Montgomery College Catalog
Volume 74 • 2024-2025

Students who plan to graduate from Montgomery College should select one catalog during their enrollment and follow the curriculum outlined in that catalog, provided they graduate within seven years of the catalog chosen.

Montgomery College's online catalog, located on the Official Policies and Documents page of the College's website at www.montgomerycollege.edu/catalog, is the official version of this document. In the case of conflicts between the printed catalog or other versions of the catalog and the Official Policies and Documents page of the website, the material on the online page shall control.

240-567-5000

Mission Statement

Our Mission

We empower our students to change their lives, and we enrich the life of our community.

We are accountable for our results.

Our Vision

With a sense of urgency for the future, Montgomery College will be a national model of educational excellence, opportunity, and student success. Our organization will be characterized by agility and relevance as it meets the dynamic challenges facing our students and community.

Our Values

Excellence / Integrity / Innovation / Diversity / Stewardship / Sustainability

Adopted by the Montgomery College Board of Trustees, June 20, 2011

Message From The President

Welcome to the Montgomery College family!

You are exactly where you need to be to accomplish your goals in life. Whether you are the first member in your family to attend college, or one of a long line of college graduates, you are now in the right place to make your own mark on the world. Whether you are here to earn a certificate in a critical trade, earn an associate's degree, take targeted courses to enhance your job skills, or transfer to a university to earn a bachelor's degree, we have a place for you. Perhaps you are still deciding what career to pursue? You are in the right place to carve your own future and fulfill your dreams. No matter who you are, you are forever part of the reason Montgomery College is a phenomenal and very special place.

You are one step closer to changing your life and the lives of many people around you. A world of people at Montgomery College and beyond know you can succeed, want you to succeed, and will do their best to help you succeed. You will find support and encouragement in abundance. Take advantage of assistance from people, such as professors, counselors, friends, or parents. They provide the framework with office hours, advising, learning communities, and so much more. So many stand ready to help you reach your potential, whatever goal you set for yourself.

Welcome!

Dr. Jermaine F. Williams, EdD
President
president@montgomerycollege.edu

Information

Student Success Model

Student success is accomplished through a collaborative effort to achieve learning that actively engages students, faculty, and staff. Student success can be measured by identifying and clarifying student goals and expectations upon entry, assessing student progress and experiences through their courses, and evaluating student outcomes at the time of exit. Montgomery College fulfills its implicit contract with the larger community when student success is achieved.

Student Success Credo

We believe student success is accomplished when students

- read, write, and speak at the college level;
- use mathematics tools and concepts at the college level;
- use information resources, including developing technology, to support continued learning;
- are positive, motivated learners who accept responsibility for their success;
- are self-confident, independent, and active learners with critical thinking skills enabling lifelong learning;
- are tolerant and flexible, and aware of the interdependence of modern society.

We believe student success is facilitated through

- assessing student academic skills and placing students in appropriate courses;
- counseling and advising students to establish focused and realistic educational, career, and personal goals;
- assessing ongoing development, clarification, and refinement of student goals throughout the educational process;
- teaching students with challenging, but nurturing and encouraging, instructional methods;
- providing effective and appropriate learning support programs and services.

We believe student success is enabled when faculty and staff are committed to

- providing a positive, welcoming climate that reflects an ethical, caring college community;
- taking a personal interest by encouraging, assisting, and respecting the individual potential in each student;
- setting personal performance expectations that reflect their commitment to student success.

We believe student success is further ensured when the College

- is responsive to the community's needs and sets goals to meet them;
- clearly and effectively communicates information internally and externally;
- provides a physical environment conducive to learning and the development of a sense of community among students, faculty, and staff;
- offers students a comprehensive co-curricular program;
- is responsive to the needs of faculty and staff directly involved in the learning process;
- develops plans, allocates resources, and assigns administrative time to activities contributing to student success;
- provides professional development opportunities for faculty and staff that enhance the learning environment;
- maintains a reward system that recognizes faculty and staff contributions to students and their learning;
- regularly evaluates (with student input) all aspects of the College instruction, as well as support and administrative offices, and uses the data to improve such aspects.

Directory

College Directory

Some frequently used addresses and phone numbers for the College are listed below. You can also find contact information for College departments and programs at www.montgomerycollege.edu.

Central Services
9221 Corporate Blvd.
Rockville, MD 20850
240-567-5000

Germantown Campus
20200 Observation Drive
Germantown, MD 20876
240-567-5000
Security: 240-567-3333

Rockville Campus
51 Mannakee Street
Rockville, MD 20850
240-567-5000
Security: 240-567-3333

Takoma Park/Silver Spring Campus
7600 Takoma Avenue
Takoma Park, MD 20912
240-567-5000
Security: 240-567-3333

Alumni
Office of Alumni Affairs
240-567-5378

Employee and Labor Relations
240-567-5276

Employment
Office of Human Resources and Strategic Talent Management
240-567-5353

Financial Aid and On-Campus Student Employment
240-567-5100

Library
Germantown: 240-567-7858
Rockville: 240-567-7117
TP/SS: 240-567-1540

Public Relations
Office of Communications
240-567-4022

Raptor Central
Admissions, Enrollment, and Visitor Services
240-567-5000

Use of College Facilities
Office of Facilities
Germantown: 240-567-7807
Rockville: 240-567-5073
TP/SS: 240-567-1563

Veterans Affairs Office
240-567-5033

Workforce Development & Continuing Education
51 Mannakee Street
Rockville, MD 20850
240-567-5188

Collegewide or Campus Closing, Delayed Opening, or Emergency

Montgomery College will always operate on its regular schedule unless otherwise announced. Changes to the college's operational status will be communicated in a number of ways. Additional information can be found under College Policies.

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College Calendar

Academic Year 2024-2025

Please visit www.montgomerycollege.edu/dates for detailed semester calendars.

Fall Semester 2024

Monday, August 26	Official beginning of Academic Year; Faculty return for professional week
Monday, September 2	College closed for Labor Day holiday
Tuesday, September 3	Fall semester classes begin
Saturday-Sunday, September 7-8	Fall semester weekend classes begin
Tuesday, October 22	Advising day; No classes for students; Non-instructional duty day for faculty
Wednesday, November 27	No classes for students; Non-instructional duty day for faculty
Thursday-Sunday, Nov 28-Dec 1	College closed for Thanksgiving holiday
Monday-Sunday, December 16-22	Final exam week
Sunday, December 22	Official end of fall semester
Monday-Friday, December 23-Jan 3	Winter break; College closed

Winter Session 2025

Monday December 23	Winter session classes begin
Monday January 20	College closed for Dr. Martin Luther King, Jr. holiday
Friday January 24	Winter session classes end

Spring Semester 2025

Monday December 23	Official beginning of spring semester
Monday January 20	College closed for Dr. Martin Luther King, Jr. holiday
Tuesday January 21	Faculty return for professional days
Monday January 27	Spring semester classes begin
Saturday-Sunday February 1-2	Spring semester weekend classes begin
Monday-Sunday March 17-23	Spring break for students and faculty
Friday March 21	Spring break; College closed
Monday-Sunday May 12-18	Final exam week
Monday-Friday May 19-23	Non-instructional duty days for faculty
Friday May 23	Commencement

Summer Sessions 2025

Monday May 26	College closed for Memorial Day holiday
Tuesday May 27	Official beginning of summer sessions
Tuesday May 27	Summer session I classes begin
Thursday June 19	College closed for Juneteenth holiday

College Calendar

Monday June 16	Midsummer session classes begin
Friday July 4	College closed for Independence Day holiday
Monday July 7	Summer session II classes begin
Friday August 15	Official end of summer sessions

Legal Disclaimers

Notice

In keeping with the College's educational mission, the educational policies and procedures are continually being reviewed and changed. The statements and provisions in this catalog are subject to change at the discretion of the College and without notice. This catalog should not be construed as constituting a contract, express or implied, between the College and any person. The College may issue supplements and make revisions at its sole discretion. The official version of the catalog may be found on the Official Policies and Documents page of the College's website: www.montgomerycollege.edu/policies-and-procedures/index.html

Readers should use this catalog solely as a reference document, recognizing that it is not always the most authoritative or complete source of information. Students are responsible for keeping informed of official policies and meeting all relevant requirements and should confirm the current status of statements and provisions before registering. Where there is a conflict between any official documents and any summary of such documents that may appear in this catalog, the provisions of the official document shall apply.

The College reserves the right in its sole discretion to change any of the policies and procedures of the College at any time, including but not limited to, those related to admission, instruction, and graduation. This also includes without limitation the right of the College to make changes of any nature in the College's academic program, courses, curricula, schedule, calendar, tuition, fees, academic policies, and other policies and procedures affecting students, whenever the College in its sole discretion deems it desirable to do so. The College also reserves the right to shift programs, departments, or courses from one to another of its campuses. The foregoing changes may include, without limitation, the elimination of programs, departments, or courses; the modification of the content of any of the foregoing; the rescheduling of classes, with or without extending the announced academic term; changes to course format or mode of instruction (online, structured remote, etc.); and the cancellation of scheduled classes or other academic activities. If such changes are deemed desirable by the College, the College may in its sole discretion require or afford such alternatives for scheduled classes or other notification that the College deems reasonably practical under the circumstances. All such changes are effective at such times as the College determines and, unless otherwise stated in writing, will apply not only to prospective students but also to those who already are enrolled in the College. Enrollment of all students is subject to these conditions.

Payment of tuition in whole or part or attendance at a class shall constitute a student's acceptance of the College's rights as set forth above.

Notice of Non-Discrimination

At Montgomery College, we understand diversity is more than just ethnic representation. Our student body, faculty, and staff are made up of people with varying abilities, sexualities, religions, ethnicities, and nationalities. As a community open to all, the College embraces its extraordinary diversity, and it is committed to creating learning environments and opportunities that prepare our students to contribute to and participate in a global society and marketplace. By putting diversity first, Montgomery College is a community of students, faculty, staff, and alumni that are truly citizens of the world.

At Montgomery College, we demonstrate our commitment to diversity in several ways, which includes ensuring an environment where all persons are provided opportunities for employment and/ or participation in academic programs and other College activities. The Montgomery College Board of Trustees has established policies to assure that College maintains educational and employment environments free from ethnic, cultural, and racial hostility, violence, or harassment. It is the policy and practice of the College to prohibit discrimination in its programs and activities against a qualified individual with a disability or on the basis of age, citizenship status, color, covered veteran status, gender identity, genetic information, marital status, national origin, race, religion, sex, sexual orientation or any other characteristic protected by applicable law. This policy is consistent with Title VI of the Civil Rights Act of 1964; Title IX of the Educational Amendments Act of 1972; the Rehabilitation Act of 1973, Section 504; the ADA Amendments Act (ADAAA 2008); and other applicable laws and regulations. Inquiries regarding compliance with these laws may be directed to the Director of Employee Engagement and Labor Relations, **Carol Kliever**, 9221 Corporate Boulevard, CT/E101, Rockville, MD 20850, Carol.Kliever@montgomerycollege.edu, 240-567- 4435; **Kristen Roe**, Director of ADA Compliance & Title IX Coordinator, 9221 Corporate Blvd., Rockville, MD 20850, Kristen.Roe@montgomerycollege.edu, 240-567-4279; or to the Office for Civil Rights, Department of Education, Washington, DC 20201. Under provisions of the Americans with Disabilities Act, this material is available in alternative formats by contacting the Disability Support Services Office at 240-567-5058.

Legal Disclaimers

Student Liability Statement

At the time of enrollment, each student agrees to assume the personal risks and liabilities entailed in any course requirement. The student releases and holds harmless Montgomery College, its trustees, and employees from any injury sustained through his/her actions or the actions of other students enrolled in the course.

About Montgomery College

Montgomery College has been changing lives in Montgomery County for more than 70 years. Founded in 1946, Montgomery College began as an evening college at Bethesda-Chevy Chase High School, serving an initial student body of just 186 students.

By 1950, the College acquired the buildings and land previously occupied by the Bliss Electrical School. This Takoma Park/ Silver Spring Campus location became the College's first campus. Rockville Campus opened in 1965, and the Germantown Campus opened in 1978.

Today, the College is a multi-campus institution that serves nearly 60,000 students annually, through a combination of credit and noncredit continuing education programs.

Chartered by the state of Maryland and governed by a ten-member Board of Trustees, Montgomery College is widely recognized for the quality and scope of its academic programs in liberal arts, humanities, sciences, business, and technologies.

Campuses are located in Germantown Campus, Rockville Campus, and Takoma Park/Silver Spring Campus, complemented by Workforce Development and Continuing Education centers and other off-campus sites throughout Montgomery County.

More than 100 degree and certificate programs prepare students to earn an associate's degree, transfer to a four-year college or university, enter the job market, upgrade career skills, complete an apprenticeship, or enhance life through enrichment experiences.

A highly accomplished and innovative faculty provides individualized instruction and a supportive learning environment. Affordable tuition and various extracurricular activities-such as athletic programs, performing arts, student clubs and multicultural organizations, and student government-create a complete college experience for the county's culturally diverse student population.

Courses and student services are provided year-round for day, evening, and weekend students.

College Philosophy

The College is an open-access, public education institution dedicated to academic excellence and committed to student success. The College offers a wide range of post-secondary academic programs, career training, and lifelong learning opportunities at moderate cost to residents, businesses, and other organizations within Montgomery County.

The College provides an enriching and comprehensive learning experience for students, faculty, staff, and community members who enhance the College with a diversity of ethnicities, cultures, ages, and experiences. This diversity offers opportunities for students to appreciate individual differences and to communicate ideas. As an educational resource center, the College acknowledges its responsibility and participates actively with public and private agencies to search for solutions to community problems.

College Program Commitments

The vision of academics at Montgomery College is a natural expansion of our student- centered mission of caring, commitment to quality, and service to community that holds us accountable for key results centered on learning. This vision incorporates

clear priorities and the challenges of the future: continued access, retention, achievement, and collaborative learning. These priorities are achieved within a framework of service to the community and continued learning and professional development.

In keeping with its philosophy, policies, and purposes, the College offers the following high-quality educational opportunities:

- transfer curricula for students wishing to transfer to upper-division degree studies at four-year colleges and universities;
- technical curricula for students wishing to prepare for immediate employment;
- a broad-based general education curriculum upon which students with undecided objectives can build;
- credit and noncredit courses that may be used for employment, re-employment, retraining, and for exploring interests in professional and technical fields;
- a continuing education program that extends the resources of the College into the community;
- forums, lectures, short courses, concerts, dramatic productions, art exhibits, athletics, and other activities meant to add balance to the total instructional program of the College;
- academically, vocationally, and personally-oriented counseling services;
- a program designed to identify and help remedy students' academic deficiencies;
- an early placement program for qualified high school seniors wishing to supplement their secondary school courses and/or accelerate their college studies;
- an honors program for students of outstanding ability; and
- an extensive summer program for current students, undergraduates from other institutions, and high school graduates who wish to begin their college studies.

Degrees, Certificates, and Letters of Recognition

The Maryland Higher Education Commission has authorized the College to confer the associate of arts, associate of science, associate of applied science, associate of arts in teaching, and associate of fine arts degrees upon its graduates. The College awards diplomas, certificates, and letters of recognition. Specific requirements are listed in the Curricula Information section.

Academic Recognition and Memberships

As a public institution, the College is legally accountable to the state of Maryland and Montgomery County. At the state level, the College reports to the Maryland Higher Education Commission (MHEC). MHEC establishes minimum requirements for associate degree-granting institutions and establishes general policies for the operation of community colleges.

Middle States Association Accreditation

The College was first accredited on April 28, 1950, after an evaluation by a committee representing the Commission on Higher Education of the Middle States Association (an institutional accrediting agency recognized by the U.S. Secretary of Education and the Commission on Recognition of Postsecondary Accreditation). It has remained on the accredited list ever since.
For more information on accreditation, contact:

Middle States Commission on Higher Education
3624 Market Street
Philadelphia, PA 19104
267-284-5000
www.msche.org

Other Accreditation

The College holds accreditation from the State of Maryland and numerous academic and professional organizations. Examples of accrediting organizations for specific curricula are as follows:

Diagnostic Medical Sonography
Commission on Accreditation of Allied Health Education Programs

Early Childhood Education
National Association for the Education of Young Children

Health Information Management
Commission on Accreditation for Health Informatics and Information Management Education

Interior Design
National Kitchen and Bath Association

Music
National Association of Schools of Music

Nursing
Accreditation Commission for Education in Nursing

Personal Fitness Trainer
Commission on Accreditation of Allied Health Education Programs

Physical Therapist Assistant
Commission on Accreditation in Physical Therapy Education

Polysomnography Technology
Commission on Accreditation of Allied Health Education Programs

Radiologic Technology
Joint Review Committee on Education in Radiologic Technology

Surgical Technology
Commission on Accreditation of Allied Health Education Programs

Alumni

The Montgomery College Alumni Association is a free membership organization of former students, graduates, and College retirees committed to enriching lives and producing meaningful opportunities for alumni, students, and the community.

The Association serves alumni of MC's legacy institutions: the Bliss Electrical School, Carver Junior College, and the Maryland College of Art and Design. Any group of 10 alumni may form a special-interest chapter; email **alumni@montgomerycollege.edu** for more information.

The Association awards annual scholarships, including two for the child or parent of a College alumnus/alumna; the Socrates and Anne Koutsoutis Statue of Liberty Scholarship for a first-year student; partial or full scholarships for Summer Dinner Theatre students; and the Louis D. Bliss Memorial Scholarship for electrical engineering or computer science majors.

The Association also locates volunteer mentors to help students accomplish their academic and professional endeavors. Alumni mentors are matched with students based on curriculum and other criteria at the start of the academic year.

The Alumni Association regularly honors outstanding and high-achieving alumni. The Milton F. Clogg Outstanding Alumni Achievement Award and the Rising Star Young Alumni Recognition Award are presented at the Alumni Awards Ceremony, where former athletes are inducted into the Athletic Hall of Fame. Nominations are accepted from current and former students, faculty, and staff. For scholarship applications, award nominations, and information on membership benefits, email alumni@montgomerycollege.edu, visit www.montgomerycollege.edu/alumni, or follow www.facebook.com/mcalumniassociation.

College Policies

All official College policies and procedures are posted on our website at www.montgomerycollege.edu/pnp. Excerpts from key policies including 42001: Student Code of Conduct, 75003: Restrictions on Smoking, and 58005: Closing of the College, are below. For other pertinent policies including 53001: Academic Regulations and Standards, 31005: Drug and Alcohol Prevention, 31001: Hate/Violence Activity, 41002: Equal Education Opportunity and Non-Discrimination, and 31001: Sexual Misconduct, please refer to the Policies and Procedures website.

Student Code of Conduct

About Montgomery College

The College believes in the premise that students are responsible for their own actions and should be free to pursue their educational objectives in an environment that promotes learning, protects the integrity of the academic process, and protects the College community.

The Student Code of Conduct outlines the policies, regulations, and procedures of the College regarding academic honesty and student behavior, including penalties and appeals. The code can be viewed on the web at www.montgomerycollege.edu/pnp.

Restrictions on Smoking

Smoking and tobacco use, including e-cigarettes, are prohibited in all indoor and outdoor College-owned property and are not permitted within leased College office and classroom space. Tobacco and smoking products will not be sold in College facilities. Details of the smoking and tobacco use policy, as well as enforcement protocol, can be viewed at www.montgomerycollege.edu/pnp.

Closing, Delayed Opening, or Emergency

Montgomery College will always operate on its regular schedule unless otherwise announced. Depending on the nature of the incident, notifications of emergencies and changes to the College's operational status will be communicated through one or more of the following means:

- College emergency responders: Security Officers, Campus Response and/or Support Teams
- Montgomery College ALERT. Registered users receive text and e-mail messages. Registration information at www.montgomerycollege.edu/emergency
- Montgomery College Emergency Desktop Notification. Scrolling messages are broadcast on College computers
- Montgomery College closures and delays page at www.montgomerycollege.edu
- MyMC website at mymc.montgomerycollege.edu
- Social media: Twitter, Facebook Stories, and Instagram Stories
- Montgomery College student e-mail system
- Montgomery College employee voice mail. From off-site, dial 240-567-1701
- Montgomery College employee e-mail. From off-site, http://mail.montgomerycollege.edu
- Montgomery College main phone number at 240-567-5000
- Montgomery College cable channel 10 in Montgomery County
- Commercial radio and TV stations including:

If the College opens late or closes early for any reason, the following rule will be used to determine if a class will meet. If a class can meet for at least half of its scheduled time or if the class can meet for 50 minutes or more, then the class will meet. Reasonable efforts will be made to open and make buildings accessible at least 30 minutes prior to any delayed opening.

Evening and Weekend Classes/Activities

When MC is closed due to inclement weather, all evening and weekend classes, programs, athletic events, and activities are canceled or postponed.

Operational Status and Color Codes

The table below provides an overview of the four operational status levels or color codes that will indicate the College's operating status.

Montgomery College's operating status is based on current or forecasted conditions and will be displayed at the top of the College's homepage. Based on the circumstances, the aforementioned alert notifications will be sent when necessary.

Students, please note: Always refer to the course syllabus and/or communicate directly with your instructors for guidance related to classes and assignments.

Additionally, all supervisors, department chairs, and administrators should work closely with their departments and teams to plan and prepare for their operations under codes yellow and orange in advance.

About Montgomery College

MONTGOMERY COLLEGE OPERATIONAL DEFINITIONS

Code/Level	Conditions (Examples)	Operating Status	Faculty/Staff/Student Actions
GREEN	Normal	The College is open and all campuses/locations are open.	Operations/instruction/services as usual, both for on-site and remote/online activities.
YELLOW	Anticipated or minor events that do not affect the overall operations of a campus/location (weather watch or advisory due to snow, hail, heavy rain). Isolated campus/location or operations emergency or issue (small scale power failure).	The College is open and all campuses/locations are open. Some on-site operations/instruction/services may be limited or impacted.	All classes and events continue as scheduled. Liberal use of leave and situational telework for employees at the discretion of the supervisor/administrator.
ORANGE	Events that will impact the physical or on-site operations of a campus/location (weather warning due to snow, hurricane, tornado). A regional area warning due to emergency or risk (regional travel warning). Localized College emergency or risk (MC network disruption, area power failure).	The College is open for operations, but all campuses and locations (i.e., physical locations) are closed. Operations/instruction/services are limited to remote only.	All on-site campus/location classes, services, events, and activities are cancelled. All online, remote, and hybrid classes continue as scheduled. Students should refer to their course syllabus and/or communicate directly with their instructor for guidance. Only essential personnel directed by supervisor report to work on-site.* All telework eligible employees are required to telework or use leave. Regular staff in positions ineligible for telework are granted administrative leave.
RED	Events and situations that may involve an extreme local/on-site and regional/national emergency or risk (severe weather, state of emergency, civil or health crisis). Major infrastructure issues (large-scale network disruption, power failure)	The College is closed. All on-site and remote operations/instruction/services are suspended.	All classes, services, events, and activities are cancelled, including online and remote classes. Only essential personnel directed by the supervisor report to work on-site.* Teleworking is not required. All regular staff will be granted administrative leave.

*Note: Employees required to report to work on-site during code Orange or Red status will be compensated in accordance with the AFSCME collective bargaining agreement or the College's policies and procedures as appropriate.

For additional information and guidance, please contact the relevant departments below.

Operational status system (color codes) and notifications: PublicSafety@montgomerycollege.edu

Employee teleworking, work schedules, administrative leave, essential personnel: HRSTM@montgomerycollege.edu.

All inquiries from the news media regarding an emergency event should be directed to the College's Office of Communications.

College Schedule

The College operates on a semester/term basis, fall and spring. Within each credit class term are four different parts. Each part of the term has an associated date range. Credit classes are offered within each of the four parts of the term, ranging from seven weeks to 15 weeks long. In addition, the College offers two summer sessions and two winter sessions. All three campuses offer classes and services days, evenings, and weekends, although hours vary. Noncredit courses run year-round, and classes begin weekly. Detailed schedules of the College's credit classes can be reviewed during registration at www.montgomerycollege.edu/admissions-registration/search-the-class-schedule.html. Students must be logged in to MyMC to register for classes.

Academic Affairs

Message from Dr. Deidre Price, Senior Vice President for Academic Affairs/College Provost

It is my pleasure to welcome you to Montgomery College.

As we begin the 2024-25 academic year, we are pleased to provide an academic schedule that provides opportunities to meet every student's need, including in-person, remote (synchronous), distance learning (asynchronous), and hybrid offerings as well as 15, 12, and 7-week terms. There is a schedule to meet every need. The types of course offerings are noted below, but please review the class schedule to see how specific courses are offered. In addition to in-person classes, we have three types that you can find out more information about:

Distance Learning courses are offered completely online and allow students to learn independently, on their own schedules, as they meet specific deadlines and complete assignments. Instructors guide students' learning with lessons, activities, and feedback through a Blackboard course site. Distance learning courses are indicated in the course schedule as Distance Learning with a DL WEB course location.

Remote courses are scheduled on specific days and at specific times. Students meet as a class remotely through Zoom or Blackboard Collaborate; instructors will tell students which software to use. Students complete reading and assignments according to the course schedule. Class sessions take place in real time, and the instructor leads course sessions. These courses are listed in the course schedule with specific times as REMOTE.

On campus courses are scheduled at any of our three campuses in Takoma Park/Silver Spring, Rockville, and Germantown. In addition, courses are offered at educational sites in Gaithersburg, Wheaton (resuming in Spring 2025), and our newest location, the East County Education Center in Silver Spring. We also look forward to the opening of our state-of-the-art Catherine and Isiah Leggett Math and Science Building on the Takoma Park/Silver Spring campus this academic year.

We have Academic Program Advisors who are prepared to help you set and achieve your goal, whether you want to transfer and complete a four-year degree, earn an associate's degree or certificate and enter the workforce, find an appropriate experiential learning opportunity, or develop new skills and knowledge to change careers or enrich your life. I am very proud of our nationally recognized comprehensive degree and certificate programs as well as our Workforce Development and Continuing Education programs, and of our incredibly talented and successful students. We can help you define your goal, and assist you to develop a plan to successfully achieve your goal.

We are offering new degrees and certificates reflecting high-demand areas of study including Data Science, Bioinformatics, Psychology, Cloud Computing, and Database Systems. We offer 22 fully online degrees. In addition, over 10,000 students each semester take advantage of Z-courses (zero textbook cost) which make use of Open Educational Resources (OER) or other materials which have no cost to students. We also offer courses that have embedded coaches who offer additional resources to support students in their academic efforts. Both of these types of courses are denoted in the registration system as you develop your class schedule.

I am proud of our outstanding, highly qualified and dedicated faculty, supported by our equally qualified and dedicated staff. They are powerful catalysts who instruct, mentor, and guide students. Our faculty work closely with the faculty at four-year colleges and universities in Maryland to ensure that our courses are aligned so that transfer students move seamlessly to their next destination. We also collaborate with local industries to ensure that the knowledge and skills you learn at Montgomery College prepare you to be successful in the workforce.

Regardless of your journey to Montgomery College, you will find a pathway to success at Montgomery College. I promise you a rich and rewarding experience as part of a community that is passionate and excited about learning and growing together.

Germantown Campus

Message from Dr. Muhammad Kehnemouyi, Interim Vice President and Provost, Germantown Campus and the Collegewide Science, Technology, Engineering, and Mathematics Unit

Whether you are returning or new to the Germantown Campus of Montgomery College, welcome. The beautiful, expansive campus - aka The Pinkney Innovation Complex for Science and Technology at Montgomery College (PIC MC) is located just 30 miles north of Washington, D.C., between Route 355 and Interstate 270. The campus serves a richly diverse population of nearly 6,000 full-time and part-time day, evening, and weekend students. Our faculty and staff work closely with the arts community and the businesses on the I-270 high-tech corridor, offering the resources of our LEED gold Bioscience Education Center, the LEED silver Dr. DeRionne Pollard Student Affairs and Science Building, the High Technology and Science Center, and the county's Germantown Innovation Center in the Paul Peck Academic and Innovation Building. Curricula and courses, including those of our signature biotechnology and cybersecurity programs, are tailored to prepare students to work in some of the most critical and dynamic fields in Montgomery County.

The Germantown Campus maintains its commitment to the community by encouraging use of the campus facilities including conference rooms in the Paul Peck Academic and Innovation Building, meeting and breakout rooms in the Conference Center located in the Bioscience Education Center, the state-of-the-art Cybersecurity Lab, and the 375-seat auditorium - Globe Hall - in the High Technology and Science Center.

The Germantown campus *is* the Pinkney Innovation Complex for Science and Technology at Montgomery College (PIC MC), an integrated academic, business, and research campus. Acreage is available for build-to-suit projects and business co-location through our development partner agreement. The College's programs and curriculum offerings reflect key business sectors in the region, such as life sciences, data science, IT, cloud computing, and cyber technologies. PIC MC's anchor partner, the Holy Cross Germantown Hospital, is the only hospital in the nation to be located on a community college campus. Hughes Network Systems has built a manufacturing facility that houses the production of Hughes satellite broadband and networking equipment on the campus.

In the following building descriptions, the codes that appear in parentheses following the building names correspond to the codes used in the campus map, posted on campus buildings, and published in the schedule of classes.

The Bioscience Education Center (BE) contains six general purpose classrooms, eight recitation rooms, 25 wet laboratories, the Science Learning Center, and 48 offices to support the biology, biotechnology, and chemistry disciplines, as well as the Dual Enrollment program. The Conference Center (within the BE building) is a 4,115 square foot meeting room with five breakout rooms, and a meeting coordinator suite, including office and conference room space.

The Center for Early Education (CG) is a state-of-the-art center with access to science labs, art galleries, the library, and recreational facilities. The Center is accredited by the National Association for the Education of Young Children (NAEYC), and is licensed by the MD State Department of Education. The facility is open to children ages 3 to 5.

The Greenhouse (GN) is a complex of buildings that support the environmental horticulture and sustainable agribusiness program and complements the new landscaping design labs in SA.

The High Technology and Science Center (HT) contains classrooms, computer-equipped classrooms, specialized technology labs, the Part-Time Faculty Resource Center; a Cybersecurity Center; an Information Technology Institute classroom; the Globe Hall auditorium with seating for 375; faculty offices, and the Office of the Collegewide Dean of Mathematics, Statistics, and Data Science.

The Holy Cross Germantown Hospital (HCGH) is the first campus resident partner of the Pinkney Innovation Complex for Science and Technology at Montgomery College (PIC MC). The Hospital, a 93-bed facility, is a host site for clinical training for students in Health Sciences programs.

The Humanities and Social Sciences Building (HS) contains classrooms; computer-equipped classrooms; the Writing, Reading, and Learning Center; the English Language for Academic Purposes (ELAP)/ speech lab; the Veterans' Office and Lounge; the Model Ed Classroom; library; Workforce Development and Education Center (WDCE) Offices; College Store; cafeteria; studio art classrooms; faculty and administrative offices; the Office of the Collegewide Dean of English Language for Academic Purposes, Linguistics, and Communication Studies.

Germantown Campus

The Paul Peck Academic and Innovation Building (PK) contains classrooms and administrative, faculty, and staff offices; the English and Reading Department; and the Office of the Vice President and Provost of the Germantown Campus and Collegewide STEM Unit, on the first floor. The second floor hosts Montgomery County's bioscience and technology incubator, the Germantown Innovation Center (GIC).

The Physical Education Building (PG) contains classrooms, a gymnasium, a swimming pool with scheduled community use times, a weight room, locker rooms, and faculty offices.

The Dr. DeRionne Pollard Student Affairs and Science Building (SA) contains the campus Welcome Center - Raptor Central, the Office of Public Safety (open 24/7), the Records and Registration Office, Assessment Center, Counseling and Advising Office, Financial Aid Office, the International and Multicultural Student Center, Student Employment Services Office, Student Life Office, Office of the Collegewide Dean of Access and Student Affairs at Germantown, and faculty and administrative offices. The newest addition to SA includes the Math, Accounting, Physics, Engineering, Learning (MAPEL) Center; classrooms and laboratories for engineering, physical science, landscape design, and computer science; and faculty and staff offices for the Science, Engineering, and Technology area.

For more information,
visit the campus website at
www.montgomerycollege.edu/gthome
or call 240-567-5000.

Germantown Campus
20200 Observation Drive
Germantown, MD 20876

Directions to the Germantown Campus

By Car: Take I-270 to Exit 15 East (Route 118). Continue to the second traffic light at Observation Drive; turn right onto campus.

A valid Montgomery College parking permit is required. Visitor permits can be obtained from Raptor Central in SA 100, and from the Office of Public Safety in SA 282.

By Metro: Take Red Line train to Shady Grove station and transfer to Ride-On Bus Route 55 to on-campus stop.

By Bus: The campus is served by Ride-On Bus with connections to Metrorail. For more information, visit www.montgomerycollege.edu/maps.

Germantown Campus and Vicinity

For more information, visit www.montgomerycollege.edu/gthome.

Rockville Campus

Message from Dr. Eric Benjamin, Interim Vice President and Provost, Rockville Campus and the Collegewide Arts, Business, Education, English, and Social Sciences Unit

Welcome to the Rockville Campus! As a vibrant community, and home to the Macklin Business Institute and the Robert E. Parilla Performing Arts Center, the Rockville Campus provides relevant and engaging learning experiences to a diverse, dynamic student population. We offer exciting signature academic and cultural programs, and we strive to create and maintain a state-of-the-art, welcoming environment. Each day at Rockville, we work diligently to lead, motivate, support, and inspire our students and partners to achieve their career and educational goals. Our faculty, staff, and students enjoy academic and cultural programs that reflect the diversity and international flavor of an exceptional suburban campus. In addition, community members participate in special events and a host of noncredit and credit educational and athletic offerings open to the public.

Accessible by all modes of transportation and located near the lively Rockville Town Center, the Campus opened in 1965 with 2,489 students. It now serves approximately 15,000 students each semester, including for-credit programs and noncredit courses through Workforce Development & Continuing Education. We collaborate with Montgomery County Public Schools to offer Early College Programs for high school students in business, education, and mathematics. Embracing the "One-College" concept, we also partner with other Montgomery College campuses in Germantown and Takoma Park/Silver Spring to provide distance learning opportunities that deliver academic relevance, flexibility, and rigor.

The Long Nguyen and Kimmy Duong Student Services Center opened in spring, 2021. This state-of-the-art facility serves as a "one-stop shop" for the MC's Raptor Central, and associated student admission and enrollment needs. All these critical student services will be in one location to make pursuing your educational goals at Montgomery College easier. The Long Nguyen and Kimmy Duong Student Services Center provides a centralized experience for new and returning students, and student club and gathering spaces that will make it easier to spend time with fellow students, friends, family, and colleagues. A second MBI Café, offers beverages and snacks and is located on the first floor of the building.

If you have questions about the Rockville Campus, please call my office at 240-567-5010. I also encourage you to take the **College's Virtual Tour** located on the campus Web page, **www.montgomerycollege.edu/rvhome** , by selecting the " **Virtual Tour** " link at the bottom of this page.

In the following building descriptions, the codes that appear in parentheses following the building names correspond to the codes used in the campus map posted on campus buildings and published in the schedule of classes.

The Amphitheatre (AT) is an open, outdoor area near the Humanities Building with tiered seating, sun decks, and an enclosed information booth.

The Campus Center (CC) houses the Montgomery College Rockville Campus Bookstore, CaféMC, dining rooms, MBI Café, and Also in the Campus Center are the Workforce Development & Continuing Education classrooms, registration services, and offices, and the Marriott Hospitality Center (e.g., food management, classrooms, and the student kitchen).

The Computer Science Building (CS) houses classrooms, computer laboratories, faculty offices, and other computer facilities.

The Academic Annex Building (CB) houses the Achieving the Promise Academy (ATPA) personnel. ATPA is a Collegewide program that provides academic support for students through embedded classroom support and one-on-one individualized academic coaching.

The Gordon and Marilyn Macklin Tower (MT) contains the library, the Writing, Reading and Language Center Lab, faculty, and administrative offices, MCTV and Media Production Services, and the College Archives/Special Collections Office.

The Homer S. Gudelsky Institute for Technical Education (GU) is a state-of-the-art technical training facility offering instructional programs in four primary areas: automotive technology, building and construction technology, and workforce technologies. The facility houses instructional laboratories, classrooms, conference rooms, and faculty offices.

Rockville Campus

The Humanities Building (HU) houses the Writing, Reading, and Language Center, an honors seminar room, classrooms, computer laboratories, a conference room, the Evening and Weekend Adjunct Faculty Office, the Campus Facilities Office, faculty offices, and the mailroom.

The Interim Technical Training Center (TT) houses technical training laboratories and classrooms associated with the programs in the Gudelsky Institute for Technical Education.

The Music Building (MU) houses a recital hall, a rehearsal hall, practice rooms, studios, an ear-training laboratory, specialized classrooms, and faculty offices. The building is equipped with pianos, organs, and other musical instruments.

The North Garage (NG) offers 918 parking spaces on seven levels along with five electric car charging stations.

The Paul Peck Art Building (AR) contains classrooms, the Sarah Silberman Art Gallery, studios for crafts, sculpture, painting, ceramics, drawing, printmaking and design, and faculty offices.

The Physical Education Center (PE) includes two all-purpose gymnasiums, a swimming pool with a separate diving area, an apparatus room, a weight room, dance studios, locker and shower facilities, classrooms, and faculty offices. Adjacent to the building are the athletic areas for track, baseball, softball, tennis, and soccer.

The Robert E. Parilla Performing Arts Center (PA) has a 500-seat theatre and is the site for both campus productions and community performances. Its design includes 38-line sets, a greenroom, a Bayreuth pit, a lobby gallery, dressing rooms with showers, and a box office. Student productions and singular events are presented here, such as MC's Got Talent, and the Annual Honor Awards Convocation, as are events in the College's Guest Artist Series and Saturday Morning Children's Series. The facility is also used extensively by the public.

The Science Center (SC) houses the department of biology on the first and second floors, chemistry on the third floor, and physics, engineering, and geosciences on the fourth floor. The rooftop has an astronomy observatory. The Science Center addition houses the department of mathematics, classrooms, and math labs.

The Science Center West Building (SW) houses classrooms, mathematics labs, an auditorium, and the Judy E. Ackerman STEM Learning Center.

The South Campus Instruction Building (SB) currently houses classrooms and faculty offices.

The Long Nguyen and Kimmy Duong Student Services Center (SV) contains Raptor Central, Counseling and Advising, Financial Aid, the offices of Admissions and Records, the office of the International Student Coordinator, Student Financial Aid, Cashier, the Trio Student Support program, the office of the Vice President and Provost, the Assessment Center, the Office of Student Life and Student Activity Center, Veterans Affairs, and the MBI Café.

The Technical Center (TC) contains facilities for career-oriented programs including applied geography, architectural technology, computer-aided design and graphics, construction management, graphic design, interior design, photography, and television. Along with the Media Arts Gallery, the Technical Center also contains classrooms and faculty offices.

The Theatre Arts Building (TA) contains classrooms, laboratory performance spaces, a scenery shop, technical facilities, faculty offices, and a stage and arena for academic performances and College activities.

For more information,
visit the campus website at
www.montgomerycollege.edu/rvhome
or call 240-567-5000; TTY 301-294-9672

Rockville Campus
51 Mannakee Street
Rockville, MD 20850
Directions to the Rockville Campus

Directions to the Rockville Campus

Rockville Campus

By Car: *From the north*: Take I-270 South to Exit 6 (Route 28), W. Montgomery Ave./Rockville. Then take Exit 6A (Route 28) East. Turn left at first traffic light onto Nelson Street. Go to first traffic light at Mannakee Street; turn left. The campus is 1-1/2 blocks on the left.

From the south: Take I-495 to I-270 North exit 6A (Route 28, W. Montgomery Avenue/Rockville). Follow Montgomery College sign through traffic light (road becomes Nelson Street). Go to first traffic light at Mannakee Street; turn left. The campus is 1-1/2 blocks on the left.

A valid Montgomery College parking permit is required. Visitor permits can be obtained from Raptor Central SV 102 and from the Office of Safety and Security in SV 122.

By Metro: Take Red Line train to Rockville station and transfer to Metrobus Q2 (Veirs Mill Road line) or Ride On Bus Route 46 to campus bus stop on South Campus Drive.

By Bus: The campus is served by both Ride On Bus and Metrobus routes with connections to Metrorail. Visit www.montgomerycollege.edu/maps for more information.

Rockville Campus and Vicinity

For more information, visit www.montgomerycollege.edu/rvhome.

Takoma Park / Silver Spring Campus

Message from Dr. Brad J. Stewart, Vice President and Provost, Takoma Park/Silver Spring Campus and the Collegewide Communication, Health Sciences, Health and Physical Education, and Humanities Unit

Established in 1950, Montgomery College's first physical location is theTakoma Park/Silver Spring Campus located in a dynamic urban/suburban neighborhood. It proudly serves more than 6,000 credit and noncredit students from more than 150 countries each semester. The campus's diverse and talented faculty provide expertise and offer quality instruction in more than100 different disciplines. This cosmopolitan campus is the headquarters of the College's highly regarded health sciences programs and home to various visual and performing arts programs including the School of Art + Design.

Construction on began on a new state-of-the-art STEM facility is nearly 30% complete. The **Catherine and Isiah Leggett Math and Science Building** will be an essential addition to the campus and the college enabling students to take STEM courses in biology, chemistry, physics, engineering, cybersecurity, mathematics and other disciplines twenty-first century laboratories and classrooms. MC faculty, staff, and students have devoted countless hours toplanning and advocating for this facility to become a reality. The Building will also house a planetarium/universarium featuring 100 movable seats under a tilted 30-foot dome, and it will show not only stars, nebulae, and galaxies but also Layered Earth software, Spitz videos, and 360-degree virtual reality video and sound-everything from space to polar bears in the Arctic to the Sistine Chapel. The facility is expected to be fully operational and open for classes in the fall semester of 2023. In addition to this new building, scheduled to open in fall 2023, the campus boasts many outstanding and modern facilities

The Catherine F. Scott Commons buildings includes classrooms, a lecture hall, the Academic Success Center, a food pantry, the Bliss Exhibition Hall, conference rooms, and offices. Students in English, humanities, and social sciences classes make use of the building's numerous study spaces.

The Charlene R. Nunley Student Services Center houses Raptor Central, the Offices of the Vice President and Provost, Records and Registration, Student Financial Aid, Public Safety (open 24 hours a day), Student Life, the Cashier, and the International Student Coordinator; the Counseling Center, the Assessment Center, the campus bookstore (which has a café), the cafeteria, the mailroom, computer-equipped classrooms, and open labs. In addition, the soaring atrium in the building overlooks numerous space for students to socialize and study.

The Cultural Arts Center is home to two beautiful state-of-the-art theatre spaces: a 500-seat multipurpose proscenium theatre and a 116-seat modified thrust studio theatre. It also houses the George and Ruth Tretter Dance Studio, featuring floor-to-ceiling windows overlooking Georgia Avenue, a film-editing lab, a piano lab, classrooms and offices. It presents cross-genre programming focused on representing the diverse cultural interests of our campus and our community. The CAC has hosted concerts by world famous artists including Aretha Franklin and Washington DC's Chuck Brown, one of the founders of go-go music.

The Health Sciences Center provides state-of-the-art health sciences classrooms, laboratories, nursing simulation labs, and other facilities. It also houses a community health center operated by Holy Cross Hospital.The clinic provides care for uninsured and underserved patients while offering community-based clinical experience for student nurses. Holy Cross personnel handle patient care and serve as clinical adjunct faculty, working alongside College faculty in supervising and evaluating students.

The Mathematics Pavilion contains classrooms, one of two campus Mathematics Learning Centers, and math faculty offices.

The Morris and Gwendolyn Cafritz Foundation Arts Center houses classrooms, art studios, an art gallery, faculty offices, and community use studios. It also houses the Refugee Training Center, the ADN to BSN Pathway Office (which provides resources for nursing students in their academic journey as they work toward transferring to earn a bachelor of science in nursing or advanced degree), and Workforce Development and Continuing Education classrooms and offices.

The North Pavilion houses faculty and other offices.

Pavilion One contains one of two campus Mathematics Learning Centers, classrooms, and faculty offices.

Pavilion Two contains faculty and other offices.

Pavilion Three contains classrooms, faculty offices, and student study spaces.

Takoma Park / Silver Spring Campus

Pavilion Four houses classrooms, faculty offices, the campus fitness center and the **Institute for Race, Justice, and Civic Engagement,** which provides a meeting area where students can discuss social justice issues; an academic space where faculty can support students; a food pantry and clothing library; and community engagement so students can connect with volunteer opportunities and community support organizations.

The Resource Center houses the library, classrooms, faculty offices, and the Writing, Reading, and Language Center, and Student Employment Services. A complete renovation of the Library is scheduled to begin in 2022.

The Science North Building houses chemistry, engineering, biology, and physics laboratories, a lecture hall and classrooms, the Math/Science Learning Center, and faculty offices.

Among its many successful academic programs, the Takoma Park/Silver Spring Campus is home to a robust health sciences program. The **nursing program** starts students on the path to a successful career as a registered nurse. Graduates of our two-year associate's degree program are qualified to take the NCLEX examination to become licensed, registered nurses who are prepared to give competent nursing care to patients in hospitals, nursing homes, and other health care settings. Other health sciences degree and certificate programs at the campus helping fill critical workforce shortages include **diagnostic medical sonography, radiologic (x-ray) technology, health information management,** and **physical therapist assistant**.

For more information,
visit the campus website at
www.montgomerycollege.edu/tphome
or call 240-567-1300

Takoma Park/Silver Spring Campus
7600 Takoma Avenue
Takoma Park, MD 20912

Directions to the Takoma Park/Silver Spring Campus

By Car: Take I-495 West to Exit 31 or East to Exit 31B, Georgia Avenue South (Route 97). Continue south on Georgia Avenue past the Colesville Road (Route 29) intersection. Following the signs for Montgomery College, turn left (East) on Sligo Avenue. Follow Sligo Avenue to Fenton Street; turn right. Continue (southbound) on Fenton Street through the traffic light at Philadelphia Avenue (Route 410). The East Garage is just ahead on your right, and the campus itself begins one block farther at New York Avenue and Fenton Street. The West Garage is located off Georgia Avenue on Jesup Blair Drive.

A valid Montgomery College parking permit is required. Visitor permits can be obtained from the Welcome Center in ST 123, the Office of Safety and Security on the first floor of the Charlene R. Nunley Student Services Center (ST), and the lobby desk on the first floor of the Health Sciences Center (HC).

By Metro: Take Red Line train to Silver Spring station, then transfer to Ride On Bus Route 17 or 18.

By Bus: The campus is served by both Ride On Bus and Metrobus routes with connections to Metrorail. Visit www.montgomerycollege.edu/maps for more information.

Takoma Park/Silver Spring Campus and Vicinity

For more information, visit www.montgomerycollege.edu/tphome.

Workforce Development & Continuing Education

Workforce Development and Continuing Education

The Workforce Development and Continuing Education (WDCE) programs at Montgomery College provide a wide range of pre- and post-degree educational offerings and services designed to meet the needs of county residents and businesses. Individuals in career transitions, those re-entering the workforce, and those maintaining current technical skills, as well as those seeking lifelong educational enrichment experiences, are among the more than 25,000 students enrolled in WDCE programs each year.

With more than 2,000 courses offered year-round, the chances of finding a course of interest are excellent. High-quality noncredit courses are available in more than 25 program areas, including information technology, small business and management, technical training, certification and licensure preparation, financial planning, real estate, child care, health sciences, personal development, career development, writing, American English, cultural diversity, customer service, quality management, and leadership development. These course offerings change continuously to reflect the ever-changing needs of the businesses and communities we serve.

Courses are offered through six program areas: Community Education and Extended Learning Services; Business, Information Technology, and Safety; the Gudelsky Institute for Technical Education; the Health Sciences Institute; the Community Arts; and Adult ESOL and Basic Skills for College and Careers. Courses in these program areas may be taken at the three College campuses and at other community sites, including the Westfield South Center in Wheaton and the Business Training Centers in Olde Towne Gaithersburg . Courses are of varying lengths, have flexible start dates, and are offered in the daytime, evening, and weekends to suit the needs of the populations served. Course delivery formats may be in-person, on-line, or through a structured remote platform such as Zoom.

Many WDCE noncredit courses are delivered as a result of a customized training program developed for business and community organizations. Contract training partnerships align College education and training resources with the demands of the workplace and are tailored to each business partner's requirements. Employer-sponsored training programs have grown significantly in recent years and are frequently delivered at the business location.

For more information on WDCE programs, please visit our website at www.montgomerycollege.edu/wdce.

Online Learning Courses

Each month, Montgomery College offers an exciting array of hundreds of noncredit online courses. These are open to everyone. Most of the online courses are six weeks in length and include such topics as Office Skills, Computer Skills, Digital Photography, Webpage Design, Personal Enrichment, Health Care Continuing Education, and Career Skills. These courses offer two lessons a week for a total of 12 lessons. For more information, please visit the website: www.montgomerycollege.edu/workforce-development-continuing-education/noncredit-online-courses/index.html.

Who Is a WDCE Student?

People of all ages, educational backgrounds, and interests participate in WDCE courses each year. These people come from many walks of life and many occupations, including business professionals, health care providers, technicians, engineers, teachers, homemakers, students with prior degrees, and retired persons. WDCE courses appeal to those with a lifelong interest in learning.

Special Programs

Adult ESOL and Basic Skills for College and Careers

Adult ESOL and Basic Skills for College and Careers are grant-funded programs offering a variety of English, basic skills, and vocational classes for immigrants, refugees, and those in need of a high school diploma. Classes in these programs are free or at a reduced tuition rate. Many are offered remotely.

The Adult ESOL Program has six levels and provides basic English language and life skills instruction to county residents whose native language is not English. Classes are also available in English in civic participation and U.S. citizenship preparation. Classes are offered at a variety of times throughout the county. Participants in these programs work with a college and career coach who will help them transition to other vocational programs offered by the College.

Workforce Development & Continuing Education

The Refugee Training Program is a grant-funded program that offers classes in English for documented refugees and political asylees in the American workplace, basic life skills, computer literacy, and pre-vocational training in health care and other fields. For more information, please visit the website: www.montgomerycollege.edu/workforce-development-continuing-education/english-language-skills/adult-esol/index.html.

The Work Plus! Program offers workforce readiness classes in Vocational ESOL courses such as ESOL for Healthcare Jobs, ESOL for Customer Service, ESOL for Building Trades Jobs, and ESOL for Education Professionals are offered for students interested in preparing for employment and further training. The College also offers integrated courses where students work on English and basic skills while simultaneously training to become a licensed geriatric nursing assistant, certified apartment maintenance technician, or an early childhood educator among others. Participants in these programs are also supported in transitions to employment and other vocational programs offered by the College.

The grant-funded Citizenship Program prepares newcomers to the United States for the U.S. naturalization exam and American citizenship. Classes are throughout the county and offered year round.

The Literacy-GED Test® Preparation Program serves those who have not obtained a high school diploma and need to improve their literacy, writing, numeracy, and other content area skills in order to pass the GED® examination. The Literacy-GED Test® Preparation Program also offers community orientations on the GED® test and program services. For more information on these classes, please visit the website www.montgomerycollege.edu/workforce-development-continuing-education/english-language-skills/adult-esol/index.html.

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English as a Second Language (Noncredit ESL)

To meet the expanding need for language training, WDCE offers a broad array of English courses to help students whose native language is not English prepare to enter the English Language for Academic Purposes (ELAP) program or to enhance their proficiency in English in order to progress professionally. For more information, please visit the website: www.montgomerycollege.edu/workforce-development-continuing-education/english-language-skills/.

Biotechnology

The biotechnology workforce development program serves the needs of the county's growing biotechnology industry. Courses are offered to interest both scientists and the general public. Topics include basic biotechnology, laboratory skills, and Food and Drug Administration (FDA) regulatory compliance. Customized training options are available.

Business Training Services

WDCE works with many local businesses, governmental agencies, and community organizations to provide training solutions to meet specific organizational goals. Existing course offerings can be tailored to focus on specific topics of interest, or new course material can be developed to meet specific training needs. Course length and content are determined by the training requirement. Classes are then held at a College location or frequently are held in an organization's training or conference room. The full course inventory of the College can be drawn upon to meet workplace education and training needs and can be delivered in a wide variety of learning formats, including onsite, web-based, intense, or regular-length instructional programs. Technical assistance in the development of a customized course series may include convening focus groups, conducting needs assessments, curriculum development, learning outcome assessments, and educational program design. For more information, please visit the website www.montgomerycollege.edu/business-partners-employers/mc-business-solutions/index.html.

World Languages

WDCE offers affordable, dynamic noncredit courses in a variety of world languages: currently offered are Chinese, Farsi, French, German, Hebrew, Italian, Korean, Mandarin, Portuguese, Russian, Spanish, and American Sign Language. The primary goal of the language courses is to develop communication skills in the language as quickly as possible. These courses work to meet a wide variety of needs, from basic communication skills to advanced levels of instruction for those with good fluency. Contract classes and customized courses are also available to local businesses, government agencies, and community organizations. For more information visit the website: www.montgomerycollege.edu/workforce-development-continuing-education/world-languages/index.html.

Workforce Development & Continuing Education

Gudelsky Institute for Technical Education

To meet the technical education and training needs of the workforce and the community, the Homer S. Gudelsky Institute for Technical Education (GITE) provides instructional programs in three primary areas: automotive technology, building trades technology, and workforce technologies. The automotive technology program, including training in hybrid and electric car functions and service, is Master Certified by the National Automotive Technicians Education Foundation. The building trades technology program, including training in solar and wind installation and service, is authorized by The North American Board of Certified Energy Practitioners. With this program the HVAC curriculum is certified by the Partnership for Air Conditioning, Heating, and Refrigeration Accreditation. GITE offers both credit and noncredit courses via classroom and lab training, on-site or offsite customized contract training, apprenticeship training, and long- or short-term training. A community benefit of GITE is the Fab Lab, where visitors can bring innovative ideas, develop creative projects, and build new items or technologies. For more information, please visit the website at www.montgomerycollege.edu/academics/departments/gudelsky-institute-technical-education/index.html.

Health Sciences Institute

The Health Sciences Institute was designed to meet the needs of health care providers in the metropolitan Washington area. It offers both noncredit and credit courses and programs of study in various health care careers. These courses and programs will provide individuals with workforce skills, certification in specific disciplines, and associate degrees in an array of health sciences. Customized courses and programs, training courses, seminars, and specialty workshops are available. Experienced faculty, from the College or from the local community of health care providers, participate to develop the workforce for the health care community. For more information, please visit the website: www.montgomerycollege.edu/workforce-development-continuing-education/health-sciences/index.html.

Hispanic Business and Training Institute

The Hispanic Business and Training Institute (HBTI) was created in 1999 as a partnership between the College, Montgomery County Department of Economic Development, and Hispanic Chamber of Commerce of Montgomery County. HBTI has since grown into an award-winning program through which training increases economic opportunities for the Hispanic community. HBTI offers a variety of training programs in small business, home improvement licensure, OSHA safety training, computer applications, food safety certification, legal assistant, and occupational Spanish. For more information, please visit the website: www.montgomerycollege.edu/workforce-development-continuing-education/small-business/hispanic-business/index.html.

Information Technology Institute

In response to the need for skilled information technology workers, the College established the Information Technology Institute (ITI). ITI offers noncredit courses at all three College campuses as well off-campus centers in Gaithersburg and Wheaton. In addition, ITI provides customized training at business sites throughout the region.

ITI is designed to prepare new workers and retrain existing workers to fill positions in Montgomery County's information technology market. Courses are available to meet a wide range of student needs and career goals and are taught by faculty with years of practical experience.

The College is a member of the Microsoft IT Academy, Oracle Academic Initiative, Oracle Workforce Development Program, and Cisco Systems Networking Academy. Courses in these programs offer students the opportunity to prepare for industry certification examinations.

For more information on ITI, please e-mail Alton.Henley@montgomerycollege.edu or visit the website at www.montgomerycollege.edu/iti.

Professional Licensure and Certification

To help the professional community meet certification or licensure requirements, numerous WDCE courses are offered in cooperation with business, government, and professional organizations in the following areas:

- insurance, real estate, small business, mortgage loan, and Society for Human Resources Management (SHRM) and American Management Association (AMA) certification courses (see www.montgomerycollege.edu/workforce-development-continuing-education/job-skills/index.html and www.montgomerycollege.edu/workforce-development-continuing-education/management-leadership/index.html for more information);
- early childhood education, para-professional educator training, teacher certification;
- automotive, electrical, plumbing, stationary engineering, and occupational safety;
- health care, including nursing;
- computer and networking fields;
- cosmetology (see www.montgomerycollege.edu/workforce-development-continuing-education/small-business/cosmetology/index.html); and
- veterinary assistant (see www.montgomerycollege.edu/workforce-development-continuing-education/small-business/animal-care/index.html).

Project Management

Montgomery College's WDCE Department is a Global Registered Education Provider by the Project Management Institute (PMI). Courses in a variety of project management topics prepare individuals for new roles in project management and also prepare them for the PMI certifications, including the nationally and internationally recognized Project Management Professional certification. For more information, please visit the website: www.montgomerycollege.edu/workforce-development-continuing-education/management-leadership/project-management/index.html.

SAT/ACT Preparation

WDCE offers a preparation program to high school students and anyone preparing to take the SAT and/or ACT. They are comprehensive, short-term, affordable courses that review content skills and provide extensive timed practice with real sections of the SAT or ACT. Classes are held primarily on the College campuses after school, evenings, and weekends. Courses are offered during the summer and prior to six testing dates during the school year. For more information, visit the website www.montgomerycollege.edu/workforce-development-continuing-education/test-prep/sat/index.html.

Senior Adult Programs

The Lifelong Learning Institute offers many courses primarily designed for county residents age 50 or older. The Institute provides affordable, relevant, and dynamic learning opportunities conveniently held at campus and community locations. The Lifelong Learning Institute is committed to creating and fostering a variety of intellectually stimulating opportunities in the arts, humanities, lifestyle, and personal finance areas. The College is growing a series of courses related to employment preparation and repositioning. For more information, please visit the website: www.montgomerycollege.edu/workforce-development-continuing-education/lifelong-learning/lifelong-learning-institute.html.

Youth Programs

WDCE Youth Programs offers specialized and enrichment programs throughout the school year for students in kindergarten through 12th grade. These programs are offered in special one-day enrichment workshops, after-school and Saturday mini-courses, and a comprehensive nine-week summer program. Many programs are collaborative efforts with Montgomery County Public Schools. For more information, please visit the Youth Programs website at www.montgomerycollege.edu/workforce-development-continuing-education/youth-programs/index.html.

Workforce Access Programs

WDCE offers noncredit programs for students with developmental and intellectual disabilities, including the Graduate Transitions Program (GTP) and the Challenge Program. GTP is a certificate program designed for students with developmental and intellectual disabilities who want to pursue postsecondary education. GTP offers a custom-tailored learning community enabling students to transition to greater independent living through functional education, vocational and employment training, and life skills. This noncredit program focuses on basic academic skills and enhancing potential success as productive citizens in our community.

The Challenge Program is a collection of courses designed to help adults with developmental and intellectual disabilities function more independently in the home, at work, and in the community. Course topics include computers, reading, vocabulary building, art, math, theatre, small business, and more.

For more information, visit the website at www.montgomerycollege.edu/workforce-development-continuing-education/job-skills/index.html.

How to Enroll

The Admissions and Registration section of this catalog describes the procedures for enrolling in noncredit WDCE courses. For a schedule of current noncredit WDCE offerings, please call 240-567-5188, e-mail wdce@montgomerycollege.edu, or visit the website at www.montgomerycollege.edu/wdce.

Tuition and Fees

The registration fee and tuition for WDCE courses and other offerings are determined periodically by the vice president for WDCE. Please call 240-567-5188 or refer to the course schedule or the website at www.montgomerycollege.edu/wdce for tuition and fees.

WDCE Locations

For all Workforce Development and Continuing Education locations, please visit www.montgomerycollege.edu/about-mc/campuses-and-locations/wdce-locations.html.

Distance Education

Message from Dr. Michael Mills, Vice President, Office of E-Learning, Innovation and Teaching Excellence

Online. Anytime. Anywhere. Blended or fully online. The Office of E-Learning, Innovation, and Teaching Excellence (ELITE) provides comprehensive services that empower students with skills that are essential to success in distance education or technology-enhanced courses. Fully online courses are taught entirely over the Internet. Students sign in to the course where they "meet" their instructor, access the syllabus and other course materials, participate in discussions, collaborate with other students, turn in assignments, and possibly even take quizzes and exams. Faculty teaching fully online courses rarely require students to come to campus, other than possibly to attend a course-specific orientation or to take proctored exams. Blended courses require regular, predetermined classroom attendance in addition to coursework that is conducted online. Both types of online courses provide students with flexibility and convenience. Some online courses allow for real time interaction through chats or the virtual classroom. If a course requires on-campus meetings, the information will be included in the section notes available from the class schedule, found online at www.montgomerycollege.edu/admissions-registration/search-the-class-schedule.html.

Online courses require the same prerequisites, admissions, and registration procedures as do on-campus courses. Online courses have the same learning objectives as those taught in a traditional format. Distance Education students have access to the same services as do on-campus students, including online or walk-in counseling and advising sessions, library and library databases, and learning centers on any campus.

Montgomery College now offers 22 fully online degrees and 14 fully online certificates. Visit the Fully Online Degrees webpage to learn more about these fully online degrees and certificates: www.montgomerycollege.edu/academics/online-learning/distance/fully-online-degrees.html. Some of our fully online degrees are also Z-degrees, which means students do not have to purchase textbooks and materials for the class. For additional information on our Z-degrees and Z-courses, visit www.montgomerycollege.edu/academics/mc-open/.

Can't make it to a campus to attend classes? No problem! Students can complete their degrees from anywhere by simply logging into our easy-to-use online course environment. The online programs will follow the same curriculum as the traditional degree programs. The courses are taught by the College's expert faculty who have been trained and certified in online quality assurance. Montgomery College's online learners have the convenience of using the College's e-resources to support their studies or can come to any of our campuses to use the physical academic support centers, library, advising services, and more.

Students new to online learning can take our online learning pre-assessment to determine if they are ready to take online courses. Students will be asked questions on topics about computer skills; motivation, organization and self-direction, and how they prefer to learn new information. The online learning pre-assessment is easy and informative. It takes about 10-15 minutes to complete. After completing the online pre-assessment, students will be given a list of resources that might be helpful to them. ELITE also has an online orientation that is available to help students learn more about distance education. The online self-assessment and orientation can be accessed by going to Online Learning website and clicking on How to Register and Prepare for Online Classes.

Students who have questions or need additional information can call 240-567-6000 or e-mail at dl@montgomerycollege.edu.

Admissions and Registration

Admissions Policy

Montgomery College is committed to a policy of equal opportunity in student admissions, student financial assistance, and other student policies and procedures without regard to age, sex, race, color, religious belief, national origin, or disability. It is the policy of the Board of Trustees of the College that all who are high school graduates or the equivalent, and who can benefit from the programs and services of the College, shall qualify for admission. Others may also, under certain circumstances, be considered for admission. To accommodate the various interests and goals of persons requesting admission to the College, applicants, depending on their objectives and educational background, are admitted to the credit programs and courses of the College in the following categories: degree or certificate seeking (curriculum decided); degree or certificate seeking (curriculum undecided); or non-degree seeking.

Some curricula of the College have a limit on the number of students who may be admitted. In addition, admission to the College does not automatically qualify a student for all courses and curricula; some programs and course offerings have more stringent requirements. Students should contact the appropriate College departments and Raptor Central for more information.

Criteria for Admission to Montgomery College Credit Programs

In order to satisfy minimum qualifications for enrollment in the College's credit courses, in addition to submitting an application, the applicant must meet any one of the following conditions:

1. Be a graduate of an accredited high school.
2. Have satisfactorily completed the GED examination.
3. Be a high school student, or equivalent, who has completed the sophomore year with a 3.0 quality point average or the junior year with an overall 2.75 quality point average (based on a 4.0 scale) and be recommended by a high school guidance counselor or principal. The student must have an articulated plan for concurrent high school attendance and enrollment in college-level, credit-bearing coursework during the junior and senior years. That plan must have the approval of parents (or guardians) and counselor, and the plan will include all courses required for high school graduation. These standards are applicable in summer terms as well as fall and spring semesters. The deans of student services may recommend a waiver to the director of records & registration in exceptional circumstances.
4. Be a student in a public or private school, or equivalent, who does not meet the requirements in number 3 above, but whose achievement in a certain field of study is clearly exceptional. This achievement may be documented through testing or other means deemed necessary by the relevant dean, department chair, or faculty, and it must surpass the level of courses offered by the school attended. The College may admit the student upon the recommendation of the high school counselor or principal. The approval of the dean of student services on the campus where the course is to be taken is also required.
5. Be a student who is homeschooled and who is in compliance with state and county education guidelines. A verification letter from a student's county home school program office, indicating that the applicant is registered with the local school system as home schooled, should be submitted with the application for admission. All requirements listed in 3 and/or 4 above also apply.
6. Be a person who is beyond the age of compulsory attendance in the State of Maryland and who has left secondary school.

In all cases, the College reserves the right to make the final decision on admission.

Admissions Procedures for Credit Programs

All applicants must submit an application for admission to the Raptor Central, together with the $25 nonrefundable application fee. Newly admitted students will receive a welcome letter with instructions regarding assessment tests, advising, or other procedures required for registration. Applicants who plan to enroll in selective admission programs, including the health sciences and some art and music majors, should contact the Raptor Central regarding additional admission procedures.

Applicants for Health Sciences Programs

The health sciences programs have additional admission and enrollment requirements. These selective programs are available only at the Takoma Park/Silver Spring Campus and require a special application form. All candidates must be eligible for admission to the College (a Montgomery College application for admission must be submitted before or at the same time as the health sciences application, if the general application was not submitted previously); must meet curriculum admission criteria

that have been approved in advance by the campus vice president and provost for the curriculum for which the student is applying; and must have a minimum grade point average of 2.5 (on a 4.0 scale) for consideration. All candidates' backgrounds will be reviewed for appropriate academic preparation.

Applicants to the certain health science programs require an additional test, the *Test of Essential Academic Skills (TEAS)* to be taken. This may be found on the Health Science Application. Students must meet the minimum benchmarks provided in the health sciences application in order to apply to these programs.

All students who are accepted to a Health Sciences Programs are required to submit to an annual background check and toxicology test using this program required vendor. This information is provided to the student upon acceptance and orientation into their program. Other background or drug screenings will not be accepted.

All candidates who are offered admission to a health science program must meet all legal requirements and standards imposed by recognized professional societies and by the institution or agency where the clinical practice is to occur. Students that participate in health sciences clinical courses (e.g., those involving hospital and clinical facilities) are required to pass the appropriate health examinations (e.g. annual flu vaccine, TB test, titers and required vaccinations).

Certain federal facility clinical sites may not be available to dual citizens, and are only available to U.S. citizens and permanent residents.

International Applicants

The College is proud to have a large and highly diverse enrollment of international students from over 160 countries. International students who require a student visa (F1 or M1) should contact the international student coordinators in Records & Registration for additional enrollment procedures. For details, see www.montgomerycollege.edu/international-and-esl-students/international/index.html.

Applicants Enrolled in Another College/University

Applicants who are enrolled in another college or university and wish to take courses at Montgomery College must apply for admission and should submit a letter of permission from the home institution before attempting to register. Doing so will streamline the registration process and ensure the transferability of credit to the home institution. For details, see www.montgomerycollege.edu/visitingstudents.

Applicants Who Lack a Secondary School Diploma or GED

Applicants who lack a secondary school diploma or GED credentials, and who have not attended another college or university, are limited to enrollment in two courses per semester or summer term until the completion of 12 hours with a cumulative 2.0 grade point average, unless special permission is granted by the director of records and registration or designee. The campus dean of student affairs or designee may recommend permission based on documented potential.

Personal Interest Applicants

Personal interest applicants whose first language is English are exempt from assessment testing for all courses, with the exception of English and mathematics. However, they must meet specific course prerequisites and any other applicable regulations. The personal interest admissions category is available to those who have been out of high school a minimum of three years and do not plan to pursue a degree.

Registration Procedures for Workforce Development and Continuing Education Courses

There are four easy ways to register for Workforce Development and Continuing Education (WDCE) courses:

1. In person at any of the Montgomery College WDCE Customer Service/Registration locations:

- **Gaithersburg Business Training Center, Room 400**
  8:30 a.m.-9 p.m. (M-R) • 8:30 a.m.-4:30 p.m. (F)
  8:30 a.m.-4 p.m. (S)
- **Germantown Campus, Humanities and Social Sciences Building Room 241 and/or 243**
  8:30 a.m.-4:30 p.m. (M-F)
- **Rockville Campus, 220 Campus Center**
  8 a.m.-7 p.m. (M-R) • 8 a.m.-5 p.m. (F)
  8:30 a.m.-12 p.m. (S)
- **Takoma Park/Silver Spring Campus, 230 CF, Customer Service**
  8:30 a.m.-5 p.m. (M-F)

2. By mail: send the WDCE registration form to Montgomery College, WDCE, 51 Mannakee Street, 220 Campus Center, Rockville, MD 20850.

3. By fax: 240-683-6945.

4. Online at www.montgomerycollege.edu/wdce.

Registrants will be enrolled in the order that registrations and payments are received.

Students in the Adult ESOL and Literacy-GED Programs or Refugee Training Program should contact those offices for registration assistance, since the procedures are different from the four options described above. For more information, visit the website at www.montgomerycollege.edu/wdce/aelg.

Assessment Testing (Appropriate Course Placement)

The College uses placement processes to determine appropriate courses for each student. Placement helps students identify areas of strength, as well as areas where they need the most help. Students are guided into the appropriate level of credit or noncredit courses. Students are also counseled on developing a schedule with the appropriate mix of courses.

Various placement measures and procedures may be used depending on the English language skills of the applicant. Although these placements provide opportunities for college-level course placement, some students may not be immediately eligible for college-level courses.

Students who graduated from a Maryland public high school with an unweighted Grade Point Average (GPA) of 3.0 or higher, or with documentation of previous college-level coursework in English or mathematics, or with documentation of appropriate scores on one of the standardized tests or other measures accepted by the College, are exempt from guided placement.

Students listed below, who do not have any of the exemptions listed above, must go through the Montgomery College placement process:

- first-time college students who are seeking a degree or certificate or who are planning to transfer to another institution;
- full-time students enrolled for more than 12 credit hours
- full-time students who want to enroll in their first English or mathematics course and, students who were not previously tested or who did not follow their recommendations and whose academic records have placed them on academic restriction, alert, or suspension.

Personal interest students who are not enrolling in their first English or mathematics course may take up to 11 credits (in courses that do not require English or mathematics prerequisites) before determining whether placement is needed.

Students must have an admissions application on file in the Office of Records and Registration in order to begin guided placement. Students who are assessed as needing developmental or pre-college level courses may be required to complete those courses before they can enroll in college-level courses.

Counselors and academic advisors will assist all students in developing educational plans that are best suited to individual goals, interests, and demonstrated skills.

Credit for Prior Learning

Advanced Standing Credit

Students may be awarded Montgomery College credit for prior learning in accordance with approved academic regulations of the College. The Office of the Senior Vice President for Academic Affairs, in coordination with the Office of Records and Registration, evaluates standardized exams, military credit, certificates, high school credits as part of an articulation agreement, apprenticeships, and courses taken at post-secondary institutions. For a transcript to be reviewed, students must be seeking a degree/certificate at Montgomery College and submit corresponding documents to the Office of Records and Registration. Accepted documents include, but not limited to:

- official transcript from a regionally accredited U.S. college or university;
- scores from nationally recognized exams (i.e., AP, IB, or A-levels); transcripts from CLEP (College Level Examination Program) tests or the DSST;
- high school transcript and credit award form for approved transfer agreements between the College and Montgomery County Public Schools;
- American Council on Education transcript that lists its recommendations for coursework or training completed outside of post-secondary institutions;
- Completion certificate of technical training in a nationally accredited training program; or
- the Joint Services Transcript (JST).

Students seeking advanced standing credit for coursework completed outside of the United States must have their transcripts evaluated by an approved independent, accredited credentialing service. This evaluation must then be forwarded directly from the service provider to the Office of Records and Registration at the campus a student plans to attend.

Students can also receive Credit by Exam credit by working with their program advisor or department chair.

To assure evaluation prior to the start of the semester/term, documents must be received by April 1 for summer, July 1 for fall, or November 1 for spring.

More information about all prior learning assessments may be obtained from www.montgomerycollege.edu/priorlearning.

Financial Information

Tuition and Fees

Tuition and fees paid by students cover a significant portion of the cost of the operation of the College. Revenues from the county and state governments make up nearly all the difference.

Students registered at the College pay tuition according to their residency classification, using the criteria outlined in Appendix A. Refer to the class schedule and/or the College website for current tuition and fee information.

The College reserves the right to change tuition and fees at any time at the discretion of the Board of Trustees.

In addition to tuition, students pay a consolidated fee of 20 percent of tuition with a minimum charge of $50 and other applicable fees. Some courses require that students purchase textbooks and additional supplies or equipment, which may add significantly to the cost of these courses.

Tuition and fees apply regardless of the method of instruction and will not be refunded in the event instruction occurs remotely or in any alternative format for any part of the academic year.

Appeals of Residency Classification

A change in residency classification or an appeal of current classification, as outlined in Appendix A, may be requested within a reasonable time following a decision by the College. Appeals for changes of residency classification must be accompanied by evidence justifying such changes and must be processed prior to the end of the third week of classes. Any changes processed after the third week of classes will be effective the following semester. Appeals must be submitted in writing to the campus registrar. If the student is not satisfied with the decision of the registrar, a written appeal may be made to the director of records & registration and college registrar, whose decision is final.

Business/Industry Tuition Agreements

Businesses or other organizations that do business in the state of Maryland may be eligible to enter into an agreement with the College that affords their employees or members tuition and fees at the in-county residence rate, regardless of actual domicile. The courses taken must benefit the employer, and the employer must pay for the courses directly or through an employee reimbursement program. Contact the Office of Records & Registration for more information.

Tuition Waiver

People 60 Years and Older . Maryland state residents who have enrolled in any credit or credit-equivalent course offered by the College will have their tuition waived if they are 60 years of age or older. Those who are age 60 or older must register during the final three days of registration to be eligible for the tuition waiver. The waiver is granted on a space-available basis.

Maryland National Guard . Any resident of Maryland who is a member of the Maryland National Guard for a minimum of a 24-month enlistment and enrolls in any class at the College, which is eligible under the Annotated Code of Maryland, Section 16-106 (Educ.) for state support, shall be eligible for a 50 percent waiver of the tuition.

People with Disabilities . Any resident of Maryland who is out of the workforce because of a permanent disability as defined by the Social Security Act, the Railroad Retirement Act, or-in the case of former federal employees-the Office of Personnel Management and who enrolls in a community college class that has at least 10 regularly enrolled students may be eligible for a tuition waiver. The waiver is available for six credits per semester for students who have not declared a degree or certificate program. If a student enrolls in a degree program, they are eligible for up to 12 credits of tuition waiver per semester. Students must complete the Federal Application for Federal Student Aid online by the priority deadline (March 1 for fall semester, November 1 for spring or winter sessions, April 1 for summer sessions). For more information on this tuition waiver, visit www.montgomerycollege.edu/paying-for-college/tuition/special-tuition-waivers.html.

Foster Care Recipients . Any foster care recipient who resides in a foster home located in the state of Maryland, and who is enrolled at the College in an associate's degree program on or before reaching 21 years of age, shall be eligible for waiver of tuition and mandatory fees, provided that he or she has filed for federal and state financial aid by March 1 of each year.

Fees

Financial Information

Fees related to registration, tuition, and other charges are payable in full by the deadline indicated, unless the student has signed up for an installment plan. No fees are to be collected in the classroom. Fees are not normally refundable as they support the overall significant costs of operating college facilities and services.

Application fee (nonrefundable): $25 This nonrefundable fee must accompany all applications for admission from students who will be registering for credit courses at the College for the first time.

Applied music fee: $150 per credit/billing hour. Covers the additional costs associated with applied music courses.

Change of schedule fee: $10 Within the first week (seven calendar days including the day classes begin as stated in the College calendar) of classes, students may adjust their schedule of study at no charge. Thereafter, a fee is charged for each schedule change.

Consolidated fee (see refund policy later in this section): 20 percent of tuition charged per bill hour; minimum $50.

All students must pay this fee, this fee is assessed to support many of the costs associated with college provided resources and services such as: registration, records, in-class instructional supplies, library, learning centers, counseling and advising, student activities, athletics, and intramurals.

Credit-by-examination fee: 40 percent of in-county tuition rate.

This fee is charged to students on the basis of the number of credit hours in the course and is equal to 40 percent of the in-county tuition rate. Where a national examination is used, any additional charges will be paid by the student.

Invalid check fee: $35/occurrence

This fee is charged if a paper check, given for and/or by a student, is not honored by the bank. Returned checks may cause the student's registration to be canceled.

Installment Plan Late Payment Fee: $35/ occurrence

Library fines and fees (as incurred)

Each library patron is responsible for returning books or other materials to the library. Fines are assessed for overdue materials. A fee is assessed based on the value of damaged or non-returned materials.

Major facilities reserve fund fee: ($7 per billing hour) this fee is assessed to support the renewal and replenishment of College facilities and applicable debt service costs incurred for such renewal and replenishment.

Replacement diploma fee: $25 This fee is charged to students who wish to replace a lost or mutilated diploma.

Student status letter of certification fee: $5 This fee is charged each time a College office must produce a certification of various types of College academic and financial records. Certifications may be in the form of a letter certifying the full-time status of the student (or other academic information) or in the form of a copy of the student's financial record with the certification that the copy is a true and accurate record. This fee is only assessed for those certifications that are College generated. Certifications that are sent to the College and merely signed are not subject to this fee. No certifications will be issued for any student who is financially delinquent with the College.

Technology fee: ($5 per billing hour) this fee is assessed to support the cost of technology incurred for instructional programs.

Traffic fines: (variable) Fines are charged for violations of the College traffic regulations. See the Montgomery College Motor Vehicle Regulations publication available online.

Transcript fee: Official electronic transcripts may be purchased for $10. Official hard copies of transcripts can be purchased by mail and in person for $7. For more information, visit www.montgomerycollege.edu/admissions-registration/student-resources/request-mc-transcript.html.

Transportation fee: ($7 per billing hour) this fee is assessed to support the cost of transportation operations including maintaining parking garages, parking lots, campus roadways; parking enforcement and administration, the Metro Ride On service, and shuttle services, and debt service costs incurred for these operations.

Financial Information

Financial Responsibility

Each student is individually responsible for his or her tuition and fees. Payment in full is due at time of registration unless an authorized payment plan arrangement (tuition installment plan) has been executed by the student at time of registration. See Appendix B for more details. Stopping payment on a check tendered in payment of tuition and fees does not relieve the student of financial responsibility for incurred tuition and fee charges. To ensure that the student's financial record reflects the correct charges, the student is responsible for officially dropping or adding courses in MyMC or in-person at the Office of Records & Registration. The student is also responsible for regularly monitoring the status of their account (tuition and fees) in MyMC. If courses are not dropped before the refund date for a course the student will be responsible for the charges.

If a third party such as, but not limited to, a federal, state, or municipal government agency agrees to pay a student's tuition and fees, the student is not relieved of his or her primary responsibility. If such a third party fails to honor its agreement, the College reserves the right to bill the student directly. Guidance on compliance with third party processes can be found at this link: www.montgomerycollege.edu/paying-for-college/payments/options.html

Outstanding financial balances must be paid before future registration is permitted or certifications, diplomas, are issued.

NOTE: In accordance with the Veterans Benefits and Transition Act of 2018 (effective August 1, 2019) and notwithstanding the preceding section or any other College policy/procedure to the contrary, the College will not impose any penalty, including the assessment of any late fee, precluding registration or otherwise denying access to classes, libraries or other College facilities, or requiring the student to borrow additional funds, on any student using U.S. Department of Veterans Affairs (VA) Vocational Rehabilitation and Employment (Chapter 31) or Post 9/11 GI Bill® (Chapter 33) benefits who has unpaid financial obligations due to any delay in payment or disbursement of funding by the VA.

Students intending to use Chapter 31 or Chapter 33 benefits are required to: (1) submit a certificate of eligibility for entitlement to the College Registrar, or designee, no later than the first day that the class(es) meet, unless the Registrar, or designee, makes an exception; (2) submit a written request to use such entitlement; and (3) provide additional information necessary to properly certify.

Charges and associated fees not covered by educational assistance under Chapter 31 or Chapter 33 are the sole responsibility of the student. Penalties, including but not limited to late fees, drops for non-payment and registration holds, may be applied to the student's account for unpaid charges not covered under Chapter 31 or Chapter 33. The student can bring their account into a paid status by paying their remaining balance in full or by enrolling in payment plan approved by the College.

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government Web site at ***U.S. Department of Veterans Affairs*** .

Payment of Tuition and Fees

The Cashier's Office will accept all forms of payment (cash, check, money order, credit card, or debit card). Checks and money orders must be made payable to Montgomery College for the exact amount of tuition and fees. Montgomery College does not accept counter checks, two-party checks, or starter checks. The College also accepts VISA, Master Card, and Discover credit or debit cards in payment of tuition and fees in person and online. Payments from international bank accounts must be made through Flywire for the exact amount of tuition and fees. Tuition and fees are to be paid in full upon registration with the exception of the installment plans. See Appendix B for more details.

Tuition and Fees Installment Program

Information on paying tuition and fees by installment plan can be found at www.montgomerycollege.edu/paying-for-college/payments/options.html.

Refunds Due to Class Withdrawal or Class Cancellation

The effective date for withdrawal will be the date that the student successfully drops the class online or in-person at the Office of Records & Registration. The refund deadline date for each course section is noted in MyMC. All refunds are payable to the student of record. Refunds may be issued by credit card and check. Montgomery College can refund students electronically. Students must set up an eRefund account through MyMC. eRefunds must be set up in advance of an expected refund. eRefunds accounts require verification and may take up to two full weeks from the set up date until the account is verified and activated.

eRefunds will go directly to the student's bank account. However, eRefunds will not be issued for payments made via credit card. Payments made by credit card must be returned to the card most recently used for payment of tuition and fees.

The refund policy is as follows:

- For courses canceled by the College: 100 percent refund of tuition, consolidated fee, major facilities reserve fee, applied music fee, and technology fee.
- For courses dropped by the student by the published deadline date (listed on the student schedule/invoice): 100 percent refund of tuition, consolidated fee, major facilities reserve fund fee, applied music fee, and technology fee. Students must drop by the published refund date. Refunds are not prorated if the student voluntarily drops the class after the drop with refund date.
- For students involuntarily withdrawing from the College: (1) Under certain circumstances, refunds of tuition only (fees are nonrefundable after published refund date) will be prorated based on the total amount of expired course time after the first week of classes (see the section on involuntary withdrawal in Appendix C for details). (2) For military personnel called to active duty or being transferred because of related troop movements, a 100 percent refund of tuition and fees will be provided for the semester within which the effective date of withdrawal falls (see Appendix C).

Treatment of Title IV Funds When Students Withdraw

Students who are awarded Title IV financial aid must earn their aid by attending classes. When students completely withdraw from school or stop attending school during a semester, the school must follow rules established by the federal government to determine the amount of financial aid earned.

- When students receive more Title IV funds than they have earned, the unearned portion must be returned to program accounts. This may result in students owing money to either the College or the federal government.
- When students have not received all of their earned Title IV funds, they may still receive disbursement of this aid.

Title IV funds include the following programs: Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, Federal Direct Loans (subsidized and unsubsidized), and Federal Parent Loans for Undergraduate Students (PLUS). Examples of how this policy is applied are available at the Office of Student Financial Aid at each campus or www.montgomerycollege.edu/heoa under Financial Assistance Information.

Textbooks and Supplies

Textbooks and course-related supplies are not included in tuition and fees. All required books and supplies should be purchased before the first day of classes. Books and supplies cost approximately $60-$200 per course and can be purchased from the bookstore on the campus where the course is taught or online two weeks before the start of classes. Students should check the booklist posted in each store or on the MC Books & More website, www.montgomerycollege.edu/bookstore.

Financial Aid

The Montgomery College student financial aid program is structured to meet the College's philosophy that no student should be restricted from attending because of limited financial resources. Financial aid programs include grants, scholarships, loans, and student employment. An Office of Student Financial Aid is located on each campus.

Contact Information:
240-567-5100
financialaid@montgomerycollege.edu

Definition of Financial Need

Financial need is defined as the difference between estimated student expenses at Montgomery College and the expected family contribution. When the expected family contribution exceeds the student's estimated expenses, the student has no financial need. The College determines financial need by using the federal methodology, determined through completion of the Free Application for Federal Student Aid (FAFSA). The amount of aid awarded cannot exceed the financial need of the student. The College offers several scholarships, loans, and work programs where financial need is not required. For further information, contact the Office of Student Financial Aid.

Eligible Programs

Students should check with the Office of Student Financial Aid to determine which degree or certificate programs are eligible for assistance. Currently, students enrolled in the following programs are not eligible for financial aid: all letter of recognition programs; transfer studies certificate; women's and gender studies certificate; certificates requiring fewer than 16 credit hours; and old degree programs not in the current catalog.

New certificates may not yet be approved for eligibility; please contact the Office of Student Financial Aid to confirm the eligibility status of any program not listed here.

Application Process

The first step in applying for financial aid is to complete the Free Application for Federal Student Aid (FAFSA). The FAFSA is available online at studentaid.gov beginning October 1 for the following academic year. It is highly recommended that all students apply for assistance as early as possible. Students should list Montgomery College (Title IV code 006911) on the FAFSA as their first-choice college. Students should read the directions for the application carefully and complete it accurately. For questions about the FAFSA, contact the Office of Student Financial Aid. Additional information about federal student assistance programs and the FAFSA is also available at **studentaid.gov.**

The Maryland State Financial Aid Application (MSFAA) is available to applicants who are ineligible to receive federal aid using the FAFSA. The MSFAA allows qualified children of undocumented immigrants who qualify for in-state tuition under §15-106.8 of the MD Education Article to apply and be considered for certain types of state need-based financial aid,

For priority consideration, for federal and institutional aid, the FAFSA along with any additional required documentation should be completed and submitted to the financial aid office no later than March 1 for the fall and spring semesters, or November 1 for the spring semester only.

After the financial aid office receives the required forms, along with the appropriate documentation to verify the information reported, a determination will be made whether the student is eligible for aid. The financial aid office will then notify the student of their award(s).

A student who files an application for financial aid in accordance with the above instructions and the policies adopted by the College will be considered for all types of financial aid programs for which he or she may be eligible, if funds are available. Federal and State financial aid cannot pay for classes that are not included in a student's Program of Study.

State Aid

Maryland State Student Financial Assistance

The General Assembly of the State of Maryland created several scholarship and grant programs both need and non-need based to help those who need financial assistance for a college education. The Maryland Higher Education Commission (MHEC)

awards various categories of scholarships for which Montgomery College students are eligible to apply. The General Assembly of the State of Maryland created several financial aid programs both need and non-need based to help those who need financial assistance for a college education. The Office of Student Financial Assistance (OSFA) at the Maryland Higher Education Commission (MHEC) administers and provides these state grants, scholarships, and loan assistance repayment programs for eligible Maryland residents. Maryland State Grants and Scholarships are awarded through Montgomery College to students who are Maryland residents and meet the state's criteria for the award. List of MD programs:

Need-Based Grants

- Howard P. Rawlings Program of Educational Excellence Awards:
  - Guaranteed Access Grant
  - Educational Assistance Grant
  - Campus-Based Educational Assistance Grant
- 2+2 Transfer Scholarship
- Part-Time Grant
- Graduate and Professional Scholarship Program
- Maryland Community College Promise Scholarship
- Near Completer Grant

Legislative Scholarships

- Delegate Scholarship
- Senatorial Scholarship

Career/Occupation-Based Grants & Scholarships

- Charles W. Riley Firefighter and Ambulance and Rescue Squad Member Scholarship Program
- Cybersecurity Public Service Scholarship Program
- Workforce Development Sequence Scholarship
- Workforce Shortage Student Assistance Grant Program
- Tuition Reduction for Non-Resident Nursing Students

Loan Assistance Repayment Programs

- Janet L. Hoffman Loan Assistance Repayment Program (LARP)
- John R. Justice Grant Program
- Maryland Loan Assistance Repayment Program for Foster Care Recipients (MLARP Foster Care)
- Maryland Loan Assistance Repayment Program for Physicians (MLARP)
- Maryland Dent-Care Loan Assistance Repayment Program (MDC-LARP)

Unique Populations

- Jack F. Tolbert Memorial Student Grant Program
- Edward T. and Mary A. Conroy Memorial Scholarship Program and Jean B. Cryor Memorial Scholarship Program
- Veterans of Afghanistan and Iraq Conflicts Scholarship

Tuition Waiver Programs

- Tuition Waiver for Foster Care Recipients
- Tuition Waiver for Unaccompanied Homeless Youth
- Tuition Waiver for Maryland National Guard
- Tuition Waiver for Students with Disabilities

Additional information and specific program eligibility for these program*s* is available at the MHEC website. Students applying for Maryland State financial assistance must complete and submit the appropriate application, either the **FAFSA or the MSFAA by the March 1st deadline** to be considered for most MD funding.

District of Columbia Student Financial Assistance

The District of Columbia Office of the State Superintendent of Education's (OSSE) Postsecondary and Career Education division manages financial assistance programs for District residents who are enrolling in college. Financial assistance like scholarships and grants help students enroll in college and increases chances of success. List of DC programs:

- DC Tuition Assistance Grant (DCTAG)
- Mayor's Scholars Undergraduate Program

Additional information and specific program eligibility for these DC programs is available at the website: **osse.dc.gov** . Students applying for District of Columbia financial assistance must have completed the FAFSA and submitted the DC OneApp with all supporting documentation to the DC Office of the State Superintendent of Education (OSSE) by August 19th to be considered for most DC funding.

Financial Aid Appeals

Special and Unusual Circumstances

The College has an appeal process for students who have experienced a considerable change in the information they reported on the FAFSA that constitutes a special or unusual circumstance. Additional information regarding special and unusual circumstances can be found by contacting the financial aid office or visiting our webpage.

1. The student should meet with a Financial Aid Counselor to determine if they should submit a Professional Judgment Appeal Form.
2. The Financial Aid Professional Judgment Committee will review the appeal and notify the student of the final decision.

Satisfactory Academic Progress

Students applying for financial aid and those who are awarded financial aid are required to make satisfactory academic progress as defined in the Montgomery College Office of Student Financial Aid Standards of Satisfactory Academic Progress. The policy is available in any campus financial aid office or online on the Montgomery College HEOA webpage under Financial Assistance Information. Students who fall below the standards have the ability to appeal their loss of aid eligibility. Appeal forms can be found on the MyMC Financial Aid Page under General Financial Aid Forms.

Grants and Scholarships

Conditions and characteristics of all programs described below are subject to change without notice. Individual departments and organizations offer many other scholarships and awards, which are announced periodically.

Board of Trustees Scholarship - Potential

The Board of Trustees awards a scholarship to one graduating student from each Montgomery County public high school based on academic potential demonstrated in high school. The scholarship may cover county tuition and fees for up to 15 hours per semester for one year only, pending available funding. The student must be nominated by the high school and then approved by the Scholarship Office. A limited number of second-year awards may be available pending sufficient funding.

Board of Trustees Scholarship - Academic Specialty

The Board of Trustees awards approximately 100 scholarships based on academic specialty to graduating Montgomery County high school students who have demonstrated academic potential. The scholarship may cover up to 15 hours per semester of county tuition and fees for the first academic year depending on available funding. A limited number of second-year awards may be available pending sufficient funding. The application is available online at www.montgomerycollege.edu/scholarships

Board of Trustees Student Tuition Grants - Need Based

The College's Board of Trustees established a tuition grant program to assist students with financial need, particularly those who qualify for little or no federal grant money. Applicants must follow the previously explained steps for applying for aid, must

have financial need and maintain satisfactory academic progress as defined by the financial aid office. The Board of Trustees grants are generally available to full-time and part-time students. The amount of the grant is also based on the availability of funds.

Federal Pell Grant

Undergraduate students attending an institution of higher education may be eligible for a Federal Pell Grant of up to $7,395 (2023-24 figures) per year, plus up to an additional 150% of this amount if enrolled in summer school for a minimum of six hours.

Eligibility is determined on a yearly basis, and it is the student's responsibility to reapply each year. Eligible students must be in a program that is at least one year long and leading to a degree or certificate, and the students must demonstrate financial need. The amount received is based on the number of credits enrolled and the cost of education at the College as well as on the availability of funds. Students may be enrolled on a full-time (12 or more credit hours), three-quarter-time (9-11 credit hours), or half-time, (6-8 credit hours) or less than half-time (1-5 credit hours) basis. Students enrolled for fewer than 12 credit hours may not be eligible the lower their need factor. The amount of the grant to which a student is entitled under this act in any academic year is determined annually by Congress. Application is accomplished by completing the FAFSA.

Federal Supplemental Educational Opportunity Grant

Students who demonstrate exceptional financial need may be eligible for a Federal Supplemental Educational Opportunity Grant (FSEOG) based on the availability of funds. Preference is given to Pell-eligible students who have exceptional financial need. Students apply for the FSEOG by completing the FAFSA. Students must reapply every year.

Montgomery College Foundation Scholarships

Many organizations, businesses, and individuals make generous gifts to the Montgomery College Foundation, which fund the scholarships that help Montgomery College students achieve their educational goals. Qualifications for each scholarship vary according to criteria established by the donors. One application entitles a student to be considered for all scholarships for which he or she may be qualified. The Montgomery College Foundation online scholarship application is available on the scholarship Webpage at www.montgomerycollege.edu/scholarships.

Programs for High School Students

High school students dually enrolled at MC are not eligible for federal financial aid (i.e. FAFSA) or the Maryland Promise Scholarship. However, through the Blueprint for Maryland's Future, MCPS students may enroll in courses at no cost during the MCPS school year. Additionally, public, private, and home school students may be eligible for a need-based Montgomery College High School Grant to cover portions of required College tuition and fees. This grant is subject to available funds. For more information go to the Dual Enrollment website at www.montgomerycollege.edu/dep or the scholarship website at www.montgomerycollege.edu/scholarships.

Loans

Direct PLUS Loans

Parents of undergraduate students may borrow in the Federal Parent Loans for Undergraduate Students (PLUS) Program. Parents may borrow up to the entire cost (minus any aid) of the attending College per student. The Free Application for Federal Student Aid (FAFSA) must be on file. Repayment will begin 60 days after disbursement.

Direct Subsidized Loan/Direct Unsubsidized Loan

The Direct Subsidized Loan Program is part of the William D. Ford Federal Direct Loan Program. The loans are borrowed directly from the federal government. The undergraduate student borrower must be a U.S. citizen or permanent resident, have financial need, and maintain satisfactory academic progress. The student must be enrolled for at least six credit hours in each semester.

The Direct Unsubsidized Loan is not based on financial need, but all students must file a FAFSA to apply for a loan. The amount students may borrow depends on their eligibility for the Direct Subsidized Loan Program and their dependency status. Dependent students may borrow $5,500 as a freshman and $6,500 as a sophomore. Independent students may borrow $9,500 as a freshman and $10,500 as a sophomore. These annual maximum loan amounts are a combination of both the subsidized and unsubsidized loan programs.

Students should expect fees to be deducted from the loan proceeds by these programs for loan origination. The amount of these fees varies depending on the amount borrowed. All students who borrow under these programs must complete an exit interview when they drop below half-time enrollment (six credit hours) in a semester.

Direct Subsidized Loan and Direct Unsubsidized Loan repayment begins six months after the student ceases to be at least a halftime student in an eligible program. Interest accrues during this six-month grace period for any new Direct Subsidized Loans disbursed on or after July 1. The minimum repayment is $50 per month, and the interest rate varies. The actual amount and length of the repayment period are determined by the U.S. Department of Education and the borrower.

The Direct Unsubsidized Loan principal may be deferred while the student is in school. Interest must be paid while the borrower is in school, during deferment, and during grace periods, according to the repayment schedule. The Direct Unsubsidized Loan interest can be paid according to a payment schedule or be accrued and added to the principal while the student is enrolled for at least six credit hours in a semester.

Student Employment

College Student Assistantship Program

Each year a number of qualified students receive approval to work on the College campuses as student assistants. Special emphasis is placed on skills, grade point average, relevancy to field of study, and the hiring unit's needs. To learn about available jobs, in this program and other non-need based employment, students should check individual departments and Student Career and Employment Services.

Federal Work Study Program

Federal Work-Study (FWS) is a need-based employment program funded by federal financial aid money. This program gives a number of students the opportunity to work in a wide variety of on campus and off-campus community service positions. Students interested in participating in the program, should complete the FAFSA early and turn in all required documents before the priority deadline. Under the FWS program at the College, students usually work an average of 15 hours per week during the school year. Summer employment is also available. Interested students should contact the financial aid office to verify eligibility and check the College Central Network on the Student Career and Employment Services web page to review available positions.

Veterans Benefits *See* Military Services

Services For Students

Academic Support

Montgomery College offers academic skills workshops, counseling and advising, tutoring, and other programs to help students improve skills in studying, test-taking, overcoming math anxiety, and time management, to name a few. Services are available in a variety of learning centers at each campus.

Assessment

Students must demonstrate their skills in English (or ESL, depending on language background), and mathematics upon admission to the College so they may enroll in in courses matching their academic skill levels. Students may be exempt from assessment if they can provide documentation that they have completed appropriate college coursework or have sufficiently high scores on standardized test instruments such as the SAT, ACT, or TOEFL. If such documentation is not available, students may utilize alternate placement measures, such as high school GPA or our placement process. The centers provide testing services for students who need to take make-up examinations, those enrolled in Distance Education courses, and students with disabilities who need special accommodations.

Locations and Contact Information:

Germantown: Student Affairs and Science Building, Room 132; 240-567-7739
Rockville: Campus Center, Room 014; 240-567-7459
Takoma Park/Silver Spring: Student Services Center, Room 323B; 240-567-1555

Athletics

Montgomery College Athletics offers intramural sports and 9 intercollegiate varsity teams as a Division I (Men and Women's Soccer and Men's and Women's Outdoor Track and Field) and Division II (Baseball, Men and Women's Basketball, Softball, Women's Volleyball) member of the National Junior College Athletic Association (NJCAA), Region XX, and the Maryland Junior College Athletic Conference (MDJUCO). Many student athletes transfer to 4 year institutions to further their academic and athletic endeavors. For further information, please contact The Athletics Department at 240-567-7593 or visit our website at www.mcraptors.com.

Bookstores

The Follett Higher Education operates Montgomery College Campus Stores on all three campuses. New and used textbooks, rentals, eBooks, and additional classroom materials are available in the stores. Our website also features online sales of course materials that are available for delivery to your home or for pick-up at your campus store. Please visit the MC Campus Stores website for hours of operation.

Students may use Financial Aid book credit to purchase clothing, course materials, school & art supplies, and technology products. Please visit Financial Aid Office for more information.

Each store offers reference books, study guides, and best-sellers. Books still in print may be special ordered. Other merchandise is available, such as art materials, school supplies, medical and laboratory supplies, and calculators. Textbook buyback may be done in the stores at the end of each semester.

Montgomery College clothing and memorabilia, gifts, health & beauty items, technology and Apple products, and snacks are available in all stores. Gift cards, and order information on class rings and nursing pins are also available.

Students may visit the Montgomery College Campus Stores website to research all services available, to view course material and textbook selections, and to place orders online. For more information, to access these services, or to contact the Campus Stores staff at www.shopmontgomerycollege.com.

Career Coach

Career Coach is a valuable online tool that can help you find a career based on your interests and identify the Montgomery College programs that will get you into that career. It will also give you the opportunity to explore hundreds of job possibilities in Maryland and the Washington D.C. metropolitan area. Career Coach provides you with a brief employment analysis of the selected job, including how many are employed in the area, the estimated number of annual job openings in this career, and

breakdown of worker demographics by age. We offer it as a free service to our current and future students, and members of our community. Visit the website montgomerycollege.lightcastcc.com and learn more.

Center for Early Education

The Center for Early Education (CEE) Lab School is a premier learning community designed to engage and inspire young children three to five years of age. We provide innovative play-based classroom experiences to equip young learners in social-emotional development and academic enrichment. From expressive arts programs, year-round S.T.E.A.M explorations and language study, the CEE Lab School is an amazing program for your child to learn and grow.

The Center for Early Education (CEE) Lab School program is accredited by the National Association for the Education of Young Children, a participant in Maryland Excels and a member of the International Association of Lab Schools. As a Lab School, we support the Montgomery College School of Education as a model of best practice in child development for student teachers and faculty. Enrollment is open for MC students, MC employees and the community. We provide several childcare tuition scholarships for MC students each year. The center is open Monday through Friday 8:00 a.m. to 5:30 p.m.

For more information, visit our Center for Early Education Lab School website or contact us at (240) 567- 204l.

Counseling and Advising

Counselors help students make educational, transfer, and career decisions to progress toward their individual goals. They also assist students in planning to complete certificates or degrees from the College and prepare to transfer to four-year colleges and universities. Counselors also teach student success (STSU) courses, such as the First Year Seminar, and offer interventions and support when students need help.

As an MC student, you can access general counseling and advising, as well as program advising particularly targeted at your major for support with academic planning. Academic planning is the process of setting your educational goals and determining the best path to meet them. It is critical that you play an active role in this process from start to finish during your time at Montgomery College.

Students are encouraged to seek out counseling and advising throughout the academic year, instead of only during registration periods. Students who see the same counselor and/or advisor benefit by setting clear academic goals that are reviewed periodically.

Locations and Contact Information:

*Germantown:*Student Affairs and Science Building (SA), Room 250; 240-567-7734

*Rockville:*Student Services Center (SV), Room 206; 240-567-5063

*Takoma Park/Silver Spring:*Student Services Building (ST), Room 233; 240-567-1480

Counselors are available collegewide in-person, and via email and chat. Hours of operation, options to meet with a counselor, and instructions may be viewed from the Counseling and Advising page at www.montgomerycollege.edu/can.

Program Advisors are available collegewide. Contact information is located on the Academic Program Advising by Major page at www.montgomerycollege.edu/academics/program-advising/index.html

Student Success (STSU) Courses

Counselors teach courses that ease the transition to college and provide tools for developing academic and life skills. In these courses, counselors focus on strategies to help students become successful by assisting students in developing plans to reach their academic and career goals. Student Success courses are designed to meet students' diverse academic needs and interests. Courses to help transition to college include First Year Seminar (STSU 100) and Seminar for International Students (STSU 101). These two courses, in particular, are an important component of the First Year Experience activities, and all first-time college students are strongly encouraged to take one of these courses. Courses in Study Habits Development (STSU 110) and Building Math Confidence (STSU 112) focus on building skills and Memory Development (STSU 114) teaches students how to learn and practice steps to develop a healthy memory. Career Development: Dynamics and Application (STSU 120) covers how to choose, plan, establish, or change career fields. Principles of Academic Success (STSU 122) helps students

who have a history of academic and personal issues develop behavioral strategies to improve overall success. Introduction to Student Leadership (STSU 200) is an experiential course that provides an overview of leadership fundamentals and theory, emphasizing peer leadership. Happiness and Wellbeing (STSU 124) offer students practical and researched strategies and activities for tapping into and nurturing their happiness and well-being. Mindfulness and Resilience in College (STSU 102) introduces students to evidence-based mindfulness practices and activities that, when applied to dimensions of life and study tasks, improve academic success and build resiliency.

Disability Support Services

Montgomery College is committed to radical inclusion and creating learning environments that are accessible and inclusive for all students, including those with disabilities. Accessibility is not only required by law; it is the right and smart thing to do.

DSS leads the effort to promote full participation and equal access to educational opportunities, programs and campus activities. DSS provides accommodations and support services for students with disabilities and educates the larger College community on disability related issues. When we celebrate and empower diversity at Montgomery College, we recognize and value disability as a distinct aspect of our diverse community.

DSS counselors advise students and provide academic, career, and short-term personal counseling. They determine and facilitate appropriate academic and technological accommodations, act as liaisons with College resources and external agencies and consultants, and provide referral services for students with disabilities.

Services

Students self-identify and are encouraged to contact DSS as soon as possible after admission to the College. DSS counselors meet with students to identify academic adjustments and/or accommodations. Accommodations are determined on a case-by-case basis and may include extended time on tests, note-taking assistance, sign language interpreting services, and alternative formats for printed materials. Each campus offers assistive technology, including computers with disability-specific software and hardware, voice recognition and synthesizers, print magnifiers and scanners, large print, and Braille, as well as individual tutorial support.

Arranging for Services

New students complete an online intake form, meet with a designated DSS counselor for an initial intake, and submit documentation to determine accommodations and services. Once accommodations are determined and the accommodation letter is generated, the student is responsible for providing the letter to each of their students. Returning students requesting accommodation letters need to fill out the online semester request form at least two weeks before the beginning of each semester in order to ensure timely implementation of services. Accommodations may be requested at any time, but are not retroactive. Students are encouraged to maintain regular contact with their DSS counselor for guidance and assistance.

Campus locations and contact information are as follows:

Germantown: Student Affairs and Science, Suite 250; 240-567-7770
Rockville: Student Services Center, Suite 305; 240-567-5058
Takoma Park/Silver Spring: Student Services Center, Suite 233; 240-567-1480
Workforce Development and Continuing Education: Campus Center (Rockville Campus), Suite 204; 240-567-4118

For more information on the application steps and DSS services visit: www.montgomerycollege.edu/counseling-and-advising/disability-support-services.html

First Year Experience

The first year of college is an exciting and challenging time where you will experience academic and personal growth. The mission of the College's First Year Experience Program (FYE) is to connect first year students to Montgomery College by educating students on services and resources, empowering students to make their move toward their goals using informed decision making, engaging students in Montgomery College and the community, embracing students by meeting them where they are, exciting students through the experience we provide in their first year, enriching students' lives by providing, promoting and supporting learning opportunities that will help them grow personally, professionally and academically and exploring opportunities so students can discover who they want to be and plans they can make to realize their dreams.

Services For Students

The College's First-Year Experience (FYE) program includes New Student Orientation, the Summer Bridge Program (First-Year Seminar for students who attend in the summer), and workshops and programs throughout the year.

The First Year Seminar - STSU 100 or STSU 101 for International Students will help new students learn the expectations for a college student and the skills to enhance their potential for success, time management, successful studying, and the development of an individualized education plan. They will learn about the higher education system, the purpose of general education, personal development, and career planning. This course should be taken either the summer before or during a student's first semester of attendance.

For more information, visit www.montgomerycollege.edu/fye.

Food Services

CaféMC locations and vending machines on each campus offer a variety of food, snacks, and beverages. For more information on CaféMC operating hours and menu offerings, visit the website www.montgomerycollege.edu/food. For vending machine locations, visit www.montgomerycollege.edu/vending.

Housing

Students are responsible for their own living accommodations. The College does not approve or maintain housing facilities.

International and Multicultural Students

Counselors on each campus advise international and multicultural students from diverse cultures, including various ethnic, geographic, and language backgrounds. Students whose first language is not English can obtain specialized counseling, advising, and programming throughout the year. In addition, international students should consider taking STSU 101 - Seminar for International Students. This orientation course for international students includes study skills, academic regulations, the American educational system, individual educational and vocational goals, communication skills, and American customs.

For more information, please visit any campus's Counseling and Advising department.

Library

The Montgomery College Library provides quality resources and services to support the programs of the College and to meet the learning and information needs of students, faculty, staff, and community members. Library employees are available to assist users with research, technology, and access to the library's resources. Librarians can help users develop a research topic, find relevant sources, evaluate sources, and cite sources. This support is available via text message, 24/7 online chat, phone, walk-ins at the library service desk, and by appointment, either online or on Zoom. Learn about all our support options on our Get Research Help webpage. Users can also get help with research in various subject areas and preparing for courses and assignments with the library's online subject and course research guides and tutorials, all available on the website. All library locations offer a variety of study environments to fit diverse learning styles, including collaboration spaces, quiet zones, and private group study rooms.

The library maintains numerous computer workstations for College and community users. In addition, the library offers laptops and tablets for students to check out and use in the library. Students and employees may use the library One Button Studios for easy video creation. Student use of these services takes priority. Assistive technologies are available for users with special needs.

The library offers textbooks, e-textbooks, and other course materials required for many MC courses through the course reserves program. Students can inquire about their textbooks at the service desk, search by title, author, or class in RaptorSearch, or click on Library Course Reserves in their Blackboard course menu. Course reserves materials may be checked out for two hours at a time and used in the library buildings. Electronic reserves are available 24/7. High-speed scanners are available for students to scan their assignments and go.

The library provides 24/7 access to hundreds of thousands of e-books, e-journals, and streaming media covering all subject areas and over 200 academic databases to assist with coursework, many containing full-text articles. In addition, MC Library's print collections cover all disciplines. MC Library maintains a select collection of historical materials and memorabilia related to the history of the College. Any request for information about these materials may be directed to Beth Thoms, collection development

librarian, at beth.thoms@montgomerycollege.edu. Finally, the library offers best-selling books and e-books, streaming popular films, and a variety of print and digital newspapers and magazines for users to enjoy.

Most resources, including books, e-books, articles, and media, can be accessed through the library's search engine, RaptorSearch, and library's website. Interlibrary Loan (ILL) service is available to provide resources the library does not own by borrowing them from other libraries. Users can make ILL requests using the form on our website. The library also offers an Inter-Campus Loan (ICL) service to deliver resources from one campus library to another.

Those with a valid student identification card or a community user's card may check out materials for use outside of the library. Students registered for the current semester may use the library's electronic resources from outside the library via the library's website. Audio or video materials may be viewed online or at any library location and most are available to faculty for classroom instruction.

For more information, please visit the Montgomery College Library website at www.montgomerycollege.edu/library, use our librarian chat service for 24/7 research help at libfaqs.montgomerycollege.edu, or call one of the campus locations:

Germantown, Humanities and Social Sciences Building, Suite 110; 240-567-7858
Rockville, Macklin Tower, Suite 110; 240-567-7117
Takoma Park/Silver Spring, Pavilion 1, first floor (temporary location while Resource Center is under construction); 240-567-1540
East County Education Center, Room 112; no phone number yet

Military and Veteran Services

Montgomery College is a military- and veteran- friendly institution, recognizing and supporting the contributions that our students make outside the classroom as active duty service members, guardsmen, reservists, veterans, and dependents. To that end, the College assists the military community in reaching their educational goals by providing:

- Flexible withdrawal procedures in the event of activation, deployment, or enlistment,
- Waived residency requirements for active duty service members and dependents,
- Veterans Benefits processing,
- Tuition Assistance processing,
- Tuition Waivers for Maryland National Guardsmen,
- DoD Voluntary Education Partnership Memorandum of Understanding (MOU) signatory, and
- Support services available through the Combat2College program (see below).

Combat2College

Combat2College is a nationally recognized program that offers opportunities and services to veterans and service members attending Montgomery College. Some of the program features include:

- Academic opportunities and advising,
- Financial Opportunities
- Wellness activities,
- Social opportunities,
- Space for gathering, and
- Referral and coordination with external agencies/resources

For more information, visit www.montgomerycollege.edu/combat2college.

Veterans Affairs Office

The Veterans Affairs/Military Office was established to assist all students applying for Department of Veterans Affairs (DVA) educational benefits, active-duty members of the military, and military spouses. Students eligible to receive VA benefits must submit a Certification Request for VA Benefits form, available at www.montgomerycollege.edu/admissions-registration/student-resources/student-forms.html to va@montgomerycollege.edu each semester after completing registration to have their enrollment certifications submitted to the DVA. Each semester after completing registration, students receiving

military tuition assistance must submit a Certification Request for VA Benefits form, available at www.montgomerycollege.edu/admissions-registration/student-resources/student-forms.html to va@montgomerycollege.edu together with the tuition assistance authorization from the corresponding military branch. All students receiving VA benefits, and military tuition assistance must contact va@montgomerycollege.edu regarding any changes in enrollment. For more information, visit www.montgomerycollege.edu/veterans-and-military/index.html

Parking and Motor Vehicle Registration

Each person associated with the College who parks a vehicle on any campus of the College or any property owned, leased, maintained, or operated by the College must register the vehicle regardless of its ownership. Students, faculty, staff, and visitors must abide by College traffic regulations. The College reserves the right to issue a citation or to tow, at the owner's risk and expense, any unregistered vehicle parked in violation. The Montgomery College Motor Vehicle Regulations and vehicle registration and parking information is available online at www.montgomerycollege.edu/about-mc/campuses-and-locations/transportation-and-parking.html.

Printing at MC

A kiosk style, pay-for-print system is in place at the College. Our kiosks currently use the Ink Labs cloud printing solution, and are located on each campus in the libraries, labs, and learning centers. To use these kiosks, you will need to create an Ink print account. The best way to pay for these copies is to pre-load your Ink account with a minimum of $5 as funds to be drawn for each print you request. Other payment options are also available. Visit the **Printing at MC** website for FAQs, tutorials, pricing, and other information: www.montgomerycollege.edu/printing.

Public Safety Services

Montgomery College is committed to providing a safe and secure environment at all times that will support and enhance the institution's educational programs and services. The Department of Public Safety is responsible for the protection and well-being of the College community, first aid, law enforcement and security functions, emergency assistance, 24-hour escort service (upon request), maintenance of automated external defibrillators (AEDs), and the lost and found service. Officers on each campus are on duty 24 hours a day, seven days a week. In compliance with the Campus Safety and Security Act of 1990 (Clery Act), the College's Public Safety procedures are provided online in the Montgomery College Annual Security Report at ww.montgomerycollege.edu/_documents/life-at-mc/public-safety/annual-security-report.pdf

Public Safety Office Locations

Germantown: Student Affairs and Science Building (SA), Room 282; 240-567-3333
Rockville: Student Services Center (SV), Room 122; 240-567-3333
Takoma Park/Silver Spring: Student Services Center (ST), Room 117; 240-567-3333

Emergencies

In the event of a life-threatening emergency, call 911 first. Then call MC Public Safety at (240) 567-3333.

When a local or regional emergency affects Montgomery College, Montgomery College's Public Safety personnel and other College officials utilize the College Emergency Operations Plan to coordinate their response activities with county, state, and federal authorities, as appropriate. The College works directly with Montgomery County's Office of Emergency Management and Homeland Security and other agencies of County government.

Additional information, including emergency evacuation area maps, is available at www.montgomerycollege.edu/emergency .

Emergency Preparedness

In the event of emergency situations involving Montgomery College directly or if an emergency occurs at the local, regional, or national level that could impact the college community Montgomery College's Public Safety personnel and other College officials utilize in-house emergency response plans and coordinate their response activities with local, county, state, and federal authorities, as appropriate. The College works directly in conjunction with Montgomery County's Office of Emergency Management and Homeland Security, in the event of any local activation of the county's Emergency Operations Center.

Additional information, including emergency evacuation area maps, is available at www.montgomerycollege.edu/emergency.

Services For Students

Personal Safety

Personal safety depends on the actions each individual takes to prepare for, anticipate and respond to a perceived threat of danger. All visitors and members of the College are expected to take reasonable precautions that include an awareness of their surroundings; the phone number for Public Safety (240-567-3333) for assistance or an escort; and locations in which a visitor may hide or shelter-in-place. Everyone is encouraged to sign up for MC Alert text messaging on the Public Safety web page, and to be prepared to take immediate action when danger is observed or announced. For example, in the case of a reported Active Threat, members of the College community and visitors will be notified as soon as the incident is verified to "Run, Hide, or Fight as appropriate", knowing that each person must take the action most appropriate for the individual circumstance.

Members of the MC community are encouraged to contact Public Safety for individual or group training in areas of concern.

Additional information, including emergency evacuation area maps, is available at www.montgomerycollege.edu/safety.

Student Employment Services

The purpose of Student Employment Services is to teach currently enrolled students and recent graduates the skills that they need to become successfully employed, by assessing, identifying, and showcasing their skills and abilities in the job search process. This assistance is applicable in looking for part-time work to finance their education, internships relevant to their major to enhance their career journey, and full-time work in conjunction with their career goals. Employment services include:

- individual assistance with résumé writing, cover letter preparation, interview skills, job readiness, and job search skills;
- job readiness workshops (résumé preparation, interviewing techniques, etc.);
- job listings for full-time, part-time, and temporary employment opportunities (College Central Network at www.collegecentral.com/montgomerycollege - which can also be reached through MyMC accounts by clicking on the icon at the bottom of the Student Tools section);
- employer on-campus recruitment and virtual employer information sessions;
- annual general job fairs and frequent "niche fairs" focused on specific majors; and
- access to computers to make use of online job search resources.

Locations:
Germantown: Student Affairs and Science Building; Room 265
Rockville: Student Services Building; Room 205
Takoma Park/Silver Spring: Resource Center; Room 205T (Permanent Location)**

**Current Location of *Takoma Park/Silver Spring* Office is Cafritz 151T due to building renovations.

A Student Employment Services Specialist is available on each campus to work with students on an individual basis. For more information, please e-mail studemp@montgomerycollege.edu or visit the website: www.montgomerycollege.edu/careerservices.

Student Life

The Student Life Office provides a place for students to take advantage of a variety of programs and opportunities to get involved at the College. These opportunities are an integral part of the co-curricular experience and they enhance the academic experience at the College. Programs provide students with skills and abilities in such areas as leadership, communication, program planning, budget and financial management, collaboration, social and civic engagement, and multicultural understanding. Programs and events may focus on students, the campuses, the college, and the community.

The Office of Student Life offers leadership training to provide students with the necessary skills to participate effectively in clubs and organizations. Students have the opportunity to run for office in student government, participate in the planning and approving of budget expenditures, and can contribute to the development of campus life and culture. Available clubs and organizations vary by campus but generally include cultural, ethnic, religious, political, mentoring, tutorial, recreational, academic, and service clubs; other organizations include the campus newspapers and the campus Student Senates. Students can also form new clubs to add to the rich environment of each campus. In addition to leadership training, the Office of Student Life provides a service-learning program that engages students, faculty, and community organizations in meaningful, collaborative, and mutually beneficial projects.

Services For Students

The Student Life Offices are located in room 113 of the Student Affairs and Science Building at Germantown, room 005 of the Campus Center at Rockville and room 217 of the Student Services Center at Takoma Park/ Silver Spring.

Locations :
Germantown: Student Affairs and Science Building; Room 113
Rockville: Campus Center; Room 005
Takoma Park/Silver Spring: Student Services Center; Room 217

New Student Orientation

The New Student Orientation Program is a beneficial program for all incoming first year students and is offered online or in-person. The three campuses offer several program formats prior to the beginning of fall and spring semesters. Specific information may be obtained from the Student Life Office websites for New Student Orientation: www.montgomerycollege.edu/orientation.

The orientation program introduces students, and their family members to a variety of first-year experiences designed to facilitate the transition to college life and help students enjoy a successful year at Montgomery College. Faculty, staff, administrators, and students collaborate to provide workshops, open houses, tours, discussions, and social events to help new students and their families learn about services, college expectations, campus life, academic issues, parent/ family involvement, safety, and much more.

Support Centers

The College provides a number of centers at each campus that support student success. Services include tutoring, study skills development, access to information technology, books, models, audiovisuals and other media, and other success skills materials and support activities. These services are free. Students are encouraged to stop by any of the centers listed on the following page for information regarding hours and available services.

Germantown Campus

- Math Accounting Physics Engineering Learning (MAPEL) Center, 202 SA (computer science tutoring also offered)
- Science Learning Center, 244 BE
- Cybersecurity Lab, 230 HT (cybersecurity and computer science tutoring)
- Student Employment Services Office, 265 SA
- Writing Center and Language Lab, Writing, Reading and Language Center, 150 HS

Rockville Campus

- Digital Learning Center Computer Labs, 307, 312, 314, 320 HU; 25/26 CS
- World Languages Tutoring, 20 MT
- General Purpose Computer Labs, 312, 314 HU; 25/26 CS
- The Judy E. Ackerman STEM Learning Center, 109 SW
- Writing, Reading, and Language Center, 020MT/HU002

Takoma Park/Silver Spring Campus

- Academic Success Center, 110 CM
- Learning Skills Support Services, 325 HC
- Medical Learning Center, 221 HC
- Health Sciences Student Success Center, 226 HC
- Science Learning Center, 101 SN and MP 144
- Mathematics Learning Center, MP 144
- Student Employment Services, CF151
- Digital Learning Center, 304 ST
- Writing, Reading, and Language Center, CM110

Television

Montgomery College Television (MCTV) is a nationally award-winning educational and informational television channel and media outlet providing high quality, thought provoking video programming for students and community members. Content topics range from career exploration, academic and extra-curricular opportunities, student resources and social justice to local history, sports, performing arts, commencement and much more. Montgomery College students can apply for practical hands-on engineering and digital media production internships. Interning as a paid student aide with MCTV includes job training in a state-of-the-art facility, learning to create live programs in the studio as well as remotely on field shoots. Student interns engage in video and audio editing, graphic design, writing for broadcast and social media, and have the opportunity to appear on camera. MCTV invites you to be a part of the community of viewers and watch online at MCTV.info or via cable in Montgomery County. For links to on-demand videos and social platforms, MCTV's program schedule, and to apply for student opportunities, visit www.montgomerycollege.edu/mctv. MCTV airs 24/7 on cable channel # 998 and # 10 on Comcast, # 10 on Verizon, and # 1059 on RCN. Follow MCTV at: facebook.com/montgomerycollegetv, twitter.com/mctvsocial, and instagram.com/mctvsocial and youtube.com/montgomerycollege.

Transportation

Current Montgomery College students can board the Ride On bus or MC Campus Shuttle at no additional cost. They must simply show the driver a College student identification card with a current semester sticker. Ride On schedules, maps, and routes are available online at the Ride On and Transit Services page of the Montgomery County website: www.montgomerycountymd.gov. For details on how to obtain a valid MC student ID, visit www.montgomerycollege.edu/studentid. For more information on transportation and the MC Shuttle, visit www.montgomerycollege.edu/about-mc/campuses-and-locations/transportation-and-parking.html.

TRIO Programs

In 1965, Congress established a series of programs to help low-income Americans enter college, graduate, and move on to participate more fully in the country's economic and social life. These programs are funded under Title IV of the Higher Education Act of 1965 and are referred to as the TRIO Programs.

Educational Opportunity Center

The Educational Opportunity Center (EOC) provides information and counseling on college admissions to qualified adults who want to enter or continue a program of postsecondary education. An important objective of EOC is to counsel participants on financial aid options and to assist in the application process. The goal of EOC is to increase the number of adult participants who enroll in postsecondary education institutions.

Students in the program are eligible to receive career counseling, college admission and financial aid counseling, application assistance, financial literacy advising, and, when necessary, referrals to English as a Second Language and GED instructional programs. Participation eligibility is based on the following categories: first-generation college student (neither parent has a bachelor's degree), low-income student (based on taxable income and family size), and the desire to enroll in postsecondary education. In addition, students must be U.S. citizens or permanent residents or meet the residency requirements for federal financial assistance. The EOC office and satellite locations at community-based organizations, social services agencies, and other community resource programs make higher education information conveniently accessible to Montgomery County residents.

The EOC program is located in 150 CF on the Takoma Park/Silver Spring Campus. For more information, please call 240-567-5644 or visit the website www.montgomerycollege.edu/special-programs/trio-programs-at-mc.

Student Support Services

Student Support Services (SSS) is a federally funded grant program through the U.S. Department of Education serving Montgomery College students since Fall 2001. Our goal is to positively affect and increase the college's retention, transfer, and graduation rates by providing and coordinating a variety of educational support services and activities for our first-generation college students, students who meet federal low-income guidelines, and/or students with disabilities. In this capacity, we facilitate the process of a student's transition from one level of higher education to the next.

Participation in the program is limited to 175 Montgomery College students. To qualify for the program, a student must be:

Services For Students

1. A U.S. citizen or permanent resident
2. Currently enrolled at MC
3. In need of academic support

AND

Meet one of the following categories:

- A first-generation college student (neither of the student's parents has received a four-year degree in the U.S.). A low-income individual based on federal guidelines.
- An individual with a disability

Services provided

1. Academic support
2. Academic, career, and transfer advising
3. Financial literacy, assistance with completing the FAFSA
4. English, reading, and STEM tutoring
5. Workshops on academic skills, career exploration/planning, social services, and other topics

Student Support Services' goal is achieved by providing

- Staff who are invested in students' academic success
- Personalized attention for each individual situation
- Assistance in learning to navigate the College system and identify resources
- A learning community for personal and academic growth
- Academic advising and monitoring
- Resource information for career exploration and planning
- Transfer assistance and advising
- Financial aid application assistance
- A sense of belonging and purpose

We believe in the value of each individual, and we enjoy the privilege of serving and witnessing student growth. We believe in students' dreams and provide a supportive environment for the realization and accomplishment of those dreams. Our goal is to empower students to make positive life choices, adapt to a changing world that requires new responsibilities and skills, and create and maintain supportive connections and communities.

Please email sss@montgomerycollege.edu or visit our website at www.montgomerycollege.edu/trio for more information.

Academic Regulations and Standards

The following academic regulations and standards information is a summary of a selection of critical student regulations. Information in this section is intended as reference material and is not the official language of the Montgomery College Academic Regulations. A complete and updated list of the official regulations can be viewed in the College's Policies and Procedures, posted online at www.montgomerycollege.edu/policies-and-procedures/ .

Definition of Full-Time Student

A full-time student at the College is defined as one who is enrolled in 12 or more credit hours (billing hours) per semester.

Course Structure

A credit hour or semester hour is equivalent to approximately 15 hours of lecture, 30 hours of laboratory or studio, or 45 hours of an alternative instructional situation, such as an internship. Fall and spring courses are usually taught for 13-15 weeks, including final examinations. A three-credit lecture course may meet three days a week for 50 minutes each session, two days a week for 75 minutes each session, or once a week for 150 minutes. Condensed courses (same total hours of instruction but taught over fewer weeks) are also available. Two summer sessions offer courses varying in length from four to eight weeks. A winter session offers a limited number of intensive courses over three-week or five-week periods.

For lecture courses, it is expected that most students will spend two hours of study or preparation in addition to class time for each hour of class.

Class Attendance

Students are expected to attend all class sessions. The instructor may drop the student from the class in cases involving excessive absences. "Excessive absences" is defined as one more absence than the number of classes per week during a fall or spring semester; the number of absences is prorated for accelerated sessions. Faculty members define their classroom attendance policies in the course syllabus.

Grading System

Grade	Standard	Quality Points
A	Superior	4
B	Good	3
C	Average	2
D*	Pass without recommendation	1
F	Failure	0
I	Incomplete	None
IC	Incomplete due to Crisis	None
P	Pass (Credit by Examination)	None
AU	Audit	None
W	Withdrawn	None
WC	Withdrawn due to Crisis	None
S	Satisfactory Progress	None
U	Unsatisfactory Progress	None

		None
H	Successful completion of first half of "Math Prep" MATH 017, MATH 020, MATH 045 OR MATH 098	0

** The grade of D may not be accepted for transfer credit.*

Incomplete grades are exceptional marks that students earn after they attend the majority of a course and complete work but, for circumstances beyond their control, are unable to complete a small portion of the course work. The instructor will provide students with incomplete forms stipulating work to be done by a certain date, usually by the fourth week of the following fall or spring semester.

Incomplete due to Crisis "IC" grades are given to students during a crisis situation to include natural disasters, national crises, acts of war, government-mandated restrictions, or other incidents where there is a deemed credible risk to student's health and well-being.

Failure to fulfill the terms of the form will lead to the conversion of the "I' or "IC" grade to an "F". The instructors are afforded access to "I" and "IC" grades they have assigned and both students and instructors are e-mailed about the original arrangement and are warned as deadlines approach.

The grade of W (withdrawn) will be recorded if a course is dropped after 20 percent of its length has been completed. A student may officially withdraw from a course and receive a grade of W until 73 percent of its length has been completed.

Students who stop attending classes but do not officially withdraw by the 73 percent deadline will receive a grade of F.

The grades of S (satisfactory) and U (unsatisfactory) may be earned only in courses not included in computing the grade point average (GPA).

Unless the catalog states otherwise, a student may only attempt a course only three times. The grade of record will be the most recent grade. The grade of AU will not be considered an attempt.

Calculating a Grade Point Average

A student's GPA is calculated by multiplying the number of credit hours in a certain course by the appropriate number of quality points (4 for an A, 3 for a B, etc.) and then dividing that number by the course's credit hours. For example, a student taking a three-hour course and earning an A will be entitled to 3 times 4, or 12, quality points. Those 12 points are then divided by the number of credits (3) to give a GPA of 4.0.

The cumulative GPA, which factors in courses taken throughout a student's career at Montgomery College, is calculated by dividing the total number of quality grade points earned in all semesters by the total number of credit hours. Only courses that have a recorded grade of A, B, C, D, or F may be factored into the computing of quality grade points or overall GPAs.

Note that credit hours and semester hours are one and the same when it comes to calculating GPA.

Academic Standing

Students are expected to maintain a level of competent achievement in their courses. A minimum GPA of 2.0 is required for a student to achieve and remain in good academic standing. Students not in such standing will be placed on academic alert, academic restriction, or suspension as appropriate. Information on these three statuses is published in the Academic Regulations section of the College's Policies and Procedures on the web at www.montgomerycollege.edu/pnp.

Dean's List

To be eligible for the Dean's List a student must have a semester grade point average of 3.5 or higher and earn six or more credit hours, excluding developmental courses, academic courses for non-native speakers of English, and noncredit courses. The Dean's List designation is indicated on the academic transcript.

Academic Regulations and Standards

Student Cumulative Records

Any past or present student cumulative record as maintained by the College is considered confidential, and access to the record is limited to the current student/College alum, or those persons who have legitimate requests for the information contained in the record. Student cumulative records are maintained in the Office of Records and Registration on each campus. Detailed information about student rights to and release of records can be viewed in section 41003 of the Policies and Procedures posted online at **www.montgomerycollege.edu/policies-and-procedures/** .

Graduation

To qualify as a candidate for the associate's degree, a student must have earned a minimum of 60 hours of academic credit, which must include (a) the General Education requirements (see the Curricula section of this catalog) and (b) all courses required in the curriculum elected by the student. No more than 45 of the 60 hours required for the associate's degree may be earned outside of the College (70 percent of the required credit hours for certificates). Health Science students may have additional requirements. Students should consult a program coordinator for more information.

To qualify as a candidate for a certificate or a degree, a student must have a minimum cumulative GPA of 2.0 and a 2.0 GPA in the curriculum in which the degree or certificate will be granted. To receive the associate of arts in teaching (AAT), students must have a minimum cumulative grade point average of 2.75 and must present acceptable scores on one of the following state-approved standardized tests: SAT, ACT, GRE, or Praxis I Pre-Professional Skills Test.

To qualify for graduation honors, a student must have a cumulative GPA of 3.5. The general obligations of the candidate are published in the Academic Regulations section of the College's Policies and Procedures (on the web at **www.montgomerycollege.edu/policies-and-procedures/**).

An annual commencement is held at the end of the spring semester. Diplomas are awarded at the end of each semester and summer session. All students graduating during an academic year are eligible to participate in the spring commencement.

Prior to a student's graduation, the Office of Records and Registration must conduct an official graduation review. To ensure that graduation candidates can make any final changes to their final semester schedules, these students are expected to file applications for candidacy with their campus registrars no later than:

February 15 for spring graduation
June 1 for summer graduation
October 1 for fall graduation

There is no guarantee that applications received after this date will be processed in time for the resulting degree audit to be useful in planning a student's last semester. Students should see a counselor for assistance with a graduation audit before applying for graduation. A degree audit tool is also available for student use through the MyMC portal.

Students who plan to graduate from Montgomery College should select one catalog during their enrollment and follow the curriculum outlined in that catalog, provided they graduate within seven years of the catalog chosen. If there is a consecutive two-year break in enrollment, the student must use a catalog issued during the enrollment period following the two-year break in enrollment. Time limits may be appealed.

The preceding academic regulations and standards information is a summary of a selection of critical student regulations. Information in this section is intended as reference material and is not the official language of the Montgomery College Academic Regulations. A complete and updated list of the official regulations can be viewed in the College's Policies and Procedures, posted online at www.montgomerycollege.edu/policies-and-procedures/.

Special Programs

ACES - Achieving Collegiate Excellence and Success

The Achieving Collegiate Excellence and Success (ACES) Program is a collaboration among Montgomery County Public Schools (MCPS), Montgomery College (MC), and Universities at Shady Grove (USG). ACES serves targeted students in select Montgomery County Public High Schools (MCPS) with Montgomery College Academic Coaches. The academic coaches provide both academic and student support using a case management approach. They meet with students providing test preparation, tutoring, college visits, and assistance with college, financial aid, and scholarship applications. The ACES Academic Coaches encourage student success by identifying and neutralizing barriers that may prevent an at-promise student from graduating with a bachelor's degree. An on-campus academic coach provides academic support and guidance to ACES students to help facilitate their degree completion and transfer to a four-year college or university if they choose to attend Montgomery College. Students who choose to continue their education at the Universities at Shady Grove are provided with ongoing support to ensure bachelor's degree completion.

For more information, visit the website: www.montgomerycollege.edu/aces/.

ATPA - Achieving the Promise Academy

The Achieving the Promise Academy is MC's academic coaching program, created to ensure every student has the assistance, opportunities, and tools needed to succeed in college. No matter where you are on your academic journey, our Academic Coaches can help you build on your strengths and target areas for improvement so you can excel academically and achieve your full potential. Participating in academic coaching has been shown to help students build their confidence, pass their classes, improve their grades, save money, and stay on track to graduate or transfer on time-and it's free and open to any student registered for courses at MC. ATPA offers embedded academic coaching for course success and personal academic coaching for college success to students enrolled at any campus or taking classes remotely.

Embedded academic coaching is offered in specific sections of courses that have been historically challenging for students to pass. When you register for a course with ATPA support, you'll have a specialized embedded coach that can help you with that course's assignments, exams, and more. Personal academic coaches can help you create a personalized academic success plan and will meet with you weekly to help you succeed. They'll be your coach until you graduate or transfer and can help you stay motivated to achieve your long-term goals. All MC students are also invited to book a drop-in coaching session to meet with a coach right away and participate in weekly Learning Community Hour (LCH) workshops to learn academic and life skills that help you succeed here at MC and beyond.

To learn more about the benefits of academic coaching, register for upcoming workshops, or get connected to an academic coach, visit the Achieving the Promise Academy at www.montgomerycollege.edu/atpa.

Arts Institute

The Arts Institute promotes, enhances, and supports the visual, performing, and media arts at the College encouraging interdepartmental and intercampus exchange and collaboration. With support from the Montgomery College Foundation and the College's donors, the Arts Institute brings distinguished guest artists and events to all three campuses for the benefit of students, faculty, staff, and the community.

Through its artist residencies, guest lectures, workshops, performances, master classes, exhibitions, concert series, and other programs that bring visiting artists to the College, students are given exceptional opportunities to work with and learn from distinguished professionals and scholars.

The Arts Institute supports internships that allow students to discover career options in the arts and combine learning in the classroom with on-the-job experience. Working with the arts faculty and staff, the Arts Institute also develops collaborative projects with area arts organizations to enhance College and community programs in the arts.

Arts Institute Mission:

- to support exceptional creative opportunities in the arts for students, faculty, staff, and the community
- to enrich the experiences of MC students outside of the classroom, allowing them to engage with the arts and improve their opportunities for academic and professional success
- to encourage interdepartmental and intercampus collaboration and exchange of information and ideas
- to promote MC's arts on and beyond the College's three campuses
- to invigorate the college community by offering arts events of exceptional quality and scope
- to enrich the cultural life of Montgomery County through collaboration with arts and educational organizations

For more information on the Arts Institute, visit www.montgomerycollege.edu/artsinstitute or e-mail elizabeth.melanson@montgomerycollege.edu.

Developmental Courses

Developmental courses are offered for students who need to strengthen their academic foundations in English, reading, or mathematics in order to be successful in college-level courses. Students may be required to enroll in one or more developmental courses or in a corequisite developmental support module paired with a college-level course based on their academic records, the results of assessment and placement measures, such as guided placement, or individual needs.

Depending on the placement of the student and the number of developmental courses taken, a student may enroll in additional courses for credit, if the assessment level for each course has been met. See the course descriptions in this catalog for assessment levels associated with each course. Students may enroll in developmental courses on either a part-time or full-time basis and are strongly advised to begin their developmental courses in their first semester. All developmental coursework must be completed before a student earns 24 credit hours. See Appropriate Course Placement in the Admissions and Registration section of this catalog for more information.

English as a Second Language
English Language for Academic Purposes (ELAP)

The English Language for Academic Purposes (ELAP) program offers courses designed to increase the English language proficiency of non-native speakers of English so that they can succeed in their college work. The program includes two courses that focus on Writing and Grammar (ELAW 970 and ELAW 980), two courses that focus on Reading (ELAR 970 and ELAR 980), two courses that focus on Oral/Aural skills (ELAS 970 and ELAS 980), and one capstone Integrated Skills course (ELAI 990) that focuses on reading and oral/aural skills as well as writing, grammar, and basic information literacy. Students placed in this program must pass or test out of ELAI 990 in order to take many of the courses that count towards a degree at Montgomery College.

Following admission to the College, students complete placement to determine their current level of English proficiency, as required by College regulations. Depending on their level of proficiency in writing, reading, and speaking, non-native speakers may earn a placement in one or more ELAP courses, in ENGL101/011, or in the College's Workforce Development and Continuing Education ESL Program [the American Pre-Academic and Professional English program (APPE)].

Students may enroll in ELAP on a full-time or part-time basis on all three campuses. For assistance or additional information, contact a campus Counseling and Advising Office or the ELAP department at the Germantown, Rockville, or Takoma Park/ Silver Spring campus.

Global Humanities Institute

The Global Humanities Institute is a global education project of Montgomery College, funded in part through a six-year "Bridging Cultures" challenge grant from the National Endowment for the Humanities and the Montgomery College Foundation.

The Association of American Colleges and Universities has identified global awareness and literacy as essential skills for the work and thinking our students will have to perform in the near future, thanks to the unprecedented interconnectedness of nations and cultures in the world today. The GHI answers this call by supporting the systematic integration of global perspectives and knowledge to humanities courses. We accomplish this through:

- Faculty training to enable revision of existing courses.
- The General Education course, GHUM 101 - Introduction to Global Humanities, offered on every campus.
- A faculty-created scholarship, 'The Rita Kranidis Scholarship Fund.'
- College-wide community engagement and public education events delivered in collaboration with other programs within and beyond the College.
- Scholarly exchanges, webinar conferences, virtual expert speakers, sabbatical leave options, and travel to our university partners in various countries.
- The GHI supports interdisciplinary work among STEM and Humanities faculty and students through an annual STEAM event that examines teaching an issue of global concern, such as food and water.
- We bring the world into our classrooms through our Global Classrooms program that enables direct experiential learning through the virtual combination of classes at MC and at our international academic partners.

The GHI supports the global education efforts of other institutions through informal and formal mentorship, by sharing our work, resources and products through presentations at academic conferences, publications, and our comprehensive website, www.montgomerycollege.edu/globalhumanities. Join us as we work to meet the imperative goal of preparing students for a global future.

Gudelsky Institute for Technical Education

To meet the technical education and training needs of the workforce and the community, the Homer S. Gudelsky Institute for Technical Education (GITE) provides instructional programs in three primary areas: automotive technology; building trades technology; and workforce technologies, which includes computer repair, welding, and FabLab. GITE offers both credit and noncredit courses taught via classroom and lab training, onsite or off-site customized contract training, apprenticeship training, and long or short-term training. For more information, please visit the website: www.montgomerycollege.edu/departments/giterv.

Health Sciences Institute

The Health Sciences Institute was designed to meet the needs of health care providers in the metropolitan Washington area. It offers both noncredit and credit courses and programs of study in various health care careers. These courses and programs will provide individuals with workforce skills, certification in specific disciplines, and associate's degrees in an array of health sciences. Customized courses and programs, training courses, seminars, and specialty workshops are available. Experienced faculty, from the College or from the local community of health care providers, participate to develop the workforce for the health care community. For more information, visit the website: www.montgomerycollege.edu/healthsciences.

Honors Programs

Collegewide Honors Program

The College is committed to providing high-ability, motivated students with stimulating and challenging opportunities both inside and outside the classroom. Honors course offerings are varied and differ on each campus based on faculty interests and the number of students participating in the program. Honors offerings are listed in the class schedule by academic department and in the campus Honors Program section. Honors classes, indicated with an HC suffix, are honors sections of standard classes. Honors modules, indicated with an HM suffix, allow students to have an enriched honors experience while taking a standard class.

The Honors Program is collegewide and designed for high-achieving students. The program requires that participating students complete a minimum of 15 honors credits distributed among at least three different disciplines (such as the arts, humanities, social sciences, and sciences) in a minimum of two semesters. In order to receive the Honors Program designation on their transcripts, students must maintain a minimum 3.4 grade point average (GPA) until they either graduate from the College or transfer to another institution.

Honors Program students receive special advising opportunities, including information about scholarships and transfer counseling. They can also participate in activities set up for honors students such as clubs, honors conferences, lectures, and other events. A limited number of Honors Internships are available. These have a competitive application and may require GPA above the Honors Program minimum of 3.4.

Applicants must meet one of the following entry requirements: (1) SAT scores of 600 on each section and a minimum high school GPA of 3.5 on a 4.0 scale (unweighted), (2) eligibility for ENGL 102 as determined by the Montgomery College placement process and a minimum high school GPA of 3.5 on a 4.0 scale (unweighted), (3) completion of a minimum of 12 credits in transfer-level classes at Montgomery College with a minimum 3.4 GPA, including a grade of A or B in ENGL 101.

Admission to the various programs within the Honors Program may require a separate application process. Applications are available online at www.montgomerycollege.edu/academics/honors/index.html. For more information, contact Dr. Lucy Laufe, Collegewide Honors Director and Chair, at lucy.laufe@montgomerycollege.edu or the directors of the individual programs on the Honors website.

Students who do not enroll in the Honors Program, but wish to take honors classes, must have a minimum 3.4 GPA and must have completed at least 12 credit hours of college-level coursework, including ENGL 101 with a grade of A or B. Exceptions to these requirements may be made on a case-by-case basis by the Collegewide Honors Chair. Recent high school graduates may be admitted to honors courses based on evaluation of high school grade reports.

Students who have completed 12 credit hours of honors work by the end of the fall semester in at least two different disciplines, and who have maintained a 3.6 GPA or better, are eligible to be recognized as Honors Scholars at campus academic awards ceremonies in the spring semester.

Macklin Business Institute Scholars Program

The Gordon and Marilyn Macklin Business Institute Scholars Program is a competitive college-wide program offering business students an opportunity to participate in experiential learning initiatives, weekly seminars, and to pursue honors coursework in accounting, business administration, and economics. Students admitted to the midyear program or two-year program are offered a scholarship benefit that covers the in-county full-time cost of tuition and fees (up to 30 credit hours at the in-county rate per academic year, or 15 per semester).

To apply for the two-year program, students must be enrolled in their final year of high school and be on schedule to completed high school graduation requirements by the end of June or must be returning Montgomery College students who will have fewer than 12 credits. MBI students are chosen on the basis of high school records, SAT scores, recommendations, essays, and interviews. The application process for the two-year program begins each year in September, with applications due in early January. Students are notified of their acceptance in March.

To apply for the mid-year program, students should be in the equivalent of their first semester (12 to 24 transferable credits) and be following an AA in Business degree program in preparation for transfer to a four-year institution to complete a bachelor's degree. The application period for the mid-year program begins each year in October, with applications due in early December. Students are notified in early January of their acceptance for the spring semester.

Students are required to maintain 12 or more credits per semester during their participation in the program. For more information, please e-mail mbi@montgomerycollege.edu, or visit the website at www.macklin.org.

Montgomery Scholars Program

The Montgomery Scholars Program, which opened on the Rockville Campus in fall 1999, is a selective-admissions interdisciplinary honors scholarship program designed for high school graduates who plan to transfer to a four-year institution at the end of two years. Scholars are chosen on the basis of high school records, test scores, intellectual interests, extracurricular activities, recommendations, essays, and other indicators of academic excellence.

Montgomery Scholars participate in an academically rigorous curriculum of honors courses, including team-taught, interdisciplinary classes especially designed for the program. During the summer between their freshman and sophomore years, depending on available funding, students have the opportunity to participate in a summer study travel experience. The capstone experience of the program is an honors colloquium. Students study and research an important issue related to their major and area of academic interest and present their research in a public colloquium. The Montgomery Scholars Program emphasizes the importance of expert counseling in helping students plan their course of study and prepare their portfolios for transfer.

First Year:

ANTH 201 HA & HB - Introduction to Sociocultural Anthropology (3)

ENGL 202 HA & HB - Introduction to World Literature II (3)
HIST 117 HA & HB - World History: A Comparative Survey from A.D.1500 to the Present (3)
MUSC 117 HA & HB - World Music (3)
ENGL 102 HC - Critical Reading, Writing, and Research (3)
PLUS COURSES FOR YOUR MAJOR

Summer:

HONR 270 - Summer Study Travel Seminar (3)

Second Year:
HONR 280 HA & HB - Capstone: Research in Disciplines (3)
POLI 203 HA & HB - International Relations (3)
PLUS COURSES FOR YOUR MAJOR

For more information, visit the website www.montgomerycollege.edu/mcscholars

Renaissance Scholars Honors Program at Germantown and Takoma Park/Silver Spring

The Renaissance Scholars Honors Program is designed to accommodate the needs of both part-time and full-time high-achieving students interested in a challenging curriculum while they acquire courses needed for their associate's degree and beyond. The core of the program consists of team-taught, interdisciplinary pairs of courses that are offered in the late afternoons and evenings.

In addition to stimulating coursework, students have the opportunity to participate in numerous social, cultural, and academic experiences outside of the classroom that help foster a learning community and enrich the students' educational experiences. Students in this honors program receive scholarship support, special advising, and the opportunity to receive college credit for a study experience during the summer. Admission to this honors program is selective and requires a separate application process. Students are selected on the basis of a portfolio that includes an essay, a personal or professional résumé, and letters of recommendation.

For more information, contact Professor Joan Naake at the Germantown Campus at Joan.Naake@montgomerycollege.edu, or Dr. Carole Wolin at the Takoma Park/Silver Spring Campus at Carole.Wolin@montgomerycollege.edu, or visit the website www.montgomerycollege.edu/renscholars.

IgnITe Hub

The ignITe Hub, on the Rockville campus in the Mannakee Building, is Montgomery College's center for digital learning and entrepreneurship, providing a 2,000 foot space where students and community members of all ages, including K-12, can come to learn new technology, work on collaborative projects, and develop apps to launch businesses. Businesses will participate to provide mentoring, or, to learn new technology skills.

Information Technology Institute

To meet the surging demand for skilled IT professionals, the College established the Information Technology Institute (ITI). Equipped with state-of-the-art and cutting-edge teaching technologies, ITI offers a diverse array of highly sought-after IT certifications, including Security+, Network+, AWS Cloud Practitioner, AWS Solutions Architect, Data+, among others. These certifications are crucial for those looking to start a technology career as well as for experienced professionals aiming to upskill.

The instructors at ITI are more than educators; they are seasoned IT professionals, imparting invaluable real-world experience directly into the classroom. Their insights and expertise ensure that students not only understand theoretical concepts but also acquire practical skills essential for thriving in today's competitive IT landscape.

With campuses across all three College locations and a convenient off-campus center in Gaithersburg, accessibility is ensured for all. Additionally, we offer customized training programs tailored to meet the specific needs of businesses throughout the region, ensuring you remain at the forefront of industry trends.

As a member of the Microsoft IT Academy, ITI provides courses aligned with the Microsoft Official Curriculum, in addition to partnerships with AWS Academy and Cisco Systems Networking Academy. These affiliations offer unparalleled opportunities to prepare for industry-standard certification examinations, giving students a competitive edge in the job market.

For more information on ITI, please email Eunice.Melo@montgomerycollege.edu, or visit our website at www.montgomerycollege.edu/iti.

Study Abroad and International Education Program

The Study Abroad (STBR) and International Education Program (IEP) has been developed to bring a greater awareness of world cultures and global perspectives, as well as to augment academics and workforce development to the student body, college employees, and the community through study abroad, professional development, service learning, out-of-state study, global Internships, and virtual overseas experiences. These approaches cover three interrelated areas: culture, curriculum, and programs.

Culture: The international richness of Montgomery College's enrollment enhances students' understanding and appreciation of one another through daily contact. STBR and IEP further enrich the College and community population through special programs that include real-time virtual overseas experiences, exhibitions, student scholars' presentations, performances, lectures, films, discussions, and college employee professional development presentations.

Curriculum: The international studies concentration of the liberal arts and sciences curriculum was developed by the College's faculty to allow students to explore careers in the Sciences, Technology, Engineering and Math (STEM), foreign service and international business, language arts, environmental sciences, and in the US Department of State sector, to name a few areas. In addition, many courses have an international focus that reflects the College's emphasis on global issues. A study abroad or out-of-state study component also accompanies various course offerings. Faculty who incorporate study abroad or out-of-state study programs in existing courses are compensated for the additional component.

Programs: STBR and IEP offer long-term study abroad, short-term overseas study, in-country/out-of-state programs, and virtual global Internship opportunities. For long term study abroad, students may select from a consortium of institutions in more than 26 countries to study abroad for a semester, a summer, or a year. These accredited academic institutions provide programs, courses, and room and board for students. In addition, we offer virtual global Internships in Asia and Europe, lasting one, two, or three months in length, with over a dozen fields and disciplines to choose from. To participate in long term study abroad or virtual global Internships, students must have a 2.5 grade point average and at least 12 college-level credits. A semester of advance planning through the Office of Study Abroad and International Education is required before going abroad. In addition, to enhance student knowledge of the world, faculty and staff members offer short-term study abroad related to the study areas of selected credit courses. Study groups have gone to Russia, China, England, Greece, Turkey, Jordan, Egypt, Morocco, Mexico, Thailand, Vietnam, Senegal, Peru, India, Cuba, and Iceland, to name a few locations. Two to four destinations are offered each academic year, and are highlighted in the Study Abroad and International Education website. Each program merges with an existing cataloged course. In addition, in-country study programs are offered, and are also connected to an existing cataloged course. Students who do not wish to take a 15-week credit course but who want to participate in a short-term study abroad or in-country study experience may do so through pre-departure classes.

For more information, visit www.montgomerycollege.edu/studyabroad or contact Dr. Gregory Malveaux, coordinator, Study Abroad, at gregory.malveaux@montgomerycollege.edu.

Internships - See Cooperative Education & Internship Program

Information about internship opportunities is also available from Student Employment Services, the Career/Transfer Centers, academic departments, counselors, and advisers.

MC/MCPS/USG Partnerships

Montgomery County Public Schools

There are currently multiple initiatives in the MC and MCPS partnership designed to help prepare students for a smooth transition to postsecondary education. The Office of Academic Initiatives was created to better serve the full spectrum of student needs.

For more information, visit the website: www.montgomerycollege.edu/high-school-students.

Dual Enrollment

Special Programs

Dual Enrollment is an academic initiative that allows qualified high school students to be admitted and enrolled at Montgomery College taking credit courses while completing their high school diploma requirements.

Students may enhance their schedule with college coursework and experience the independence of college-level study while also earning college credit. Students may take advantage of our numerous dual enrollment programs to include individual credit opportunities through Jumpstart to College or apply for one of our diploma+degree programs (Early College, Virtual Middle College, Northwest/Northwood Middle College or P-Tech). For many students, these MC degrees will serve as a stepping-stone to continue on to a four-year college degree, a full two years earlier than is traditional.

MCPS students are eligible to enroll in college classes at no cost during the school year. Financial incentives are also available for qualifying private and homeschooled students. For more information on all dual enrollment opportunities visit www.montgomerycollege.edu/dep.

Early College

Early College (EC) is a dual enrollment program that provides the opportunity for students from all MCPS high schools to earn their associate degree while simultaneously completing their high school diploma requirements. Students are admitted into one of eighteen available degree majors. Students will apply to the program in the fall of 10th grade and will complete their 11th and 12th grade of high school by taking college courses full-time on one of the MC college campuses. Tuition, fees, and textbooks are covered for all MCPS students throughout the degree program.

Middle College Programs

Virtual Middle College

Virtual Middle College (VMC) is a dual enrollment program that allows qualified MCPS high school students the opportunity to enroll at MC through an online/virtual college experience. Students from all MCPS high schools may participate while still enrolled at their home MCPS high school. Students are admitted in to one of the College's online degree programs and earn College credits through a combination of online MC courses and MCPS Advanced Placement courses with corresponding AP exam scores. Students are supported through a progressive transition from a traditional high school experience to online/virtual college courses. Tuition, fees, and textbooks are covered for all MCPS students throughout the program during the school year.

Northwest HS and Northwood HS Middle College (MC 2)

Middle College (MC2) at Northwest and Northwood high schools. MC2 is a dual enrollment program that provides the students to earn an Associate of Arts in General Studies, business or engineering(Northwest only). Students complete their associate degree while simultaneously earning their high school diploma. Students are supported through a progressive transition from a traditional high school experience to an on-campus college experience.

College classes are delivered at the high school in grades 10 and 11 with the student coming on to the college campus in grade 12 to complete their degree requirements. Students enter the MC² program in 9th grade. Tuition, fees, and textbooks are covered for all MCPS students throughout the program during the school year.

Pathway in Network and Information Technology (P-TECH)

Pathways in Network and Information Technology (P-TECH) is a MSDE grant-funded dual enrollment program that enables participating students to earn both an MCPS high school diploma and an Associate of Applied Science degree (AAS) in Cloud Computing and Network Technology from MC at no cost while in high school. College classes are delivered at the high school in grade 10 with the students coming on to the college campus in grades 11 and 12 to complete their degree requirements.

The AAS degree will ensure that students will meet industry expectations and gain technical skills and workplace competencies as well as industry certifications. Students receive internships and mentorship opportunities from local businesses, as well as first-look job opportunities after graduation.

This program is offered at Clarksburg High School with students entering the program in 9th grade.

Jumpstart to College

Jumpstart to College is a dual enrollment program that allows qualified high school students to enroll at MC to take one college course during their high school tenure or strategically plan a pathway to take up to 17+ college courses and earn 30 or more college credits. Jumpstart is designed to help college bound students get a "jumpstart" on their college degree by completing

as many college courses as able while earning their high school diploma. Students can take classes at any MC campus, at their HS site (where available) or entirely online. Over 400 courses in many disciplines are available for students to choose.

Students may continue at MC or transfer credits to another institution (where applicable). MCPS, private, out-of-county, homeschooled, and other public school students are eligible. Tuition, fees, and textbooks are covered for all MCPS students enrolled in credit courses during the school year.

Career Programs of Study

Career Programs of Study are pre-college academic programs offered by Montgomery County Public Schools that focus on specific career pathways. Students in select programs who earn at least a "B" in college-level coursework at their high schools may earn college credits when they enroll at Montgomery College in a related program of study. This gives students a head start on college, and saves money because the credits earned in high school are free; there is no tuition charged, no book or lab costs, and no registration fees. Students in this program also gain hands-on skills that will allow them to make informed decisions about college majors and career choices. The following programs are available:

At Montgomery College, the career programs of study are facilitated through the Office of the Senior Vice President for Academic Affairs. For more information, visit www.montgomerycollege.edu/cte.

Universities at Shady Grove (USG)

A unique partnership with USG allows College students to earn bachelor's degrees from University System of Maryland four-year institutions offering programs in Montgomery County. Students should complete an associate's degree at the College and then complete the final two years of study of a bachelor's degree at USG, conveniently located in Rockville.

The following institutions are currently involved in this partnership: Bowie State University (graduate level only); Salisbury University; Towson University; University of Baltimore; University of Maryland, Baltimore; UMBC; University of Maryland, College Park; University of Maryland, Eastern Shore; and University of Maryland University College.

Institutions in this partnership offer courses at USG that can be applied toward undergraduate degrees in the following areas:

- accounting,
- biological sciences,
- biotechnology,
- business,
- business administration
- communication
- communication studies,
- computer and information science,
- computer networks and cybersecurity,
- construction management technology,
- criminology and criminal justice,
- cybersecurity management and policy,
- digital media and web technology,
- education,
- exercise science,
- embedded systems and the internet of things,
- health systems management,
- history,
- hospitality and tourism management,
- human resource management,
- information science,
- information systems management,
- investigative forensics, laboratory management,
- management with a specialization in entrepreneurship,
- marketing,
- nursing,
- political science,
- psychology,
- public health science,
- public safety administration,
- simulation and game design,
- social work
- software development and security, and
- translational life sciences technology

Additional programs will be added in future semesters. Please consult USG's website (www.shadygrove.umd.edu) for more information. The student's diploma will be from the specific institution offering the degree program and will not reference USG on it.

USG also offers graduate-level programs in a variety of areas, including biotechnology, business administration, cybersecurity, information technology, education, engineering, health care administration, industrial organizational psychology, management, nursing pharmacy, public administration, publications design, social work, and technology management. A variety of certificate programs are also available.

Due to the nature of the specialized programs and courses, students interested in transferring to USG must carefully plan their academic program at the College. For more information about degree programs and admission, contact an MC counselor or program advisor; call USG at 301-738-6023; or visit www.shadygrove.umd.edu.

Talent Ready

The Talent Ready program was created by Montgomery County Public Schools, Montgomery College, and the Universities at Shady Grove, in collaboration with The Greater Washington Partnership, to increase baccalaureate degree attainment and professional success for students that have been historically underrepresented in information technology academic (IT) programs and careers. This program offers a structured and supported pathway to IT degree attainment for students in

Montgomery County, MD. Additionally, Talent Ready encourages students to explore and persist in IT career pathways and to be prepared with the 21st century work readiness skills required by our region's tech employers.

STEM Ready

STEM Ready diversifies our region's future workforce by empowering students who are traditionally underrepresented in science, technology, engineering, and mathematics (STEM) fields to succeed in college and career. This program is a partnership with Montgomery County Public Schools (MCPS), Montgomery College (MC), the Universities at Shady Grove (USG), and University of Maryland, Baltimore County (UMBC), along with local and regional industry representatives. Starting with an application in sophomore year of high school, this pathway supports students in Montgomery County to pursue STEM careers and be part of the regional STEM workforce.

Montgomery County Collaboration Board

The MC Board of Trustees and the Montgomery County Board of Education seek the advice and counsel of residents of the community, employers, and educational representatives through the establishment of cluster advisory committees. Operating under the Montgomery County Collaboration Board (MCCB), these advisory committee members serve to advise, counsel, and assist in the planning, development, and evaluation of the MCPS and MC systems' efforts in creating and maintaining a well-prepared, educated, and adaptable workforce to meet the current and future needs of employers through articulated programs in Montgomery County. The MCCB serves as a forum for critical stakeholders to engage in dialogue on the ways and means of providing cutting-edge education and training programs to the county's secondary and post-secondary students.

While the MCCB is advisory in nature and is not charged with administrative, policy-making, or legislative responsibility, the members' recommendations influence actions in providing rigorous and realistic preparation for students. The operations of the MCCB are divided among 11 Career Cluster Advisory Boards, each with its own workforce specialization.

Cluster Advisory Board specializations include the following areas:

- Arts, Humanities, Media, and Communication
- Biosciences, Health, and Medicine
- Business Management and Finance
- Construction and Development
- Education, Training, and Child Studies
- Engineering, Research, and Manufacturing
- Environmental, Agricultural, and National Resources
- Human and Consumer Services, Hospitality, and Tourism
- Information Technologies
- Law, Government, Public Safety, and Administration
- Transportation, Distribution, and Logistics

The regular voting members of the overarching MCCB consist of an MCCB president, 11 Career Cluster Advisory Board presidents, and a student representative from both MCPS and MC.

At Montgomery College, the MCCB is facilitated through the Office of the Senior Vice President for Academic Affairs.

Paul Peck Humanities Institute

The Paul Peck Humanities Institute enriches the learning and teaching experiences of Montgomery College students and faculty, from all disciplines, through the humanities. The Institute reaches students in three ways: by offering humanities events that enable students on all three campuses to interact with speakers engaged in a wide variety of topics; by generating the Smithsonian Faculty Fellowship program, in support of Montgomery College faculty who utilize the Smithsonian as a teaching resource; and by providing internship programs that diversify the learning opportunities of high-achieving students. The Paul Peck Humanities Institute generates various additional programs and collaborations designed to enrich the experience of learners at Montgomery College and in our wider communities. For more information, please visit the website www.montgomerycollege.edu/humanities, or contact sara.ducey@montgomerycollege.edu.

Special Programs

PPHI Humanities Internships - The Smithsonian Institution, Library of Congress, and United States Holocaust Memorial Museum Internship Programs: HONR 275PA, HONR 275PB, and HONR 275PG

The Smithsonian Institution, Library of Congress, and the United States Holocaust Memorial Museum Internship Programs provide unique opportunities for Montgomery College students to experience the professional environment of world-class museum and library research activities. Samples of activities an intern may participate in include: assisting with new or ongoing research programs, performing collection analysis and organization, digitizing documents, abstracting and archiving academic materials, and planning new educational programs. Eligible students have completed 15 credit hours of coursework at Montgomery College, have earned a 3.4 overall grade point average, and will have completed ENGL 102 or ENGL 103 with grades of B or better prior to applying for the internship. Interested students should prepare themselves for this opportunity by taking General Education courses and earning high grades.

Students serve 240 hours at the internship site (typically 16 hours/week during fall or spring, and 20 hours per week during summer I and II). Students receive a scholarship of $1250 to cover the cost of the HONR275 course.

Potomac Review Internships HONR 275PF

Internships with the Potomac Review offer Montgomery College students the opportunity to be involved in all facets of magazine production, including decision-making about layout, design, and the selection of submissions. Interns participate in local writing conferences and community events. Eligible Montgomery College students have completed one of the following creative writing courses with a grade of B or better: ENGL 264, ENGL 265, ENGL 272, ENGL 273, and HONR 251 CJ (Writing Your Novel). Other courses may be considered for eligibility.

Internship awards cover the cost of three in-county credit hours and are awarded pending available funding.

For more information, please visit www.montgomerycollege.edu/humanities, or contact Professor John Wang at PotomacReviewEditor@montgomerycollege.edu.

Phi Theta Kappa International Honor Society

Phi Theta Kappa is the international honor society for students at community colleges. The Beta Kappa Omega (Germantown), Beta Lambda Alpha (Rockville), and Kappa Omega (Takoma Park/Silver Spring) chapters were chartered at the College in 1960. To be considered for membership in Phi Theta Kappa, a student must have a cumulative grade point average of at least 3.5 for at least 15 credit hours of college-level coursework (excluding ELAP courses) at the College. Invitation to Phi Theta Kappa represents one of the highest honors that can be earned by a student at the College.

Please contact the faculty advisors for PTK at the campuses.

- **Germantown**: Prof. Thomas Chen (Thomas.Chen@montgomerycollege.edu *)*
- **Rockville**: Prof. Sue Adler (Sue.Adler@montgomerycollege.edu) or Prof. Michael Berman (Michael.Berman@montgomerycollege.edu *)*
- **Takoma Park/ Silver Spring**: Prof. Michael LeBlanc (Michael.LeBlanc@montgomerycollege.edu)

Southern Management Leadership Program

The Southern Management Leadership Program is a scholarship and educational program that supports, develops, and graduates ethical leaders who want to energize and give back to their local communities. The Program is open to all transferable majors starting at Montgomery College and finishing at the University of Maryland, College Park. Students receive a scholarship covering 55% of tuition plus books, mentoring, internships, and 3-credit courses that culminate in a minor in technology entrepreneurship at the University of Maryland. They also participate in a strong cohort experience with other aspiring entrepreneurs both at MC and UMD.

Minimum requirements to apply include a base GPA of 2.5 or higher, completion of one transferable math course, and a path to complete an associate's degree within one year of enrollment in the Program. Applicants must be pursuing their first bachelor's degree. Finally, they must be 1) Maryland residents and 2) U.S. citizens, students with permanent resident status, or students covered by the DREAM Act. To apply, students complete an online application form and submit one letter of recommendation.

Selected students are then invited to an interview to determine their suitability for the program. A total of 20 students are accepted each year into this program. The priority deadline for applications is May 1 for the following fall semester.

More information about this program and the application form can be found at www.montgomerycollege.edu/smlp.

Women's and Gender Studies Program

The Women's and Gender Studies Program (WGSP) offers courses about women and gender for all students. The program is designed to explore the experiences and cultural contributions of women and those in the lesbian, gay, bisexual, transgender (LGBT) community as well as examine the societal implications of gender. Informed by feminist, gender, and sexuality theory, the courses in the WGSP challenge false assumptions and theories about women, gender, sexuality, race, and class; encourage rigorous critical thinking; raise issues of gender bias and the subjective nature of knowledge; support students' development as individuals and as participating members of their larger communities; and expand options for all beyond traditional gender roles. These writing-intensive courses help students consider the differences gender and sexuality make - in family relationships, friendships, education, and work. These classes are comfortable settings for delving into scholarship and theory.

In addition to the interdisciplinary introductory courses on women's, gender, and LGBT studies, courses in the program include women's history, philosophy, literature, sociology, psychology, physical education, and health. Honors modules are available for some classes. Opportunities to pursue independent study projects are also available. Service-learning and Honors internship opportunities are frequently offered. Most courses fulfill General Education requirements in the humanities or behavioral and social sciences distribution areas as well as the College's global and cultural perspectives requirement.

A certificate in women's studies can be earned by students who complete 12 or more credits in courses approved by the WGSP. These courses must include WMST 101, Introduction to Women's Studies or GNDS101, Introduction to Gender Studies. The WGSP also features speakers, seminars, and other programs, including active women's studies student clubs. Student awards and scholarships are presented annually.

For more information at the Germantown Campus, please visit the office at 186 Humanities and Social Sciences Building; for more information at the Takoma Park/Silver Spring Campus, please visit the office at 208 Pavilion Three. The collegewide office, located at 212 Macklin Tower, Rockville Campus, provides academic advising and materials and information on upcoming events.

Curricula

Degrees, Certificates, and Letters of Recognition

A curriculum is a series of courses designed to assist students in reaching academic, transfer, specific technical, or semiprofessional career goals, as well as to assist undecided students. Montgomery College recognizes students with associate's degrees, certificates, and letters of recognition.

Associate's Degree

An associate's degree recognizes successful completion of a 60- to 70- credit combination of General Education courses in English, mathematics, arts, behavioral and social sciences, humanities, and science (see below for more information); courses in a specific area of concentration or skill area; and, in some cases, electives. The College is currently authorized by the Maryland Higher Education Commission (MHEC) to offer five associate's degrees:

Associate of Arts (A.A.). This degree recognizes mastery in the liberal and fine arts and is intended for transfer to equivalent bachelor of arts programs at four- year schools. The A.A. is awarded in arts and sciences, business, communication studies, computer science and technologies, and general studies. Areas of concentrations within these programs allow students to focus their studies in specific areas (for example, arts and sciences program- music area of concentration).

Associate of Science (A.S.). This degree recognizes mastery in science or technology with a heavy emphasis on undergraduate mathematics or science and is intended for transfer to bachelor of science programs at four- year institutions. The A.S. is awarded in engineering science, public health sciences, nursing, and science. Areas of concentration within the engineering science and science programs allow students to focus their studies in specific areas (for example, engineering science program- aerospace engineering area of concentration).

Associate of Applied Science (A.A.S.). This degree recognizes mastery of vocational-technical occupational skills and is intended for those seeking immediate employment opportunities. Students may still transfer eligible courses to four- year institutions offering upper- division programs in related areas. Areas of concentration within some A.A.S. programs allow students to focus their studies in specific areas (for example, illustration area of concentration, graphic design A.A.S.)

Associate of Arts in Teaching (A.A.T.). This degree recognizes mastery in a core of professional education coursework and fieldwork experiences appropriate for the first two years of teacher preparation. The program is intended to prepare students to transfer to an early childhood, elementary, or selected secondary education programs at a four- year college or university in the state of Maryland. Students who receive the A.A.T. will have fulfilled their General Education requirements and earned acceptable scores on a state approved basic skills test. The A.A.T. offers a 2+2 program between community colleges and four-year colleges and universities, while enhancing our efforts at 2+2+2 collaborative programs with local K-12 schools.

Associate of Fine Arts (A.F.A.). This degree recognizes mastery in the professional arts in programs that have as a primary goal transfer to a bachelor of fine arts (B.F.A.) program, are similar to the first two years of a B.F.A. program, and require at least 60 percent of the course credit to be in studio work and related areas. The College offers two A.F.A. degrees: graphic design and studio art.

Certificate

A certificate recognizes successful completion of a sequence of courses (a minimum of 12 credits) that focus on the development of specific technical skills.

Letter of Recognition

The letter of recognition is designed to provide students with a confirmation of the completion of a sequence of courses (6-11 credits) that teach focused skills and competencies in specific career areas. Students seeking only a letter of recognition, who are not planning to pursue a certificate or associate's degree at the College, are considered non-degree seeking students and are not eligible for financial aid.

Campus Curricula Offerings

Some curricula are offered at all campuses, and some are limited to one or two. In this section of the catalog, when a curriculum is offered at a specific campus, it is indicated by G for Germantown, R for Rockville, or T for Takoma Park/Silver Spring. If there is no campus designation, all campuses may offer the curriculum. Students may take appropriate courses offered on any campus to meet the requirements of the curriculum in which they are enrolled.

Curricula

Choosing a Curriculum

Curricula at the College are designed to serve a variety of individual educational needs, including preparation for transfer, and for specific technical or semiprofessional careers. The first step toward academic and career success is to select a field that matches a person's skills, needs, interests, goals, experience, and training. To further explore these options, students may seek assistance through Career Services, Counseling and Advising, academic faculty in areas of interest, workshops on career exploration, and career development courses.

Undecided Students

Students uncertain of their goals may obtain career exploration assistance at Montgomery College. Assistance may be provided by the Career Centers, counseling services, academic faculty in areas of interest, workshops on career exploration, and career development courses. Students should also read the following section on selecting a major. If you are undecided as to which program will best suit your career or transfer needs, explore the Fields of Study. Using the general studies curriculum or the Fields of Study, the student and counselor can design a program of courses to meet career or transfer goals.

Selecting a Major

Many students come to college without clearly defined career goals. The first step toward academic and career success is to select a field that matches a person's skills, interests, and values. There are several computerized guidance programs and pencil-and- paper inventories that can help students identify interests and match them with possible occupations. These programs are available in the Career Center on any campus.

Learning Assessment

The College is committed to promoting student success and ensuring student retention while also continuing the institution's excellence, accountability, and continuous learning. To this end, practices and procedures have been established to ensure that faculty and administrators systemically and methodically assess student learning outcomes and review programs. All departments and administrative offices participate in the College Area Review, which evaluates each area of the College for collective improvement. In compliance with Middle States standards, the College requires that programs undergo Outcomes Assessment to assure that students are meeting program learning outcomes.

For more information about the College Area Review please visit the website www.montgomerycollege.edu/car.

For more information about Outcomes Assessment, visit www.montgomerycollege.edu/outcomes.

Transfer to a Four-Year Institution

Each year, Montgomery College students transfer to colleges and universities across the country. Students interested in transferring should consult with a counselor or an academic advisor as early in their educational program as possible. Counselors can assist with course selection and academic planning to maximize the transfer of credit to four-year institutions.

For students who plan to continue their education and transfer in a specific discipline (e.g., business administration, computer science, engineering, etc.), the College offers degrees that provide the first two years of a four- year degree program as well as a general studies curriculum. In cases where Montgomery College does not offer a particular major, the general studies curriculum can be used to meet transfer requirements. Counselors and academic advisors can assist students in planning; however, it is the responsibility of the students to meet the requirements of their intended transfer institutions. Students are encouraged to meet with a counselor or academic advisor each semester to discuss the most appropriate transfer plan.

Transfer Agreements

The College is dedicated to creating partnerships with four- year colleges and universities that create a clear transfer pathway for students. One important way of doing this is by forming transfer agreements, official agreements that match coursework between schools. These are designed to help students make a smooth transition when transferring from the College to a four-year institution. Some agreements state that four-year schools will accept an entire associate's degree from the College. Other agreements outline specific courses to take at the College for transfer. Students can view the College's existing transfer agreements at www.montgomerycollege.edu/agreements.

Transfer Guidance

Curricula

Montgomery College offers a variety of resources for transfer planning, including individual transfer advising, on campus visits from partner institutions, a transfer scholarship month, and Transfer Fairs held every fall and spring. Web planning resources include:

- The Montgomery College transfer website (www.montgomerycollege.edu/transfer) includes information to help students research, select, and apply to colleges, and navigate the transfer process.
- ARTSYS (http://artsys.usmd.edu), the articulation system for Maryland colleges and universities, indicates which Montgomery College courses will be accepted for credit at most instate transfer institutions.

Career and Technical Education

The College offers 43 CTE degree programs. They are highly specialized technical education programs that are aligned with the requirements of the occupation. The degree also includes a strong component of general education courses to increase students' breadth of knowledge. The College also offers non- degree certificate curricula, in which students develop technical skills and expertise in a specific area.

Students enrolling in career/technical curricula should be aware that, in some of these curricula, there are specialized courses that are not usually acceptable for transfer to four-year colleges and universities.

The General Education Program

In the belief that all students who earn a degree from Montgomery College should exhibit both breadth and depth of knowledge, the College requires a General Education component in all degree programs. The goal of the General Education program is to provide all students, in both career and transfer curricula, with the foundation to live a productive life, to be a citizen of the world, to appreciate aesthetic values, and to engage in life- long learning in a continually changing world. For this reason, the General Education program requires courses across the arts and humanities, behavioral and social sciences, and natural sciences.

After completing the program, students will develop five competencies: skills in written and oral communication, scientific and quantitative reasoning, critical analysis and reasoning, technological competency, and information literacy. Students will also develop an awareness of the arts and an understanding of their personal, social, and civic responsibilities.

Global and Cultural Perspective Requirement

Students in associate of arts (A.A.) and associate of science (A.S.) programs will include one course designated as a "global and cultural perspectives" course from within the general education distribution areas. The course has a primary focus or provides in-depth study that leads students to an appreciation of the differences, as well as commonalities, among people by studying the ideas, history, values, and/or creative expressions of diverse groups.

Transfer of General Education Courses

Montgomery College's General Education program meets the Maryland Higher Education Commission's (MHEC) Academic Regulations on General Education and Transfer and the Middle States accreditation General Education guidelines. MHEC transfer guidelines state that general education courses taken at one Maryland public college or university will transfer without further review to another Maryland public institution without the need for a course-to-course match. That is, a course designated as general education by a sending institution will fulfill a general education category requirement even if the receiving institution does not offer that specific course among general education choices.

Students interested in transferring to private or out-of-state schools should select General Education courses carefully. For more information about the General Education program and transfer, please visit www.montgomerycollege.edu/gened.

Statewide Programs

The Maryland Higher Education Commission designates some community college programs as statewide programs. Students may enroll in any of these programs at the same rates as in-county residents if a particular program is not offered by the local community college, or if the student cannot enroll due to an enrollment limit. These programs are subject to change; apply at the Office of Admissions and Records.

Please see MHEC's website at https://mhec.state.md.us for the most current listing of statewide programs and Health Workforce Shortage Programs.

Health Workforce Shortage Programs

Health Workforce Shortage Programs have been identified by the Maryland Higher Education Commission. Maryland residents may enroll in any of these programs and pay the in-county tuition rate of each school on a space-available basis. These programs are subject to change.

Please see MHEC's website at https://mhec.state.md.us for the most current listing of statewide programs and Health Workforce Shortage Programs.

General Education Program

In order to meet General Education requirements, courses must be on the General Education course list when taken by the student.

Component	Number of Credits Required			
Foundation	**AA /AAT**	**AAS**	**AFA**	**AS**
• English	3	3	3	3
• Mathematics	3	3	3	3
Distribution	**AA/AAT**	**AAS**	**AFA**	**AS**
• Arts	3	0	3	3
• Humanities	3	0 Note: One 3-credit Arts or Humanities Gen Ed course	3	3
• Behavioral and Social Sciences	6*	3	3	6*
• Natural Sciences	7**	4**	4**	8**
Institutional Requirement (GEIR)	**AA/AAT**	**AAS**	**AFA**	**AS**
Two GEIR courses required. Students select one course from two of the following categories: • Any COMM General Education course • Any HLTH General Education course ‡ • Any ARTD or HUMD General Education course	6	0	0	0
General Education Elective (GEEL)* **	**AA/AAT**	**AAS**	**AFA**	**AS**
• Choose additional General Education courses from any category	0	4-6	3	3
Total Credits	31-33	20-22	22	29-31

In all AA and AS curricula, students are required to select at least one course with a global and cultural perspectives designation.

* Behavioral and social sciences distribution (BSSD) courses must come from different disciplines.

** At least one lab science course must be taken to fulfill the natural sciences requirement.

*** Major programs may recommend or require specific General Education electives for their respective degree requirements. In the AS degrees, students must have 8 credits of natural sciences through a combination of NSLD, NSND, and GEEL, with at least 1 course as a lab science.

‡ Find HLTH in BSSD and GEIR sections.

‡‡ MATH 130 is required for the associate of arts in teaching (AAT). Many transfer institutions will not accept MATH 130 as a general education math course if an AAT is not completed.

[GCP] Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement.

Foundation and Distribution Courses

English Foundation (ENGF)

ENGL 102 Critical Reading, Writing, and Research
3 semester hours

OR

ENGL 103 Critical Reading, Writing, and Research in the Work Place
3 semester hours

Mathematics Foundation (MATF)

MATH 115 Mathematical Ideas
3 semester hours

MATH 117 Elements of Statistics
3 semester hours

MATH 120 Survey of College Mathematics
3 semester hours

MATH 130 Elements of Mathematics I: Mathematical Reasoning and Number Systems
4 semester hours ‡‡

MATH 150 Elementary Applied Calculus I
4 semester hours

MATH 165 Precalculus
4 semester hours

MATH 170 Calculus for Life Sciences I
4 semester hours

MATH 181 Calculus I
4 semester hours

Arts Distribution (ARTD/GEIR)

ARTT 100 Introduction to Drawing
3 semester hours

ARTT 102 Introduction to 2D Design
3 semester hours

ARTT 112 Digital Photography for Fine Arts I
3 semester hours

ARTT 116 Digital Tools for the Visual Arts
4 semester hours

ARTT 120 Ceramics I
3 semester hours [GCP]

ARTT 123 Crafts
3 semester hours

ARTT 127 Art Appreciation (Art in Culture)
3 semester hours [GCP]

ARTT 152 Photographic Expression I
3 semester hours

ARTT 200 Art History: Ancient to 1400
3 semester hours [GCP]

ARTT 201 Art History: 1400 to Present
3 semester hours [GCP]

ARTT 225 Woodcut: Global Printmaking
3 semester hours [GCP]

ARTT 270 Survey of African Art
3 semester hours [GCP]

ARTT 272 Survey of Asian Art
3 semester hours [GCP]

DANC 100 Introduction to Dance
3 semester hours [GCP]

ENGL 235 Film and Literature
3 semester hours [GCP]

ENGL 264 Introduction to Creative Writing of Fiction
3 semester hours

ENGL 272 Introduction to Creative Writing of Poetry
3 semester hours

FILM 110 Introduction to Film
3 semester hours

GDES 116 Digital Tools for the Visual Arts
4 semester hours

ISTD 173 Integrated Arts
3 semester hours [GCP]

MUSC 110 Listening to Music
3 semester hours

MUSC 117 World Music
3 semester hours [GCP]

MUSC 125 History of Jazz
3 semester hours [GCP]

MUSC 131 American Popular Music
3 semester hours

MUSC 184 Introduction to Music Theory
3 semester hours

PHOT 161 Introduction to Digital Photography
3 semester hours

THET 100 Introduction to the Theatre
3 semester hours [GCP]

THET 110 Fundamentals of Acting
3 semester hours

TVRA 134 Media Appreciation
3 semester hours

Humanities Distribution (HUMD/GEIR)

ARAB 101 Elementary Arabic I
5 semester hours [GCP]

ARAB 102 Elementary Arabic II
5 semester hours [GCP]

Foundation and Distribution Courses

ASLP 100	ASL I *3 semester hours* [GCP]
ASLP 110	ASL II *3 semester hours* [GCP]
CHIN 101	Elementary Chinese I *5 semester hours* [GCP]
CHIN 102	Elementary Chinese II *5 semester hours* [GCP]
CHIN 201	Intermediate Chinese I *5 semester hours* [GCP]
CHIN 202	Intermediate Chinese II *5 semester hours* [GCP]
COMM 108	Foundations of Human Communication *3 semester hours*
COMM 112	Business and Professional Speech Communication *3 semester hours*
ENGL 122	Introduction to World Mythology *3 semester hours* [GCP]
ENGL 190	Introduction to Literature *3 semester hours* [GCP]
ENGL 201	Introduction to World Literature I *3 semester hours* [GCP]
ENGL 202	Introduction to World Literature II *3 semester hours* [GCP]
ENGL 205	Masterpieces of Asian Literature *3 semester hours* [GCP]
ENGL 208	Women in Literature *3 semester hours* [GCP]
ENGL 211	Survey of American Literature I *3 semester hours* [GCP]
ENGL 212	Survey of American Literature II *3 semester hours* [GCP]
ENGL 213	Survey of British Literature I *3 semester hours*
ENGL 214	Survey of British Literature II *3 semester hours*
ENGL 220	The American Novel *3 semester hours* [GCP]
ENGL 226	Survey of African American Literature I *3 semester hours* [GCP]
ENGL 227	Survey of African American Literature II *3 semester hours* [GCP]
ENGL 230	Introduction to Modern Drama *3 semester hours* [GCP]
ENGL 233	The Short Story *3 semester hours* [GCP]
ENGL 241	American Literature of Nature and the Environment *3 semester hours* [GCP]
FREN 101	Elementary French I *3 semester hours* [GCP]
FREN 102	Elementary French II *3 semester hours* [GCP]
FREN 201	Intermediate French I *3 semester hours* [GCP]
FREN 202	Intermediate French II *3 semester hours* [GCP]
FREN 207	Readings in French Literature *3 semester hours* [GCP]
FREN 208	Readings in French Literature II *3 semester hours* [GCP]
GERM 101	Elementary German I *3 semester hours* [GCP]
GERM 102	Elementary German II *3 semester hours* [GCP]
GHUM 101	Introduction to Global Humanities *3 semester hours* [GCP]
HIND 101	Elementary Hindi I *5 semester hours* [GCP]
HIND 102	Elementary Hindi II *5 semester hours* [GCP]
HIST 112	Women in World History *3 semester hours* [GCP]
HIST 114	The World in the 20th Century *3 semester hours* [GCP]
HIST 116	World History: A Comparative Survey from the Ancient World to A.D. 1500 *3 semester hours* [GCP]
HIST 117	World History: A Comparative Survey from A.D. 1500 to the Present *3 semester hours* [GCP]
HIST 146	History of the Ancient World *3 semester hours*
HIST 147	History of Europe from the Fall of Rome to the 17th Century *3 semester hours*
HIST 148	History of Europe from the 17th Century to the Present *3 semester hours*
HIST 200	History of the United States, a Survey Course: from Colonial Times to 1865 *3 semester hours*

Foundation and Distribution Courses

HIST 201 History of the United States, a Survey Course: from 1865 to the Present
3 semester hours

HIST 205 Technology and Culture in the Western World
3 semester hours

HIST 211 History of Latinos in the United States
3 semester hours [GCP]

HIST 228 Women in the Western World
3 semester hours [GCP]

HIST 235 The History of African Americans to 1865
3 semester hours [GCP]

HIST 236 The History of African Americans Since 1865
3 semester hours [GCP]

HIST 240 Civil Rights in America
3 semester hours [GCP]

HIST 245 Latin American History
3 semester hours [GCP]

HIST 247 East Asian Civilization
3 semester hours [GCP]

HIST 250 Modern Asia
3 semester hours [GCP]

HIST 252 The United States and 20th Century World Affairs
3 semester hours [GCP]

HIST 262 The History of England from 55 B.C. to 1688
3 semester hours

HIST 263 The History of England from 1688 to the Present
3 semester hours [GCP]

HIST 265 African History to 1800
3 semester hours [GCP]

HIST 266 African History from 1800
3 semester hours [GCP]

ITAL 101 Elementary Italian I
3 semester hours [GCP]

ITAL 102 Elementary Italian II
3 semester hours [GCP]

JAPN 101 Elementary Japanese I
4 semester hours [GCP]

JAPN 102 Elementary Japanese II
4 semester hours [GCP]

KORA 101 Elementary Korean I
3 semester hours [GCP]

KORA 102 Elementary Korean II
3 semester hours [GCP]

KORA 201 Intermediate Korean I
3 semester hours [GCP]

LATN 101 Elementary Latin I
3 semester hours [GCP]

LATN 102 Elementary Latin II
3 semester hours [GCP]

LING 200 Introduction to Linguistics
3 semester hours [GCP]

PHIL 101 Introduction to Philosophy
3 semester hours

PHIL 140 Introduction to the Study of Ethics
3 semester hours

PHIL 143 Introduction to the Study of Religion
3 semester hours [GCP]

PHIL 190 Elementary Logic and Semantics
3 semester hours

PHIL 201 Morality and Contemporary Law
3 semester hours

PHIL 205 Philosophy in Literature
3 semester hours [GCP]

PHIL 212 Women in Philosophy I
3 semester hours [GCP]

PORT 101 Elementary Portuguese I
3 semester hours [GCP]

PORT 102 Elementary Portuguese II
3 semester hours [GCP]

RUSS 101 Elementary Russian I
3 semester hours [GCP]

RUSS 102 Elementary Russian II
3 semester hours [GCP]

SPAN 101 Elementary Spanish I
3 semester hours [GCP]

SPAN 102 Elementary Spanish II
3 semester hours [GCP]

SPAN 103 Intensive Elementary Spanish
4 semester hours [GCP]

SPAN 106 Spanish for Heritage Speakers
4 semester hours [GCP]

SPAN 201 Intermediate Spanish I
3 semester hours [GCP]

SPAN 202 Intermediate Spanish II
3 semester hours [GCP]

SPAN 203 Intensive Intermediate Spanish
4 semester hours [GCP]

SPAN 215 Advanced Spanish Conversation and Composition

Foundation and Distribution Courses

	3 semester hours [GCP]
SPAN 216	Advanced Readings in Spanish: Introduction to Latin American Literature *3 semester hours* [GCP]

Behavioral & Social Sciences Distribution (BSSD)

ANTH 201	Introduction to Sociocultural Anthropology *3 semester hours* [GCP]
ANTH 240	Introduction to Archaeology *3 semester hours* [GCP]
ANTH 256	World Cultures *3 semester hours* [GCP]
ASLP 121	Introduction to the Deaf Community and Culture *3 semester hours* [GCP]
CCJS 110	Administration of Justice *3 semester hours* [GCP]
ECON 105	Basic Economics *3 semester hours* [GCP]
ECON 201	Principles of Economics I *3 semester hours*
ECON 202	Principles of Economics II *3 semester hours*
GEOG 101	Introduction to Geography *3 semester hours*
GEOG 105	Cultural Geography *3 semester hours*
GEOG 113	Economic Geography *3 semester hours*
GEOG 130	Global Geography *3 semester hours* [GCP]
GNDS 101	Introduction to Gender Studies *3 semester hours* [GCP]
GNDS 102	Understanding LGBT Identities *3 semester hours* [GCP]
HLTH 131	Drugs and Lifestyle Wellness *3 semester hours*
HLTH 160	The Science and Theory of Health *3 semester hours*
HLTH 170	Introduction to Aging *3 semester hours* [GCP]
HLTH 212	Controlling Stress and Tension *3 semester hours*
HLTH 225	Introduction to Health Behaviors *3 semester hours*
POLI 101	American Government *3 semester hours*
POLI 105	Introduction to Political Science *3 semester hours* [GCP]
POLI 203	International Relations *3 semester hours* [GCP]
POLI 206	Political Ideologies *3 semester hours* [GCP]
POLI 211	Comparative Politics and Governments *3 semester hours* [GCP]
POLI 256	Politics of the Developing World *3 semester hours* [GCP]
PSYC 100	General Psychology *3 semester hours*
SOCY 100	Introduction to Sociology *3 semester hours* [GCP]
SOCY 105	Social Problems and Issues *3 semester hours* [GCP]
SOCY 208	Sociology of Gender *3 semester hours* [GCP]
SOCY 240	Sociology of Age and Aging *3 semester hours* [GCP]
SOCY 243	The Sociology of Sport *3 semester hours* [GCP]
WMST 101	Introduction to Women's Studies *3 semester hours* [GCP]

Natural Sciences Distribution with Lab (NSLD)

AOSC 105	Meteorology: An Introduction to Weather *4 semester hours*
ASTR 101	Introductory Astronomy *4 semester hours*
BIOL 101	General Biology *4 semester hours*
BIOL 105	Environmental Biology *3 semester hours* [GCP]
BIOL 106	Environmental Biology Laboratory *1 semester hour* [GCP]
BIOL 130	The Human Body *3 semester hours*
BIOL 131	The Human Body Laboratory *1 semester hour*
BIOL 150	Principles of Biology I *4 semester hours*
BIOL 212	Human Anatomy and Physiology I *4 semester hours*
BIOL 213	Human Anatomy and Physiology II *4 semester hours*

Foundation and Distribution Courses

CHEM 105	Chemistry and Society *3 semester hours* [GCP]
CHEM 106	Chemistry and Society Laboratory *1 semester hour*
CHEM 131	Principles of Chemistry I *4 semester hours*
CHEM 132	Principles of Chemistry II *4 semester hours*
CHEM 150	Essentials of Organic and Biochemistry *4 semester hours*
GEOG 124	Physical Geography *4 semester hours*
GEOL 101	Physical Geology *4 semester hours*
GEOL 102	Historical Geology *4 semester hours*
HORT 100	Introduction to Plant Sciences *4 semester hours*
PHYS 110	Sound and Light in the Arts *4 semester hours*
PHYS 203	General Physics I (Non-Engineering) *4 semester hours*
PHYS 204	General Physics II (Non-Engineering) *4 semester hours*
PHYS 262	General Physics II: Electricity and Magnetism *4 semester hours*
PHYS 263	General Physics III: Waves, Optics, and Modern Physics *4 semester hours*
PSCI 101	Physical Science I *4 semester hours*
PSCI 102	Physical Science II *4 semester hours*

Natural Sciences Distribution without Lab (NSND)

ANTH 215	Human Evolution and Archaeology *3 semester hours* [GCP]
AOSC 100	Weather and Climate *3 semester hours*
BIOL 105	Environmental Biology *3 semester hours* [GCP]
BIOL 130	The Human Body *3 semester hours*
CHEM 105	Chemistry and Society *3 semester hours* [GCP]
ENES 100	Introduction to Engineering Design *3 semester hours*
NUTR 101	Introduction to Nutrition *3 semester hours*
PHYS 105	Conceptual Physics *3 semester hours*
PHYS 161	General Physics I: Mechanics and Heat *3 semester hours*

Institutional Requirement (GEIR)

COMM 108	Foundations of Human Communication *3 semester hours*
COMM 112	Business and Professional Speech Communication *3 semester hours*
HLTH 105	Personal and Community Health *3 semester hours*
HLTH 121	Nutrition for Fitness and Wellness *3 semester hours*
HLTH 125	Personalized Health Fitness *3 semester hours*
HLTH 131	Drugs and Lifestyle Wellness *3 semester hours*
HLTH 150	Fitness and Nutrition for Weight Management *3 semester hours*
HLTH 160	The Science and Theory of Health *3 semester hours*
HLTH 170	Introduction to Aging *3 semester hours* [GCP]
HLTH 200	Health Issues in Human Sexuality *3 semester hours* [GCP]
HLTH 212	Controlling Stress and Tension *3 semester hours*
HLTH 215	Women's Health *3 semester hours* [GCP]
HLTH 225	Introduction to Health Behaviors *3 semester hours*

Notes:

ACCOUNTING

Accounting Certificate: 167

: 167

The accounting certificate curriculum is designed to serve those students who desire to upgrade their professional competence. Course work in the accounting certificate curriculum is primarily intended to satisfy the Maryland Board of Public Accountancy's accounting education requirements for CPA licensure. Course work in the accounting certificate will also satisfy the Office of Personnel Management's education requirements for accounting employment with the U.S. Federal government.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

ACCT	221	Accounting I	4*	ACCT	231	Intermediate Accounting I	4*
ACCT	222	Accounting II	4*	Select At Least 12 Credits From The Following Program Electives: , , , , , , , , , , , .			

TOTAL CREDIT HOURS: 24

* Required certificate courses (, , or) transferred to Montgomery College from other institutions at fewer than 4 semester hours will satisfy certificate requirements provided certificate semester hours total at least 24 semester hours.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify, measure, record, and communicate financial information relating to an organization.
- Interpret, analyze, and evaluate financial information relating to an organization.
- Meet the qualifications for Federal government accounting programs and upgrade professional competence.

AMERICAN SIGN LANGUAGE

American Sign Language AA: 608

(R): 608

The associate of arts degree program in American Sign Language is a transfer-degree program designed for students who plan to enter fields in which they would work with Deaf people on a daily basis. The program fosters the acquisition of the language and culture of the Deaf in the United States and Canada. Following the national standards established by the American Council on the Teaching of Foreign Languages, the program focuses on communication through the study of semantics, syntax, pragmatics, and culture. Following program completion, students would transfer to a four-year degree program majoring in American Sign Language, Deaf studies, Deaf education, interpreter education, or social work.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
PSYC	100	General Psychology	3(BSSD)
ASLP	100	ASL I	3(HUMD)
ASLP	105	Visual Gestural Communication	3
ASLP	106	Fingerspelling and Number Use in ASL	3

Second Semester

English Foundation *3 semester hours (ENGF)*
Mathematics Foundation *3 semester hours (MATF)*

ASLP	110	ASL II	3(GEIR)
ASLP	121	Introduction to the Deaf Community and Culture	3(BSSD)

Natural Science Distribution with Lab *4 semester hours (NSLD)*

Third Semester

Arts Distribution *3 semester hours (ARTD)*

Natural Sciences Distribution *3 semester hours (NSD)*

ASLP	200	ASL III	3
ASLP	205	Structural ASL I	3
HLTH	105	Personal and Community Health	3(GEIR)

Fourth Semester

ASLP	206	Structural ASL II	3
ASLP	207	ASL Translation and Interpretation	3
ASLP	210	ASL IV	3
ASLP	269	Independent Study in ASL	1-4(2 semester hours)
ASLP	285	Practicum in ASL	3

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate an appreciation of the culture and cultural practices of the Deaf community and support ASL as the visual language of the Deaf community.
- Effectively utilize signed communicative and interpreting skills learned in the classroom in general situations in and out of the Deaf community.
- Achieve an overall proficiency rating in all skill areas, both linguistic and pragmatic, of 2.5 on the MC American Sign Language Proficiency Assessment (MC-ASLPA).

American Sign Language Certificate: 220

(R): 220

The certificate program in American Sign Language is designed to provide students with a foundation in ASL and would benefit those pursuing business or other service-oriented fields where they might be called upon to communicate directly with Deaf clients. The program also serves students preparing to enter an Interpreter Training Program; students whose first language is ASL and who desire to learn the structure and syntax of the language; and students desiring to improve their understanding of Deaf culture to better communicate with Deaf family, friends, neighbors, and community.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

ASLP	100	ASL I	3
ASLP	105	Visual Gestural Communication	3
ASLP	106	Fingerspelling and Number Use in ASL	3
ASLP	110	ASL II	3
ASLP	121	Introduction to the Deaf Community and Culture	3
ASLP	200	ASL III	3
ASLP	205	Structural ASL I	3
ASLP	206	Structural ASL II	3
ASLP	210	ASL IV	3

TOTAL CREDIT HOURS: 27

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Integrate and recognize ASL registers.
- Demonstrate competency in ASL expressive and receptive skills at a minimum level 2 proficiency.
- Demonstrate competency in visual gestural communication and finger spelling.
- Demonstrate support and respect for ASL as the visual language of the Deaf community.
- Achieve an overall proficiency rating in all skill areas, both linguistic and pragmatic, of 2.0 on the MC American Sign Language Proficiency Assessment (MC-ASLPA).

APPLIED GEOGRAPHY

Applied Geography AAS: 344

(R): 344

This curriculum is designed primarily for the student who desires to pursue a profession in geography, cartography, geographic education, or geographic information systems (GIS). The curriculum provides the student with an opportunity to test his or her interests prior to making a commitment for advanced study. Completion of all requirements will lead to the AAS.

Course work in this curriculum (involving fieldwork, use of computer technology, mapping projects, and research) will explore four related disciplines. Geography, the first discipline, is the study of places; it enables the graduate to function as a paraprofessional in a broad range of studies. The geography graduate assists in performing research and compiling data in activities connected with cultural and physical components of the environment, as well as city planning, marketing, transportation, and domestic and foreign area studies. Cartography, the second discipline, is the art and science of map construction; its skills enable the graduate to use, compile, and construct maps and related cartographic products. Geographic education, the third discipline, provides prospective teachers and currently employed teachers seeking to meet certification requirements in Montgomery County and Maryland with exposure to geographic concepts and methodology. GIS, the fourth discipline, combines the use of computer technology with the field of geography to help analyze and problem-solve spatial information.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
GEOG	101	Introduction to Geography	3(BSSD)
GEOG	240	Introduction to Cartography	3
General Education Elective *4 semester hours (GEEL)*			

Third Semester

GEOG	105	Cultural Geography	3
GEOG	124	Physical Geography	4
GEOG	250	Interpretation of Geographic Imagery: Use and Analysis	3
Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*			
Program Elective *3 semester hours* ‡			

Second Semester

English Foundation *3 semester hours (ENGF)*			
GEOG	113	Economic Geography	3(BSSD)
GEOG	130	Global Geography	3
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			
Elective *3 semester hours*			

Fourth Semester

GEOG	235	Preserving Our Natural Heritage: The Geography of Conservation and Natural Resources	3
OR			
GEOG	222	Geography of the United States	3
Behavioral and Social Sciences Distribution *3 semester hours*			
Program Elective *3 semester hours* ‡			
Program Elective *3 semester hours* ‡			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

‡ Select from the following program electives: GEOG 211, GEOG 251, GEOG 255, GEOG 260 or GEOG 270.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Examine geography as a spatial concept and describe what it entails and how it is part of daily life.
- Identify where places are, including continents, countries, states, regions, cities, districts, islands, water bodies, physical features, and other defined locations.
- Interpret maps and atlases effectively and successfully use a variety of coordinate systems.
- Use maps and atlases as tools.
- Demonstrate geographic phenomena.
- Analyze, discuss, and compose key principles of geography through original research as well as formal and informal writing assignments.

Cartography and Geographic Information Systems Certificate: 184

(R): 184

Training in cartography and geographic information systems enables the student to develop, construct, and use maps and other imagery to solve problems relating to the earth, its resources, and its development. These skills are used by professionals employed in federal mapping and related agencies in the Washington metropolitan region.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

GEOG	101	Introduction to Geography	3
GEOG	240	Introduction to Cartography	3
GEOG	250	Interpretation of Geographic Imagery: Use and Analysis	3
GEOG	251	Principles of Map Design	3
GEOG	255	Introduction to Computer Mapping	3
GEOG	260	Introduction to Geographic Information Systems	3
GEOG	270	Advanced Geographic Information Systems	3

TOTAL CREDIT HOURS: 21

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Use various mapping software packages.
- Apply their enhanced cartographic skills.
- Use maps as tools.
- Conduct research and be familiar with the various research resources available, i.e., county, city, and federal government; the private sector; and online data.
- Have gained an appreciation of the various job opportunities available through attending trips to various cartographic facilities.
- Integrate other software as appropriate into their mapping projects, e.g., Adobe Illustrator, Photoshop, and other graphics packages.
- Use various techniques that improve their cartographic, GIS, and spatial analytic skills.
- Create portfolios and PowerPoint presentations and give presentations that strengthen their communication, interpersonal, and articulation skills.
- Present and explain their work at map design competitions and at poster presentations at conferences.

Geographic Education Certificate: 183

(R): 183

This certificate curriculum is designed primarily for the student who desires to pursue a profession in geographic education. Geographic education is a specialization in the field of geography. This facet of the curriculum is for students seeking to pursue a degree in teaching or to provide exposure to geographic concepts and methodology for teachers seeking to meet certification requirements in Montgomery County and Maryland. This curriculum provides students with an opportunity to test their interest prior to making a commitment for advanced study. Coursework in this curriculum will involve fieldwork, use of computer technology, mapping exercises, and extensive reading.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

GEOG	101	Introduction to Geography	3
GEOG	105	Cultural Geography	3
GEOG	124	Physical Geography	4
GEOG	130	Global Geography	3
GEOG	235	Preserving Our Natural Heritage: The Geography of Conservation and Natural Resources	3
Program Elective *3 semester hours* ‡			

TOTAL CREDIT HOURS: 19

‡ Select GEOG 113, GEOG 211, GEOG 222, or GEOG 250.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Use various geographic concepts and methodologies that will condition them for advanced degrees in geography.
- Read, interpret, and analyze maps.
- Conduct research and present.
- Teach geography in the K-12 curriculum more effectively.
- Use basic geographic information systems (GIS) software designed for grades K-12.

ARCHITECTURAL TECHNOLOGY

Architectural Technology Area of Concentration, Architectural/Construction Technology AAS: 302

(R): 302

There are two area of concentrations leading to the AAS in architectural and construction technology: architectural technology and management of construction. In addition, two certificates are offered: CAD for the building professional and management of construction. Both of the AAS area of concentrations are designed to prepare graduates for entry into paraprofessional positions in the construction industry and architecture upon completion of the curriculum. *(See Construction Management)*

Graduates of this AS area of concentration continue their education toward professional degrees or seek employment immediately as paraprofessionals. Technicians specializing in architecture and construction are prepared to assist and work with architects, contractors, and related professionals.

Successful graduates involve themselves in many specialized aspects of the construction industry, including preparation of contract drawings, supervision and/or inspection of construction work, and contract administration. Computer drafting skills provide extensive opportunities for graduates.

Students planning to transfer to four-year schools of architecture should be aware that not all courses in the curriculum may transfer.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence follows. All students should review the Program Advising Guide and consult with the architectural technology program coordinator prior to registration.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	150	Elementary Applied Calculus I	4(MATF)
ARCH	101	Introduction to Architecture and the Built Environment	3
ARCH	103	Building Technology and Documentation	3
CMGT	100	Construction Methods and Materials	3

Third Semester

ARCH	200	CAD: 3D Presentation	4
ARCH	201	Introduction to Architectural Design	4
ARTT	265	Architectural History: Ancient to 1400	3
PHYS	203	General Physics I (Non-Engineering)	4(NSLD)

Second Semester

English Foundation *3 semester hours (ENGF)*

ARCH	104	Introduction to Architectural Graphics	3
ARCH	183	CAD: Architectural Applications	4
COMM	108	Foundations of Human Communication	3(GEEL)
OR			
COMM	112	Business and Professional Speech Communication	3(GEEL)

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*

Fourth Semester

ARCH	202	CAD: REVIT I	4
ARCH	203	Principles of Sustainability	3
OR			
CMGT	290	Professional Practicum	1 ‡
ARTT	266	Architectural History: 1400 to Present	3

Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*

TOTAL CREDIT HOURS: 60

* ENGL 101, if needed for ENGL 102/ENGL 103, or elective.

‡ CMGT 290 must be taken three times for credit.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Synthesize social, economic, environmental, material, and aesthetic issues to create architectural designs.
- Document design strategies using a variety of graphic verbal and written forms.
- Analyze various construction technologies and materials and demonstrate mastery in application in graphic format.
- Demonstrate an understanding of building design by means of resolving architectural space planning, aesthetic, and construction details issues in design projects such as residential, commercial, or public structures.

CAD for the Building Professional Certificate: 203

(R): 203

This certificate curriculum prepares students for entry-level positions in architectural firms or construction-related businesses by providing an opportunity to learn computer-aided drafting (CAD) skills, while developing a preliminary understanding of building technology. This curriculum also serves professionals currently in the architectural field who are seeking career advancement through the development of intensive technical and creative CAD skills and experience. These courses can be applied to the architectural technology AAS area of concentration.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

ARCH	103	Building Technology and Documentation	3
ARCH	183	CAD: Architectural Applications	4
ARCH	200	CAD: 3D Presentation	4
ARCH	202	CAD: REVIT I	4
CMGT	100	Construction Methods and Materials	3
ENGL	101	Introduction to College Writing	3*

TOTAL CREDIT HOURS: 27

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103,or elective.

* *Course meets General Education requirements.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Prepare construction documents in a variety of formats including hand drafting, 2D CAD [computer-aided drafting], 3D presentation and rendering, and 3D object based modeling.
- Demonstrate a thorough understanding of construction details and building sections.
- Differentiate between BIM software and non-object CAD software.
- Describe construction details in BIM documents.
- Prepare BIM construction documents based on designs submitted by employers or clients.
- Revise BIM construction documents.
- Arrange construction information in a BIM format.

Sustainability Letter of Recognition: 820

(R): 820

This program is designed for students who wish to develop skills or knowledge in sustainable design and implementation in the environment. People in government, business, construction, and environmental organizations would benefit from this letter. Students will gain an understanding of the implementations and requirements concerning the built environment. A grade of C or better is required for each course.

PROGRAM REQUIREMENTS:
All students should review the Advising Worksheet and consult an advisor.

ARCH	203	Principles of Sustainability	3

TOTAL CREDIT HOURS: 6

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Assess the complexity of the design, construction, and management of buildings.
- Tabulate the theories of sustainability in terms of the site, water management, material and natural resources, alternate energies, and indoor air quality.
- Demonstrate an ability to work effectively as a member of a team.
- Evaluate the importance of the environmental impact of buildings.
- Demonstrate skills necessary in the sustainable sector of the construction industry.
- Apply practical analysis skills.

ART

Art AA: 618

(R, TP/SS): 618

This is a liberal education degree that focuses on art within the context of a broad educational experience in the arts and humanities, the natural and physical sciences, and the social sciences that make up half of the program requirements. Therefore, it is a suitable degree for students who seek a general liberal arts degree with an art emphasis. This program will prepare students for transfer to a four-year institution to pursue a BA (bachelor of arts) degree, such as University of Maryland, College Park.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
ARTT	100	Introduction to Drawing	3(ARTD)
ARTT	102	Introduction to 2D Design	3(GEIR)
ARTT	200	Art History: Ancient to 1400	3

Third Semester

ARTT	263	Professional Practice for the Visual Artist	1
Humanities Distribution *3 semester hours (HUMD) ****			
Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***			
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			
Art Elective 3 semester hours †			

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
GDES	116	Digital Tools for the Visual Arts	4
ARTT	103	Introduction to 3D Design	3
ARTT	201	Art History: 1400 to Present	3
ARTT	204	Intermediate Drawing	3
OR			
ARTT	205	Figure Drawing I	3

Fourth Semester

COMM	108	Foundations of Human Communication	3(GEIR)
OR			
COMM	112	Business and Professional Speech Communication	3(GEIR)

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102, or art elective.

** Behavioral and social sciences distribution (BSSD) courses must come from different disciplines.

*** A world languages course is strongly recommended.

† Students interested in pursuing advanced study in art should choose 6 credits of ARTT electives. Students interested in pursuing advanced study in art education should choose 6 credits from ARTT 120 or ARTT 211 or one printmaking course from ARTT 225, ARTT 226, ARTT 227, ARTT 228, ARTT 230, or ARTT 233.

‡ Students should consult an advisor regarding the requirements of transfer institutions. A foreign language course is appropriate for students intending to transfer to UMD College Park BA in Art. ARTT 123 or ARTT 221 is appropriate for students interested in pursuing advanced study in art education. ARTT 221 is required for students pursuing MC AA in Art to Salisbury University at Shady Grove's BFA in Graphic Design Articulation Agreement.

Students are required to have at least 12 credits at 200 level.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Create a professional portfolio of artworks.
- Apply principles of visual organization in two and three dimensions.
- Utilize technical skills to achieve visual communication and expression in one or more art media.
- Analyze a work of art within art historical and contemporary context, and apply this awareness to one's own creative investigations.

Studio Art, AFA Statewide Program (Visual Arts): 910

: 910

This degree is studio intensive with two-thirds of the total credit hours in studio art courses, and one-third of the total credit hours in General Education courses. The program will prepare students for transfer to a four-year art institution to pursue a bachelor of fine arts degree.

All students should meet with their advisor to plan their program of study as well as their transfer and career goals.

Footnote: The Maryland Higher Education Commission designates some community college programs as statewide programs. A student may enroll in any of these programs at the same rates as in-county residents if his or her particular program is not offered by the local community college or if the student cannot enroll due to an enrollment limit. For more information on statewide programs, please see college catalog.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide€‹ and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
ARTT	100	Introduction to Drawing	3(ARTD)
ARTT	102	Introduction to 2D Design	3(GEEL)
ARTT	200	Art History: Ancient to 1400	3

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
GDES	116	Digital Tools for the Visual Arts	4
ARTT	205	Figure Drawing I	3
OR			
ARTT	204	Intermediate Drawing	3
ARTT	103	Introduction to 3D Design	3
ARTT	201	Art History: 1400 to Present	3

Third Semester

ARTT	263	Professional Practice for the Visual Artist	1
ARTT	211	Painting I	3
ARTT	221	Sculpture I	3
Printmaking Program Elective *3 semester hours ‡‡*			
OR			
ARTT	152	Photographic Expression I	3
Craft Program Elective *3 semester hours ‡*			

Fourth Semester

Humanities Distribution *3 semester hours (HUMD)*
Art Program Elective *3 semester hours ‡‡‡*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*
Art Program Elective *3 semester hours ‡‡‡*
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102, or art elective.

‡ Craft Program Electives: ARTT 120, ARTT 123, ARTT 245, or ARTT 247.

‡‡ Printmaking Program Electives: ARTT 225, ARTT 226, ARTT 227, ARTT 228, ARTT 230, or ARTT 233.

‡‡‡ Art Program Electives: Select any ARTT, GDES 134, GDES 210, or GDES 220.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Create a professional portfolio of artworks in a range of media.
- Apply principles of visual organization in a diverse range of two and three dimensional media.
- Utilize technical skills to achieve visual communication and expression in a range of art media, including painting and sculpture.
- Analyze a work of art within art historical and contemporary context, and apply this awareness to one's own creative investigations.

AUTOMOTIVE TECHNOLOGY

Automotive Electrical Systems Specialist Certificate: 162

(R): 162

This certificate curriculum prepares individuals for employment in the automotive service industry as an electrical systems technician. The curriculum also prepares individuals for the ASE A-6 (Electrical/Electronic Systems) and L-3 (Light Duty Hybrid/Electric Vehicle Specialist) automobile technician certification exams. Credits may be applied to the automotive technology AAS.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

AUTO	101	Introduction to Automotive Technology	3
AUTO	161	Automotive Electricity I	4
AUTO	262	Battery/Starting/Charging	3
AUTO	263	Chassis Circuits	4
AUTO	264	Hybrid/Electric Vehicles	2

TOTAL CREDIT HOURS: 16

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Obtain gainful employment in the automotive service and repair (or related) industry.
- Complete successfully the following National Institute for Automotive Service Excellence (ASE) automobile technician certification exam: A-6 (Electrical/Electronic Systems), L-3 (light duty Hybrid/Electric Vehicle Specialist).

Automotive Technology AAS: 307

(R): 307

The ASE-NATEF Master Certified curriculum prepares students for employment in the automotive service industry as a repair technician. The curriculum also prepares students for seven ASE automobile technician certification exams: ASE A-1, A-4, A-5, A-6, A-8, G-1, and L-1. Students are exposed to the following areas of expertise: undercar (brakes, suspension, steering, and alignment), electrical (engine and chassis/body), engineer performance (computer controlled fuel injection, ignition, and emission control systems), engine repair and HVAC (heating, ventilation, and air conditioning). All automotive (AUTO) classes consist of a lecture section and a lab (shop) section. Some AUTO classes also include a lab discussion section. Successful completion of the AAS, in addition to AUTO 130 and AUTO 220, will lead to: the powertrain specialist certificate, the undercar specialist certificate, the engine performance specialist certificate, and it also prepares students for all ASE automobile technician certification exams. This combination is designed for individuals seeking ASE Master Automobile Technician status.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
AUTO	101	Introduction to Automotive Technology	3
AUTO	161	Automotive Electricity I	4
AUTO	150	Brakes	5

Third Semester

AUTO	111	Engine Repair	4
AUTO	282	Engine Performance II	4
AUTO	140	Suspension and Steering	5
CHEM	105	Chemistry and Society	3(NSLD)
AND			
CHEM	106	Chemistry and Society Laboratory	1(NSLD)
OR			

Natural Sciences Distribution with Lab *4 semester hours (NSLD)*

Second Semester

English Foundation *3 semester hours (ENGF)*
Mathematics Foundation *3 semester hours (MATF)*

AUTO	180	Basic Engine Performance	4
AUTO	262	Battery/Starting/Charging	3

Fourth Semester

AUTO	200	Auto Tech Practicum	1
AUTO	283	Engine Performance III	4

Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*
General Education Elective *4 semester hours (GEEL)*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed, for ENGL 102/ENGL 103, or elective.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify and describe operation of automotive components and systems.
- Demonstrate safe and effective use of tools and equipment related to the automotive service and repair industry.
- Diagnose, service, and repair automotive systems and components.

Engine Performance Specialist Certificate: 160A

(R): 160A

This certificate curriculum prepares individuals for employment in the automotive service industry as an engine performance and repair technician. The curriculum also prepares individuals for ASE A-1 (Engine Repair), A-8 (Engine Performance), and L-1 (Advanced Engine Performance) automobile technician certification exams. Credits may be applied to the automotive technology AAS.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

First Semester

AUTO	101	Introduction to Automotive Technology	3
AUTO	161	Automotive Electricity I	4
AUTO	180	Basic Engine Performance	4

Second Semester

AUTO	111	Engine Repair	4
AUTO	282	Engine Performance II	4
AUTO	283	Engine Performance III	4

TOTAL CREDIT HOURS: 23

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Obtain gainful employment in the automotive service and repair (or a related) industry.
- Complete successfully the following National Institute for Automotive Service Excellence (ASE) automobile technician certification exams: A-1 (Engine Repair), A-8 (Engine Performance), and L-1 (Advanced Engine Performance Specialist).

Powertrain Specialist Certificate: 161A

(R): 161A

This certificate curriculum prepares individuals for employment in the automotive service industry as an engine, automatic trans/transaxle, manual trans/transaxle, and driveline repair technician. The curriculum also prepares individuals for ASE A-1 (Engine Repair), A-2 (Automatic Transmission/Transaxle), and A-3 (Manual Drive Train and Axles) automobile technician certification exams. Credits may be applied to the automotive technology AAS.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

First Semester				Second Semester			
AUTO	101	Introduction to Automotive Technology	3	AUTO	111	Engine Repair	4
AUTO	161	Automotive Electricity I	4	AUTO	130	Manual Drive Train and Axles	5
AUTO	180	Basic Engine Performance	4	AUTO	220	Automatic Transmission/ Transaxles	5

TOTAL CREDIT HOURS: 25

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Obtain gainful employment in the automotive service and repair (or related) industry.
- Complete successfully the following National Institute for Automotive Service Excellence (ASE) automobile technician certification exams: A-1 (Engine Repair), A-2 (Automatic Transmission/Transaxle), and A-3 (Manual Drive Train and Axles).

Undercar Specialist Certificate: 163A

(R): 163A

This certificate curriculum prepares individuals for employment in the automotive service industry as a brake, suspension, steering, and alignment technician. The curriculum also prepares individuals for ASE A-4 (Suspension and Steering) and A-5 (Brakes) automobile technician certification exams. Credits may be applied to the automotive technology AAS.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

AUTO	101	Introduction to Automotive Technology	3	AUTO	150	Brakes	5
AUTO	140	Suspension and Steering	5	AUTO	161	Automotive Electricity I	4

TOTAL CREDIT HOURS: 17

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Obtain gainful employment in the automotive service and repair (or related) industry.
- Complete successfully the following National Institute for Automotive Service Excellence (ASE) automobile technician certification exams: A-4 (Suspension and Steering) and A-5 (Brakes).

BEHAVIORAL HEALTH

Behavioral Health AA, Statewide Program: 616

: 616

According to the Agency for Healthcare Research and Quality, behavioral health is the study of "mental health and substance abuse, life stressors and crises, stress related physical symptoms, and health behaviors". It is a dynamic and growing field that focuses on promoting positive health behaviors while reducing or eliminating health risk behaviors. The goal of this program is to foster resilience in an environment that supports students from diverse backgrounds and life experience. The program is designed to transfer to UMBC's baccalaureate social work program at the Universities at Shady Grove campus. The program also serves to train students for entry-level positions as aides or technicians in various mental health disciplines. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
OR			
Health Elective *3 semester hours*			
BIOL	101	General Biology	4(NSLD)
MATH	117	Elements of Statistics	3(MATF)
SOCY	100	Introduction to Sociology	3(BSSD)
BEHE	100	Introduction to Behavioral Health Promotion	3

Third Semester

World Language Elective *3-4 semester credits (HUMD)* †			
Arts Distribution *3 semester hours (ARTD)*			
HLTH	225	Introduction to Health Behaviors	3
BEHE	200	Group Dynamics	3
POLI	101	American Government	3
OR			
ECON	201	Principles of Economics I	3

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
COMM	108	Foundations of Human Communication	3(GEIR)
HLTH	200	Health Issues in Human Sexuality	3
OR			
HLTH	131	Drugs and Lifestyle Wellness	3
OR			
HLTH	170	Introduction to Aging	3
PSYC	100	General Psychology	3(BSSD)
World Language Elective *3-4 semester credits (GEIR)* †			

Fourth Semester

PSYC	203	Human Growth and Development During the Life Span	3
OR			
PSYC	215	Child Psychology	3
PSYC	221	Introduction to Psychopathology	3
NUTR	101	Introduction to Nutrition	3(NSND)
BEHE	201	Field Experience in Behavioral Health	5

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 011, if needed for ENGL 102 or HLTH elective.

† World Language Electives: Choose a General Education language (SPAN, FREN, and CHIN) offering a 101, 102, and 201 sequence.

For students transferring to UMBC: students are required to complete one semester of a language at a 200 level. Students may be able to complete this requirement as part of the associate's degree if they test out of the 100 level class. If not, UMBC at Shady Grove will allow students to transfer up to six additional credits of language.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate an understanding of key concepts in behavioral health promotion including: the determinants of mental health; stress; coping; anxiety, mood and personality disorders; substance abuse; and treatment.
- Identify and model examples of ethical and professional behavior.
- Demonstrate an understanding of group processes and behaviors including: identity, formation, structure, power, influence, leadership, and performance.
- Demonstrate effective verbal and written communication skills.
- Use critical thinking skills to solve problems relevant to the practice of behavioral health.

BIOINFORMATICS

Bioinformatics AS: 612

: 612

Bioinformatics is an interdisciplinary field of inquiry that effectively combines the life sciences and computer science with information technology. Bioinformaticists use computers to analyze, organize, and visualize biological data in ways that increase the understanding of the molecular components of living organisms. Bioinformatics combines computer science, statistics, and mathematics to analyze and interpret biological data.

Bioinformatics is conceptualizing biology in terms of macromolecules (in the sense of physical-chemistry) and then applying "informatics" techniques (derived from disciplines such as applied math, computer science, and statistics) to understand and organize the information associated with these molecules, on a large-scale. To do this, one must combine elements of biology and computer science. The methodologies and informatics tools developed by the bioinformatics scientists help to manage genomic information.

The Bioinformatics AS is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree leading to an advanced degree in the field of bioinformatics. Working closely with a counselor or advisor, students will be able to transfer to local and regional colleges and universities offering advanced programs in bioinformatics. Students are strongly advised to work with a biology, chemistry, and/or computer science faculty member or an academic transfer counselor in order to minimize or prevent the loss of credits upon transfer.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3
MATH	181	Calculus I	4(MATF)
BIOL	202	Interdisciplinary Bioinformatics- An Introduction	3
CHEM	131	Principles of Chemistry I	4(NSLD)

Second Semester

English Foundation *3 semester hours (ENGF)*

BIOL	150	Principles of Biology I	4(NSLD)
CHEM	132	Principles of Chemistry II	4(GEEL)
CMSC	140	Introduction to Programming	3

Arts Distribution *3 semester hours (ARTD)*

Third Semester

BIOL	151	Principles of Biology II	4
CHEM	203	Organic Chemistry I	5
COMM	108	Foundations of Human Communication	3(HUMD)
MATH	217	Statistics for Scientists	3

Fourth Semester

BIOL	222	Principles of Genetics	4
CMSC	203	Computer Science I	4

- Behavioral and Social Sciences Distribution *3 semester hours (BSSD) **
- Behavioral and Social Sciences Distribution *3 semester hours (BSSD) **

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A , if needed for ENGL 102/ENGL 103, or CMSC 204.

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify and describe skills specific to programming, data analysis, and data manipulation.
- Analyze contemporary problems in medicine, public health, and biology using computational approaches at the beginner level.
- Synthesize issues across the disciplines of biology, chemistry, computer science, and mathematics.
- Communicate effectively with diverse stakeholders, individually and in group settings, using verbal, written, and electronic modes of communication.

BIOTECHNOLOGY

Biomanufacturing Certificate: 246

(G): 246

This certificate curriculum is designed to prepare students for immediate employment in biomanufacturing. This certificate is suitable for students who have completed high school and desire fast entry into the biotechnology industry, for people who want to update or upgrade their skills, or for those who have obtained a bachelor's degree in the life sciences and want additional training. Students must obtain consent of the biotechnology program coordinator before enrolling in the certificate curriculum. To enter directly into the certificate curriculum, students must have met the prerequisites for the courses.

PROGRAM REQUIREMENTS:

Biotechnology AAS: 334

(G): 334

The biotechnology program is designed to instruct and train students in the field of biotechnology. Entry-level workers in the field of biotechnology are involved in laboratory work such as DNA isolation or sequencing, cell culture, toxicology or vaccine sterility testing, antibody production and isolation, and the testing and development of diagnostic and therapeutic agents. Training is designed to prepare students for both academic achievement and successful employment in the biotechnology industry. The program offers both a degree and two certificates to meet the differing needs of students.

On completion of the biotechnology AAS, the student may transfer to another institution and earn a baccalaureate degree in a biological science or may elect to enter the workforce. Course selection within the curriculum depends on which option the student selects.

The emphasis of the program is on applied laboratory skills relevant to the biotechnology industry. A solid foundation is obtained through introductory coursework in biotechnology, biology, chemistry, and mathematics. These background courses prepare students for more rigorous upper-level applied coursework in biotechnology, biology, and chemistry taken during the second year. High school biology, chemistry, and math (algebra II) are strongly recommended.

Because of the variation in requirements of four-year institutions, students are urged to consult an advisor about specific course selections.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
BIOT	110	Introduction to Biotechnology	3
BIOT	120	Introduction to Cell Culture	2
BIOT	121	Aseptic Technique and Cell Culture Skills	1
CHEM	131	Principles of Chemistry I	4(GEEL)

Third Semester

Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*			
BIOL	222	Principles of Genetics	4
BIOT	231	Immunological Methods	1
BIOT	230	Applied Immunology	3
CHEM	150	Essentials of Organic and Biochemistry	4‡

Second Semester

English Foundation *3 semester hours (ENGF)*			
BIOL	150	Principles of Biology I	4(NSLD)
BIOT	200	Protein Biotechnology	3
BIOT	201	Protein Biotechnology Skills	1
BIOL	210	Microbiology	4

Fourth Semester

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*			
BIOT	240	Principles of Nucleic Acid Methods	3
BIOT	241	Nucleic Acid Methods	1
Program Electives *7 semester hours* †			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

‡ CHEM 203 (5 semester hours) may be taken instead of CHEM 150.

† Program electives: BIOT 250, BIOT 251, BIOT 260, BIOT 261, CMAP 120, CHEM 132, CHEM 204, PHYS 203, PHYS 233, SCIR 297, MATH Elective, BIOL Elective, COMM 108 or COMM 112, HUMD, BSSD, or ARTD.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Independently complete basic laboratory tasks common to biotechnology such as documentation, pipetting, buffer preparation, dilutions, and gel electrophoresis.
- Define and explain the basic principles, concepts, and techniques of biotechnology.
- Identify, communicate, and solve common problems in the biotechnology field.

Biotechnology Certificate: 219

(G): 219

This certificate curriculum is intended to prepare people for immediate employment in the biotechnology field. This curriculum is suitable for students currently working in the biotechnology or medical technology field who want to upgrade or update their skills, or for those who have obtained a bachelor's degree in the life sciences and want additional training. Students must obtain consent of the biotechnology program coordinator before enrolling in the certificate curriculum. To enter directly into the certificate curriculum, students must have met the prerequisites for the biotechnology courses.

PROGRAM REQUIREMENTS:

BROADCAST MEDIA PRODUCTION

Audio Production Certificate: 208A

(R): 208A

This certificate prepares the student for immediate employment in the audio industry. Courses are designed to increase proficiency in audio production skills. This concentrated approach will provide introductory and/or higher level training for first time employment in radio or for professional development.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

TVRA	100	Introduction to New Media	3
TVRA	125	Audio Production Techniques	4
TVRA	220	Radio Production	4
TVRA	239	Broadcast Management	3
TVRA	260	Radio Station Operation	3

TOTAL CREDIT HOURS: 17

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Record professional audio in studios, announce booths and on location with a variety of microphones and recording devices.
- Produce professional segments and programs of varies lengths for the radio and audio production industry.
- Solve technical and logistical problems through planning and preparation to successfully meet production deadlines.
- Create a portfolio that reflects the employment standards of the radio and sound recording industry.

Broadcast Journalism Certificate: 207

(R): 207

BROADCAST JOURNALISM CERTIFICATE: 207 WAS REPLACED BY MEDIA PRODUCTION CERTIFICATE: 260 AND IS NO LONGER ACCEPTING NEW STUDENTS. ADDITIONALLY, STUDENTS ADMITTED PRIOR TO FALL 2022 WILL NOT BE ABLE TO GRADUATE WITH THIS CERTIFICATE AFTER SPRING 2025. PLEASE CONTACT A PROGRAM ADVISOR#FOR ALTERNATIVE OPTIONS.

This certificate program provides an intensive course of study focused on updated broadcast journalism skills, techniques, and procedures. This concentrated approach can assist those persons seeking first-time employment with a radio or television or web-based news organization, those planning to change careers to a journalism-based field, or those currently working an area of production other than news who wish to upgrade or expand their skills.

Completion of all curriculum requirements will lead to the award of the Broadcast Journalism Certificate. All students should meet with an academic advisor in the Department of Media Arts & Technologies to make an academic plan or discuss career or transfer goals.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

ENGL	101	Introduction to College Writing	3
TVRA	120	Video Production I	4
TVRA	125	Audio Production Techniques	4
TVRA	129	Concept and Story	3
TVRA	134	Media Appreciation	3
TVRA	140	Video Editing	3
TVRA	220	Radio Production	4
AND			
TVRA	260	Radio Station Operation	3
OR			
TVRA	224	Electronic Field Production	3
AND			
TVRA	230	Video Production II	4
TVRA	227	Broadcast Journalism	3
TVRA	255	Advanced Broadcast Journalism	3

TOTAL CREDIT HOURS: 33

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Create professional news segments for use in radio or television, broadcast, podcasts or web streaming delivery.
- Analyze audience data and identify target audiences for various video and/or audio productions.
- Interpret research-based facts available through various sources to prepare and deliver unbiased reports for a variety of media outlets.
- Work with video and computer files in a server-based, collaborative environment.
- Apply correct and safe use of video and audio equipment needed to create professional projects.

Digital Media Production Certificate: 214

(R): 214

DIGITAL MEDIA PRODUCTION CERTIFICATE: 214 WAS REPLACED BY MEDIA PRODUCTION CERTIFICATE: 260 AND IS NO LONGER ACCEPTING NEW STUDENTS. ADDITIONALLY, STUDENTS ADMITTED PRIOR TO FALL 2022 WILL NOT BE ABLE TO GRADUATE WITH THIS CERTIFICATE AFTER SPRING 2025. PLEASE CONTACT A PROGRAM ADVISOR#FOR ALTERNATIVE OPTIONS.

This certificate curriculum focuses on the technical and artistic development of digital media content suitable for various platforms including websites, meetings and presentations. By partnering with public service clients, students master production and media project management skills and complete projects suitable for commercial, educational or corporate use. This certificate is intended to assist those seeking first-time employment or planning to change careers, as well as for professional or portfolio development.

PROGRAM REQUIREMENTS:

All students should review the Program Advising Guide and consult an advisor.

ENGL	101	Introduction to College Writing	3*
TVRA	100	Introduction to New Media	3
TVRA	120	Video Production I	4
TVRA	129	Concept and Story	3
TVRA	140	Video Editing	3
TVRA	224	Electronic Field Production	3
OR			
GDES	140	Introduction to Animation	4
TVRA	250	Advanced Media Content Production	4**

TOTAL CREDIT HOURS: 23-24

*ENGL 101/ENGL 101A if needed or PHOT 161.

**This program includes a Service Learning component where students in TVRA 250 Advanced Digital Media Production partner with local non-profit organizations to create videos that support the organization's goals based on a needs assessment. this capstone course is designed to support outreach and provide web impact for an organization while offering the opportunity for students to create professional quality projects that are published and to earn positive professional references to support their employment goals.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Record professional video and audio in the studio and on location with a variety of cameras, lights, microphones and recording devices.
- Write, produce and edit professional videos and/or animations of various lengths designed to inform, engage or entertain specific target audiences.
- Solve technical and logistical problems through planning and preparation to successfully meet client deadlines with documentation of progress and delivery of product.
- Create a portfolio that reflects the employment standards of the video production industry.

ADVISING NOTES:
The Career Program (CTE) is not designed for transfer, however, many colleges and universities accept the coursework. Most 200 level TVRA courses transfer as lower level electives.

Media Production AA: 614

: 614

The Media Production curriculum, including video, film and audio, is planned to provide a fundamental course of study and training in basic skills for students who plan to continue study at a four-year institution, expect to enter a professional training program in the media production industry, or wish to seek professional employment in broadcast media, commercial, industrial, interactive, or educational production and distribution. Students develop technical skills, writing skills, aesthetic values, and professional attitudes supported by highly committed faculty with practical experience in the field of production. The attainment of content production skills is demonstrated in a digital portfolio designed to support transfer application or a job search.

Completion of all curriculum requirements will lead to the award of the associate of arts (A.A.). All students should meet with an academic advisor in the Media Arts & Technologies Department to make an academic plan or discuss career or transfer goals.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	117	Elements of Statistics	3(MATF)
COMM	108	Foundations of Human Communication	3(GEIR)
TVRA	120	Video Production I	4

Second Semester

English Foundation *3 semester hours (ENGF)*
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*

TVRA	125	Audio Production Techniques	4
TVRA	129	Concept and Story	3
TVRA	140	Video Editing	3‡‡
OR			
TVRA	100	Introduction to New Media	3‡

Third Semester

TVRA	134	Media Appreciation	3(ARTD)
SOCY	100	Introduction to Sociology	3(BSSD, GCP) **

Natural Sciences Distribution with or without Lab *3 semester hours (NSD)*

FILM	110	Introduction to Film	3(GEIR)
OR			
THET	110	Fundamentals of Acting	3(GEIR)

Program Elective *3 semester hours* †

Fourth Semester

Humanities Distribution *3 semester hours (HUMD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Program Elective *3 semester hours* †
OR

COMM	250	Introduction to Communication Inquiry and Theory	3‡‡‡

Program Elective *3 semester hours* †

TVRA	236	Video Production Portfolio	2‡‡
OR			
TVRA	260	Radio Station Operation	3‡

Program Elective *1 semester hour* †, ††

PROGRAM REQUIREMENTS:

ENGL	101	Introduction to College Writing	3*
TVRA	120	Video Production I	4
TVRA	125	Audio Production Techniques	4
TVRA	129	Concept and Story	3
TVRA	140	Video Editing	3‡‡
OR			
TVRA	100	Introduction to New Media	3‡
TVRA	236	Video Production Portfolio	2‡‡
OR			
TVRA	260	Radio Station Operation	3‡

Program Elective *3 semester hours* †
OR

COMM	250	Introduction to Communication Inquiry and Theory	3‡‡‡

Program Elective *3 semester hours* †
Program Elective *3 semester hours* †
Program Elective *1 semester hour* †, ††

TOTAL CREDIT HOURS: 60 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or a Program Elective.

** Behavioral and Social Sciences Distribution (BSSD) courses must come from different disciplines.

‡ TVRA 100 and TVRA 260 required for concentration in radio only.

‡‡ TVRA 140 and TVRA 236 required for concentration in video or film only.

‡‡‡ Students should take COMM 250 if it is required for transfer.

† Program Electives include: TVRA 210, TVRA 220, TVRA 227, TVRA 230, TVRA 234, TVRA 239, TVRA 275, TVRA 280, FILM 210, FILM 220, FILM 230, and FILM 240.

†† For students taking TVRA 236 needing to meet the 60-credit requirement for program completion.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or a Program Elective.

** Behavioral and Social Sciences Distribution (BSSD) courses must come from different disciplines.

‡ TVRA 100 and TVRA 260 required for concentration in radio only.

‡‡ TVRA 140 and TVRA 236 required for concentration in video or film only.

‡‡‡ Students should take COMM 250 if it is required for transfer.

† Program Electives include: TVRA 210, TVRA 220, TVRA 227, TVRA 230, TVRA 234, TVRA 239, TVRA 275, TVRA 280, FILM 210, FILM 220, FILM 230, and FILM 240.

†† For students taking TVRA 236 needing to meet the 60-credit requirement for program completion.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Successfully record video and audio in studio and on location with various professional cameras, microphones, lights, and recording devices.
- Write content for broadcast, social media, and Internet conferences and webinars to engage, inform, or entertain.
- Produce and edit segments and programs of various lengths for the media production industry, social media, and the Internet.
- Demonstrate the ability to successfully meet production deadlines through leadership, an understanding of technical and logistic issues, and planning and preparation.
- Create a portfolio that reflects the rapidly changing structure of the media content production industry and its employment opportunities.

Media Production Certificate: 260

: 260

This certificate is designed to provide students with the skills necessary for various careers in the media content creation industry or for transfer to another institution. This concentrated approach will provide training for first time employment or for professional development. Students in this program will gain hands-on experience using industry standard hardware and software at a basic level, and then focus their studies through elective courses.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

TVRA	120	Video Production I	4	TVRA	140	Video Editing	3
TVRA	125	Audio Production Techniques	4	OR			
				TVRA	100	Introduction to New Media	3†
				Program Elective *2-3 semester hours ††*			
				Program Elective *3-4 semester hours ††*			

TOTAL CREDIT HOURS: 16

† Required course for concentration in radio only.

†† Program Electives include: TVRA 129, TVRA 210, TVRA 220, TVRA 227, TVRA 230, TVRA 234, TVRA 236 OR TVRA 260, TVRA 239, TVRA 275, TVRA 280, FILM 210, FILM 220, FILM 230, FILM 240.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Successfully record video and audio in studio and on location with various professional cameras, microphones, lights and recording devices.
- Produce and edit segments and programs of various lengths, both in studio and on location, for the media production industry, social media and the Internet.

Radio Area of Concentration, Broadcast Media Production AAS: 309A

: 309A

RADIO AREA OF CONCENTRATION, BROADCAST MEDIA PRODUCTION AAS: 309A WAS REPLACED BY MEDIA PRODUCTION AA: 614 AND IS NO LONGER ACCEPTING NEW STUDENTS. ADDITIONALLY, STUDENTS ADMITTED PRIOR TO FALL 2022 WILL NOT BE ABLE TO GRADUATE WITH THIS CERTIFICATE AFTER SPRING 2025. PLEASE CONTACT A PROGRAM ADVISOR#FOR ALTERNATIVE OPTIONS.

The radio area of concentration is a career-focused degree designed to teach audio production skills through hands-on, experience-based classes in radio, sound and podcast production. Students develop technical skills, writing skills, aesthetic values, and professional attitudes, supported by highly committed faculty with practical experience in the field of production. The attainment of these skills is demonstrated in a digital portfolio designed to support a job search.

Knowledge and skills learned through this program will be of value in commercial, industrial, interactive and educational media production and distribution.

A strong academic core combines specialized career courses with a liberal arts education. This offers the graduate the alternatives of entering the radio or audio production field or continuing in an institution of higher learning. The curriculum is designed for students pursuing careers in digital media production as well as those currently employed in the field. Completion of all curriculum requirements will lead to the award of the Associate of Applied Science (AAS). All students should meet with an academic advisor in the Department of Media Arts & Technologies to make an academic plan or discuss career or transfer goals.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
TVRA	100	Introduction to New Media	3
TVRA	125	Audio Production Techniques	4
TVRA	134	Media Appreciation	3(ARTD or HUMD)****

Second Semester

English Foundation *3 semester hours (ENGF)*			
TVRA	129	Concept and Story	3
TVRA	210	Audio and Video Podcasting	3
COMM	108	Foundations of Human Communication	3(GEIR)
Program Elective *3 semester hours **, ***			

Third Semester

Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			
TVRA	220	Radio Production	4
TVRA	227	Broadcast Journalism	3
COMM	109	Voice and Diction	3
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*			

Fourth Semester

TVRA	239	Broadcast Management	3
TVRA	255	Advanced Broadcast Journalism	3
TVRA	260	Radio Station Operation	3
COMM	250	Introduction to Communication Inquiry and Theory	3

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or choose from the following options: TVRA 120, THET 110 or any POLI (Political Science) elective.

** Select one of the following program electives: MUSC 131, TVRA 280, or TVRA 140.

*** TVRA 280 must be taken for a total of 3 semester hours for degree completion.

**** AAS programs require one 3-credit Arts or Humanities General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Successfully record video and audio in studio and on location with various professional cameras, microphones, lights, and recording devices.
- Write content for broadcast and new media to engage, inform, or entertain based on audience research.
- Produce and edit professional segments and programs of various lengths for the television and media production industry and demonstrate this proficiency through a professional portfolio.
- Solve technical and logistical problems through planning and preparation to successfully meet production deadlines.

Television Area of Concentration, Broadcast Media Production AAS: 310A

(R): 310A

TELEVISION AREA OF CONCENTRATION, BROADCAST MEDIA PRODUCTION AAS: 310A WAS REPLACED BY MEDIA PRODUCTION AA: 614 AND IS NO LONGER ACCEPTING NEW STUDENTS. ADDITIONALLY, STUDENTS ADMITTED PRIOR TO FALL 2022 WILL NOT BE ABLE TO GRADUATE WITH THIS

CERTIFICATE AFTER SPRING 2025. PLEASE CONTACT A PROGRAM ADVISOR#FOR ALTERNATIVE OPTIONS.

The television area of concentration is a career-focused degree designed to teach video and audio production skills through hands-on, experience-based classes in studio, field and post-production. Students develop technical skills, writing skills, aesthetic values, and professional attitudes, supported by highly committed faculty with practical experience in the field of production. The attainment of production skills is demonstrated in a digital portfolio designed to support a job search. Knowledge and skills learned through this program will be of value in commercial, industrial, interactive, and educational media production and distribution.

A strong academic core combines specialized career courses with a liberal arts education. This offers the graduate the alternatives of entering the video production field or continuing in an institution of higher learning. The curriculum is designed for students pursuing careers in digital media production as well as those currently employed in the field. Completion of all curriculum requirements will lead to the award of the Associate of Applied Science (AAS). All students should meet with an academic adviser in the Media Arts & Technologies Department to make an academic plan or discuss career or transfer goals.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
TVRA	120	Video Production I	4
TVRA	125	Audio Production Techniques	4
TVRA	140	Video Editing	3

Second Semester

English Foundation 3 *semester hours (ENGF)*			
TVRA	129	Concept and Story	3
TVRA	134	Media Appreciation	3(ARTD or HUMD) **
TVRA	230	Video Production II	4

Third Semester

Natural Sciences Distribution with Lab 4 *semester hours (NSLD)*			
COMM	108	Foundations of Human Communication	3(GEEL)
TVRA	224	Electronic Field Production	3
TVRA	227	Broadcast Journalism	3
TVRA	234	Television Directing	3

Fourth Semester

COMM	250	Introduction to Communication Inquiry and Theory	3
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*			
TVRA	236	Video Production Portfolio	2
TVRA	239	Broadcast Management	3
TVRA	255	Advanced Broadcast Journalism	3

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or choose from the following options: TVRA 100, TVRA 210, GDES 140 or any PHOT elective.

** AAS programs require one 3-credit Arts or Humanities General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Successfully record video and audio in studio and on location with various professional cameras, microphones, lights and recording devices.
- Write content for broadcast and new media to engage, inform or entertain based on audience research.
- Produce and edit professional segments and programs of various lengths for the television & media production industry and demonstrate this proficiency through a professional portfolio.
- Solve technical and logistical problems through planning and preparation to successfully meet production deadlines.
- Create a portfolio that reflects the rapidly changing structure of the television and video production industry and its employment opportunities.

Video Production Certificate: 209A

(R): 209A

This certificate is designed to teach video and audio production skills through hands-on, industry standard, experience-based classes in studio, field, and post production. Skill sets designed to enhance employment opportunities are demonstrated in a digital portfolio. These skills will be of value in broadcast, corporate, interactive, and educational media production and distribution.

Completion of all curriculum requirements will lead to the award of the video production certificate. All students should meet with an academic advisor in the Media Arts & Technologies Department to make an academic plan or discuss career or transfer goals.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

TVRA	120	Video Production I	4
TVRA	125	Audio Production Techniques	4
TVRA	140	Video Editing	3
TVRA	230	Video Production II	4
TVRA	234	Television Directing	3
TVRA	236	Video Production Portfolio	2
FILM	220	Basic Movie Production	3

TOTAL CREDIT HOURS: 23

This Career Program (CTE) is not designed for transfer; however, many colleges and universities accept the course work. Most 200 level TVRA courses transfer as lower level electives.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Record professional video and audio in the studio and on location with a variety of cameras, lights, microphones, and recording devices.
- Write, produce and edit professional videos and/or animations of various lengths designed to inform, engage or entertain specific target audiences.
- Solve technical and logistical problems through planning and preparation to successfully meet client deadlines with documentation of progress and delivery of product.
- Apply constructive, organized work habits and demonstrate safe practices in the use of technical video and audio equipment and computer hardware and software.

ADVISING NOTES:
This Career Program (CTE) is not designed for transfer; however, many colleges and universities accept the course work. Most 200 level TVRA courses transfer as lower level electives.

BUILDING TRADES TECHNOLOGY

Building Trades Technology Certificate: 263

(R): 263

This certificate curriculum prepares students for employment or advancement in the building and construction industry. A combination of academic and practical instruction provides knowledge and skills that are necessary for success in these professions. Credits may also be applied to the Building Trades Technology AAS degree.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

BLDG 130	Introduction to the Building Trades	3	
BLDG 133	Building Trades Blueprint Reading	3	
Program Electives, *15 semester hours* *			

TOTAL CREDIT HOURS: 21

* Students are advised to follow the recommended program electives listed below for their particular area of training. A minimum of 21 credit hours is required for the certificate.

Required for All Certificate Students:
BLDG 130
BLDG 133

Carpentry Electives:
BLDG 140
BLDG 230
BLDG 240
BLDG 242

Electrical Wiring Electives:
BLDG 150
BLDG 184

BLDG 250
BLDG 252
BLDG 256
BLDG 284

HVAC Electives:
BLDG 170
BLDG 172
BLDG 174
BLDG 271
BLDG 273

Remodeling and Repair Electives:
BLDG 140
BLDG 150
BLDG 160
BLDG 242

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Work effectively as a team member with various construction tradespeople and personnel.
- Describe the construction process as it applies to residential buildings.
- Perform practical construction skills as it applies to buildings.

Carpentry Area of Concentration, Building Trades Technology AAS: 308A

(R): 308A

This program is intended to prepare students for careers in the building and construction trades. The General Education courses, in conjunction with specialized courses, provide a broad foundation and sharpen students' skills in preparation for entry into or advancement in today's workplace. This curriculum, following the carpentry area of concentration, provides training, skills, and knowledge that prepares students for employment as carpenters or provides current building and construction professionals with essential carpentry skills.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
BLDG	130	Introduction to the Building Trades	3
BLDG	133	Building Trades Blueprint Reading	3
BLDG	140	Fundamentals of Carpentry	4

Third Semester

BLDG	242	Remodeling and Interior Finishing	4

Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*
General Education Elective *3 semester hours (GEEL)*
Program Elective *6 semester hours* †

Second Semester

English Foundation *3 semester hours (ENGF)*

Mathematics Foundation *3 semester hours (MATF)*

BLDG	230	Building Codes and Standards	3
BLDG	240	Advanced Framing and Exterior Finishing	4

Program Elective *3 semester hours* †

Fourth Semester

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*
General Education Elective *3 semester hours (GEEL)*
Program Electives *5 semester hours* †

TOTAL CREDIT HOURS: 60

* ENGL 101/ ENGL 101A, if needed for ENGL 102/ENGL 103 or elective.

† Select from the following program electives: ARCH 103, ARCH 183, BLDG 150, BLDG 160, BLDG 182, BLDG 184, BLDG 200 (1-3 credits), BLDG 250, BSAD 101, CMGT 100, CMGT 135, or SPAN 101.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Define and explain the basic principles and techniques of residential construction.
- Apply relevant construction skills in a particular trade area.

Carpentry Certificate: 179A

(R): 179A

CARPENTRY CERTIFICATE: 179A WAS REPLACED BY BUILDING TRADES TECHNOLOGY CERTIFICATE: 263 AND IS NO LONGER ACCEPTING NEW STUDENTS. ADDITIONALLY, STUDENTS ADMITTED PRIOR TO FALL 2022 WILL NOT BE ABLE TO GRADUATE WITH THIS CERTIFICATE AFTER SPRING 2025. PLEASE CONTACT A PROGRAM ADVISOR FOR ALTERNATIVE OPTIONS.

This certificate curriculum prepares individuals for employment or advancement in the carpentry trade of the building and construction industry. A combination of academic and practical instruction will provide individuals with knowledge and skills that are necessary for success in this profession. Credits may also be applied to the building trades technology AAS degree.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

BLDG	130	Introduction to the Building Trades	3	BLDG	230	Building Codes and Standards	3
BLDG	133	Building Trades Blueprint Reading	3	BLDG	240	Advanced Framing and Exterior Finishing	4
BLDG	140	Fundamentals of Carpentry	4	BLDG	242	Remodeling and Interior Finishing	4

TOTAL CREDIT HOURS: 21

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate the ability to work effectively as a team member with various construction trades and personnel.
- Describe effectively the construction process as it applies to residential buildings.
- Apply practical carpentry skills.
- Communicate written, verbal, and visual information as it relates to carpentry.

Carpentry Letter of Recognition: 810A

(R): 810A

This sequence of two courses is designed for persons who wish to develop skills in the carpentry trade. To complete each course in this sequence, students need to demonstrate skills in specific areas. These areas include: material selection, calculations, framing, stairs, roofing, and siding. A grade of C or better is required in each course.

PROGRAM REQUIREMENTS:
All students should review the Advising Worksheet and consult an advisor.

BLDG	140	Fundamentals of Carpentry	4	BLDG	240	Advanced Framing and Exterior Finishing	4

TOTAL CREDIT HOURS: 8

Upon successful completion of this course of study, and application to the office of Records and Registration, the letter of recognition in carpentry will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate the ability to work effectively as a team member within the carpentry trade.
- Describe effectively the roles and responsibilities of a carpenter on a residential construction project.
- Apply practical carpentry skills.

Electrical Wiring Area of Concentration, Building Trades Technology AAS: 308B

(R): 308B

This program is intended to prepare students for careers in the building and construction trades. The General Education courses, in conjunction with specialized courses, provide a broad foundation and sharpen students' skills in preparation for entry into or advancement in today's workplace. This curriculum, following the electrical wiring area of concentration, provides training, skills and knowledge that prepares students for employment as electricians or provides current building and construction professionals with essential electrical wiring skills.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
BLDG	130	Introduction to the Building Trades	3
BLDG	133	Building Trades Blueprint Reading	3
BLDG	150	Fundamentals of Electrical Wiring	4

Third Semester

BLDG	252	Commercial Electrical Wiring	4
BLDG	256	National Electrical Code	3

Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*
General Education Elective *3 semester hours (GEEL)*
Program Electives *3 semester hours* †

Second Semester

English Foundation *3 semester hours (ENGF)*

Mathematics Foundation *3 semester hours (MATF)*

BLDG 250 Residential Electrical Wiring 4
Program Electives *6 semester hours* †

Fourth Semester

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*
General Education Elective *3 semester hours (GEEL)*
Program Electives *5 semester hours* †

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

† Select from the following program electives: ARCH 103, ARCH 183, BLDG 140, BLDG 160, BLDG 172, BLDG 182, BLDG 184, BLDG 200 (1-3 credits), BLDG 230, BLDG 240, BLDG 242, BLDG 284, BSAD 101, CMGT 100, CMGT 135, CMGT 280, or SPAN 101.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Define and explain the basic principles and techniques of residential construction.
- Apply relevant construction skills in a particular trade area.

Electrical Wiring Certificate: 245

(R): 245

ELECTRICAL WIRING CERTIFICATE: 245 WAS REPLACED BY BUILDING TRADES TECHNOLOGY CERTIFICATE: 263 AND IS NO LONGER ACCEPTING NEW STUDENTS. ADDITIONALLY, STUDENTS ADMITTED PRIOR TO FALL 2022 WILL NOT BE ABLE TO GRADUATE WITH THIS CERTIFICATE AFTER SPRING 2025. PLEASE CONTACT A PROGRAM ADVISOR#FOR ALTERNATIVE OPTIONS.

This certificate curriculum prepares individuals for employment or advancement in the electrical trade of the building and construction industry. A combination of academic and practical instruction will provide individuals with knowledge and skills that are necessary for success in the electrical profession. Credits may also be applied to the Building Trades Technology AAS degree.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

BLDG	130	Introduction to the Building Trades	3
BLDG	133	Building Trades Blueprint Reading	3
BLDG	150	Fundamentals of Electrical Wiring	4
BLDG	250	Residential Electrical Wiring	4
Program Electives *5-7 semester hours* ‡			

TOTAL CREDIT HOURS: 19-21

‡ Select from BLDG 184, BLDG 252, BLDG 256, BLDG 284.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate the ability to work effectively as a team member with various construction trades and personnel.
- Describe effectively the construction process as it applies to residential buildings.
- Apply practical construction skills in electrical wiring.
- Communicate written, verbal, and visual information as it relates to electrical wiring.

HVAC Area of Concentration, Building Trades Technology AAS: 308C

(R): 308C

This program is intended to prepare students for careers in the building and construction trades. The General Education courses, in conjunction with specialized courses, provide a broad foundation and sharpen students' skills in preparation for entry into or advancement in today's workplace. This curriculum, following the HVAC area of concentration, provides training, skills, and knowledge that prepares students for employment as HVAC technicians or provides current building and construction professionals with essential HVAC technician skills. In order to receive the AAS, HVAC area of concentration students must pass the E.P.A. 608 Certification Exam and at least one Industry Competency Exam (ICE).

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*(ENGF)
BLDG	130	Introduction to the Building Trades	3
BLDG	133	Building Trades Blueprint Reading	3
BLDG	170	Fundamentals of Refrigeration	4

General Education Elective *3 semester hours (GEEL)*

Third Semester

BLDG	271	Heating Systems	4
BLDG	273	Air Conditioning and Heat Pump Systems	4

Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*
Program Elective *3 semester hours* †

Second Semester

English Foundation *3 semester hours (ENGF)*
Mathematics Foundation *3 semester hours (MATF)*

BLDG	172	HVAC Electricity	4
BLDG	174	HVAC Technician Development	2

Program Elective *3 semester hours* †
EPA 608 Certification Exam

Fourth Semester

BLDG	275	Residential HVAC System Design	2

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*
General Education Elective *3 semester hours (GEEL)*
Program Elective *3 semester hours* †
Industry Competency Exam *0 semester hours*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A if needed for ENGL 102/ENGL 103, or elective.

† Select from ARCH 103, ARCH 183, BLDG 140, BLDG 150, BLDG 160, BLDG 182, BLDG 184, BLDG 200 (1-3 credits,) BLDG 230, BLDG 250, BLDG 252, BLDG 256, BSAD 101, CMGT 100, CMGT 135, CMGT 280, or SPAN 101.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Define and explain the basic principles and techniques of residential construction.
- Apply relevant construction skills in a particular trade area.

HVAC Certificate: 244

(R): 244

HVAC CERTIFICATE: 244 WAS REPLACED BY BUILDING TRADES TECHNOLOGY CERTIFICATE: 263 AND IS NO LONGER ACCEPTING NEW STUDENTS. ADDITIONALLY, STUDENTS ADMITTED PRIOR TO FALL 2022 WILL NOT BE ABLE TO GRADUATE WITH THIS CERTIFICATE AFTER SPRING 2025. PLEASE CONTACT A PROGRAM ADVISOR FOR ALTERNATIVE OPTIONS.

This certificate curriculum prepares individuals for employment or advancement in the HVAC trade of the building and construction industry. A combination of academic and practical instruction will provide individuals with knowledge and skills that are necessary for success in the HVAC profession. Credits may also be applied to the building trades technology AAS degree.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

BLDG	130	Introduction to the Building Trades	3
BLDG	133	Building Trades Blueprint Reading	3
BLDG	170	Fundamentals of Refrigeration	4
BLDG	172	HVAC Electricity	4
BLDG	174	HVAC Technician Development	2
BLDG	271	Heating Systems	4
BLDG	273	Air Conditioning and Heat Pump Systems	4

TOTAL CREDIT HOURS: 24

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate the ability to work effectively as a team member with various construction trades and personnel.
- Describe effectively the construction process as it applies to residential buildings.
- Apply practical construction skills in HVAC.
- Communicate written, verbal, and visual information as it relates to the HVAC trade.

HVAC Letter of Recognition: 808A

(R): 808A

This sequence of three courses is designed for persons who wish to develop skills in the heating, ventilation, and air conditioning (HVAC) trade. To complete each course in this sequence, students need to demonstrate skills in specific areas. These areas include: refrigeration systems, soldering and brazing, electrical controls, and refrigerants. A grade of C or better is required in each course.

PROGRAM REQUIREMENTS:
All students should review the Advising Worksheet and consult an advisor.

BLDG	170	Fundamentals of Refrigeration	4
BLDG	172	HVAC Electricity	4
BLDG	174	HVAC Technician Development	2

TOTAL CREDIT HOURS: 10

Upon successful completion of this course of study, and application to the office of Records and Registration, the letter of recognition in HVAC will be issued by the chief enrollment services and financial aid officer.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate the ability to work effectively as a team member within the HVAC trade.
- Describe effectively the roles and responsibilities of a HVAC technician on a residential construction project.
- Apply practical HVAC skills.

Residential Remodeling and Repair Certificate: 236A

(R): 236A

RESIDENTIAL REMODELING AND REPAIR CERTIFICATE: 236A WAS REPLACED BY BUILDING TRADES TECHNOLOGY CERTIFICATE: 263 AND IS NO LONGER ACCEPTING NEW STUDENTS. ADDITIONALLY, STUDENTS ADMITTED PRIOR TO FALL 2022 WILL NOT BE ABLE TO GRADUATE WITH THIS CERTIFICATE AFTER SPRING 2025. PLEASE CONTACT A PROGRAM ADVISOR FOR ALTERNATIVE OPTIONS.

This certificate curriculum prepares individuals for employment in the remodeling and repair sector of the building and construction industry. A combination of academic and practical instruction will provide individuals with knowledge and skills that are necessary for success in this profession. Credits may also be applied to the building trades technology AAS degree.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

BLDG	130	Introduction to the Building Trades	3	BLDG	242	Remodeling and Interior Finishing	4
BLDG	133	Building Trades Blueprint Reading	3	BLDG	150	Fundamentals of Electrical Wiring	4
BLDG	140	Fundamentals of Carpentry	4	BLDG	160	Fundamentals of Plumbing	4

TOTAL CREDIT HOURS: 22

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate the ability to work effectively as a team member with various construction trades and personnel.
- Effectively describe the construction process as it applies to residential buildings.
- Apply practical construction skills in various trades areas.
- Communicate written, verbal, and visual information as it relates to the remodeling process.

BUSINESS

Business AA: 006

: 006

This curriculum is designed for students planning to transfer to a four-year college and major in general business, or a more specialized field of business such as finance, accounting, international business, marketing, or management. It also provides a solid foundation for students planning to major in economics or pre-law. Completion of all requirements for this curriculum will lead to the award of the AA degree in business. Note: Many credits earned in the management certificate requirements may not be applied toward an AA in business. Students should seek advice from a counselor.

Business students may be eligible for the Macklin Business Institute scholars program, a competitive honors program which includes seminars, special honors courses, mentoring, the possibility of an internship, and a scholarship. Students potentially interested in this program should take ECON 201, ECON 202, or ACCT 222 in the sophomore year. For more information on this program see this catalog, the Montgomery College website, or a counselor. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)* †			
BSAD	101	Introduction to Business	3
CMAP	120	Introduction to Computer Applications	3
OR			
CMSC	110	Computer Concepts	3
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **			

Third Semester

ACCT	221	Accounting I	4
ECON	201	Principles of Economics I	3(BSSD)
MGMT	201	Business Law	3
OR			
Elective *3 semester hours* ††			
Humanities Distribution *3 semester hours (HUMD)* ‡			

Second Semester

English Foundation *3 semester hours (ENGF)*			
BSAD	210	Statistics for Business and Economics	3
OR			
MATH	117	Elements of Statistics	3
COMM	108	Foundations of Human Communication	3(GEIR)
OR			
COMM	112	Business and Professional Speech Communication	3(GEIR)
Arts Distribution *3 semester hours (ARTD)*			
Natural Science Distribution with Lab *4 semester hours (NSLD)*			

Fourth Semester

ACCT	222	Accounting II	4
ECON	202	Principles of Economics II	3
Arts Distribution (ARTD), Humanities Distribution (HUMD) or Health General Education Course (HLTH) *3 semester hours (GEIR)* ‡			
Natural Sciences Distribution *3 semester hours (NSND)*			
Elective *3 semester hours* ††			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective. Please consult an advisor or transfer institution for assistance with course selection.

Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

† Many, but not all four year institutions require MATH 150 or MATH 181 as a Math foundation. Students should consult with an advisor regarding the requirements of transfer institutions.

†† Students should consult an advisor regarding the requirements of transfer institutions. For some institutions, MGMT 201 may be appropriate, for others (e.g. The Smith School at the University Maryland) another course will be more appropriate. If necessary use as needed to fill the 60 credit requirement.

‡ AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Interpret and evaluate financial information to assist business decision making.
- Apply economic principles to business decision making.
- Apply basic ethical principles to businesses practices.
- Use appropriate analytical and statistical tools and technology to support business practices.

BUSINESS ANALYTICS

Business Analytics AA, Statewide Program: 620

: 620

The associate of arts in Business Analytics is designed to meet the growing demand for highly skilled professionals with analytics expertise. The program grounds students in general business courses, including economics and accounting, and builds essential skills in business analytics, statistics, scripting in programming language, data visualization, and applied decision-making. You will gain hands-on experience in using Excel, R, Tableau, and SQL in business analytics to summarize, visualize, and analyze data. The program is designed for students planning to transfer to a four-year college and major in business analytics.

SUGGESTED COURSE SEQUENCE:

Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	117	Elements of Statistics	3(MATF)
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* ** ‡			
COMM	112	Business and Professional Speech Communication	3(HUMD)
OR			
COMM	108	Foundations of Human Communication	3(HUMD)
BSAN	101	Introduction to Business Analytics	3

Third Semester

ECON	201	Principles of Economics I	3(BSSD)
Natural Sciences Distribution with or without Lab *3 semester hours* (NSD)			
Arts Distribution (ARTD), Humanities Distribution (HUMD) or Health (HLTH) General Education Course *3 semester hours (GEIR)* ‡			
ACCT	221	Accounting I	4
DATA	110	Data Visualization and Communication	3

Second Semester

English Foundation *3 semester hours (ENGF)*			
Arts Distribution *3 semester hours (ARTD)* ‡			
PHIL	140	Introduction to the Study of Ethics	3(HUMD)
CMSC	135	Introduction to Scripting	3
MATH	150	Elementary Applied Calculus I	4
OR			
MATH	181	Calculus I	4†

Fourth Semester

Natural Sciences Distribution with Lab 4 *semester hours (NSLD)*			
ACCT	222	Accounting II	4
BSAN	250	Business Analytics Capstone	2
ECON	202	Principles of Economics II	3

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 011, if needed for ENGL 102/ENGL 103. Please consult an advisor or transfer institution for assistance with course selection.

** Behavioral and Social Sciences (BSSD) should be from different disciplines.

† Many, but not all, four year institutions require MATH 150 or MATH 181. Students should consult with an advisor regarding the requirements of transfer institutions.

‡ AA and AS programs require one global and cultural perspectives (GCP) General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Employ business analytics tools and techniques for the purpose of using data to inform organizational decision-making related to core business functions.
- Understand, evaluate, and apply ethical principles and practices in the data lifecycle.
- Demonstrate competency using appropriate statistical methods to engage in descriptive, predictive, and prescriptive analytics to gain business insights.
- Develop original analyses and prescribe solutions related to scenarios involving the core business functions of operations, finance and accounting, marketing, and human resources.
- Summarize and communicate findings of analyses using charts, graphs, infographics, and dashboards.

CISCO CERTIFIED NETWORK ASSOCIATE + SECURITY

Cisco Certified Network Associate + Security Certificate: 253

: 253

This career curriculum prepares students for entry-level positions in cybersecurity. Intended for those already employed in computing or who have a computing background, the certificate prepares the student to install, operate, and troubleshoot medium-sized router and switched networks including implementation and verification of connections to remote sites in a WAN. It includes basic introduction to wireless networking concepts and hands-on performance-based skills. The certificate instructs the student in basic and intermediate cybersecurity skills, such as how to develop a security infrastructure, recognize vulnerabilities to networks, and mitigate security threats. This cybersecurity curriculum emphasizes core security technologies and the installation, troubleshooting, and monitoring of network devices to maintain integrity, confidentiality and availability of data and devices. It provides the foundation for students to sit for the following industry-recognized certifications: Network +, Security+, and CCNA (Cisco Certified Network Associate). **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

NWIT	151	Introduction to Networking	3	NWIT	252	Cisco Networking 2	3
NWIT	173	Network Security	3	NWIT	253	Cisco Networking 3	3
NWIT	245	Defending the Network	3	NWIT or CMSC Elective, *3 credit hours* *			

TOTAL CREDIT HOURS: 18

* Students may select a 3-credit or 4-credit NWIT or CMSC elective to fulfill this requirement.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Describe common network devices; the OSI model; common network protocols; features of LANs and WANs; types of network topologies; bandwidth.
- Describe characteristics of Ethernet networks; client/server networks; function of network devices; router serial ports; characteristics of WAN technologies.
- Describe basics of Ethernet technologies; framing process; MAC; CSMA/CD; types of duplex; 10/100/1000/10000BPS Ethernet technologies.
- Describe commands used to name a router, how administrators set passwords on a router, the use of the show commands, the command and steps required to configure a serial interface, the command and steps required to configure an Ethernet interface, how an administrator executes changes to a router, how an administrator saves changes to a router, the command and steps required to configure an interface description, the command and steps required to configure a log-in banner, the command and steps required to configure host tables, the purpose of backup documentation, and the steps for password recovery on a router.
- Describe the basic principles of routing, the difference between routed and routing protocols, what interior and exterior protocols are used for in routing, the difference between static versus dynamic routes, how static routes are configured, how default routes are configured, some methods for troubleshooting static route configurations, why dynamic routing protocols are necessary, distance vector routing, link-state routing, and how different routing protocols are used in context.
- Describe classless interdomain routing (CIDR); calculate subnets with variable length subnet masking (VLSM); describe route aggregation with VLSM and Routing Information Protocol version 2 (RIPv2); configure, verify and troubleshoot RIPv2, EIGRP, and OSPF.
- Describe micro-segmentation, how a switch learns addresses, and switch forwarding; describe switches and collision domains and switches and broadcast domains; configure LAN switches; verify LAN switch configuration; and manage LAN switches.
- Describe the goals of redundant topologies; define Spanning Tree Protocol (STP); describe the stages of spanning-tree port states and election of designated ports; describe the stages of selecting a root bridge; describe Path cost; set STP timers; explain how STP helps convergence; and describe Rapid Spanning Tree Protocol (RSTP).
- Explain what VLANs are; cite reasons to create VLANs and describe the benefits of VLANs; name and describe the methods of VLAN implementation; create, verify, and delete VLAN configurations; describe basic VLAN troubleshooting methods.
- Explain the differences between LANs and WANs; identify the devices used in a WAN; list WAN standards; describe WAN encapsulation; classify the various WAN link options; differentiate between packet-switched and circuit-switched WAN technologies; describe the steps in WAN design.
- Identify and describe the basic components that define Point-to-Point Protocol (PPP) communication; define and describe the use of link control protocol (LCP) and Network Control Protocol (NCP) frames in PPP; describe the process for configuring and verifying PPP; describe and explain PPP authentication; define and describe the use of password authentication; define and describe the use of Challenge Handshake Authentication Protocol (CHAP).
- Describe Frame Relay services, standards, and components; describe Local Management Interface (LMI) features; describe the use of Frame Relay sub-interfaces; configure, verify, and troubleshoot basic Frame Relay.
- Describe industry security terminology and acronyms, basic security vulnerabilities, and design and manage a security policy.
- Design and implement trust and identity technology at layer 2 and 3 of the OSI Model.
- Configure, monitor, and maintain advanced router firewall installation.
- Implement Secure Network Design.

CLOUD COMPUTING AND NETWORKING TECHNOLOGY

Cloud Computing and Networking Technology AAS: 355

: 355

This curriculum provides students a broad coverage and technical understanding of computer technology, networking and security as well as the communication skills and professionalism required of all entry-level IT professionals. Skills include software and hardware installation, network configuration and diagnostics, security and forensics fundamentals, and virtualization and cloud computing implementation, with a "hands-on" focus on scenarios in which troubleshooting tools must be applied to resolve problems. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
NWIT	101	Introduction to the Internet of Things (IoT)	3
OR			
CMSC	110	Computer Concepts	3
NWIT	105	Introduction to Cloud Computing	3
NWIT	127	Microcomputer Essentials	3

Third Semester

Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*			
CMSC	253	UNIX/LINUX System Administration	4
NWIT	173	Network Security	3
NWIT	200	Microsoft Modern Desktops	3
NWIT	208	Cloud Architecting	3
OR			
NWIT	209	Cloud Administration	3

Second Semester

English Foundation *3 semester hours (ENGF)*			
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			
COMM	108	Foundations of Human Communication	3(GEEL)
OR			
COMM	112	Business and Professional Speech Communication	3(GEEL)
CMSC	135	Introduction to Scripting	3
OR			
CMSC	140	Introduction to Programming	3
NWIT	151	Introduction to Networking	3
OR			
NWIT	170	Network and Cloud Infrastructure	3

Fourth Semester

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*			
NWIT	204	Network Virtualization and System Administrator	4
NWIT	264	Network and Cloud Forensics	3
NWIT or CMSC or DATA or TECH Elective *3 semester hours*			

PROGRAM REQUIREMENTS:

ENGL	101	Introduction to College Writing	3*
CMSC	135	Introduction to Scripting	3
OR			
CMSC	140	Introduction to Programming	3
CMSC	253	UNIX/LINUX System Administration	4
NWIT	101	Introduction to the Internet of Things (IoT)	3
OR			
CMSC	110	Computer Concepts	3
NWIT	105	Introduction to Cloud Computing	3
NWIT	127	Microcomputer Essentials	3
NWIT	151	Introduction to Networking	3
OR			
NWIT	170	Network and Cloud Infrastructure	3
NWIT	173	Network Security	3
NWIT	200	Microsoft Modern Desktops	3
NWIT	204	Network Virtualization and System Administrator	4
NWIT	208	Cloud Architecting	3
OR			
NWIT	209	Cloud Administration	3
NWIT	264	Network and Cloud Forensics	3
NWIT or CMSC or DATA or TECH Elective *3 semester hours*			

TOTAL CREDIT HOURS: 60

*ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or NWIT or CMSC or DATA or TECH Elective.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Install, maintain and evaluate computer networks.
- Describe network architecture concepts, including topology, protocols, components, and principles.
- Demonstrate best practices in the use of lab equipment and network hardware.
- Create a detailed plan showing the steps necessary to implement a network security system.
- Test and configure network services, devices, and peripherals.
- Review data and identify relevant evidence using current forensic tools.
- Describe the evolution of cloud computing and major methods of deployment.
- Design and implement cloud applications that can scale up on a VM (Virtual Machine and out across multiple VMs.

Cloud Computing and System Administrator Certificate: 257

: 257

This certificate program provides fundamental knowledge for cloud computing and system administrator positions and also develops skills to install, configure, manage, maintain, and troubleshoot a virtual network infrastructure/cloud platform using popular tools. This certificate program is designed for students pursuing a career in cloud computing and system administrator areas. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

NWIT	101	Introduction to the Internet of Things (IoT)	3
NWIT	105	Introduction to Cloud Computing	3
NWIT	170	Network and Cloud Infrastructure	3
OR			
NWIT	151	Introduction to Networking	3
NWIT	204	Network Virtualization and System Administrator	4
NWIT	208	Cloud Architecting	3
OR			
NWIT	209	Cloud Administration	3
200-Level NWIT Elective *3 semester hours* *			

TOTAL CREDIT HOURS: 19

* Any three or four-credit NWIT course can be used to satisfy this requirement.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Define the Internet of Things (IoT) and list various applications associated with the IoT.
- Evaluate various cloud delivery models.
- Describe the basics of networking fundamentals, including technologies, devices and protocols.
- Identify standard operating and maintenance resources.
- Explain files types, as well as their location, storage, use and attributes.
- Maintain high availability and fault tolerance in virtual environment.
- Configure and deploy Cloud products using virtualization technologies**.**
- Design and implement cloud applications that can scale up on a VM (Virtual Machine) and out across multiple VMs.
- Develop a plan with strategies to pass a minimum of two industry certification exams associated with cloud computing technology.

IT Professional+ Certificate: 254

: 254

This career certificate is designed to provide students with technical understanding of computer technology, networking and security, as well as the communication skills and professionalism required of all entry-level IT professionals. Skills included software and hardware installation, network configuration and diagnosing, and preventive maintenance and security fundamentals. This certificate program is more of a "hands-on" orientation focused on scenarios in which troubleshooting and tools must be applied to resolve problems. It also prepares students to take professional CompTIA A+, Linux+, Network+, and Security+ certificates. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

NWIT	127	Microcomputer Essentials	3
NWIT	170	Network and Cloud Infrastructure	3
OR			
NWIT	151	Introduction to Networking	3
NWIT	173	Network Security	3
CMSC	253	UNIX/LINUX System Administration	4
NWIT or CMSC Elective *3 semester hours*			

TOTAL CREDIT HOURS: 16

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate solid foundation skills and competency in a range of microcomputer hardware and software configuration and troubleshooting techniques.
- Demonstrate safe practices in the use of microcomputer hardware and software.
- Demonstrate ability, verbally and in writing, to think critically and analyze network structures.
- Demonstrate problem solving that employs technical skills and comprehension of networking with application to current industry.
- Demonstrate and employ the skills and concepts used to secure networks.
- Demonstrate constructive and organized work habits.

COMMUNICATION STUDIES

Communication Studies AA: 609

: 609

The AA in communication studies provides students with an academic core basic to a liberal arts education and facilitates ease of transfer to communication programs at four-year institutions. The degree provides analytical and critical thinking skills that render recipients to be effective members of their communities, both professionally and personally. A strength of the communication degree is that it allows students to target their studies toward areas of interest within the field. Areas such as public relations, rhetoric, political communication, interpersonal communication, organizational communication, mass media, and others are popular at four-year colleges and universities.

Students are encouraged to seek assistance from Communication Studies faculty in making course selections to suit their academic and career goals. Completion of the curriculum requirements will lead to the award of the AA. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL 101	Introduction to College Writing	3*
MATH 117	Elements of Statistics	3(MATF)
COMM 108	Foundations of Human Communication	3
OR		
COMM 112	Business and Professional Speech Communication	3(GEIR)

Arts Distribution *3 semester hours (ARTD)*
World Language Elective or Humanities Distribution *3 semester hours (HUMD)* †

Second Semester
English Foundation *3 semester hours (ENGF)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*
Program Elective *3 semester hours* ‡
World Language or General Education Institutional Requirement (ARTD, HUMD, or HLTH) *3 semester hours (GEIR)* †

Third Semester

COMM 250	Introduction to Communication Inquiry and Theory	3

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Program Elective *3 semester hours* ‡
Program Elective *3 semester hours* ‡
World Language or Elective *3 semester hours* †

Fourth Semester
Natural Sciences Distribution *3 semester hours (NSND)*
World Language or Elective *3 semester hours* †
Elective *5 semester hours*
Program Elective *3 semester hours*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

‡ Choice of four from the following program electives: COMM 121, COMM 204, COMM 220, COMM 225, COMM 230, COMM 251, COMM 252, LING 200. Two courses must be at the 200 level.

† World Language or Elective: Some transfer schools, including UMCP, have a Global Engagement/World Language requirement that may be fulfilled in ways other than taking language courses at MC. Review the policy and discuss with UMCP Communication advisor: www.arhu.umd.edu/undergraduate/globalengagement.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Research, analyze, organize, and deliver oral and written presentations appropriate for diverse audiences, purposes and occasions.
- Solve problems and work effectively in groups and teams.
- Demonstrate an understanding of communication theory, research and application.
- Use communication skills to be an effective group member or leader.
- Analyze cultural similarities and differences as they affect, and are in turn affected by the process of communication.
- Identify and articulate an ethical perspective within and across various contexts and cultures.

COMPUTER APPLICATIONS

Database Systems Certificate: 238

: 238

This certificate curriculum provides training, skills, and knowledge that prepare students for employment as entry-level database programmers and designers, or provides current professionals with essential database programming and design skills.

Students will create and manipulate Microsoft Access and web databases as well as write database user interfaces in the Visual Basic.Net environment.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

CMAP	245	Database Applications	3
CMSC	140	Introduction to Programming	3
CMSC	222	Visual Programming	3
TECH	272	Website Development	4
TECH	278	Web Application Development Using ColdFusion	4
TECH	282	Web Application Development Using PHP and MySQL	3
OR			
TECH	288	Advanced Web Application Development Using ColdFusion	3

TOTAL CREDIT HOURS: 20

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Describe the advantages, disadvantages, and appropriate uses of various database management systems (DBMS).
- Design a database system based on user requirements.
- Create entity-relationship diagrams that accurately describe a database structure.
- Demonstrate, explain, and successfully utilize basic database concepts such as primary and foreign keys, normalizing, bridge tables, alternate primary keys, and strong versus weak entities.
- Create a database system that successfully fulfills an organization's data requirements.

Information Technology Certificate: 213

: 213

This certificate curriculum is for the career professional who needs to become more proficient at using today's popular software applications as tools in decision making, managing people and information, communicating effectively, enhancing company viability, and addressing today's many technology challenges.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

CMAP	106	Computer Literacy	3
CMAP	120	Introduction to Computer Applications	3
CMAP	232	Word Processing Applications	3
CMAP	245	Database Applications	3
CMAP	252	Spreadsheet Applications	3
TECH	272	Website Development	4

TOTAL CREDIT HOURS: 19

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Utilize productivity software (such as word processing, spreadsheet, database, and presentation software) to create, analyze, store, and report information.
- Locate and manage data on personal or collaborative technology.
- Present information using multiple electronic media.

COMPUTER GAMING AND SIMULATION

Computer Gaming and Simulation AAS: 360

: 360

Gaming and simulation is a rapidly growing and exciting industry. Gaming is not only the fastest growing segment of the technology industry but also the fastest growing segment of the entertainment industry. Gaming is not just about entertainment-many industries use gaming and simulation technology, from medical and corporate training to advocacy, advertising, and emergency response simulation. This degree presents students with an introduction to the skills needed to explore the emerging technology area of game and simulation development. Students completing the degree will learn foundational skills of digital and board game creation, web development, animation, 3D modeling, and programming. Electives allow students an opportunity to further explore their area of interest, such as programming, 3D modeling, mobile games, and other topics.

Students may transfer this degree to complete a bachelor's degree in gaming and simulation at the University of Baltimore (UB). Refer to the UB Articulation Plan for specific requirements, and see further information at www.studygaming.com. See a gaming advisor to choose electives and discuss transfer options.

SUGGESTED COURSE SEQUENCE:

Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows; part-time students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL 101 Introduction to College Writing 3*
Math Foundation *3 semester hours (MATF)*
TECH 272 Website Development 4
GDES General Education Course *3 semester hours (**ARTD** or HUMD)* **

Second Semester

English Foundation *3 semesters hours (ENGF)*
GDES 140 Introduction to Animation 4
TECH 190 Introduction to Game and Simulation Development 4
Programming Course *3 semester hours* ‡

Third Semester

GDES 240 Animation 2: 3-D Modeling 4
TECH 295 Board Game Design 4
Program Elective *3 semester hours* †
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*
General Education Elective *4 semester hours (GEEL)*

Fourth Semester

TECH 290 Building Game Worlds: Level Design, Mods, and Quality Assurance 4
Program Elective *3 semester hours* †
Program Elective *4 semester hours* †
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*

PROGRAM REQUIREMENTS:

ENGL	101	Introduction to College Writing	3*
GDES	140	Introduction to Animation	4
GDES	240	Animation 2: 3-D Modeling	4
TECH	190	Introduction to Game and Simulation Development	4
TECH	272	Website Development	4
TECH	290	Building Game Worlds: Level Design, Mods, and Quality Assurance	4
TECH	295	Board Game Design	4

Programming Course *3 semester hours* ‡
Program Electives *10 semester hours* †

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or program elective.

** AAS programs require one 3-credit Arts or Humanities General Education course.

‡ Pick one: CMSC 100, CMSC 135, CMSC 140, CMSC 201, CMSC 203, CMSC 204, CMSC 206, CMSC 214, CMSC 220, CMSC 222, CMSC 224, CMSC 226, CMSC 230, CMSC 234, CMSC 240, CMSC 141, CMSC 266, TECH 225, TECH 276, or TECH 277. Students transferring to UB should choose a programming class that will transfer. See a gaming advisor for details.

† Program electives list: ANTH 201, ARTT 100, ARTT 102, ARTT 103, ARTT 105, ARTT 200, BSAD 101, CMAP 120, CCJS 110, CMSC 100 or higher, ENGL 190, GDES 116, GDES 121, GDES 134, GDES 135, GDES 216, GDES 218, GDES 234, GDES 242, GDES 285, HIST 116, HIST 117, HIST 200, HIST 201, MATH 117 or higher, MUSC 174, MUSC 184, natural science lab or non-lab distribution, NWIT 101 or higher, PHIL 101, PHIL 190, PHIL 201, PSYC 100, POLI 101, POLI 105, POLI 211, SOCY 100, TECH 225, TECH 273, TECH 276, TECH 277, TECH 282, TVRA 140.

60 credits are required for graduation. University of Baltimore will accept up to 63 credits for transfer, so students transferring to UB may choose additional electives up to a total of 63 credits. Students with a B or above in CMSC 226 may be able to waive the equivalent upper level course at UB. Since transfer schools may require certain classes, students considering transferring to UB or other universities should review any applicable transfer agreements and meet with a gaming advisor to plan electives.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate an understanding of the vocabulary of gaming and simulation.
- Create an online portfolio containing game development related coursework.
- Demonstrate working knowledge of analyzing, designing, and developing games in a team environment.

Computer Gaming and Simulation Certificate: 232A

(R): 232A

Computer gaming and simulation is part of a rapidly growing and exciting new industry. Gaming is not only the fastest growing segment of the technology industry but also the fastest growing segment of the entertainment industry. Gaming is not just about entertainment -- game technology is increasingly being applied in a variety of settings, from medical and corporate training to advocacy, advertising, and emergency response simulation. This interdepartmental certificate presents students with an introduction to the skills needed to explore the emerging technology area of game and simulation development. Completion of this degree will expose students to core game development skills and theory, introduce gaming and computer simulation technology applications, and provide an introduction to computer graphics technology. Electives allow students an opportunity to further explore their particular area of interest, such as programming, 3D modeling, mobile games, and other topics.

PROGRAM REQUIREMENTS:

All students should review the Program Advising Guide and consult an advisor.

GDES	140	Introduction to Animation	4
GDES	240	Animation 2: 3-D Modeling	4
TECH	190	Introduction to Game and Simulation Development	4
TECH	272	Website Development	4
TECH	290	Building Game Worlds: Level Design, Mods, and Quality Assurance	4
TECH	295	Board Game Design	4
Programming Course *2-4 semester hours* ‡			
Program Elective *3-4 semester hours* ‡ ‡			

TOTAL CREDIT HOURS: 29-32

‡ Choose any program elective: TECH 225, TECH 276, CMSC 100, CMSC 140 (or other TECH or CMSC programming class).
‡ ‡ ARTT 100, ARTT 102, CMSC 100 or higher, ENGL 101, GDES 116, GDES 121, GDES 134, GDES 216, GDES 242, GDES 285, TECH 225, TECH 273, TECH 276, TECH 277, TECH 282, TVRA 140, CMSC 100, CMSC 140 or other TECH or CMSC course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate an understanding of the vocabulary of gaming and simulation.
- Create an online portfolio containing game development related coursework.
- Demonstrate working knowledge of analyzing, designing, and developing games in a team environment.

COMPUTER SCIENCE AND TECHNOLOGIES

Computer Programming Certificate: 108

: 108

This certificate curriculum emphasizes software development and computer programming skills. The curriculum provides flexibility in the student's choice of programming languages. Students should consult an advisor before beginning the curriculum. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

CMSC	110	Computer Concepts	3‡	CMSC	140	Introduction to Programming 3
				Intermediate Languages *6-7 semester hours* ‡ ‡		
				Advanced Language *3-4 semester hours* ‡‡‡		
				CMSC Elective or Department-Approved CMAP or TECH Elective *3 semester hours*		

TOTAL CREDIT HOURS: 18-20

‡ May be replaced by another CMSC course with department consent.

‡‡ Select two courses from CMSC 201, CMSC 203, CMSC 222, CMSC 226, or other department-approved language.

‡‡‡ The advanced language must correspond to one of the intermediate languages chosen.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Analyze, design, and implement computer programs.
- Demonstrate working knowledge in one high-level programming language.
- Demonstrate proficiency in a second high-level programming language.

Computer Science Area of Concentration, Computer Science and Technologies AA: 107

: 107

This degree is designed for students who plan to transfer to a four-year degree program in computer science or for students in mathematics, science, or technical areas who wish to acquire skills in computer software development for scientific and technical applications. The courses in the program provide an academic core of the theoretical concepts of computer science combined with the fundamentals of structured design and development techniques for computer programming.

Because of the academic level of this area of concentration, students are expected to demonstrate college-level skills in English, mathematics, and elementary programming.

Not all CMSC courses transfer to all institutions. Please consult an advisor or the transfer institution before selecting elective courses. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	181	Calculus I	4(MATF)
CMSC	140	Introduction to Programming	3

Arts Distribution *3 semester hours (ARTD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

Third Semester

CMSC	204	Computer Science II	4

Humanities Distribution *3 semester hours (HUMD)*
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*
Program Elective *3 semester hours* †

Second Semester

English Foundation *3 semester hours (ENGF)*

CMSC	203	Computer Science I	4
MATH	182	Calculus II	4

Art or Humanities Distribution *(ARTD or HUMD)* or Health Course *(HLTH) 3 semester hours (GEIR)* † †

Fourth Semester

COMM	108	Foundations of Human Communication	3(GEIR)

OR

COMM	112	Business and Professional Speech Communication	3(GEIR)
CMSC	207	Introduction to Discrete Structures	4

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***
Natural Sciences Distribution *3 semester hours (NSND)*
Program Elective *3 semester hours* †

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective. Please consult an advisor or transfer institution for assistance with course selection.

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

† Program elective courses are any CMSC or DATA course, 200 World language course, MATH 117, MATH 165, MATH 280, MATH 282, MATH 284. See department advisor for elective or equivalent course substitution if appropriate. Not all CMSC courses transfer to all institutions. Please consult an advisor or the transfer institution before selecting program elective courses.

† † Please consult an advisor or the transfer institution before selecting General Education institutional requirements (GEIR).

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply logical skills and mathematical concepts to analyze, design and implement computer algorithms and programs.
- Demonstrate proficiency in a high level programming language.
- Demonstrate proficiency in current design techniques, i.e. Object Oriented Design.

Information Sciences and Systems Area of Concentration, Computer Science and Technologies AA: 109

: 109

This transfer degree area of concentration is for students who plan to transfer to a four-year program such as information systems or information management. The curriculum is designed to present a broad coverage of concepts applying to the theory and management of information, analytical techniques in the development of computer-based information systems, and practical experience with business programming.

Because of the variation in such programs at four-year institutions, students are urged to consult an advisor about specific course selections. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester
ENGL 101 Introduction to College Writing 3*
Mathematics Foundation *3 semester hours (MATF)*
CMSC 110 Computer Concepts 3‡
Arts Distribution *3 semester hours (ARTD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **

Third Semester
CMSC 243 Systems Analysis and Design 3
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Humanities Distribution *3 semester hours (HUMD)*
Program Elective *3 semester hours* †
Program Elective *3 semester hours* †

Second Semester
English Foundation *3 semester hours (ENGF)*
CMSC 140 Introduction to Programming 3
Program Elective *3 semester hours* †
Arts or Humanities Distribution *(ARTD or HUMD)* or Health Course *(HLTH)* Distribution *3 semester hours (GEIR)* † †
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*

Fourth Semester
COMM 108 Foundations of Human Communication 3(GEIR)
OR
COMM 112 Business and Professional Speech Communication 3(GEIR)
Program Elective *3 semester hours* †
Program Elective *2 semester hours* †
Program Elective *3 semester hours* †
Natural Sciences Distribution *3 semester hours (NSND)*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines. Contact department advisor for transfer requirements for specific schools. Students applying to business schools should consider using economics as an elective because it meets transfer and BSSD requirements. If you have any questions, please see a department advisor.

‡ May be replaced by another CMSC course with departmental consent.

† List of program electives: CMSC, DATA, NWIT, CMAP; TECH 190, 200-level TECH courses; ACCT 221, ACCT 222, BSAD 101, ECON 201, ECON 202; MATH 165, MATH 150 or MATH 181, MATH 182, MATH 117 or BSAD 210; MGMT 101, MGMT 211, PSYC 100. Four credits can be used to satisfy program electives.

Select program electives based on transfer institution requirements. See an advisor for assistance and use ARTSYS for Maryland transfer school requirements, http://artweb.usmd.edu. Note: There must be at least 12 credits total at the 200-level for an AA degree.

† † Please consult an advisor or the transfer institution before selecting institutional requirements.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Analyze components of the computer information systems.
- Analyze, design, and implement computer programs using a high level programming language.
- Demonstrate proficiency in analysis and design techniques.

Java Developer Certificate: 250

: 250

This certificate is designed for students who want to receive training in developing object-oriented Java applications that will run on server and client systems. Students will be able to apply these courses toward a general studies, web careers, or information systems degree. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

CMSC	201	Java Programming Language	3	CMSC	220	Client-Server Programming with Java	3
CMSC	214	Advanced Java Programming	3				

TOTAL CREDIT HOURS: 16

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate working knowledge with Java programming language.
- Write GUI-based, object-oriented, event-driven, client-side Java programs using primitive data types, control structures, methods, arrays, classes, interfaces, inheritance, polymorphism, asynchronous event handling, and multi-threading.
- Build Java programs to connect to databases and manipulate database records.
- Develop networking programs using Remote Method Invocation and networking API.
- Create server-side programs using the web protocol, client-side interfaces, and serverside technologies such as Java Servlet and JavaServer Page.
- Implement Java games and applications to run on different devices.

CONSTRUCTION MANAGEMENT

Management of Construction Area of Concentration, Architectural/Construction Technology AAS: 303

(R): 303

There are two areas of concentration leading to the AAS in architectural and construction technology: architectural technology and management of construction. In addition, two certificates are offered: CAD for the building professional and management of construction. Both of the AAS areas of concentration are designed to prepare graduates for entry into paraprofessional positions in the construction-industry and architecture upon completion of the curriculum. (See Architectural Technology)

This AAS area of concentration is designed to prepare graduates to organize, operate, manage, and control the unique and demanding systems, procedures, and services in the construction industry, both on the job site and in the contractor's office. Areas of study include cost control, planning, scheduling, controlling and expediting construction, contract bidding and estimating, personnel management, and the overall management of construction operations. This curriculum prepares students for construction management careers in any type or size of construction firm.

The curriculum is not designed as a transfer program except to institutions having a construction curriculum. A student seeking a four-year bachelor's degree must meet with the program coordinator in the management of construction program or the applied technologies department chair to work out a suitable program of study.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor in the management of construction program.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
CMGT	100	Construction Methods and Materials	3
CMGT	110	Construction Plan Reading	3
CMGT	135	Construction Field Operations	3

Second Semester

English Foundation *3 semester hours (ENGF)*			
CMGT	190	Computer Applications in Construction	3
CMGT	210	Construction Management	3
COMM	108	Foundations of Human Communication	3(ARTD or HUMD)**
OR			
COMM	112	Business and Professional Speech Communication	3(ARTD or HUMD)**
General Education Elective *4 semester hours (GEEL)*			

Third Semester

CMGT	250	Construction Surveying	3
CMGT	270	Construction Estimating	3
CMGT	275	Construction Planning and Scheduling	3
Behavioral and Social Science Distribution *3 semester hours (BSSD)*			
Program Elective *3 semester hours* ‡			

Fourth Semester

CMGT	280	Mechanical and Electrical Systems	3
CMGT	285	Practical Construction Law	3
CMGT	290	Professional Practicum	1
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			
Program Elective *3 semester hours* ‡			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

** AAS programs require one 3-credit Arts or Humanities General Education course.

‡ Choose from the following program electives: ACCT 221, ARCH 101, ARCH 103, ARCH 183, ARCH 202, ARCH 203, any BLDG course, CMGT 290, or MATH 165.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate a thorough understanding of the principles and methods used in the installation of materials and building components including structural, nonstructural, mechanical, and electrical systems.
- Demonstrate technical mastery of the methods and procedures of reading architectural, structural, and mechanical drawings.
- Assist a field manager or project manager with basic project administration procedures both in the field and at the office.
- Demonstrate technical mastery in the computer software and surveying equipment used for project administration, estimating, scheduling, and surveying.
- Develop a working knowledge of construction estimating and scheduling procedures and the legal implications applicable to a construction project.

Management of Construction Certificate: 142

(R): 142

This certificate curriculum is designed to serve personnel presently employed in construction-related industries who might not want to complete an associate's degree. Students will be able to enroll in specific professional/academic courses that will lead to an upgrading of their professional competence.

The certificate provides students with formal recognition of academic achievement for completing selected courses from the management of construction AAS area of concentration. The student may transfer to the AAS area of concentration.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

CMGT	100	Construction Methods and Materials	3
CMGT	110	Construction Plan Reading	3
CMGT	135	Construction Field Operations	3
CMGT	190	Computer Applications in Construction	3
CMGT	210	Construction Management	3
CMGT	270	Construction Estimating	3
CMGT	275	Construction Planning and Scheduling	3
CMGT	285	Practical Construction Law	3
ENGL	101	Introduction to College Writing	3
Program Electives *6-8 semester hours* ‡			

TOTAL CREDIT HOURS: 33-35

‡ Program electives: ACCT 221, BLDG electives, COED 260, ARCH 101, ARCH 103, ARCH 183, CMGT 250, CMGT 280, CMGT 290, MATH 165.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate a thorough understanding of the principles and methods used in the installation of materials and building components including structural, nonstructural, mechanical, and electrical systems.
- Demonstrate technical mastery of the methods and procedures of reading architectural, structural, and mechanical drawings.
- Assist a field manager or project manager with basic project administration procedures both in the field and at the office.
- Demonstrate technical mastery in the computer software and surveying equipment used for project administration, estimating, scheduling, and surveying.
- Develop a working knowledge of construction estimating and scheduling procedures and the legal implications applicable to a construction project.

CRIMINAL JUSTICE

Criminal Justice AAS: 314

: 314

The AAS in criminal justice is designed to prepare students for careers within the criminal justice system. The program offers a combination of liberal arts and specialized career courses to help students upon entry into the criminal justice field. The curriculum is offered for those already employed in the criminal justice profession as well as for high school students interested in pursuing careers with local, state, or private agencies within the field. Students are encouraged to seek assistance from criminal justice faculty in making course selections to suit their career goals and interests. Those students interested in transferring to obtain a bachelor's degree from a four-year college or university should consult advisors regarding our AA degree in general studies. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
CCJS	110	Administration of Justice	3(BSSD)
COMM	108	Foundations of Human Communication	3(GEEL)
OR			
COMM	112	Business and Professional Speech Communication	3(GEEL)
SOCY	100	Introduction to Sociology	3(GEEL)

Third Semester

CCJS	215	Organization and Administration	3
POLI	101	American Government	3

Natural Sciences Distribution with Lab *4 semester hours (NSLD)*
CCJS Elective *3 semester hours* ‡
Elective *2 semester hours*

Second Semester

English Foundation *3 semester hours (ENGF)*

CCJS	201	Introduction to Law Enforcement	3
OR			
CCJS	230	Introduction to Corrections	3
CCJS	221	Criminal Law	3
PSYC	100	General Psychology	3

Arts or Humanities Distribution *3 semester (ARTD or HUMD)*

Fourth Semester

CCJS	242	Theory and Practice	3
CCJS	244	Contemporary Issues	3

CCJS Elective *3 semester hours* ‡
OR

Behavioral and Social Sciences Elective *3 semester hours*
CCJS Elective *3 semester hours* ‡
Elective *3 semester hours*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

‡ CCJS electives include CCJS 211, CCJS 216, CCJS 222, CCJS 232, CCJS 246, CCJS 250, and CCJS 255. Students can also use CCJS 201 or CCJS 230 as a CCJS elective if not already used to satisfy a program requirement.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate an understanding of the criminal law and of the criminal justice process (police, courts, and corrections).
- Explain the function and role of various criminal justice practitioners in the operation of an ethical and professional system of justice that exists within a diverse society.
- Analyze the history, functions, policies, and procedures used in each subsystem of justice and creatively offer alternatives to current practices.
- Explain the impact of political and economic considerations as it relates to criminal justice theory, research, practice, and policy.
- Demonstrate the ability to proficiently write about criminal justice issues while utilizing academic sources in an organized and coherent manner.

Criminal Justice Area of Concentration, Arts and Sciences AA: 617

: 617

The criminal justice area of concentration, arts and sciences associate of arts is designed for students planning to transfer to a four-year institution to complete a bachelor's degree in criminal justice and/or criminology. The pathway exposes students to

important criminal justice coursework while incorporating key General Education courses needed for transfer. The program is structured to prepare students who ultimately plan to serve the community in the fields of law enforcement, corrections, juvenile justice, probation and parole, court services, or law. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	117	Elements of Statistics	3(MATF)***
CCJS	110	Administration of Justice	3(BSSD)***
COMM	108	Foundations of Human Communication	3(GEIR)
OR			
COMM	112	Business and Professional Speech Communication	3(GEIR)

ARTD, HUMD, or HLTH Course *3 semester hours (GEIR)*

Third Semester

BSAD	210	Statistics for Business and Economics	3***

Natural Sciences Distribution with Laboratory *4 semester hours (NSLD)*
Humanities Distribution *3 semester hours (HUMD) #*

CCJS	221	Criminal Law	3***
PSYC	100	General Psychology	3

Second Semester

English Foundation *3 semester hours (ENGF)*

SOCY	100	Introduction to Sociology	3(BSSD)

Natural Sciences Distribution without Laboratory *3 semester hours (NSND)*
Arts Distribution *3 semester hours (ARTD)*

POLI	101	American Government	3

Fourth Semester

CCJS	200	Criminology	3***
CCJS	222	Criminal Evidence	3

CCJS Elective *3 semester hours* ****
CCJS Elective or Elective *3 semester hours* ****
Elective *2 semester hours* **

TOTAL CREDIT HOURS: 60

* If needed for ENGL 102/ENGL 103, or elective.

** Students transferring to the University of Maryland should make sure they do not exceed the 60 credits required for graduation and transfer.

*** Students planning to transfer to the UMCP Program @ Shady Grove must complete these five identified courses with a minimum grade of C.

**** Except CCJS 255 (Independent Study in Criminal Justice).

Students who began prior to fall 2012 must take an English literature or a history course to meet the UMD humanities requirement.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate an understanding of the criminal law and criminal justice process (police, courts, and corrections) through writing assignments.
- Explain the functions and roles of the various criminal justice practitioners in the operation of an ethical and professional system of justice that exists within a diverse society.
- Analyze the relationship between criminological research and theory as it relates to the implementation of criminal justice policies and procedures.
- Use academic sources to research and write organized and coherent assignments on criminal justice issues.
- Describe employment pathways and identify employment opportunities in the field of criminal justice.

CYBERSECURITY

Cybersecurity AAS: 356A

: 356A

This AAS degree prepares students for entry-level positions in cybersecurity. The program emphasizes computer security and information assurance concepts augmented with current industry standard techniques. Topics cover threats and vulnerabilities, prevention at the technical (hardware and software) and human levels, detection, response, and management aspects of security.

The program prepares entry-level computer technicians with cybersecurity expertise and also offers students a transfer option to four-year institutions. The proposed program of study is designed to address the needs for increasing the number of trained workers qualified to work in cybersecurity in the homeland security industry. The program is expected to meet National Security Telecommunications and Systems Security Instruction (NSTISSI) 4011 and 4013 standards. It will also help prepare students to sit for a variety of industry certifications, including the Computing Technology Industry Association's (CompTIA) A+, Network + and Security+ certifications; Cisco Certified Network Associate (CCNA) certification; and the Security Certified Network Professional certification. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
CMSC	135	Introduction to Scripting	3
NWIT	127	Microcomputer Essentials	3
NWIT	151	Introduction to Networking	3
NWIT	173	Network Security	3

Second Semester

English Foundation *3 semester hours (ENGF)*
Mathematics Foundation *3 semester hours (MATF)*

CMSC	253	UNIX/LINUX System Administration	4
NWIT	245	Defending the Network	3
NWIT	263	Introduction to Digital Forensics	3

Third Semester

Natural Sciences Distribution with Lab *4 semester hours (NSLD)*

PHIL	140	Introduction to the Study of Ethics	3(GEEL)
NWIT	105	Introduction to Cloud Computing	3
NWIT	230	Intro to Cyber Ops	3
NWIT	246	Attacker Tools and Techniques	3

Fourth Semester

Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*

NWIT	247	Introduction to Incident Response	3
NWIT	275	Wi-Fi Pen Testing	3
NWIT	291	Cybersecurity Capstone	1

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or NWIT or CMSC elective.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply software patches to operating systems and applications.
- Evaluate a system for security vulnerabilities using appropriate resources.
- Use standard software tools to detect attempted security breaches in networks.
- Implement network security defenses.
- Describe a professional's responsibility in the areas of individual privacy, intellectual property rights, and ethics and codes of conduct.
- Examine legal, social, and ethical concerns related to securing information systems and networks.
- Explain how to use current forensic tools.
- Demonstrate critical thinking and problem-solving skills on issues related to cybersecurity.
- Describe the differences between internal and external threats and how to defend against each.
- Propose cybersecurity solutions based on real-world problem scenarios.
- Demonstrate the skills necessary to be successful in passing at least 2 of the following certification exams: CCNA (Cisco Certified Network Administrator), CompTIA Network+, CompTIA Security+, and/or ISC2 Professional Security certification(s).

Cybersecurity for IT Professionals Certificate: 265

: 265

Intended for those already employed in computing or who have a computing background, the certificate emphasizes computer security and information assurance concepts augmented with current industry standard techniques. This career curriculum prepares students for entry-level careers in cybersecurity. Topics cover threats and vulnerabilities, prevention at the technical

(hardware and software) and human levels, detection, response, and management aspects of security. This program of study is built upon the National Security Telecommunications and Systems Security Instruction (NSTISSI) 4011 and 4013. Each course in this certificate prepares the students in part to sit for the respective professional certifications. Range of occupations applicable to this certificate are: network analyst, network administrator, IT manager, internet security specialist, IT compliant specialist. Before registering, students must contact a program advisor. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

NWIT	173	Network Security	3
NWIT	245	Defending the Network	3
NWIT	246	Attacker Tools and Techniques	3
NWIT	263	Introduction to Digital Forensics	3
NWIT	275	Wi-Fi Pen Testing	3
NWIT	290	Information Security Capstone	3

TOTAL CREDIT HOURS: 18

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Describe: security threats, integrity, confidentiality, and availability in security information.
- Describe security ramifications, technology weaknesses, configuration weaknesses, policy weaknesses, and human errors.
- Describe authentication, understand password issues, Kerberos assumptions, challenge handshake authentication protocol, security tokens, and biometrics.
- Define common Internet components, and identify techniques used in web hacking, attacks and malicious code, IP fragmentation attacks, spoofing, man in the middle, and TCP session hijacking.
- Investigate advanced concepts and procedures related to the transmission control protocol/ internet protocol (TCP/IP).
- Secure version of internet protocol (IP) and internet protocol security (IPSec).
- Describe Web security, SSL and TLS, HTTPS vulnerabilities, javascript, activex, and buffer overflows.
- Secure workstations and servers running current Windows OS software and test the effectiveness of various security measures.
- Investigate measures that can help ensure business continuity in the event of a disaster, such as contingency planning and power and backup issues.
- Identify the basic components of a layered structure for network defense architecture, describe access control objectives, and auditing concepts.
- Analyze network operations risks; conduct network penetration tests; implement network countermeasures.

DATA SCIENCE

Data Science AS: 416

: 416

The degree provides an excellent opportunity for students wanting to increase their data literacy, improve their marketability, and/or prepare for a career in a data science field. It is also suitable for those who wish to advance their professional careers by supplementing their work experience or an existing college or graduate degree with data science knowledge. Students will use mathematics, statistics, and data science skills to tackle unstructured data, solve multifaceted problems, consider ethical implications, and make data-driven recommendations. Through hands-on experiences using a variety of the most ubiquitous data tools and technology, students will learn to build the skills necessary to explore, analyze, visualize, and communicate about large data sets. Additionally, students will explore ethical implications of the use of data in the data lifecycle. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	150	Elementary Applied Calculus I	4(MATF)
OR			
MATH	181	Calculus I	4(MATF)
PSYC	100	General Psychology	3(BSSD)
COMM	108	Foundations of Human Communication	3(GEEL)
OR			
COMM	112	Business and Professional Speech Communication	3(GEEL)
MATH	117	Elements of Statistics	3
OR			
MATH	217	Statistics for Scientists	3

Third Semester

Natural Sciences Distribution with Lab *4 semester hours (NSLD)* **

DATA	201	Statistical Methods in Data Science	3
MATH	264	Applications in Linear Algebra	4‡

Program Elective *4 semester hours* †

Second Semester

English Foundation *3 semester hours (ENGF)*

PHIL	140	Introduction to the Study of Ethics	3(HUMD)
GEOG	130	Global Geography	3(BSSD, GCP)
DATA	101	Introduction to Data Science	3
DATA	110	Data Visualization and Communication	3

Fourth Semester

Arts Distribution *3 semester hours (ARTD)*
Natural Sciences Distribution with Lab *4 semester hours (NSLD)* **

DATA	205	Capstone Experience in Data Science	4

200-Level Program Elective *3 semester hours* †

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103 or program elective.

** Students are strongly encouraged to take two consecutive lab sciences courses. Examples include CHEM 131/CHEM 132, PSCI 101/PSCI 102, PHYS 203/PHYS 204.

‡ MATH 284 may be substituted for MATH 264.

† Program Electives: any MATH or CMSC course or GEOG 240 or GEOG 260. Department strongly recommends CMSC 206, CMSC 246, and GEOG 240. CMSC 206 and CMSC 246 provide programming skills in Python and SQL, and GEOG 240 provides foundational knowledge of Geographic Information Systems (GIS). Not all program elective options transfer to all institutions. Please consult a data science program advisor or the transfer institution before selecting program elective courses.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Assess different analysis and data management techniques and justify the selection of a particular model or technique for a given task.
- Execute analyses of large and disparate datasets and construct models necessary for these analyses.
- Demonstrate competency with programming languages and environments for data analysis.
- Summarize and communicate findings of complex analyses in a concise way for a target audience using both graphics and statistical measures.
- Explain, evaluate, and apply ethical principles and practices in the data lifecycle.

Data Science Certificate: 256

: 256

This certificate will provide students with experience in the field of data science including such areas as data management, data analysis, data collection, and data visualization. It is suitable for students who wish to begin work in the field, for those who wish to supplement their existing coursework with additional experiences in these data science areas, and for students who have obtained a bachelor's or other degree in any number of analytical and scientific fields and wish to upgrade or update their skills and training. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

MATH	117	Elements of Statistics	3
OR			
MATH	217	Statistics for Scientists	3
OR			
BSAD	210	Statistics for Business and Economics	3
DATA	101	Introduction to Data Science	3
DATA	110	Data Visualization and Communication	3
DATA	201	Statistical Methods in Data Science	3
DATA	205	Capstone Experience in Data Science	4

TOTAL CREDIT HOURS: 16

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Assess different analysis and data management techniques and justify the selection of a particular model or technique for a given task.
- Execute analyses of large and disparate datasets and construct models necessary for these analyses.
- Demonstrate competency with programming languages and environments for data analysis.
- Summarize findings of complex analyses in a concise way for a target audience using both graphics and statistical measures.

DIAGNOSTIC MEDICAL SONOGRAPHY

Diagnostic Medical Sonography AAS: 530

(TP/SS): 530

Students who plan to major in diagnostic medical sonography will be assigned the temporary major of pre-diagnostic medical sonography, with POS code 530, until they are officially admitted to the diagnostic medical sonography program. Students may take preparatory courses and courses that fulfill General Education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the diagnostic medical sonography program may choose to major in general studies or any other open-admission program. The Admissions and Records Office at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the diagnostic medical sonography program.

This curriculum, accredited by the Commission on Accreditation of Allied Health Education Programs, requires a minimum of two years of didactic and clinical experience. It provides a foundation for graduates to become highly skilled in providing patient services using diagnostic ultrasound under the supervision of a physician in hospitals, offices, and other health care settings. Reflected ultrasound waves are utilized by the sonographer to display images on a video monitor of body tissues. The sonographer is responsible for performing the examinations, providing patient care, and recording anatomical, pathological, and/or physiological data for interpretation by the physician.

Admission requirements, including specific selection criteria, have been established by the Board of Trustees; see the Admissions and Registration section of this catalog.

Students need to meet prerequisites for first-semester courses. Each of the diagnostic medical sonography courses builds on materials offered in previous courses. Students in this curriculum are required to achieve a grade of C or better in each sonography course and maintain current CPR certification while enrolled in the program.

Upon completion of this curriculum, the graduate will receive an AAS and be eligible to apply to take the national registry exam, administered by the American Registry of Diagnostic Medical Sonographers, in one or more of the following specialties: abdominal-extended sonography, obstetrics gynecology sonography, adult echocardiography, or vascular sonography.

Other Requirements:

BIOL	213	Human Anatomy and Physiology II	4
HINM	115	Medical Terminology I	2
HINM	116	Medical Terminology II	2
HINM	120	Concepts of Disease	3
PHYS	103	Introduction to Physics	2

Abdominal Extended and Obstetrics and Gynecology Area of Concentration:

SONO	112	Abdominal Sonography I	3
SONO	123	Obstetric/Gynecology Sonography I	3
SONO	210	Breast Sonography	1
SONO	232	Abdominal Sonography II	3
SONO	243	Obstetric/Gynecology Sonography II	3
SONO	261	Sonography Practicum I	1
SONO	262	Sonography Practicum II	1
SONO	263	Sonography Practicum III	2
SONO	264	Sonography Practicum IV	4
SONO	265	Sonography Practicum V	1
SONO	266	Sonography Practicum VI	4

ABDOMINAL EXTENDED AND OBSTETRICS AND GYNECOLOGY AREA OF CONCENTRATION TOTAL CREDIT HOURS: 70

Echocardiography Area of Concentration:

SONO	229	Pediatric Echocardiography	3	SONO	263	Sonography Practicum III	2
SONO	245	Adult Echocardiography I	3	SONO	264	Sonography Practicum IV	4
SONO	248	Adult Echocardiography II	3	SONO	265	Sonography Practicum V	1
SONO	261	Sonography Practicum I	1	SONO	266	Sonography Practicum VI	4
SONO	262	Sonography Practicum II	1				

ECHOCARDIOGRAPHY AREA OF CONCENTRATION TOTAL CREDIT HOURS: 66

Vascular Area of Concentration:

SONO	229	Pediatric Echocardiography	3	SONO	262	Sonography Practicum II	1
SONO	245	Adult Echocardiography I	3	SONO	263	Sonography Practicum III	2
SONO	248	Adult Echocardiography II	3	SONO	264	Sonography Practicum IV	4
SONO	261	Sonography Practicum I	1	SONO	265	Sonography Practicum V	1

VASCULAR AREA OF CONCENTRATION TOTAL CREDIT HOURS: 63

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Obtain, review, and integrate pertinent patient history and supporting clinical data to facilitate optimum diagnostic results.
- Perform appropriate procedures and record anatomical, pathological, and/or physiological data for interpretation by a physician.
- Record, analyze, and process diagnostic data and other pertinent observations made during the procedure for presentation to the interpreting physician.
- Exercise discretion and judgment in the performance of sonographic and/or other diagnostic services.
- Demonstrate appropriate communication skills with patients and colleagues.
- Act in a professional and ethical manner.
- Provide patient education related to medical ultrasound and/or other diagnostic vascular techniques and promote principles of good health.

DIGITAL MEDIA AND WEB TECHNOLOGY

Digital Media and Web Technology AA: 615

: 615

From front-end development to server-side programming and databases, this program provides students with the skills and knowledge needed to excel in the rapidly growing field of website and web application development. Students in this program will gain hands-on experience in HTML, CSS, and JavaScript, as well as database and web application development using industry standard equipment and software. This degree prepares students for transfer to a four-year institution as well as a variety of entry and mid-level positions such as user-interface developers, web developers, digital media specialists, web designers, and multimedia specialists. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)* †			
GDES	116	Digital Tools for the Visual Arts	4(ARTD)
TECH	272	Website Development	4

Second Semester

English Foundation *3 semester hours (ENGF)* †
Natural Science Distribution with Lab *4 semester hours (NSLD)* †
Arts Distribution *(ARTD)* or **Humanities Distribution** *(HUMD)* or Health General Education Course *(HLTH) 3 semester hours (GEIR)*

TECH	276	JavaScript Fundamentals	3
TECH	273	Advanced Website Development	3

Third Semester

Humanities Distribution *3 semester hours (HUMD)* †
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* ** †

TECH	274	Web Content Management Systems and Strategy	3
TECH	282	Web Application Development Using PHP and MySQL	3

Elective *3 semester hours* ††

Fourth Semester

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* ** †
Natural Science Distribution without Lab *3 semester hours (NSND)* †
OR

Natural Science Distribution with Lab *4 semester hours (NSLD)* †

COMM	108	Foundations of Human Communication	3(GEIR)

OR

COMM	112	Business and Professional Speech Communication	3(GEIR)

Elective *3 semester hours* ††
Elective *3 semester hours* ††

PROGRAM REQUIREMENTS:

ENGL	101	Introduction to College Writing	3*
TECH	272	Website Development	4
TECH	274	Web Content Management Systems and Strategy	3
TECH	273	Advanced Website Development	3
TECH	276	JavaScript Fundamentals	3
TECH	282	Web Application Development Using PHP and MySQL	3

Elective *3 semester hours* ††
Elective *3 semester hours* ††
Elective *3 semester hours* ††

TOTAL CREDIT HOURS: 60 60

* ENGL 101/ENGL 011, if needed for ENGL 102/ENGL 103, or elective.

** Behavioral and social sciences distribution (BSSD) courses must come from different disciplines.

† Recommended General Education courses for transfer include: ENGL 102 (ENGF), ENGL 103 (ENGF), MATH 117 (MATF), HIST 205 (HUMD), SOCY 100 (BSSD), PSYC 100 (BSSD), ASTR 101 (NSLD), BIOL 105 (NSND).

†† Students may select 3-credit or 4-credit electives. Students should consult a program advisor and check transferability to four-year institutions.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

* ENGL 101/ENGL 011, if needed for ENGL 102/ENGL 103, or elective.

** Behavioral and social sciences distribution (BSSD) courses must come from different disciplines.

† Recommended General Education courses for transfer include: ENGL 102 (ENGF), ENGL 103 (ENGF), MATH 117 (MATF), HIST 205 (HUMD), SOCY 100 (BSSD), PSYC 100 (BSSD), ASTR 101 (NSLD), BIOL 105 (NSND).

†† Students may select 3-credit or 4-credit electives. Students should consult a program advisor and check transferability to four-year institutions.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate currency and proficiency in the digital tools employed in website and web applicatioon development.
- Apply the techniques and knowledge of foundational skills in a range of media to create professional quality websites and web applications that comply with current web standards and are representative of the material and techniques studied.

Digital Media and Web Technology AAS: 357

: 357

DIGITAL MEDIA AND WEB TECHNOLOGY AAS: 357 WAS REPLACED BY DIGITAL MEDIA AND WEB TECHNOLOGY AA: 615 AND IS NO LONGER ACCEPTING NEW STUDENTS. ADDITIONALLY, STUDENTS ADMITTED PRIOR TO FALL 2022 WILL NOT BE ABLE TO GRADUATE WITH THIS CERTIFICATE AFTER SPRING 2025. PLEASE CONTACT A PROGRAM ADVISOR#FOR ALTERNATIVE OPTIONS.

The digital media and web technology program is designed for the student who wishes to pursue a career or to continue studies in digital media and web development. This program teaches technologies involved in designing and developing user interfaces, websites, and web applications as well as mobile and web server programming. Students may focus their studies on user interface development, web development, or mobile development or take courses from some or all of the focus areas. The curriculum prepares students for a variety of entry and midlevel positions as user-interface developers, web developers, web designers, digital media, and multimedia specialists.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*

Mathematics Foundation *3 semester hours (MATF)*

GDES	116	Digital Tools for the Visual Arts	4(GEEL)
CMSC	100	Fundamentals of Computer Programming	2†

Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*

Third Semester

TECH	273	Advanced Website Development	3
TECH	274	Web Content Management Systems and Strategy	3
TECH	276	JavaScript Fundamentals	3

Natural Sciences Distribution with Lab *4 semester hours (NSLD)*
Program Elective *3 semester hours* ‡

Second Semester

English Foundation *3 semester hours (ENGF)*

TECH	272	Website Development	4

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*
Program Elective *4 semester hours* ‡

Fourth Semester

TECH	299	Web Certificate/Degree Portfolio	3

Program Electives *12 semester hours* ‡

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

‡ Program electives: GDES 121, GDES 140, GDES 212, GDES 214, GDES 216, CMSC 141, TECH 277, TECH 278, TECH 282, TECH 288, CMSC 201, CMSC 214, CMSC 234, CMSC 246, CMSC 250, TVRA 140. Please consult a digital media advisor before selecting courses.

† CMSC 100 is designed for students new to computer programming. Successful completion of CMSC 140 is necessary for Mobile Development courses.

This degree is a career program and may not readily transfer to four year colleges/universities (except in special cases.) Visit transfer planning for more information. This program is designed to be completed in 60 credits. If a student elects to take electives that create a program total exceeding 60 credits, they should do so under advisement.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate solid foundation skills and competency in a range of media, techniques, and knowledge of associated processes used in web and mobile development.
- Demonstrate currency and proficiency in the digital tools employed in web and mobile design and development.
- Create professional quality websites or mobile applications that comply with current web standards and are representative of the material and techniques studied.

Web Design Certificate: 229A

(R): 229A

WEB DESIGN CERTIFICATE: 229A WAS REPLACED BY WEB DEVELOPMENT CERTIFICATE: 231B AND IS NO LONGER ACCEPTING NEW STUDENTS. ADDITIONALLY, STUDENTS ADMITTED PRIOR TO FALL 2022 WILL NOT BE ABLE TO GRADUATE WITH THIS CERTIFICATE AFTER SPRING 2025. PLEASE CONTACT A PROGRAM ADVISOR#FOR ALTERNATIVE OPTIONS.

This certificate is designed to provide training, skills, and knowledge that prepare a student for employment as a member of a web development team. Skills include website management, advanced web design techniques using a variety of software, effective communication between web authors and system administrators, HTML validity, editorial responsibilities, and liaison with graphic artists and others.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

GDES	116	Digital Tools for the Visual Arts	4
GDES	121	Fundamentals of Graphic Design I	3
GDES	140	Introduction to Animation	4
GDES	214	Photoshop for Graphics and Photography	4
GDES	218	Graphic Design for the Web	4
TECH	272	Website Development	4
TECH	299	Web Certificate/Degree Portfolio	3

Program Elective (Select One Course)

ARTT	100	Introduction to Drawing	3
ARTT	102	Introduction to 2D Design	3
GDES	216	Illustrator for Vector Graphics	4
TECH	273	Advanced Website Development	3
TECH	274	Web Content Management Systems and Strategy	3
TECH	276	JavaScript Fundamentals	3
TECH	278	Web Application Development Using ColdFusion	4
TECH	277	Advanced JavaScript	3
TECH	282	Web Application Development Using PHP and MySQL	3
TECH	288	Advanced Web Application Development Using ColdFusion	3

TOTAL CREDIT HOURS: 29-30

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate solid foundation skills and competency in a range of media, techniques, and knowledge of associated processes used in web design.
- Demonstrate visual problem solving that employs appropriate technical skills and techniques.
- Demonstrate the ability to express ideas and concepts creatively.
- Apply principles of design and typography to the processes employed in the graphic design, illustration, and web design industries.
- Demonstrate an understanding of the vocabulary of web design.
- Demonstrate the ability to present and critique concepts and designs.
- Demonstrate currency in the digital tools employed in website design and assembly.
- Create professional-quality websites that comply with current web standards.
- Develop a portfolio representative of the material and techniques studied, suitable for employment or transfer to another institution.

Web Development Certificate: 231B

: 231B

From front-end development to server-side programming and databases, this certificate provides students with the skills and knowledge needed to excel in the rapidly growing field of website and web application development. Students in this program will gain hands-on experience in HTML, CSS and JavaScript, as well as database and web application development, using industry standard equipment and software. This certificate prepares students for a variety of entry and mid-level positions as user-interface developers, web developers, digital media specialists, web designers and multimedia specialists. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

GDES	116	Digital Tools for the Visual Arts	4
TECH	272	Website Development	4
TECH	273	Advanced Website Development	3
TECH	276	JavaScript Fundamentals	3
TECH	282	Web Application Development Using PHP and MySQL	3

TOTAL CREDIT HOURS: 17

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Create valid HTML webpages that correctly incorporate Cascade Style Sheets (CSS) and JavaScript.
- Use an Integrated Development Environment (IDE) effectively.
- Create webpages with dynamic content utilizing a web database technology.
- Create coherent and intuitive websites and web-enabled applications.

Web Programming Certificate: 230

: 230

WEB PROGRAMMING CERTIFICATE: 230 WAS REPLACED BY WEB DEVELOPMENT CERTIFICATE: 231B AND IS NO LONGER ACCEPTING NEW STUDENTS. ADDITIONALLY, STUDENTS ADMITTED PRIOR TO FALL 2022 WILL NOT BE ABLE TO GRADUATE WITH THIS CERTIFICATE AFTER SPRING 2025. PLEASE CONTACT A PROGRAM ADVISOR#FOR ALTERNATIVE OPTIONS.

This certificate is designed to provide training, skills, and knowledge that prepare a student for employment as a programmer on a web development team. Skills include advanced web programming languages (Java, Visual Basic, XML, DHTML/JavaScript, web databases), UNIX, and advanced HTML.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

CMSC	246	Introduction to SQL Using Oracle	3
CMSC	140	Introduction to Programming	3
CMSC	201	Java Programming Language	3
CMSC	214	Advanced Java Programming	3
CMSC	220	Client-Server Programming with Java	3
CMSC	250	UNIX/LINUX Operating System	3
GDES	116	Digital Tools for the Visual Arts	4
OR			
CMAP	106	Computer Literacy	3
TECH	272	Website Development	4
TECH	273	Advanced Website Development	3
OR			
TECH	276	JavaScript Fundamentals	3
TECH	277	Advanced JavaScript	3
TECH	278	Web Application Development Using ColdFusion	4

Electives (Select 1 Course)

CMAP	245	Database Applications	3
CMAP	269	Computer Applications Internship	1-4
CMSC	226	Introduction to Object-Oriented Programming with C++	3
CMSC	260	Computer Security	3
CMSC	269	Computer Science and Technologies Internship	1-4
TECH	225	Game Programming	4
TECH	274	Web Content Management Systems and Strategy	3
TECH	282	Web Application Development Using PHP and MySQL	3
TECH	288	Advanced Web Application Development Using ColdFusion	3

TOTAL CREDIT HOURS: 38-39

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Create valid XHTML webpages.
- Write and use JavaScript in webpages.
- Use an Integrated Development Environment (IDE) such as the MX Studio 8 effectively.
- Create webpages incorporating the Cascading Style Sheets technology.
- Create webpages with dynamic content utilizing at least two web server application technologies.
- Create coherent and intuitive web-enabled applications.

EDUCATION

Early Childhood Education Certificate: 177

: 177

This certificate curriculum is designed to prepare students to work in a variety of child care settings with children from infancy through age eight. The curriculum consists of a core of 21 credit hours directly related to early childhood education. The curriculum is designed to be completed within two semesters, or over a longer period of time if a student chooses. Students may apply earned credits toward an AAS in early childhood education technology.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

EDUC	115	Child Health, Safety, and Nutrition	3
EDUC	135	Child Growth and Development	3
EDUC	136	Curriculum Planning in Early Childhood Education	3
EDUC	153	Infant and Toddler Development and Curriculum Planning	3
OR			
EDUC	154	School-Age Child Care	3
EDUC	180	Children's Literature	3
EDUC	208	Observation and Assessment of Young Children	3
EDUC	233	Practicum in Early Childhood Education	3
ENGL	101	Introduction to College Writing	3
OR			
ENGL Foundation			
PSYC	100	General Psychology	3
COMM	108	Foundations of Human Communication	3

TOTAL CREDIT HOURS: 30

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Describe theories and principles of child development and learning and apply the theories and principles to the classroom teaching.
- Use systematic observations, documentation, and other effective assessment strategies in observing and working with children.
- Apply developmentally appropriate teaching practices and guidance approaches to enhance children's learning and development.
- Develop and implement curriculum plans to promote children's learning in the areas of physical/motor, social, emotional, cognitive, and language development.
- Be reflective practitioners to reflect and use the most effective methods of guidance and teaching when working with children.
- Demonstrate written, verbal, critical thinking, and problem-solving skills, which will allow them to effectively make connections between prior knowledge/experience and new learning.
- Teach young children in an early childhood setting with the required disposition, knowledge, skills, and competencies.
- Work on the AAS with good understanding of the required content areas.

Early Childhood Education Technology AAS: 315

: 315

This curriculum is designed to prepare students to work with children from infancy through age eight in a variety of early childhood settings. The curriculum has a core of 34 credit hours directly related to early childhood education. The curriculum is designed so that it can be completed within four semesters, but it can be extended over a longer time. A suggested course sequence for full-time students follows; part-time students should consult an advisor. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
COMM	108	Foundations of Human Communication	3(GEEL)
EDUC	119	Introduction to Early Childhood Education	3
PSYC	100	General Psychology	3(BSSD)

Third Semester

EDUC	136	Curriculum Planning in Early Childhood Education	3
EDUC	170	First Start: Care of Infants and Toddlers with Disabilities	3
OR			
EDUC	201	Introduction to Special Education	3
EDUC	224	Social-Emotional Development in Young Children	3
EDUC	227	Administering Early Childhood Programs	3
Any General Education Behavioral and Social Sciences Distribution Course *3 semester hours (BSSD)*			

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3
EDUC	115	Child Health, Safety, and Nutrition	3
EDUC	135	Child Growth and Development	3
EDUC	153	Infant and Toddler Development and Curriculum Planning	3
OR			
EDUC	154	School-Age Child Care	3
Any General Education Arts Distribution Course *3 semester hours (**ARTD** or HUMD) ****			

Fourth Semester

EDUC	180	Children's Literature	3
OR			
EDUC	243	Processes and Acquisition of Literacy	3
EDUC	208	Observation and Assessment of Young Children	3
EDUC	210	Curriculum Seminar-Science and Mathematics for Young Children	2
EDUC	233	Practicum in Early Childhood Education	3
Natural Sciences Distribution with Lab *4 semester hours (NSLD) ***			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102, or elective.

** BIOL 101 or PSCI 101 or PSCI 102 recommended.

*** AAS programs require one 3-credit Arts or Humanities General Education course. ISTD 173 is recommended.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Describe the theories and principles of child development and learning and apply the theories and principles to his or her classroom teaching.
- Identify the issues, trends, and historical events in the field of early childhood education.
- Use systematic observations, documentation, and other effective assessment strategies in a responsible way to positively influence children's learning and development.
- Demonstrate knowledge of supporting and empowering families and communities through respectful, reciprocal relationships.
- Demonstrate understanding of content areas and apply developmentally appropriate approaches to enhance children's learning and development.
- Create healthy, respectful, supportive, and challenging learning environments to promote children's learning and development.
- Design, implement, and evaluate meaningful, challenging curricula to promote positive outcomes for all young children.
- Be reflective practitioners to reflect and use the most effective methods of guidance and teaching when working with children.
- Identify and conduct themselves as early childhood professionals who use ethical guidelines and National Association for the Education of Young Children standards related to early childhood practice and who are advocates for sound educational practices and policies.
- Demonstrate excellent written, verbal, critical thinking, and problem-solving skills, which will allow them to effectively make connections between prior knowledge/experience and new learning.

Early Childhood Education/Early Childhood Special Education AAT: 604

: 604

The teacher education transfer program AAT comprises a curriculum that provides the first two years of a four-year bachelor's degree and teacher certification. This curriculum prepares students to transfer to an early childhood education program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in early childhood education. The program enables students to fulfill their general education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must either achieve a minimum of a 3.0 cumulative GPA or achieve a 2.75 - 2.99 cumulative GPA along with presenting acceptable scores on one of the following state-approved basic skills tests: SAT, ACT, Praxis I PPST, or Praxis Core academic skills tests.

Please note: EDUC 201 - Introduction to Special Education is a requirement of Montgomery College's AAT in early childhood education, but is not sufficient to meet all special education or inclusion course requirements for four-year teacher education programs. Students may be required to take additional special education or inclusion courses as a part of the requirements for a baccalaureate degree and teacher education certification at four-year institutions.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	130	Elements of Mathematics I: Mathematical Reasoning and Number Systems	4(MATF)
EDUC	119	Introduction to Early Childhood Education	3
PSYC	100	General Psychology	3

Third Semester

EDUC	136	Curriculum Planning in Early Childhood Education	3
EDUC	201	Introduction to Special Education	3
GEOG	130	Global Geography	3(BSSD)
MATH	132	Elements of Mathematics III: Probability, Statistics, and Problem Solving	4
PSCI	101	Physical Science I	4(NSND)

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
BIOL	101	General Biology	4
EDUC	135	Child Growth and Development	3
HIST	200	History of the United States, a Survey Course: from Colonial Times to 1865	3(HUMD) **
OR			
HIST	201	History of the United States, a Survey Course: from 1865 to the Present	3(HUMD)**
MATH	131	Elements of Mathematics II: Geometry and Algebra	4

Fourth Semester

EDUC	243	Processes and Acquisition of Literacy	3
HLTH	125	Personalized Health Fitness	3(GEIR)
ISTD	173	Integrated Arts	3(ARTD)
PSCI	102	Physical Science II	4
Humanities Distribution		*3 semester hours (GEIR)* ‡	

TOTAL CREDIT HOURS: 63

* ENGL 101/ENGL 101A, if needed for ENGL 102, or elective.

‡ Select ENGL literature course. (ENGL 190 recommended).

** Students planning to transfer to University of Maryland--College Park should select HIST 200.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Describe the theories and principles of child development and learning and apply the theories and principles to their classroom teaching.
- Identify the policies, issues, trends, and historical events in the field of early childhood education.
- Use systematic observations, documentation, and other effective assessment strategies in a responsible way to positively influence children's learning and development.
- Demonstrate knowledge of supporting and empowering families and communities through respectful, reciprocal relationships.
- Demonstrate understanding of content areas and apply developmentally appropriate approaches to enhance children's learning and development.
- Identify and explain the models of classroom and behavior management.
- Identify strategies for working and advocating for families of culturally and linguistically diverse students and students with disabilities in order to facilitate a child's educational program.
- Analyze and reflect upon teaching practices for the purpose of improving and differentiating instruction for students.
- Identify community resources serving students with special needs and their families.
- Identify and conduct themselves as early childhood professionals who use ethical guidelines and National Association for the Education of Young Children standards related to early childhood practice, and who are advocates for sound educational practices and policies.
- Demonstrate excellent written, verbal, critical thinking, and problem-solving skills, which will allow them to effectively make connections between prior knowledge/experience and new learning.

Elementary Education/Elementary Special Education AAT: 601A

: 601A

The teacher education transfer program AAT has a curriculum that provides the first two years of a four-year bachelor's degree and teacher certification. This curriculum prepares students to transfer to an elementary education or generic special education program at a four-year college or university in the state of Maryland. The AAT articulates with all of the transfer programs in elementary education and generic special education in the state of Maryland. The program enables students to fulfill their general education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must either achieve a minimum of a 3.0 cumulative GPA or achieve a 2.75 - 2.99 cumulative GPA along with presenting acceptable scores on one of the following state-approved basic skills tests: SAT, ACT, Praxis I PPST, or Praxis Core academic skills tests.

Please note: EDUC 201 - Introduction to Special Education is a requirement of Montgomery College's AAT in early childhood education, but is not sufficient to meet all special education or inclusion course requirements for four-year teacher education programs. Students may be required to take additional special education or inclusion courses as a part of the requirements for a baccalaureate degree and teacher education certification at four-year institutions.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	130	Elements of Mathematics I: Mathematical Reasoning and Number Systems	4(MATF)
COMM	108	Foundations of Human Communication	3(GEIR)
EDUC	101	Foundations of Education	3
EDUC	102	Field Experience in Education	1
PSYC	100	General Psychology	3(BSSD)

Third Semester

EDUC	243	Processes and Acquisition of Literacy	3
MATH	132	Elements of Mathematics III: Probability, Statistics, and Problem Solving	4
PSCI	101	Physical Science I	4(NSND)
OR			
PSCI	102	Physical Science II	4(NSND)
PSYC	203	Human Growth and Development During the Life Span	3

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
BIOL	101	General Biology	4(NSLD)
EDUC	201	Introduction to Special Education	3
EDUC	202	Field Experience in Special Education	1
MATH	131	Elements of Mathematics II: Geometry and Algebra	4

Fourth Semester

GEOG	130	Global Geography	3(BSSD)
HIST	200	History of the United States, a Survey Course: from Colonial Times to 1865	3(HUMD) **
OR			
HIST	201	History of the United States, a Survey Course: from 1865 to the Present	3(HUMD)**
HLTH	125	Personalized Health Fitness	3
ISTD	173	Integrated Arts	3(ARTD)
PSYC	227	Educational Psychology	3

TOTAL CREDIT HOURS: 61

* ENGL 101/ENGL 101A, if needed for ENGL 102 , or choose one of PSCI 101 or PSCI 102 not used for NSLD distribution course.

**Students planning to transfer to University of Maryland--College Park should select HIST 200.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/experience and new learning.

Secondary Education--English AAT: 607

: 607

This curriculum prepares students to transfer to any secondary education English program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in secondary English education. The program enables students to fulfill their General Education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must either achieve a minimum of a 3.0 cumulative GPA or achieve a 2.75 - 2.99 cumulative GPA along with presenting acceptable scores on one of the following state-approved basic skills tests: SAT, ACT, Praxis I PPST, or Praxis Core academic skills tests.

Participation in field experiences with Montgomery County Public Schools (MCPS) is an important component of all teacher education transfer programs at Montgomery College. Completion of fingerprinting for state and federal level background checks (or documentation of recent prior completion) is mandatory for enrollment in any course requiring experiences in MCPS. Further information on background checks may be found on the School of Education website at www.montgomerycollege.edu/academics/abeess/school-of-education/index.html.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
EDUC	101	Foundations of Education	3
EDUC	102	Field Experience in Education	1
ENGL	110	Principles of English Grammar	3

Third Semester

ENGL	201	Introduction to World Literature I	3
OR			
ENGL	202	Introduction to World Literature II	3
ENGL	211	Survey of American Literature I	3
OR			
ENGL	212	Survey of American Literature II	3
PSYC	227	Educational Psychology	3
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **			
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
COMM	108	Foundations of Human Communication	3(GEIR)
EDUC	201	Introduction to Special Education	3
EDUC	202	Field Experience in Special Education	1
ENGL	190	Introduction to Literature	3(HUMD)
PSYC	100	General Psychology	3(BSSD)

Fourth Semester

ENGL	213	Survey of British Literature I	3
OR			
ENGL	214	Survey of British Literature II	3
ISTD	173	Integrated Arts	3(ARTD)
PSYC	216	Adolescent Psychology	3
Humanities Distribution *3 semester hours (HUMD)* ‡			
Natural Sciences Distribution *3 semester hours (NSND)*			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102, or elective.

** Behavioral and Social Science Distribution (BSSD) courses must come from a different discipline other than PYSC.

‡ Recommended courses are HIST 200 or HIST 201.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/experience and new learning.
- Demonstrate an understanding of the structure of the English language, some aspects of its history and development, writing strategies for both literary and academic discourse, and literary works form a variety or cultures, historical periods, and genres.

Secondary Education--Mathematics AAT: 605

: 605

This curriculum prepares students to transfer to any secondary education mathematics program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in mathematics education. The program enables students to fulfill their General Education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must either achieve a minimum of a 3.0 cumulative GPA or achieve a 2.75 - 2.99 cumulative GPA along with presenting acceptable scores on one of the following state-approved basic skills tests: SAT, ACT, Praxis I PPST, or Praxis Core academic skills tests.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	181	Calculus I	4(MATF)
EDUC	101	Foundations of Education	3
EDUC	102	Field Experience in Education	1
PSYC	100	General Psychology	3(BSSD)

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
PHYS	161	General Physics I: Mechanics and Heat	3(NSD)****
EDUC	201	Introduction to Special Education	3
EDUC	202	Field Experience in Special Education	1
MATH	182	Calculus II	4

Third Semester

CHEM	132	Principles of Chemistry II	4(NSLD)
OR			
PHYS	262	General Physics II: Electricity and Magnetism	4(NSLD)
CMSC	140	Introduction to Programming	3
HIST	200	History of the United States, a Survey Course: from Colonial Times to 1865	3(HUMD)
ISTD	173	Integrated Arts	3(ARTD)
MATH	280	Multivariable Calculus	4

Fourth Semester

COMM	108	Foundations of Human Communication	3(GEIR)
MATH	284	Linear Algebra	4
PSYC	227	Educational Psychology	3

Arts Distribution *(ARTD)* or Humanities Distribution *(HUMD) 3 semester hours (GEIR)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD) **/****

TOTAL CREDIT HOURS: 61

* ENGL 101/ENGL 101A, if needed for ENGL 102, or choose one of MATH 117 or MATH 282.

** Students must select BSSD elective from a different discipline than PSYC.

***One of these courses must meet the Global Course requirement.

**** CHEM 131 Principles of Chemistry I or PHYS 161 Mechanics & Heat

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/experience and new learning.
- Demonstrate proficiency in the application of mathematics through the level of multivariable calculus.

Secondary Education--Physics AAT: 603

: 603

This curriculum prepares students to transfer to a secondary education physics program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in secondary physics education. The program enables students to fulfill their General Education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must either achieve a minimum of a 3.0 cumulative GPA or achieve a 2.75 - 2.99 cumulative GPA along with presenting acceptable scores on one of the following state-approved basic skills tests: SAT, ACT, Praxis I PPST, or Praxis Core academic skills tests.

Participation in field experiences with Montgomery County Public Schools (MCPS) is an important component of all teacher education transfer programs at Montgomery College. Completion of fingerprinting for state and federal level background checks (or documentation of recent prior completion) is mandatory for enrollment in any course requiring experiences in MCPS. Further information on background checks may be found on the School of Education website at www.montgomerycollege.edu/academics/abeess/school-of-education/index.html.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	181	Calculus I	4(MATF)
BIOL	150	Principles of Biology I	4
OR			
CHEM	131	Principles of Chemistry I	4
EDUC	101	Foundations of Education	3
EDUC	102	Field Experience in Education	1

Third Semester

HIST	200	History of the United States, a Survey Course: from Colonial Times to 1865	3(HUMD)
ISTD	173	Integrated Arts	3(ARTD)
MATH	280	Multivariable Calculus	4
PHYS	262	General Physics II: Electricity and Magnetism	4
PSYC	216	Adolescent Psychology	3

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
EDUC	201	Introduction to Special Education	3
EDUC	202	Field Experience in Special Education	1
MATH	182	Calculus II	4
PHYS	161	General Physics I: Mechanics and Heat	3(NSND)
PSYC	100	General Psychology	3(BSSD)**

Fourth Semester

COMM	108	Foundations of Human Communication	3(GEIR)
PHYS	263	General Physics III: Waves, Optics, and Modern Physics	4
PSYC	227	Educational Psychology	3

Arts Distribution *(ARTD)* or Humanities Distribution *(HUMD) 3 semester hours (GEIR) ****
Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

TOTAL CREDIT HOURS: 65

* ENGL 101/ENGL 101A, if needed for ENGL 102, or elective.

** Behavioral and Social Science Distribution (BSSD) courses must come from a different discipline than PSYC.

***One of these courses must meet the global/multicultural course requirement.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/experience and new learning.
- Demonstrate proficiency in the application of physics to include mechanics, electricity, wave theory, and modern physics.

Secondary Education--Spanish AAT: 602

: 602

This curriculum prepares students to transfer to any secondary education Spanish program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in teaching Spanish at the secondary level. The program enables students to fulfill their General Education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must either achieve a minimum of a 3.0 cumulative GPA or achieve a 2.75 - 2.99 cumulative GPA along with presenting acceptable scores on one of the following state-approved basic skills tests: SAT, ACT, Praxis I PPST, or Praxis Core academic skills tests.

Participation in field experiences with Montgomery County Public Schools (MCPS) is an important component of all teacher education transfer programs at Montgomery College. Completion of fingerprinting for state and federal level background checks (or documentation of recent prior completion) is mandatory for enrollment in any course requiring experiences in MCPS. Further information on background checks may be found on the School of Education website at www.montgomerycollege.edu/academics/abeess/school-of-education/index.html.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
EDUC	101	Foundations of Education	3
EDUC	102	Field Experience in Education	1
SPAN	103	Intensive Elementary Spanish	4
OR			
SPAN	106	Spanish for Heritage Speakers	4

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
EDUC	201	Introduction to Special Education	3
EDUC	202	Field Experience in Special Education	1
HIST	245	Latin American History	3(HUMD)
PSYC	100	General Psychology	3(BSSD)
SPAN	201	Intermediate Spanish I	3

Third Semester

ANTH	201	Introduction to Sociocultural Anthropology	3(BSSD, GCP)
COMM	108	Foundations of Human Communication	3(GEIR)
PSYC	216	Adolescent Psychology	3
SPAN	202	Intermediate Spanish II	3
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			

Fourth Semester

ISTD *(ARTD)*	173	Integrated Arts	3
PSYC	227	Educational Psychology	3
SPAN	215	Advanced Spanish Conversation and Composition	3(GEIR)
SPAN	216	Advanced Readings in Spanish: Introduction to Latin American Literature	3
Natural Sciences Distribution *3 semester hours (NSD)*			

TOTAL CREDIT HOURS: 61

* ENGL 101/ENGL 101A, if needed for ENGL 102, or elective.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/experience and new learning.
- Demonstrate proficiency in the Spanish language through the level of Intermediate II, including spoken and written language, composition, and Latin American literature.

Secondary Education-Chemistry AAT: 610

: 610

This curriculum prepares students to transfer to a secondary education chemistry program at a four-year college or university in the state of Maryland. The AAT articulates with all Maryland transfer programs in secondary chemistry education. The program enables students to fulfill their General Education requirements, participate in fieldwork experiences, and complete a core of professional education coursework appropriate for the first two years of teacher preparation. To earn the AAT students must either achieve a minimum of a 3.0 cumulative GPA or achieve a 2.75 - 2.99 cumulative GPA along with presenting acceptable scores on one of the following state-approved basic skills tests: SAT, ACT, Praxis I PPST, or Praxis Core academic skills tests.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	181	Calculus I	4(MATF)
CHEM	131	Principles of Chemistry I	4(NSLD)
EDUC	101	Foundations of Education	3
EDUC	102	Field Experience in Education	1

Third Semester

BIOL	150	Principles of Biology I	4
CHEM	203	Organic Chemistry I	5
HIST	200	History of the United States, a Survey Course: from Colonial Times to 1865	3(HUMD)
ISTD	173	Integrated Arts	3(ARTD)
PSYC	100	General Psychology	3(BSSD)

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
CHEM	132	Principles of Chemistry II	4
EDUC	201	Introduction to Special Education	3
EDUC	202	Field Experience in Special Education	1
MATH	182	Calculus II	4

Fourth Semester

CHEM	204	Organic Chemistry II	5
COMM	108	Foundations of Human Communication	3(GEIR)
PSYC	227	Educational Psychology	3

Arts or Humanities Distribution *3 semester hours (GEIR)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

TOTAL CREDIT HOURS: 65

* ENGL 101/ENGL 101A, if needed for ENGL 102, or elective.

‡Students must select a BSSD elective from a different discipline than PSYC; course must meet Global requirement.

NOTE: Students will be required to take two semesters of Physics at many transfer institutions to complete a bachelor's degree in Chemistry.

PROGRAM OUTCOMES

Upon completion of this program, the student will be able to:

- Identify major historical events in education and analyze the impact of those events with current educational trends.
- Identify the psychological, cognitive, emotional, and physical characteristics of typically developing children and adolescents, with specific consideration to disabilities and cultural and linguistic diversity.
- Analyze and critique current scientifically-based research and culturally responsive instructional practices for the purpose of understanding the educational needs of students and families.
- Identify the current and inclusive philosophies for differentiating instruction to analyze, improve, and facilitate instruction for diverse learners.
- Demonstrate and utilize technology as a teaching/reinforcement tool.
- Develop excellent written, verbal, critical thinking, and problem solving skills, which will allow him or her to effectively make connections between prior knowledge/experience and new learning.
- Demonstrate proficiency in the application of chemistry through the level of organic chemistry.

EMERGENCY PREPAREDNESS MANAGEMENT

Emergency Preparedness Management AS: 414

: 414

The emergency preparedness management program is designed to provide students with a broad education in emergency management. The program focuses on a multidisciplinary approach to preparedness and the skills needed to organize and lead emergency management operations, and prepares students to perform in a disaster by providing the necessary skills for mitigation, preparedness, response, and recovery. The curriculum is designed to provide students with a foundation of technical and professional knowledge needed for emergency services delivery in the fields of public service-including law enforcement, fire service, and emergency medical services, along with students wishing to study in this field for careers in emergency management. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
EMGT	101	Principles of Emergency Management	3
EMGT	103	Emergency Response and Recovery	3
PSYC	100	General Psychology	3(BSSD)
LIBR	110	Fundamentals of Library Research	1

Third Semester

AOSC	105	Meteorology: An Introduction to Weather	4(NSLD)
EMGT	105	Hazard Mitigation and Preparedness	3
EMGT	106	Technology in Emergency Management	3

Arts Distribution *3 semester hours (ARTD)* ‡
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* ‡

Second Semester

English Foundation *3 semester hours (ENGF)*
Mathematics Foundation *3 semester hours (MATF)*

COMM	108	Foundations of Human Communication	3(GEEL)
OR			
COMM	112	Business and Professional Speech Communication	3(GEEL)
EMGT	104	Incident Management System and EOC Interface	3
EMGT	200	Emergency Planning	3

Fourth Semester

BIOL	105	Environmental Biology	3(NSLD)
AND			
BIOL	106	Environmental Biology Laboratory	1(NSLD)
EMGT	240	Capstone Emergency Management	3
HLTH	220	Emergency Medical Responder	3

Humanities Distribution (200 Level History) *3 semester hours (HUMD)* ‡
EMGT or HMLS Elective (Must Be at 200 Level) *3 semester hours*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

‡ Students must choose a course from BSSD, Arts or Humanities (HIST) to meet the Global/Cultural Perspectives Requirement.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Develop and evaluate an emergency operations plan based on data provided on a hypothetical jurisdiction.
- Determine hazards and develop risk assessment programs in local communities.
- Develop and implement short and long term recovery concepts into all areas of the community, using an all hazard approach.
- Analyze organizational behavior problems as they apply to emergency operations.
- Analyze the roles, responsibilities, and authorities of the various organizations responding to emergency incidents.
- Demonstrate knowledge of the activities that should happen in each phase of a disaster.

Emergency Preparedness Management Certificate: 249

: 249

The certificate in emergency preparedness management provides students with the technical and professional knowledge to prepare for a career in emergency management. Courses provide introductory through advanced training in the skills necessary to succeed as a professional in this field. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

EMGT	101	Principles of Emergency Management	3
EMGT	103	Emergency Response and Recovery	3
EMGT	104	Incident Management System and EOC Interface	3
EMGT	105	Hazard Mitigation and Preparedness	3
EMGT	106	Technology in Emergency Management	3
EMGT	200	Emergency Planning	3
EMGT	206	Public Health Preparedness	3
EMGT	240	Capstone Emergency Management	3
HLTH	220	Emergency Medical Responder	3

Electives (Select One Course)

EMGT	210	Health Care Emergency Management	3
EMGT	230	Community Emergency Response Teams	3
HMLS	201	Introduction to Homeland Security	3
HMLS	202	Introduction to Terrorism	3

TOTAL CREDIT HOURS: 30

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Develop and evaluate an emergency operations plan based on data provided on a hypothetical jurisdiction.
- Analyze organizational behavior problems as they apply to emergency operations.
- Demonstrate knowledge of the activities that should happen in each phase of a disaster.

ENGINEERING SCIENCE

Aerospace Engineering Area of Concentration, Engineering Science AS: 408

: 408

This curriculum is designed to provide the first two years of a four-year program leading to the award of a BS in engineering. A student planning to transfer to any baccalaureate degree granting institution should follow the appropriate area of concentration listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information on transfer requirements for all universities and colleges with which we have an articulated transfer program.

Completion of all requirements for any area of concentration in engineering science will lead to the award of the AS in engineering science.

This area of concentration will prepare students to transfer to a four-year university with a major in aerospace engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the aerospace engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering advisor. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
MATH	181	Calculus I	4(MATF)
CHEM	135	General Chemistry for Engineers	4
OR			
CHEM	132	Principles of Chemistry II	4
ENES	100	Introduction to Engineering Design	3(NSND/ GEEL)

Third Semester

Arts Distribution *3 semester hours (ARTD)*

PHYS	262	General Physics II: Electricity and Magnetism	4(NSLD)
ENES	206	MATLAB for Engineers	1
ENES	220	Mechanics of Materials	3
MATH	280	Multivariable Calculus	4

Second Semester

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

Humanities Distribution *3 semester hours (HUMD)*

PHYS	161	General Physics I: Mechanics and Heat	3(NSND)
ENES	102	Statics	3
MATH	182	Calculus II	4

Fourth Semester

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

ENES	232	Thermodynamics	3
MATH	282	Differential Equations	3
MATH	284	Linear Algebra	4
PHYS	263	General Physics III: Waves, Optics, and Modern Physics	4

TOTAL CREDIT HOURS: 62

** Behavioral and social science distribution (BSSD) course must come from different disciplines.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in mechanics and thermodynamics.
- Design simple mechanisms and structures using analytical and numerical methods in the area of aerospace engineering.
- Use appropriate computer programming and application software in aerospace engineering.

ADVISING NOTES:
Most engineering students will start at MC missing one or more prerequisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-CHEM 132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
The prerequisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
The corequisite for ENES 100 is MATH 165 or higher.
The prerequisite for MATH 181 is MATH 165 (Precalculus). Mathematics initial course placement will be determined by the ALEKS Math Placement, Accuplacer Math Test, AP/IB credit, or transfer credits.
UMCP's ENAE 200 (1) and 283 (3) for which MC has no equivalents, remain to be taken at UMCP. Students need to take ENAE 283 in order to achieve full junior standing upon transfer. This must be done in summer term prior to fall term transfer.
CMSC 140 (3) or ENEE 150 (3) or CMSC 203 (4) and either ENES 240 (3) or ENES 206 (1) combined can be equivalent to UMCP's ENAE 202 (3).
AA and AS programs require one global and cultural perspectives (GCP) General Education course.

Bioengineering Area of Concentration, Engineering Science AS: 411A

: 411A

This curriculum is designed to provide the first two years of a four-year program leading to the award of a BS in engineering. A student planning to transfer to any baccalaureate degree granting institution should follow the appropriate area of concentration listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information on transfer requirements for all universities and colleges with which we have an articulated transfer program.

Completion of all requirements for any area of concentration in engineering science will lead to the award of the AS in engineering science.

This area of concentration will prepare students to transfer to a four-year university with a major in bioengineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the bioengineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering advisor. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
MATH	181	Calculus I	4(MATF)
CHEM	132	Principles of Chemistry II	4
ENES	100	Introduction to Engineering Design	3(NSND/ GEEL)

Second Semester

ENES	102	Statics	3
ENES	120	Biology for Engineers	3
MATH	182	Calculus II	4
PHYS	161	General Physics I: Mechanics and Heat	3(NSND)

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

Third Semester

CHEM	203	Organic Chemistry I	5
ENES	240	Scientific and Engineering Computation	3
MATH	280	Multivariable Calculus	4
PHYS	262	General Physics II: Electricity and Magnetism	4(NSLD)

Arts Distribution *3 semester hours (ARTD)*

Fourth Semester

ENES	232	Thermodynamics	3
MATH	282	Differential Equations	3

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***
Humanities Distribution *3 semester hours (HUMD)*

TOTAL CREDIT HOURS: 61

** Behavioral and social sciences distribution (BSSD) courses must come from different disciplines.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify, formulate, and solve basic physics-based, biology problems in biomechanics and biochemistry.
- Demonstrate conceptual understanding of the connections between engineering and life sciences in the context of bioengineering applications.
- Use appropriate computer application software in bioengineering.

ADVISING NOTES:
Most engineering students will start at MC missing one or more prerequisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-CHEM 132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
The prerequisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
The corequisite for ENES 100 is MATH 165 or higher.
The prerequisite for MATH 181 is MATH 165 (Precalculus). Mathematics initial course placement will be determined by the ALEKS Math Placement, Accuplacer Math Test, AP/IB credit, or transfer credits.
BIOE 121, 241, and 371, for which MC has no equivalents, must be completed after transfer or through MTAP at UMCP.
AA and AS programs require one global and cultural perspectives (GCP) General Education course.

Chemical Engineering Area of Concentration, Engineering Science AS: 406

: 406

This curriculum is designed to provide the first two years of a four-year program leading to the award of a BS in engineering. A student planning to transfer to any baccalaureate degree granting institution should follow the appropriate area of concentration listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information on transfer requirements for all universities and colleges with which we have an articulated transfer program.

Completion of all requirements for any area of concentration in engineering science will lead to the award of the AS in engineering science.

This area of concentrationwill prepare students to transfer to a four-year university with a major in chemical engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the chemical engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering advisor. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
MATH	181	Calculus I	4(MATF)
CHEM	132	Principles of Chemistry II	4
ENES	100	Introduction to Engineering Design	3(NSND/ GEEL)

Second Semester

ENES	120	Biology for Engineers	3
MATH	182	Calculus II	4
PHYS	161	General Physics I: Mechanics and Heat	3(NSND)

Art Distribution *3 semester hours (ARTD)*
Humanities Distribution *3 semester hours (HUMD)*

Third Semester

CHEM	203	Organic Chemistry I	5
MATH	280	Multivariable Calculus	4
PHYS	262	General Physics II: Electricity and Magnetism	4(NSLD)

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

Fourth Semester

CHEM	204	Organic Chemistry II	5
MATH	282	Differential Equations	3
PHYS	263	General Physics III: Waves, Optics, and Modern Physics	4

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

TOTAL CREDIT HOURS: 61

** Behavioral and social science distribution (BSSD) course must come from different disciplines.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify, formulate, and solve basic physics and organic chemistry problems.
- Analyze and design simple chemical processes.
- Use appropriate computer applications software in chemical engineering.

ADVISING NOTES:
Most engineering students will start at MC missing one or more prerequisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-CHEM 132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
The prerequisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
The corequisite for ENES 100 is MATH 165 or higher.
The prerequisite for MATH 181 is MATH 165 (Precalculus). Mathematics initial course placement will be determined by the ALEKS Math Placement, Accuplacer Math Test, AP/IB credit, or transfer credits.
UMCP's courses CHBE 101, 250, 301, and 302 are courses for which MC has no equivalents. CHBE 101, 250, and 301 must be completed for junior standing at UMCP.
AA and AS programs require one global and cultural perspectives (GCP) General Education course.

Civil Engineering Area of Concentration, Engineering Science AS: 407

: 407

This curriculum is designed to provide the first two years of a four-year program leading to the award of a BS in engineering. A student planning to transfer to any baccalaureate degree granting institution should follow the appropriate area of concentration listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information on transfer requirements for all universities and colleges with which we have an articulated transfer program.

Completion of all requirements for any area of concentration in engineering science will lead to the award of the AS in engineering science.

This area of concentration will prepare students to transfer to a four-year university with a major in civil engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the civil engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering advisor. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
MATH	181	Calculus I	4(MATF)
CHEM	135	General Chemistry for Engineers	4
OR			
CHEM	132	Principles of Chemistry II	4
ENES	100	Introduction to Engineering Design	3(NSND/ GEEL)

Second Semester

ENES	102	Statics	3
MATH	182	Calculus II	4
PHYS	161	General Physics I: Mechanics and Heat	3(NSND)

Arts Distribution 3 *semester hours (ARTD)*
Humanities Distribution *3 semester hours (HUMD)*

Third Semester

ENES	220	Mechanics of Materials	3
MATH	280	Multivariable Calculus	4
PHYS	262	General Physics II: Electricity and Magnetism	4(NSLD)

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

Fourth Semester

ENES	120	Biology for Engineers	3
OR			
ENES	221	Dynamics	3
ENES	240	Scientific and Engineering Computation	3
MATH	282	Differential Equations	3

Behavioral and Social Science Distribution *3 semester hours (BSSD) ***
Program Elective *4 semester hours* †

TOTAL CREDIT HOURS: 60

** Behavioral and social science distribution (BSSD) course must come from different disciplines.

† Program elective courses: BIOL 105 and BIOL 106, BIOL 150, CHEM 203, GEOL 101, or PHYS 263, depending on the transfer institution.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in structural mechanics.
- Analyze and design simple structures using analytical and numerical methods in the area of civil engineering.
- Use appropriate computer programming and applications software in civil engineering.

ADVISING NOTES:
Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-CHEM 132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
The co-requisite for ENES 100 is MATH 165 or higher.
The pre-requisite for MATH 181 is MATH 165 (Precalculus). Mathematics initial course placement will be determined by the ALEKS Math Placement, Accuplacer Math Test, AP/IB credit, or transfer credits.
UMCP's ENCE 100, 200, 215, 305 for which MC has no equivalents, must be completed after transfer or through MTAP.
ENES 221 is only required for Geotechnical/Structures Track at UMCP. ENES 120 is required for Environmental/Water Resources Track at UMCP.
For Program elective, BIOL 105 and BIOL 106, BIOL 150, CHEM 203, GEOL 101, or PHYS 263 may be appropriate depending on the transfer institution.
AA and AS programs require one global and cultural perspectives (GCP) General Education course.

Computer Engineering Area of Concentration, Engineering Science AS: 409

: 409

This curriculum is designed to provide the first two years of a four-year program leading to the award of a BS in engineering. A student planning to transfer to any baccalaureate degree granting institution should follow the appropriate area of concentration listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information on transfer requirements for all universities and colleges with which we have an articulated transfer program.

Completion of all requirements for any area of concentration in engineering science will lead to the award of the AS in engineering science.

This area of concentration will prepare students to transfer to a four-year university with a major in computer engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the computer engineering program at the University of Maryland, Baltimore County. A suggested course sequence for full-time students follows; all students should consult an engineering advisor. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
MATH	181	Calculus I	4(MATF)
CHEM	135	General Chemistry for Engineers	4
OR			
CHEM	132	Principles of Chemistry II	4
ENES	100	Introduction to Engineering Design	3(NSND/ GEEL)

Third Semester

CMSC	204	Computer Science II	4
ENEE	244	Digital Logic Design	3
MATH	282	Differential Equations	3
PHYS	262	General Physics II: Electricity and Magnetism	4(NSLD)

Humanities Distribution *3 semester hours (HUMD)*

Second Semester

CMSC	203	Computer Science I	4
MATH	182	Calculus II	4
PHYS	161	General Physics I: Mechanics and Heat	3(NSND)

Arts Distribution *3 semester hours (ARTD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

Fourth Semester

CMSC	207	Introduction to Discrete Structures	4
ENEE	207	Electric Circuits	4
ENEE	222	Elements of Discrete Signal Analysis	4
ENEE	245	Digital Circuits and Systems Laboratory	2

Behavioral and Social Science Distribution *3 semester hours (BSSD) ***

TOTAL CREDIT HOURS: 65

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in programming and digital circuits.
- Design simple systems using computing theory and numerical methods in the area of Computer Engineering.
- Use appropriate computer application software in computer engineering.

ADVISING NOTES:
Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, MATH 181, or CMSC 203.
The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131 -CHEM 132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
The co-requisite for ENES 100 is MATH 165 or higher.
The pre-requisite for MATH 181 is MATH 165 (Precalculus). Mathematics initial course placement will be determined by the ALEKS Math Placement, Accuplacer Math Test, AP/IB credit, or transfer credits.
The pre-requisite for CMSC 203 is a grade of C or better in CMSC 140 or consent of department. The pre- or corequisite for CMSC 203 is MATH 181.
AA and AS programs require one global and cultural perspectives (GCP) General Education course.

Electrical Engineering Area of Concentration, Engineering Science AS: 402

: 402

This curriculum is designed to provide the first two years of a four-year program leading to the award of a BS in engineering. A student planning to transfer to any baccalaureate degree granting institution should follow the appropriate area of concentration listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information on transfer requirements for all universities and colleges with which we have an articulated transfer program.

Completion of all requirements for any area of concentration in engineering science will lead to the award of the AS in engineering science.

This area of concentration will prepare students to transfer to a four-year university with a major in electrical engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the electrical engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering advisor. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
MATH	181	Calculus I	4(MATF)
CHEM	135	General Chemistry for Engineers	4
OR			
CHEM	132	Principles of Chemistry II	4
ENEE	140	Introduction to Programming Concepts for Engineers	2
ENES	100	Introduction to Engineering Design	3(NSND/ GEEL)

Third Semester

ENEE	222	Elements of Discrete Signal Analysis	4
MATH	280	Multivariable Calculus	4
PHYS	262	General Physics II: Electricity and Magnetism	4(NSLD)

Arts Distribution *3 semester hours (ARTD)*
Humanities Distribution *3 semester hours (HUMD)*

Second Semester

ENEE	150	Intermediate Programming Concepts for Engineers	3
ENEE	244	Digital Logic Design	3
MATH	182	Calculus II	4
PHYS	161	General Physics I: Mechanics and Heat	3(NSND)

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

Fourth Semester

ENEE	207	Electric Circuits	4
ENEE	245	Digital Circuits and Systems Laboratory	2
MATH	282	Differential Equations	3
PHYS	263	General Physics III: Waves, Optics, and Modern Physics	4

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

TOTAL CREDIT HOURS: 66

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in analog and digital circuits.
- Design simple systems and circuits using analytical and numerical methods in the area of Electrical Engineering.
- Use appropriate computer application software in electrical engineering.

ADVISING NOTES:
Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, MATH 181, or ENEE 150.
The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-CHEM 132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
The co-requisite for ENES 100 is MATH 165 or higher.
The pre-requisite for MATH 181 is MATH 165 (Precalculus). Mathematics initial course placement will be determined by the ALEKS Math Placement, Accuplacer Math Test, AP/IB credit, or transfer credits.
The pre-requisites for ENEE 150 are MATH 181 and ENEE 140 or consent of instructor if you have structured programming experience.
AA and AS programs require one global and cultural perspectives (GCP) General Education course.

Fire Protection Engineering Area of Concentration, Engineering Science AS: 403

: 403

This curriculum is designed to provide the first two years of a four-year program leading to the award of a BS in engineering. A student planning to transfer to any baccalaureate degree granting institution should follow the appropriate area of concentration listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information on transfer requirements for all universities and colleges with which we have an articulated transfer program.

Completion of all requirements for any area of concentration in engineering science will lead to the award of the AS in engineering science.

This area of concentration will prepare students to transfer to a four-year university with a major in fire protection engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the fire protection engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering advisor. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up#to-date comprehensive information.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
MATH	181	Calculus I	4(MATF)
ENES	100	Introduction to Engineering Design	3(NSND/ GEEL)
CHEM	135	General Chemistry for Engineers	4
OR			
CHEM	132	Principles of Chemistry II	4

Second Semester

Humanities Distribution *3 semester hours (HUMD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **

PHYS	161	General Physics I: Mechanics and Heat	3(NSND)
ENES	102	Statics	3
MATH	182	Calculus II	4

Third Semester

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **

PHYS	262	General Physics II: Electricity and Magnetism	4(NSLD)
ENES	220	Mechanics of Materials	3
ENES	221	Dynamics	3
MATH	280	Multivariable Calculus	4

Fourth Semester

Arts Distribution *3 semester hours (ARTD)*

ENES	232	Thermodynamics	3
ENES	240	Scientific and Engineering Computation	3
MATH	282	Differential Equations	3
PHYS	263	General Physics III: Waves, Optics, and Modern Physics	4

TOTAL CREDIT HOURS: 63

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in mechanics and thermodynamics.
- Design simple structures and strategies using analytic and numerical methods in the area of fire protection engineering.
- Use appropriate computer application software in fire protection engineering.

ADVISING NOTES:
Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-CHEM 132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
The co-requisite for ENES 100 is MATH 165 or higher.
The pre-requisite for MATH 181 is MATH 165 (Precalculus). Mathematics initial course placement will be determined by the ALEKS Math Placement, Accuplacer Math Test, AP/IB credit, or transfer credits.
UMCP's ENFP 250(3) and 255(3), for which MC has no equivalents, remain to be taken at UMCP after transfer.
ENES 232 (thermodynamics) IS NOT required for transfer, but is transferable as equivalent to other technical elective courses in the junior year.
AA and AS programs require one global and cultural perspectives (GCP) General Education course.

General Engineering Area of Concentration, Engineering Science AS: 410

: 410

This curriculum is designed to provide the first two years of a four-year program leading to the award of a BS in engineering. A student planning to transfer to any baccalaureate degree granting institution should follow the appropriate area of concentration listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information on transfer requirements for all universities and colleges with which we have an articulated transfer program.

Completion of all requirements for any area of concentration in engineering science will lead to the award of the AS in engineering science.

This area of concentration will prepare students to transfer to a four-year university with a major in general engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below. A suggested course sequence for full-time students follows; all students should consult an engineering advisor. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	181	Calculus I	4(MATF)
CHEM	131	Principles of Chemistry I	4
ENES	100	Introduction to Engineering Design	3(NSND/ GEEL)

Humanities Distribution *3 semester hours (HUMD)*

Third Semester

MATH	280	Multivariable Calculus	4
PHYS	262	General Physics II: Electricity and Magnetism	4(NSLD)

ENES/ENEE Elective *3 semester hours*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
MATH	182	Calculus II	4
PHYS	161	General Physics I: Mechanics and Heat	3(NSND)

ENES/ENEE Elective *3 semester hours*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **

Fourth Semester

MATH	282	Differential Equations	3
PHYS	263	General Physics III: Waves, Optics, and Modern Physics	4

OR

Program Elective *4 semester hours* †
Arts Distribution *3 semester hours (ARTD)*
Program Electives *6 semester hours* †

TOTAL CREDIT HOURS: 63

* ENGL 101/ENGL 101A, if needed for ENGL 102, or elective.

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

† MATH 165 if needed for MATH 181 or any course from the following disciplines: DATA, ENEE, ENES, PHYS, CMSC, CHEM, BIOL, GEOL, MGMT. (Students are encouraged to speak with an engineering faculty advisor or their transfer institution when selecting program electives.)

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in the areas they choose their elective coursework.
- Make basic designs of systems in their area of choice using analytical and numerical methods.
- Use appropriate computer application software in engineering.

ADVISING NOTES:
Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-CHEM 132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
The co-requisite for ENES 100 is MATH 165 or higher.
The pre-requisite for MATH 181 is MATH 165 (Precalculus). Mathematics initial course placement will be determined by the ALEKS Math Placement, Accuplacer Math Test, AP/IB credit, or transfer credits.
AA and AS programs require one global and cultural perspectives (GCP) General Education course.

Mechanical Engineering Area of Concentration, Engineering Science AS: 404

: 404

This curriculum is designed to provide the first two years of a four-year program leading to the award of a BS in engineering. A student planning to transfer to any baccalaureate degree granting institution should follow the appropriate area of concentration listed below in consultation with an engineering advisor. The student should also visit the Montgomery College Engineering Advising website www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information on transfer requirements for all universities and colleges with which we have an articulated transfer program.

Completion of all requirements for any area of concentration in engineering science will lead to the award of the AS in engineering science.

This area of concentration will prepare students to transfer to a four-year university with a major in mechanical engineering. Specific requirements in colleges vary, and the student preparing for a particular institution may, with approval, change the sequence listed below; this sequence of courses is articulated with the mechanical engineering program at the University of Maryland, College Park. A suggested course sequence for full-time students follows; all students should consult an engineering advisor. The student should also visit the Montgomery College Engineering Advising website at www.montgomerycollege.edu/engineeringadvising for up-to-date comprehensive information.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
MATH	181	Calculus I	4(MATF)
CHEM	135	General Chemistry for Engineers	4
OR			
CHEM	132	Principles of Chemistry II	4
ENES	100	Introduction to Engineering Design	3(NSND/ GEEL)

Third Semester

ENES	206	MATLAB for Engineers	1
ENES	221	Dynamics	3
ENES	272	Introduction to Computer Aided Design	2
MATH	280	Multivariable Calculus	4
PHYS	262	General Physics II: Electricity and Magnetism	4(NSLD)

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

Second Semester

ENES	102	Statics	3
MATH	182	Calculus II	4
PHYS	161	General Physics I: Mechanics and Heat	3(NSND)

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***
Humanities Distribution *3 semester hours (HUMD)*

Fourth Semester

ENES	220	Mechanics of Materials	3
ENES	232	Thermodynamics	3
MATH	282	Differential Equations	3
PHYS	263	General Physics III: Waves, Optics, and Modern Physics	4

Arts Distribution *3 semester hours (ARTD)*

TOTAL CREDIT HOURS: 63

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify, formulate, and solve basic physics and engineering problems in mechanics and energy system.
- Analyze and design simple mechanical system using analytical method(s).
- Use appropriate computer application software in mechanical engineering.

ADVISING NOTES:
Most engineering students will start at MC missing one or more pre-requisites for CHEM 131, CHEM 132, CHEM 135, ENGL 102, ENES 100, and MATH 181.
The appropriate initial chemistry courses will be determined by the student's score on the Chemistry Placement Exam, mathematics level, AP/IB credits, or transfer credits. Possible courses include CHEM 099, CHEM 131, CHEM 132, or CHEM 135. Either CHEM 132 or CHEM 135 satisfies the required chemistry credit for UMCP. CHEM 131-CHEM 132 satisfies the required chemistry credit for UMBC, but CHEM 135 does not.
The pre-requisite for ENGL 102 is ENGL 101 or ENGL 101A. English course placement is determined by the Accuplacer English/Reading Test.
The co-requisite for ENES 100 is MATH 165 or higher.
The pre-requisite for MATH 181 is MATH 165 (Precalculus). Mathematics initial course placement will be determined by the ALEKS Math Placement, Accuplacer Math Test, AP/IB credit, or transfer credits.
CMSC 140 (3) or ENEE 150 (3) or CMSC 203 (4) and either ENES 240 (3) or ENES 206 (1) combined can be equivalent to UMCP's ENME 202 (3).
AA and AS programs require one global and cultural perspectives (GCP) General Education course.

ENVIRONMENTAL HORTICULTURE AND SUSTAINABLE AGRIBUSINESS

Environmental Horticulture and Sustainable Agribusiness AAS: 361

(G): 361

This program provides the student with a comprehensive mixture of academic and practical training in the field of environmental horticulture. The flexible curriculum can accommodate career interests in either landscape contracting or design. Students will learn to design and draft landscape plans; install, construct, and maintain landscapes; and identify, select, and plant woody and herbaceous plants.

Career opportunities include positions as landscape supervisors, nursery managers, landscape contractors, and landscape designers. This program will also serve to expand the knowledge and skills of persons already working in the profession and give the student enough knowledge and experience to establish a private landscape, grounds maintenance, nursery, or greenhouse business.

Courses include general education requirements, those necessary for acquiring landscaping fundamentals, and those that reinforce the student's area of interest in landscape contracting or landscape design. This program is approved by the Landscape Contractors Association.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
BIOL	101	General Biology	4(NSLD)
OR			
HORT	100	Introduction to Plant Sciences	4(NSLD)
HORT	105	Introduction to Sustainable Landscaping	2
HORT	253	Plant Materials I	3

Third Semester

BSAD	101	Introduction to Business	3
OR			
MGMT	101	Principles of Management	3
COMM	108	Foundations of Human Communication	3(GEEL)
OR			
COMM	112	Business and Professional Speech Communication	3(GEEL)

Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*
HORT Elective *3 semester hours* ‡
HORT Elective *3 semester hours* ‡

Second Semester

English Foundation *3 semester hours (ENGF)*

CMAP	120	Introduction to Computer Applications	3
HORT	254	Plant Materials II	3

HORT Elective *3 semester hours* ‡
HORT Elective *3 semester hours* ‡

Fourth Semester

HORT	258	Sustainable Landscape Management	3
HORT	280	Landscape Technology Internship	2

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*
HORT Elective (200 Level) *3 semester hours* ‡
HORT or Elective *3 semester hours* ‡
HORT Elective *1 semester hour* ‡

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

** Environmental horticulture and sustainable agribusiness courses are listed as LNTP in the catalog and course schedule until fall 2022. After fall 2022, they are listed as HORT.

‡ Please consult an environmental horticulture and sustainable agribusiness advisor to choose HORT electives.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Design, draft, and implement landscape plans.
- Install, construct, and maintain landscapes.
- Identify common plants in Maryland landscapes.
- Identify, communicate, and solve common problems in the landscape or in production.

Environmental Horticulture and Sustainable Agribusiness Certificate: 262

(G): 262

The certificate program is designed for persons interested in pursuing a new career as well as for green industry employees seeking additional professional development. Graduates will be prepared for employment opportunities in sustainable landscape operations, public and private gardens, landscape design and construction, grounds management, turf management, nurseries,

environmental and stormwater management or apply earned credits toward an AAS in environmental horticulture and sustainable agribusiness. Special courses in the curriculum focus sustainable and organic food production and environmental management and sustainability.

This curriculum provides training with entry level skills, upgrading of existing skills, and preparation for further training in the areas of horticulture, food production, and environmental management. Special topic courses in the curriculum focus sustainable and organic food production and environmental management and sustainability.

Selected courses have been approved by the Maryland Department of Agriculture to prepare horticultural professionals for pesticide application certification in Category III (Turf and Ornamentals), Category V (Aquatic), and Category VI (Right of Way and Weed). For more information, contact the environmental horticulture and sustainable agribusiness advisor.

Upon completion of the certificate students will be eligible to earn the Maryland Certified Professional Horticulturist (CPH) certificate from the Maryland Nursery, Landscape, Greenhouse Association (MNLGA).

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

HORT	105	Introduction to Sustainable Landscaping	2
HORT	253	Plant Materials I	3
HORT	254	Plant Materials II	3
HORT	258	Sustainable Landscape Management	3
HORT Electives *8 semester hours*			

TOTAL CREDIT HOURS: 19

Please note:

- Environmental horticulture and sustainable agribusiness courses are listed as LNTP in the catalog and course schedule until fall 2022. After fall 2022, they are listed as HORT.
- Certain courses have been approved by Montgomery County Department of Environmental Protection for environmental and stormwater management.
- Select courses in these programs have been approved by the Maryland Department of Agriculture to prepare horticultural professionals for pesticide application certification in Category III (Turf and Ornamentals), Category V (Aquatic), Category VI (Right of Way and Weed), and Category VII (Consultant). For information consult the environmental horticulture and sustainable agribusiness advisor.
- Please consult the environmental horticulture and sustainable agribusiness advisor for course selection.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Design, draft, and implement landscape plans.
- Install, construct, and maintain landscapes.
- Identify common plants in Maryland landscapes.

ETHNIC SOCIAL STUDIES

Ethnic Social Studies Certificate: 241

: 241

This course of study emphasizes interdisciplinary knowledge about the role of ethnicity in its national and global contexts. The curriculum provides students with the tools to critically analyze the history and politics of race and ethnicity within U.S. society; the formation of cultural knowledge; and the study of power, community, and social justice from an inter-ethnic perspective.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

ANTH	201	Introduction to Sociocultural Anthropology	3
HIST	240	Civil Rights in America	3
SOCY	233	Race and Ethnic Relations	3

Program Electives

HIST	235	The History of African Americans to 1865	3
HIST	236	The History of African Americans Since 1865	3
HIST	209	History of Asian Americans	3
HIST	211	History of Latinos in the United States	3
POLI	230	Introduction to International Conflict Resolution	3
POLI	252	Race and Ethnicity in U.S. Politics	3
SOCY	250	Globalization Issues	3

TOTAL CREDIT HOURS: 18

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify and explicate the differences between ethnic groups and the creation and maintenance of ethnic group identities.
- Describe and explain the relationship tensions of ethnic groups within the context of a larger society.
- Identify issues related to the migrant/transnational experience within the U.S. and a global context.
- Apply newly found internalized understanding of these issues to a diverse work situation.
- Challenge stereotypes and promote an understanding of the heterogeneous, complex and fluid nature of ethnic identities.
- Enhance communication with different ethnic groups in the work place and in the community at large.

FIRE SCIENCE AND EMERGENCY SERVICES

Fire and Emergency Services Management AAS, Statewide Program: 346A

: 346A

This curriculum is designed to provide individuals with the principles, theory, and practices associated with state-of-the-art fire science and management, including issues related to tactical fire operations, fire safety, firefighting and emergency services leadership and management, and community fire issues.

Students expand their thinking beyond fire-specific issues in areas related to firefighting through coursework in human resource management, administration, homeland security and emergency/disaster management, fire protection services, safety and prevention, and investigation.

This curriculum is designed to meet the needs of professional and volunteer fire service personnel and those seeking employment in the fire and emergency services. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3(ENGF)
FIRE	101	Principles of Emergency Services	3
FIRE	102	Fire Behavior and Combustion	3
FIRE	103	Building Construction for Fire Protection	3
PSYC	100	General Psychology	3(BSSD)
LIBR	110	Fundamentals of Library Research	1

Third Semester

COMM	108	Foundations of Human Communication	3(GEEL)
OR			
COMM	112	Business and Professional Speech Communication	3(GEEL)
FIRE	202	Fire Protection Hydraulics and Water Supply	3

Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*
Natural Sciences Distribution With Lab *4 semester hours (NSLD)*
General Education Elective *3 semester hours (GEEL)*
**

Second Semester

English Foundation *3 semester hours (ENGF)*
Mathematics Foundation *3 semester hours (MATF)*

FIRE	104	Principles of Fire and Emergency Services Safety & Survival	3
FIRE	105	Fire Prevention	3
FIRE	201	Fire Protection Systems	3
PHED	166	Personal Fitness I	1
OR			
PHED	170	Strength Training and Conditioning I	1

Fourth Semester

EMGT	101	Principles of Emergency Management	3
FIRE	203	Principles of Fire and Emergency Service Administration	3
HLTH	220	Emergency Medical Responder	3

FIRE Elective (200 Level) *3 semester hours*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

** COMM courses may not be used to satisfy the GEEL requirement.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate understanding of building construction and associated fire codes.
- Apply and discuss water supply management for fire protection systems and fire scene use.
- Apply chemistry, mathematics, and physics to solve fire protection problems.
- Identify and differentiate the various forms of fire, their fundamental scientific principles, and their associated mitigation and response strategies.

Fire and Emergency Services Management Certificate: 240

: 240

This curriculum is designed to provide individuals with the principles, theory, and practices associated with state-of-the art fire science and management, including issues related to tactical fire operations, fire safety, firefighting and emergency services leadership and management, and community fire issues. This curriculum is designed to meet the needs of the professional and volunteer fire service personnel and those seeking employment in the fire and emergency services. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

FIRE	101	Principles of Emergency Services	3
FIRE	102	Fire Behavior and Combustion	3
FIRE	103	Building Construction for Fire Protection	3
FIRE	104	Principles of Fire and Emergency Services Safety & Survival	3
FIRE	105	Fire Prevention	3
FIRE	201	Fire Protection Systems	3
FIRE	202	Fire Protection Hydraulics and Water Supply	3
FIRE	203	Principles of Fire and Emergency Service Administration	3

TOTAL CREDIT HOURS: 24

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Describe the common types of fire and emergency services facilities, equipment, and apparatus.
- Categorize the components of fire.
- Classify major types of building construction in accordance with a local/model building code.
- Explain the importance of investigating all near-misses, injuries, and fatalities.
- Describe inspection practices and procedures.
- Describe the traits of effective versus ineffective management styles.

GENERAL STUDIES

General Studies AA: Integrated Studies Area of Concentration (INTG Core): 611D

: 611D

General Studies focuses on developing knowledge and skills across traditional disciplinary boundaries resulting in an interdisciplinary cornerstone for academic and career pursuits. A General Studies major allows you to develop a path for transfer into a variety of majors or that will enhance your career competitiveness and further your academic and personal goals. General Studies has flexible program requirements within core areas that encourage you to synthesize knowledge and approaches on inquiry from various disciplines allowing you to bring creative, multi-disciplinary problem-solving, and critical thinking approaches to a range of modern problems.

The General Studies degree is a flexible curriculum that fosters intentional exploration of academic and career goals through academic coursework and supportive advising. Using interdisciplinary application of practical and intellectual skills through General Education courses and your selected core area of focus, the General Studies program creates a flexible, integrated framework for you to engage in complex problems related your chosen focus of study while promoting specific disciplinary content and skills. The General Studies program promotes personal responsibility and civic engagement by providing an academic framework in which you will explore contemporary and enduring questions, integrate learning across disciplines, and

develop knowledge, skills, and motivation to frame issues and questions presented in the academic experience in the context of a broader community. **This program can be completed either on campus or online.**

In the Integrated Studies area, you will build a degree with courses selected from two of the three General Studies core areas. Through this major, you will be able to create an individualized path where you can integrate knowledge and skills across a broader range of academic disciplines beyond traditional disciplinary boundaries. This major accommodates student goals surrounding transfer, the pursuit of individual interests, or building the foundation for a major and a minor upon transfer. Additionally, this major will allow you to develop communication, interdisciplinary problem solving, critical thinking, teamwork and leadership skills along with the multi-disciplinary perspective that will allow you to grow in your chosen career and academic path.

If you are unsure of what path to pursue at Montgomery College, you may select Integrated Studies so that you begin your coursework meeting General Education requirements, and so that you can explore and develop career and academic goals.

In this program, students will develop an intentional academic plan that reflects personal, academic, and career goals from two of the following three cores, selecting from the discipline areas or individual courses listed for each of the two cores:

Studies in Humanities, Arts, Communication and Languages (HACL)

- Art (ARTT)
- Dance (DANC)
- English (ENGL)
- Film (FILM)
- Global Humanities (GHUM)
- History (HIST)
- Linguistics (LING)
- Music (MUSC)
- Philosophy (PHIL)
- Speech (COMM)
- Theater (THET)
- World Languages (ARAB, ASLP, CHIN, FREN, GERM, HIND, ITAL, JAPN, KORA, LATN, RUSS, PORT, SPAN)

Studies in Science, Technology, Engineering and Mathematics (STEM)

- Astronomy (ASTR)
- Biology (BIOL)
- Chemistry (CHEM)
- Computer Science (CMSC)
- Data Science (DATA)
- Electrical Engineering (ENEE)
- Engineering Science (ENES)
- Geology (GEOL)
- Mathematics (MATH)
- Meteorology (AOSC)
- Networking (NWIT)
- Nutrition (NUTR)
- Physical Science (PSCI)
- Physics (PHYS)

Studies in Social Science, Administration and Health (SSAH)

- Anthropology (ANTH)
- Applied Geography (GEOG)
- Criminal Justice (CCJS)
- Economics (ECON)
- Health (HLTH)
- History (HIST)
- Homeland Security (HMLS)
- Hospitality Management (HMGT)
- Physical Education (PHED) (students are limited to two PHED courses #100-199)
- Political Science (POLI)
- Psychology (PSYC)
- Sociology (SOCY)
- Women's and Gender Studies (WMST and GNDS)

Students may elect to take any of the following individual courses from their selected cores as part of their INTG core requirements to enhance their selected academic focus:

- Graphic Design (GDES 116)
- Interior Design (IDES 101)
- Integrated Studies (ISTD 173)
- Photography (PHOT 161)
- Television and Radio (TVRA 134)
- Architecture Technology (ARCH 101)
- Biotechnology (BIOT 110)
- Computer Application (CMAP 120)
- Environmental Horticulture and Sustainable Agribusiness (HORT 100)
- Accounting (ACCT 221, ACCT 222)
- Behavioral Health (BEHE 100)
- Business (BSAD 101, BSAD 210)
- Education (EDUC 101, EDUC 102, EDUC 119)
- Emergency Management (EMGT 101, EMGT 206)
- Health Information Management (HINM 115, HINM 116)
- Management (MGMT 101, MGMT 140, MGMT 201, MGMT 211)

General Degree Requirements

In order to complete this degree, students must

1. complete of a minimum of 60 credit hours including:

- 3 credits for ENGL 101 if needed for ENGL 102/ENGL 103, or select an elective.
- 31 credit hours of General Education program requirements.
    - Two General Education institutional requirement (GEIR) courses are required from the following General Education courses: COMM, HLTH, or one ARTD or HUMD. Students may only take one course from ARTD or HUMD to fulfill General Education institutional requirements.
    - One global and cultural perspectives (GCP) designated courses as part of the General Education program.
- 18 credit hours (9 credit hours in each of the two selected cores), with one core having a minimum of 3 credit hours at the 200 level.
- up to 8 elective credit hours as needed to complete 60 credit hours.

2. complete a minimum of 15 credit hours at the 200 level.

3. have a 2.0 GPA or higher:

- ENGL 102 or ENGL 103 must have a grade of C or better to graduate.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester
ENGL 101 Introduction to College Writing 3*
Mathematics Foundation *3 semester hours (MATF)* ‡
Natural Sciences Distribution with or without Lab *3 semester hours (NSD)*
General Education Institutional Requirement *3 semester hours (GEIR)*
Elective *3 semester hours* ‡‡

Second Semester
English Foundation *3 semester hours (ENGF)* ‡
Arts Distribution *3* semester hours *(ARTD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Humanities Distribution *3 semester hours (HUMD)*
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*

Third Semester
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
General Education Institutional Requirement *3 semester hours (GEIR)*
Core 1, Course 1 *3 semester hours*
Core 1, Course 2 *3 semester hours*
Core 2, Course 1 *3 semester hours*

Fourth Semester
Core 2, Course 2 *3 semester hours*
Core 2, Course 3 *3 semester hours*
Core 1, Course 3 *3 semester hours*
Elective *3 semester hours* ‡‡
Elective *2 semester hours* ‡‡

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 011 if needed for ENGL 102/ENGL 103, or select an elective.

** Behavioral and social sciences distribution (BSSD) courses must come from different disciplines.

‡ Students should attempt ENGL and MATH foundation requirements within completion of the first 24 credits of college-level work or at the completion of any prerequisite or required non-credit coursework.

‡‡ Any credit hours beyond the minimum General Education credit hours (31) or core courses are counted toward elective credit hours.

NOTE: Exact semester credit counts may vary based on specific course selections.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Utilize and apply methods of inquiry from more than one disciplinary perspective in response to a problem, task, or experience.
- Apply quantitative and qualitative methods to demonstrate an understanding of the disciplines they have chosen to study.
- Communicate complex ideas using multiple modes of communication, including digital, written, oral and graphic communication.
- Articulate an academic or career-related plan that reflects an integrated, interdisciplinary view of their formal, co-curricular and personal learning and academic and career goals.
- Reflect on and assess their own learning as it applies to themselves as scholars and engaged, global citizens.

General Studies AA: Studies in Humanities, Arts, Communication, and Languages Area of Concentration (HACL Core): 611A

: 611A

General Studies focuses on developing knowledge and skills across traditional disciplinary boundaries resulting in an interdisciplinary cornerstone for academic and career pursuits. A General Studies major allows you to develop a path for transfer into a variety of majors or that will enhance your career competitiveness and further your academic and personal goals. General Studies has flexible program requirements within core areas that encourage you to synthesize knowledge and approaches on inquiry from various disciplines allowing you to bring creative, multi-disciplinary problem-solving, and critical thinking approaches to a range of modern problems.

The General Studies degree is a flexible curriculum that fosters intentional exploration of academic and career goals through academic coursework and supportive advising. Using interdisciplinary application of practical and intellectual skills through General Education courses and your selected core area of focus, the General Studies program creates a flexible, integrated framework for you to engage in complex problems related your chosen focus of study while promoting specific disciplinary content and skills. The General Studies program promotes personal responsibility and civic engagement by providing an academic framework in which you will explore contemporary and enduring questions, integrate learning across disciplines, and develop knowledge, skills, and motivation to frame issues and questions presented in the academic experience in the context of a broader community. **This program can be completed either on campus or online.**

In the Humanities, Arts, Communications, and Languages area, you will select courses and build a degree that will allow you to transfer in a specific area of study, such as English, World Languages, Philosophy, History, and Film or to build an interdisciplinary academic foundation in traditional humanities, arts, communication, or languages. Additionally, this area allows you to develop broad and deep communication, interdisciplinary creative problem-solving, and critical thinking skills as you cultivate teamwork and leadership expertise, all highly valued proficiencies in academic fields and the workforce.

In this core, students will develop an intentional academic plan that reflects personal, academic, and career goals emphasizing the following discipline areas or individual courses:

- Art (ARTT)
- Dance (DANC)
- English (ENGL)
- Film (FILM)
- Global Humanities (GHUM)
- History (HIST)
- Linguistics (LING)
- Music (MUSC)
- Philosophy (PHIL)
- Speech (COMM)
- Theatre (THET)
- World Languages (ARAB, ASLP, CHIN, FREN, GERM, HIND, ITAL, JAPN, KORA, LATN, RUSS, PORT, SPAN)

Students may elect to take any of the following individual courses as part of their core requirements to enhance their selected academic focus; however, transferability of these courses should be carefully reviewed:

- Graphic Design (GDES 116)
- Interior Design (IDES 101)
- Integrated Studies (ISTD 173)
- Photography (PHOT 161)
- Television and Radio (TVRA 134)

General Degree Requirements

In order to complete this degree, students must:

1. complete a minimum of 60 credit hours including:

- 3 credits for ENGL 101 if needed for ENGL 102/ENGL 103, or select an elective.
- 31 credit hours of General Education program requirements.
  - Two General Education institutional requirement (GEIR) courses are required from the following General Education courses: COMM, HLTH, or one ARTD or HUMD. Students may only take one course from ARTD or HUMD to fulfill General Education institutional requirements (GEIR).
  - One global and cultural perspectives designated course as part of their General Education program.
- 15 credits in HACL core courses with a minimum of 3 credit hours at the 200-level.
- up to 11 elective credit hours as needed to complete 60 credit hours.

2. complete a minimum of 15 credit hours at the 200-level with at least 3 credits at the 200-level from the HACL core:

- ENGL 102, ENGL 103, COMM 108, and COMM 112 are not eligible for HACL core requirements if used for General Education foundation requirements. ENGL 101 and ENGL 110 cannot be used to meet HACL core requirements.

3. have a 2.0 GPA or higher:

- ENGL 102 or ENGL 103 must have a grade of C or better required to graduate.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester
ENGL 101 Introduction to College Writing 3*
Mathematics Foundation *3 semester hours (MATF)* ‡
Humanities Distribution *3 semester hours (HUMD)*
General Education Institutional Requirement *3 semester hours (GEIR)*
Natural Sciences Distribution with or without Lab *3 semester hours (NSD)*

Second Semester
English Foundation *3 semester hours (ENGF)* ‡
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
HACL Core Course 1 *3 semester hours*
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*
Elective *3 semester hours* ‡‡

Third Semester
Arts Distribution *3 semester hours (ARTD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
HACL Core Course 2 *3 semester hours*
HACL Core Course 3 *3 semester hours*
General Education Institutional Requirement *3 semester hours (GEIR)*

Fourth Semester
HACL Core Course 4 *3 semester hours*
HACL Core Course 5 *3 semester hours*
Elective 2 *semester hours* ‡‡
Elective 3 *semester hours* ‡‡
Elective 3 *semester hours* ‡‡

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 011, if needed for ENGL 102/ENGL 103, or select an elective.

** Behavioral and social sciences distribution (BSSD) courses must come from different disciplines.

‡ Students should attempt ENGL and MATH foundation requirements within completion of the first 24 credits of college-level work or at the completion of any prerequisite or required non-credit coursework.

‡‡ Any credit hours beyond the minimum General Education credit hours (31) or core courses are counted toward elective credit hours.

NOTE: Exact semester credit counts may vary based on specific course selections.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify the contributions of significant global thinkers and/or artists to ongoing intellectual debates.
- Discuss moral, social, and political issues from a critical, interdisciplinary, global perspective.
- Recognize and discuss a range of cultural perspectives.
- Communicate complex ideas using multiple modes of effective communication, including digital, written, oral and graphic communication.
- Utilize and apply methods of multi-disciplinary inquiry from the humanities, communication, art, and languages in response to a problem, task, or experience.
- Reflect on and assess their own learning as it applies to themselves as scholars and engaged citizens rooted in the humanities, arts, communication, and languages.

General Studies AA: Studies in Science, Technology, Engineering, and Mathematics Area of Concentration (STEM Core): 611B

: 611B

General Studies focuses on developing knowledge and skills across traditional disciplinary boundaries resulting in an interdisciplinary cornerstone for academic and career pursuits. A General Studies major allows you to develop a path for transfer into a variety of majors or that will enhance your career competitiveness and further your academic and personal goals. General Studies has flexible program requirements within core areas that encourage you to synthesize knowledge and approaches on inquiry from various disciplines allowing you to bring creative, multi-disciplinary problem-solving, and critical thinking approaches to a range of modern problems.

The General Studies degree is a flexible curriculum that fosters intentional exploration of academic and career goals through academic coursework and supportive advising. Using interdisciplinary application of practical and intellectual skills through General Education courses and your selected core area of focus, the General Studies program creates a flexible, integrated framework for you to engage in complex problems related your chosen focus of study while promoting specific disciplinary content and skills. The General Studies program promotes personal responsibility and civic engagement by providing an academic framework in which you will explore contemporary and enduring questions, integrate learning across disciplines, and develop knowledge, skills, and motivation to frame issues and questions presented in the academic experience in the context of a broader community. **This program can be completed either on campus or online.**

In the Science, Technology, Engineering, and Mathematics area, you will select courses and build a degree that will allow you to explore across traditional areas in the sciences, technology, engineering, and mathematics. This area of study is ideal for students planning to transfer into four-year programs in the Health Sciences, planning to apply for Montgomery College's Health Science programs, or desiring to explore a variety of areas before selecting a focused degree path. Additionally, the area allows you to develop communication, quantitative and qualitive reasoning, the scientific method and interdisciplinary approaches to problem-solving, teamwork and leadership skills -all highly valued proficiencies in academic fields and the workforce.

In this core, students will develop an intentional academic plan that reflects personal, academic, and career goals emphasizing the following discipline areas or individual courses:

- Astronomy (ASTR)
- Biology (BIOL)
- Chemistry (CHEM)
- Data Science (DATA)
- Computer Science (CMSC)
- Electrical Engineering (ENEE)
- Engineering Science (ENES)
- Geology (GEOL)
- Mathematics (MATH)
- Meteorology (AOSC)
- Networking (NWIT)
- Nutrition (NUTR)
- Physical Science (PSCI)
- Physics (PHYS)

Students may elect to take any of the following individual courses as part of their STEM core requirements to enhance their selected academic focus; however, transferability of these courses should be carefully reviewed:

- Architecture Technology (ARCH 101)
- Biotechnology (BIOT 110)
- Computer Application (CMAP 120)
- Environmental Horticulture and Sustainable Agribusiness (HORT 100)

NOTE: This core may not be appropriate for students intending to transfer to another institution for a life sciences, engineering, or mathematics degree program; students should meet with an advisor before selecting this core.

General Degree Requirements

In order to complete this degree, students must

1. complete a minimum of 60 credit hours including:

- 3 credits for ENGL 101 if needed for ENGL 102/ENGL 103, or select an elective.
- 31 credit hours of General Education program requirements
  - Two General Education institutional requirement (GEIR) courses are required from the following General Education courses: COMM, HLTH, or one ARTD or HUMD. Students may only take one course from ARTD or HUMD to fulfill General Education institutional requirements (GEIR).
  - One global and cultural perspectives designated course as part of their General Education program.
- 15 credits in STEM core courses with a minimum of 3 credit hours at the 200-level.
- up to 11 elective credit hours as needed to complete 60 credit hours.

2. complete a minimum of 15 credit hours at the 200-level with at least 3 credits at the 200-level from the STEM core.

3. have a 2.0 GPA or higher:

- ENGL 102 or ENGL 103 must have a grade of C or better to graduate.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester
ENGL 101 Introduction to College Writing 3*
Mathematics Foundation *3 semester hours (MATF)* ‡
Natural Sciences Distribution with Lab *4 semester hours (NSLD)* ‡‡
General Education Institutional Requirement *3 semester hours (GEIR)*
Elective *3 semester hours*

Second Semester
English Foundation *3 semester hours (ENGF)* ‡
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Humanities Distribution *3 semester hours (HUMD)*
Natural Sciences Distribution with or without Lab *3 semester hours (NSD)*
Elective *3 semester hours*

Third Semester
Arts Distribution *3 semester hours (ARTD or HUMD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
STEM Core Course 1 *3 semester hours*
STEM Core Course 2 *3 semester hours*
General Education Institutional Requirement *3 semester hours (GEIR)*

Fourth Semester
STEM Core Course 3 *3 semester hours*
STEM Core Course 4 *3 semester hours*
STEM Core Course 5 *3 semester hours*
Elective *3 semester hours* ‡‡‡
Elective *2 semester hours* ‡‡‡

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 011 if needed for ENGL 102/ENGL 103, or select an elective.

** Behavioral and social sciences distribution (BSSD) courses must come from different disciplines.

‡ Students should attempt ENGL and MATH foundation requirements within completion of the first 24 credits of college-level work or at the completion of any prerequisite or required non-credit coursework.

‡‡ Consult a counselor or program advisor for NSND/science course selection. Students potentially interested in science, health or engineering transfer programs should consider a 4-credit lab science course.

‡‡‡€‹ Any credit hours beyond the minimum General Education credit hours (31) or core courses are counted toward elective credit hours.

NOTE: Exact semester credit counts may vary based on specific course selections.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Construct graphic and analytical models.
- Express conclusions and implications from scientific experiments using a variety of methods and appropriate scientific language.
- Analyze and resolve real-world and abstract quantitative situations.
- Communicate, interpret, and justify results with clarity and coherence, demonstrating effective digital, written, oral and graphic communication skills.
- Utilize and apply multi-disciplinary methods of inquiry from the sciences, technology, engineering, and mathematics in response to a problem, task, or experience.
- Reflect on and assess their own learning as it applies to themselves as scholars and engaged citizens rooted in the sciences, technology, engineering, and mathematics.

General Studies AA: Studies in Social Science, Administration, and Health Area of Concentration (SSAH Core): 611C

: 611C

General Studies focuses on developing knowledge and skills across traditional disciplinary boundaries resulting in an interdisciplinary cornerstone for academic and career pursuits. A General Studies major allows you to develop a path for transfer into a variety of majors or that will enhance your career competitiveness and further your academic and personal goals. General Studies has flexible program requirements within core areas that encourage you to synthesize knowledge and approaches on inquiry from various disciplines allowing you to bring creative, multi-disciplinary problem-solving, and critical thinking approaches to a range of modern problems.

The General Studies degree is a flexible curriculum that fosters intentional exploration of academic and career goals through academic coursework and supportive advising. Using interdisciplinary application of practical and intellectual skills through General Education courses and your selected core area of focus, the General Studies program creates a flexible, integrated framework for you to engage in complex problems related your chosen focus of study while promoting specific disciplinary content and skills. The General Studies program promotes personal responsibility and civic engagement by providing an academic framework in which you will explore contemporary and enduring questions, integrate learning across disciplines, and develop knowledge, skills, and motivation to frame issues and questions presented in the academic experience in the context of a broader community. **This program can be completed either on campus or online.**

In the Social Sciences, Administration and Health area, you will select courses and build a degree with a foundation in the social and behavioral sciences that will allow you to transfer in a range of disciplines such as Psychology, Sociology, Economics, Political Science, Social Work, or Anthropology or to build an interdisciplinary academic foundation in traditional behavioral and social sciences. Additionally, this area allows you to develop broad and deep communication, interdisciplinary creative problem-solving and critical thinking skills as you cultivate teamwork and leadership expertise-all highly valued proficiencies in academic fields and the workforce.

In this core, students will develop an intentional academic plan that reflects personal, academic, and career goals emphasizing the following discipline areas or individual courses:

- Anthropology (ANTH)
- Applied Geography (GEOG)
- Criminal Justice (CCJS)
- Economics (ECON)
- Health (HLTH)
- History (HIST)
- Homeland Security (HMLS)
- Hospitality Management (HMGT)
- Physical Education (PHED) (students are limited to two PHED courses #100-199)
- Political Science (POLI)
- Psychology (PSYC)
- Sociology (SOCY)
- Women's and Gender Studies (WMST and GNDS)

Students may elect to take any of the following individual courses as part of their SSAH core requirements to enhance their selected academic focus; however, transferability of these courses should be carefully reviewed:

- Accounting (ACCT 221, ACCT 222)
- Behavioral Health (BEHE 100)
- Business (BSAD 101, BSAD 210)
- Education (EDUC 101, EDUC 102, EDUC 119)
- Emergency Management (EMGT 101, EMGT 206)
- Health Information Management (HINM 115, HINM 116)
- Management (MGMT 101, MGMT 140, MGMT 211, MGMT 201)

NOTE: Students intending to transfer to pursue a 4-year degree in hospitality management or criminal justice should consult an advisor to determine how to use this core.

General Degree Requirements

In order to complete this degree, students must

1. complete of a minimum of 60 credit hours including:

- 3 credits for ENGL 101 if needed for ENGL 102/ENGL 103, or select an elective.
- 31 credit hours of General Education program requirements.
  - Two General Education institutional requirement (GEIR) courses are required from the following General Education courses: COMM, HLTH, or one ARTD or HUMD. Students may only take one course from ARTD or HUMD to fulfill General Education institutional requirements.
  - One global and cultural perspectives (GCP) designated course as part of the General Education program.

- 15 credit hours in SSAH core courses with a minumm of 3 credit hours at the 200 level.
- up to 11 elective credit hours as needed to complete 60 credit hours.

2. complete a minimum of 15 credit hours at the 200 level with at least 3 credit hours at the 200-level from the SSAH core.

- Any CCJS course may be taken except CCJS 255.

3. have a 2.0 GPA or higher.

- ENGL 102 or ENGL 103 must have a grade of C or better to graduate.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester
ENGL 101 Introduction to College Writing 3*
Mathematics Foundation *3 semester hours* ‡
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Natural Science Distribution with or without Lab *3 semester hours (NSD)*
General Education Institutional Requirement *3 semester hours (GEIR)*

Second Semester
English Foundation *3 semester hours (ENGF)* ‡
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Humanities Distribution *3 semester hours (HUMD)*
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*
Elective *3 semester hours* ‡‡

Third Semester
Arts Distribution *3 semester hours (ARTD)*
SSAH Core Course 1 *3 semester hours*
SSAH Core Course 2 *3 semester hours*
General Education Institutional Requirement *3 semester hours (GEIR)*
Elective *3 semester hours* ‡‡

Fourth Semester
SSAH Core Course 3 *3 semester hours*
SSAH Core Course 4 *3 semester hours*
SSAH Core Course 5 *3 semester hours*
Elective *3 semester hours* ‡‡
Elective *2 semester hours* ‡‡

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 011 if needed for ENGL 102/ENGL 103, or select an elective.

** Behavioral and social sciences distribution (BSSD) courses must come from different disciplines.

‡ Students should attempt ENGL and MATH foundation requirements within completion of the first 24 credits of college-level work or at the completion of any prerequisite or required non-credit coursework.

‡‡ Any credit hours beyond the minimum General Education credit hours (31) or core courses are counted toward elective credit hours.

NOTE: Exact semester credit counts may vary based on specific course selections.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate knowledge of historical and contemporary issues in the social and behavioral science academic disciplines.
- Apply quantitative and qualitative methods for understanding human behavior.
- Explain philosophical or cultural issues associated with different social and behavioral science disciplines.
- Analyze knowledge, theories, literature, and methods of a Social Sciences discipline.
- Communicate complex ideas using multiple modes of effective communication, including digital, written, oral and graphic communication.
- Utilize and apply multi-disciplinary methods of inquiry from the social and behavioral sciences in response to a problem, task, or experience.
- Reflect on and assess their own learning as it applies to themselves as scholars and engaged citizens rooted in the behavioral and social sciences.

GRAPHIC DESIGN

Digital Animation AAS: 358

: 358

This program is designed to provide students with the skills necessary for junior or entry-level employment in the animation industry. Some students choose to continue their studies and have successfully transferred to four-year institutions with resulting portfolio. Animation is widely used in broadcast media, gaming and simulation, motion graphics, web design, forensics, and medical technologies. As the animation industry grows so does the need for qualified professionals. Students in this program will explore animation concepts and gain hands-on experience using industry standard hardware and software and motion capture systems.

SUGGESTED COURSE SEQUENCE:

Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
ARTT	100	Introduction to Drawing	3(ARTD or HUMD) **
GDES	116	Digital Tools for the Visual Arts	4
GDES	134	Illustration I	3

Program Elective *3 semester hours* ‡

Third Semester

GDES	216	Illustrator for Vector Graphics	4
GDES	240	Animation 2: 3-D Modeling	4

Behavorial and Social Sciences Distribution *3 semester hours (BSSD)*

Program Elective *3 semester hours* ‡

Second Semester

English Foundation *3 semester hours (ENGF)*

Mathematics Foundation *3 semester hours (MATF)*

ARTT	201	Art History: 1400 to Present	3(GEEL)
ARTT	205	Figure Drawing I	3
GDES	140	Introduction to Animation	4

Fourth Semester

ARTT	102	Introduction to 2D Design	3(GEEL)
GDES	242	Animation 3: Motion Capture and Character Development	4
TVRA	140	Video Editing	3

Natural Sciences Distribution with Lab *4 semester hours (NSLD)*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103 or program elective.

** AAS programs require one 3-credit Arts or Humanities General Education course.

‡ Program electives: Although this degree is designed to be completed in 60 credits, there are some scenarios that could result in more than 60 credits being earned. For example, if a student wishes to take two four-credit electives, they would have a total of 62 credits; if they choose one four credit and one 3 credit elective they would have 61. If the student selects two 3-credit classes-or-one 4-credit and one 2-credit then they would earn a total of exactly 60 credits. Please see an advisor in the Graphic Design program. Choose from the following with a minimum total of 6 credits for the two selections:

2-credit elective options: CMSC 100, GDES 269, or GDES 285.

3-credit elective options: ARTT 103, ARTT 105, ARTT 206, GDES 121, GDES 135, or PHOT 161.

4-credit elective options: GDES 214, TECH 190, TECH 225, or TECH 290.

Students whose focus is on Gaming should select from the CMSC/TECH courses listed above.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply and incorporate the elements and principles of design within a digital graphic images and animation.
- Demonstrate visual problem solving that employs appropriate technical skills and techniques.
- Demonstrate a basic knowledge of the history of digital art and animation.
- Use industry standard hardware and software to produce and manipulate digital images and animation.
- Develop a script and prepare a storyboard for 2-dimensional and 3-dimensional animation.
- Analyze and critique graphic images and animation.

Digital Animation Certificate: 175A

: 175A

This curriculum is designed to provide students with the skills necessary for junior or entry-level employment in the animation industry, or for transfer to another institution. Animation is widely used in broadcast media, gaming and simulation, motion graphics, web design, forensics, and medical technologies. As the animation industry grows so does the need for qualified professionals. Students in this program will explore animation concepts and gain hands-on experience using industry standard hardware and software and motion capture systems.

(* The Digital Animation Certificate is the revised former Computer Graphics: Art and Animation Certificate.)

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

ARTT	100	Introduction to Drawing	3
ARTT	205	Figure Drawing I	3
GDES	116	Digital Tools for the Visual Arts	4
GDES	134	Illustration I	3
GDES	140	Introduction to Animation	4
GDES	216	Illustrator for Vector Graphics	4
GDES	240	Animation 2: 3-D Modeling	4
GDES	242	Animation 3: Motion Capture and Character Development	4
TVRA	140	Video Editing	3

TOTAL CREDIT HOURS: 32

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply and incorporate the elements and principles of design within a digital graphic images and animation context.
- Demonstrate visual problem solving that employs appropriate technical skills and techniques.
- Demonstrate a basic knowledge of the history of digital art and animation.
- Use industry standard hardware and software to produce and manipulate digital images and animation.
- Develop a script and prepare a storyboard for 2-dimensional and 3-dimensional animation.
- Analyze and critique graphic images and animation.
- Develop a portfolio representative of the material and techniques studied, suitable for employment or transfer to another institution.

General Graphic Design Area of Concentration, Graphic Design AAS: 304B

(R): 304B

The graphic design degree prepares the student for employment in the field of graphic communication. Some students choose to continue their studies and have been successful transferring to four-year institutions with resulting portfolio. Emphasis is placed on the creative application of design principles and problem solving in graphic design and communication, using both traditional and industry standard digital tools. Students interested in pursuing a four-year BFA in graphic design should consider the AFA: graphic design: 902 transfer program. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:

Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3(ENGF)
ARTT	100	Introduction to Drawing	3(ARTD or HUMD) **
ARTT	102	Introduction to 2D Design	3(GEEL)
GDES	116	Digital Tools for the Visual Arts	4
GDES	121	Fundamentals of Graphic Design I	3

Third Semester

GDES	212	Publication Design with InDesign	4
GDES	216	Illustrator for Vector Graphics	4
GDES	218	Graphic Design for the Web	4

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*

Second Semester

English Foundation *3 semester hours (ENGF)*

Mathematics Foundation *3 semester hours (MATF)*

ARTT	201	Art History: 1400 to Present	3(GEEL)
GDES	124	Fundamentals of Graphic Design II	3
GDES	214	Photoshop for Graphics and Photography	4

Fourth Semester

GDES	224	Graphic Design III	3
TVRA	140	Video Editing	3

Program Elective *3 semester hours* ‡ ‡

Natural Science Distribtution with Lab *4 semester hours (NSLD)*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or GDES elective.

** AAS programs require one 3-credit Arts or Humanities General Education course.

‡ ‡ Choose one 3-credit program elective from ARTT 105, ARTT 205, GDES 134, PHOT 161, TECH 272, or choose one 4-credit elective from GDES 140 or GDES 230.

‡ ‡ Although this degree is designed to be completed in 60 credits, a student may opt to take a 4-credit elective, which would be a total of 61 credits. Please see an advisor in the Graphic Design program.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate solid foundation skills and competency in a range of media, techniques, and knowledge of associated processes to create products for a specified purpose or audience.
- Apply visual problem solving that employs appropriate technical skills and techniques.
- Evaluate the creativity of ideas and concepts for visual communication.

Graphic Design with Digital Tools Certificate: 239

(R): 239

The Graphic Design program offers one degree (two areas of concentration) and one certificate. Areas of Concentration: Graphic Design AAS and Illustration AAS. Certificate: Graphic Design with Digital Tools.

Appropriate courses may be used toward development of marketable skills, for vocational interests, or for possible transfer. A student interested in any of the AAS or certificate curricula should consult an academic advisor in the Department of Media Arts & Technologies.

This certificate curriculum prepares the student for immediate employment in graphic design using the computer in today's digital art and design studio. Courses are designed to provide introductory to advanced training in the skills necessary to succeed as a professional in this industry.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

GDES	116	Digital Tools for the Visual Arts	4
GDES	212	Publication Design with InDesign	4
GDES	214	Photoshop for Graphics and Photography	4
GDES	216	Illustrator for Vector Graphics	4
GDES	218	Graphic Design for the Web	4
TVRA	140	Video Editing	3

TOTAL CREDIT HOURS: 29-31

+ Students with no graphic design background should select GDES 121 as one of their electives.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate solid foundation skills and competency in a range of media, techniques, and knowledge of associated processes.
- Demonstrate visual problem solving that employs appropriate technical skills and techniques.
- Use a creative process to express ideas and concepts.

Graphic Design, AFA Statewide Program: 902

: 902

The Graphic Design Associate of Fine Arts degree (AFA) is a studio intensive program that prepares students for transfer to a four-year BFA program. Two-thirds of the total credit hours are in studio art and graphic design courses, and one-third are in General Education courses. The curriculum includes studio art foundations courses as well as specialized study in graphic design and typography. Courses focus on the fundamentals of visual arts and design, and parallel the course work in the first two-years of a BFA degree at a four-year institution.

The Graphic Design AFA is a designated statewide program. The Maryland Higher Education Commission designates some community college programs as statewide programs. A student may enroll in any of these programs at the same rates as in-county residents if the program is not offered by their local community college or if the student cannot enroll due to an enrollment limit. For more information on statewide programs, please see Curricula Information.

All students should meet with a discipline advisor in the Department of Visual and Performing Arts to plan their program of study, as well as their transfer and career goals. Students interested in seeking employment after completion of an associate's degree instead of transferring to a 4-year institution should consider the Graphic Design AAS: 304A career and technical education program.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
ARTT	100	Introduction to Drawing	3(ARTD)
ARTT	102	Introduction to 2D Design	3(GEEL)
GDES	116	Digital Tools for the Visual Arts	4

Third Semester

GDES	210	Graphic Design I	3†
GDES	220	Typography I	3†
ARTT	152	Photographic Expression I	3
OR			
Program Elective *3 semester hours* ‡‡			
Program Elective *3 semester hours* ‡			
ARTT	263	Professional Practice for the Visual Artist	1
Humanities Distribution *3 semester hours (HUMD)*			

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
ARTT	205	Figure Drawing I	3
OR			
ARTT	204	Intermediate Drawing	3
ARTT	200	Art History: Ancient to 1400	3
ARTT	103	Introduction to 3D Design	3
ARTT	201	Art History: 1400 to Present	3

Fourth Semester

GDES	211	Graphic Design II	3††
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*			
GDES	221	Typography II	3††
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102, or elective.

‡ Select one of the following craft electives: ARTT 120, ARTT 123, ARTT 245, or ARTT 247.

‡‡ Select one of the following printmaking electives: ARTT 152, ARTT 225, ARTT 226, ARTT 227, ARTT 228, ARTT 230, ARTT 233.

† Only offered in fall.

†† Only offered in spring.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate visual problem solving capability.
- Utilize foundational skills and demonstrate competency in a range of art media and techniques.
- Apply a comprehension of art historical and contemporary concepts to the creative process.

Illustration Area of Concentration, Graphic Design AAS: 305

(R): 305

The illustration area of concentration prepares the student for work in a variety of illustration markets including narrative, animation, gaming, sequential, editorial, advertising, and concept art. Some students choose to continue their studies and have been successful transferring to four-year institutions with resulting portfolio. Emphasis is placed on creating visual interpretations of subjects, conceptualizing, communicating, and refining technical skills using both traditional and digital media while preparing a portfolio.

SUGGESTED COURSE SEQUENCE:

Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*(ENGF)
ARTT	100	Introduction to Drawing	3(ARTD or HUMD) **
GDES	116	Digital Tools for the Visual Arts	4
GDES	121	Fundamentals of Graphic Design I	3
GDES	134	Illustration I	3

Third Semester

ARTT	201	Art History: 1400 to Present	3(GEEL)
ARTT	205	Figure Drawing I	3
GDES	140	Introduction to Animation	4
GDES	216	Illustrator for Vector Graphics	4

Second Semester

English Foundation *3 semester hours (ENGF)*

Mathematics Foundation *3 semester hours (MATF)*

ARTT	102	Introduction to 2D Design	3(GEEL)
GDES	135	Illustration II	3
GDES	214	Photoshop for Graphics and Photography	4

Fourth Semester

GDES	218	Graphic Design for the Web	4
GDES	234	Illustration III	3

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*

Natural Science Distribution with Lab *4 semester hours (NSLD)*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or any GDES elective.

** AAS programs require one 3-credit Arts or Humanities General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate solid foundation skills and competency in a range of media, techniques, and knowledge of associated processes to create products for a specified purpose or audience.
- Apply visual problem solving that employs appropriate technical skills and techniques.
- Evaluate the creativity of ideas and use of concepts for visual communication.

HEALTH ENHANCEMENT, EXERCISE SCIENCE, AND PHYSICAL EDUCATION

Advanced Personal Trainer Certificate: 191B

(R): 191B

The personal trainer certificate curriculum is designed to develop fitness specialists who are knowledgeable and skilled in fitness, wellness instruction, and program design. The curriculum blends science and theory with practical application and hands-on experience.

Students will acquire an academic foundation in the fundamental principles of exercise and nutrition in addition to a basic understanding of human anatomy and physiology. Practical skill training will focus on the development of expertise in fitness assessment, health and fitness program design, safe exercise technique, training methodology, injury prevention and care, behavior change, exercise leadership, and personal training business practice.

The certificate curriculum offers the educational framework and competencies for career opportunities in the fitness industry. Successful completion of the certificate will prepare students for many of the nationally recognized personal training certification examinations and provides a course foundation for those interested in pursuing an AA in exercise science.

PROGRAM REQUIREMENTS:

All students should review the Program Advising Guide and consult an advisor.

HLTH	121	Nutrition for Fitness and Wellness	3
HLTH	220	Emergency Medical Responder	3
PHED	206	Principles and Practices of Health-Related Fitness	3
PHED	228	Group Fitness Instructor Training	3
PHED	230	Advanced Weight Training: Theory and Program Design	3
PHED	237	Fitness Assessment and Programming	3
PHED	240	Personal Training Techniques	3
Group Fitness Activity Course *1-2 semester hours* *1			
Individual Fitness Activity Course *1 semester hour* *2			

TOTAL CREDIT HOURS: 23-24

*1 Group Fitness Activity Course: Select one course from the following courses: , , .

*2 Inividual Fitness Activities: Select one course from the following courses: , , , , , , .

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate knowledge and use of cardiovascular, respiratory, metabolic, and musculoskeletal risk factors and appropriate use of health histories, physician referrals, and informed consent.
- Demonstrate knowledge and use of appropriate fitness assessments for the following fitness components, cardiorespiratory, endurance, strength, flexibility, and body composition.
- Demonstrate knowledge and use of appropriate exercise program development for the following fitness components, cardiorespiratory, endurance, strength, flexibility, and body composition.
- Demonstrate knowledge and use of specific behavioral strategies to enhance exercise and health behavior change.
- Demonstrate knowledge and use of ability to communicate effectively and teach exercise participants proper exercise techniques, exercise progression, and lifestyle change strategies.

Community Health Area of Concentration, Arts and Sciences AA: 186A

: 186A

Professionals in this fast-growing field are employed by public and private health care organizations, government agencies, hospital wellness centers, corporate-based worksite health programs, college and university health service centers, insurance companies, private health promotion corporations, drug and alcohol rehabilitation programs, family planning agencies, and health clinics, and as education representatives for textbook publishers and pharmaceutical companies. Job titles include patient educators, health program managers, health education teachers, community health organizers, health promotion directors, and wellness coordinators. For enhanced experience, students who successfully complete course work and a 45-hour practicum field experience will earn a Community Health Worker (CHW) certification.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)* †			
COMM	108	Foundations of Human Communication	3(GEIR)
OR			
COMM	112	Business and Professional Speech Communication	3(GEIR)
HLTH	105	Personal and Community Health	3(GEIR)
SOCY	100	Introduction to Sociology	3(BSSD)

Third Semester

BIOL	212	Human Anatomy and Physiology I	4(NSLD)
HLTH	225	Introduction to Health Behaviors	3
Arts Distribution *3 semester hours (ARTD)*			
Program Electives *6 semester hours* ‡			

Second Semester

English Foundation *3 semester hours (ENGF)*			
BIOL	150	Principles of Biology I	4(NSLD)
HLTH	160	The Science and Theory of Health	3
PSYC	100	General Psychology	3(BSSD)
Program Elective *3 semester hours* ‡			

Fourth Semester

BIOL	213	Human Anatomy and Physiology II	4
Humanities Distribution *3 semester hours (HUMD)*			
Program Elective 200 Level *3 semester hours* ‡			
HLTH	298	Global Health Capstone	3
HLTH	297	Community Health Worker (CHW) Practicum	1

TOTAL CREDIT HOURS: 61

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

† Choose math according to transfer school.

‡ Consult with departmental advisor before selecting program electives. Select from the following program electives: HLTH 121, HLTH 125, HLTH 131, HLTH 150, HLTH 170, HLTH 200, HLTH 212, HLTH 215 and HLTH 220. At least three program elective credits must be at the 200-level.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Describe biological, psychological, environmental, and social factors that influence health.
- Explain the impact of individual behavior on health status.
- Define health education and list the skills/competencies of the entry level health educator.
- Develop a health education intervention based on the assessment of controllable and noncontrollable risk factors that impact health.
- Participate in a 45-hour practicum experience to earn a Community Health Worker certification.

Exercise Science Area of Concentration, Arts and Sciences AA: 157C

(R): 157C

This AA area of concentration is designed for the student who wishes to pursue a career in health promotion, fitness, or corporate wellness. An analysis of job markets in fields related to health promotion shows that they are experiencing rapid growth expansion as our society continues to become more aware of the benefits of a healthy lifestyle. This area of concentration has been designed as a transfer program, including a program developed in conjunction with Salisbury University's exercise science degree. This associate's degree program is also appropriate for students interested in pursuing a baccalaureate degree in exercise science, health promotion, health education, or kinesiology from another college or university.

Students will acquire knowledge and skills and will develop the abilities to apply theoretical information in practical real-life situations. Emphasis is on an understanding of the human body, health behavior, personal health, lifetime fitness principles and training techniques, nutrition, weight control, stress management, and other related healthy lifestyle topics. Students will learn to assess the different components of health and fitness, and they will acquire skills in the design, implementation, and supervision of healthier lifestyle programs for groups and individuals. Students will also acquire the program assessment and evaluation skills needed for the successful implementation of health behavior change programming.

Completion of the AA requirements in exercise science will prepare students for fitness certifications through nationally recognized professional organizations such as the American College of Sports Medicine. Upon completion of designated courses, students will be eligible to sit for various NCCA approved certifications. Upon completion of the Salisbury University degree, students will be eligible to sit for a variety of CoAES professional certifications including Certified Health Educator Specialist certification, ACSM's Certified Exercise Physiologist certification, or NCSA's Certified Strength and Conditioning Specialist.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	117	Elements of Statistics	3(MATF) †
HLTH	220	Emergency Medical Responder	3
PHED	206	Principles and Practices of Health-Related Fitness	3

Second Semester

English Foundation *3 semester hours (ENGF)*

BIOL	150	Principles of Biology I	4(NSLD)
HLTH	225	Introduction to Health Behaviors	3(GEIR)
PHED	228	Group Fitness Instructor Training	3

Humanities Distribution *3 semester hours (HUMD)* ††

Third Semester

BIOL	212	Human Anatomy and Physiology I	4(NSLD)
COMM	108	Foundations of Human Communication	3(GEIR)
PHED	230	Advanced Weight Training: Theory and Program Design	3
PHED	237	Fitness Assessment and Programming	3
PSYC	100	General Psychology	3(BSSD)

Fourth Semester

BIOL	213	Human Anatomy and Physiology II	4
PHED	240	Personal Training Techniques	3
PHED	250	Prevention and Management of Exercise Injuries	3
SOCY	100	Introduction to Sociology	3(BSSD) ‡
OR			
SOCY	243	The Sociology of Sport	3(BSSD) ‡

Arts Distribution *3 semester hours (ARTD)*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103. If ENGL 101/ENGL 101A is not needed, health elective (recommended HLTH 121).

† MATH 165 or MATH 150 can be taken to fulfill this requirement. (Consult department advisor to determine the appropriate math course).

†† Recommend one of the following if transferring to Salisbury University: HIST 114 or HIST 116.

‡ AA and AS programs require one global and cultural perspectives (GCP) General Education course.

Students participating in the articulated curriculum with Salisbury University @ Shady Grove need an additional 7 credits that include PHED 166, HLTH 160, and one of the following health courses: HLTH 131, HLTH 170, HLTH 212, or HLTH 215. Students must meet with departmental advisors for selection of appropriate general education and professional courses.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Define health and describe the dimensions of wellness and a healthy lifestyle while demonstrating the impact of individual health related behaviors on health status.
- Demonstrate knowledge of anatomy, physiology, and biomechanics as it relates to health and exercise programming.
- Describe and utilize current theories of health behavior to facilitate behavior change and program adherence.
- Design a comprehensive health fitness program using the principles of exercise science and the skills necessary to administer appropriate fitness assessments.
- Demonstrate knowledge of exercise professional's responsibilities, limitations, and the legal complications.

Personal Trainer Examination Preparation Letter of Recognition: 821

(R): 821

This letter of recognition is designed to prepare individuals interested in working in the fitness industry to successfully pass national personal training certifications such as ACE's Personal Trainer certification. Students will acquire the basic knowledge and skills to apply theoretical fitness information in practical real-life situations. Emphasis is on an understanding of the human body, lifetime fitness principles and training techniques, nutrition, weight control, and other related healthy lifestyle topics. Students will learn to assess the different components of health and fitness, and they will acquire skills in the design, implementation, and supervision of healthier lifestyle programs for healthy individuals. A grade of "C" or better is required in each course. This certification is designed so that individuals can complete this certification in one semester.

PROGRAM REQUIREMENTS:
All students should review the Advising Worksheet and consult an advisor.

HLTH	113	First Aid and CPR	2	PHED	166	Personal Fitness I	1
HLTH	121	Nutrition for Fitness and Wellness	3	PHED	206	Principles and Practices of Health-Related Fitness	3

TOTAL CREDIT HOURS: 9

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Define health and describe the dimensions of wellness and healthier lifestyles.
- Demonstrate basic knowledge of anatomy, physiology, and biomechanics as it relates to health and exercise programming.
- Demonstrate understanding of the impact of individual health related behaviors on individual's health status.
- Demonstrate ability to describe the concept of risk and risk factors as related to development of acute and chronic illness and ability to recognize risk factors that may require further evaluation before participation in physical activity.
- Demonstrate understanding of the principles of a healthy lifestyle including physical fitness, nutrition, and weight management.
- Demonstrate knowledge of safety plans, emergency procedures, and first aid techniques needed during fitness evaluations, and exercise training.
- Demonstrate basic understanding of the health/fitness instructor's responsibilities, limitations, and the legal implications of carrying out emergency procedures.
- Identify and demonstrate proper procedures and skills for fitness assessments and program design including proper technique for cardiovascular and strength machines.

Physical Education Area of Concentration, Arts and Sciences AA: 619

(R): 619

This AA area of concentration provides the first two years of a teacher preparation program for the elementary and secondary grade levels.

This curriculum prepares students to transfer to four year institutions with a broad-based background in the study of human movement and education theory and psychology. This curriculum is based upon introducing students to the Shape America National Physical Education Teacher Education (PETE) standards for entry level physical education teachers. The program allows the students to fulfill their general education requirements, participate in field work experience, as well as complete a core of professional preparation work that is appropriate for students in their first two years of the physical education major. Courses will address pedagogy, psychology, motor skill and movement abilities as well as health and fitness promotion.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)* ††			
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* ** ††			
HLTH	105	Personal and Community Health	3(GEIR)
PHED	201	Overview of Physical Education	3

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
Humanities Distribution *3 semester hours (HUMD)* ††			
BIOL	150	Principles of Biology I	4(NSLD)
EDUC	101	Foundations of Education	3
HLTH	125	Personalized Health Fitness	3

Third Semester

Arts Distribution *3 semester hours (ARTD)* ††			
BIOL	212	Human Anatomy and Physiology I	4(NSLD)
COMM	108	Foundations of Human Communication	3(GEIR)
OR			
COMM	112	Business and Professional Speech Communication	3(GEIR)
PHED	225	Invasion Games: a Tactical Games Approach	3
Program Elective *3 semester hours* ††			

Fourth Semester

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* ** ††			
BIOL	213	Human Anatomy and Physiology II	4
PHED	204	Foundations of Elementary School Physical Education	3
PHED	226	Net-Wall Games: a Tactical Games Approach	3

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102, or elective.

** BSSD courses must come from two different disciplines. Students are recommended to take PSYC 100.

*** Program Electives can be selected from the following list: EDUC 102, PHED 101, PHED 116, PHED 117, PHED 120, PHED 121, PHED 143, PHED 152, PHED 163, PHED 170, PHED 186, or PSYC 227.

†† Meet with a program advisor to select General Education courses based on transfer school AND choose one General Education course from either Arts, Humanities, or Behavioral and Social Sciences distributions to fulfill the Global and Cultural Perspectives (GCP) requirement. Towson accepts MATH 150 or a Mathematics foundation (MATF) in addition to a Math ALEKS score of 61 or higher.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify historical, philosophical, and social perspectives of physical education issues and legislation.
- Analyze and correct elements of motor skills and performance concepts.
- Develop and implement appropriate (e.g. measureable, developmentally appropriate, performance-based) goals and objectives aligned with local, state, and/or national objectives.
- Design and implement content and assessments that are aligned with lesson objectives.
- Demonstrate knowledge of current technology by planning and implementing learning experiences that require students to appropriately use technology to meet lesson objectives.
- Implement effective demonstrations, explanations, and instructional cues and prompts to link physical activity concepts to appropriate learning experiences.

Public Health Sciences AS: 415

: 415

Public health is the science of promoting health, preventing disease, extending life and improving quality of life for populations. The population can be as small as a community or as large as a country. Public health professionals address the impact of genetics, environment and individual behavior on the health of the population. The mission of public health is accomplished through the development and delivery of educational programs, creation of policy, regulation and administration of resources and continuing research. The scope of public health practice is broad encompassing a wide range of disciplines which emerge from the five core areas; behavioral science, epidemiology, biostatistics, administration and environmental health. This degree program is designed to articulate with the BS in Public Health Sciences, University of Maryland School of Public Health. Students may choose to complete this program at either the Shady Grove campus or the main campus in College Park. Students not transferring into the BS in Public Health Sciences are advised to check the requirements of the institution and program to which they intend to transfer.

HEALTH INFORMATION MANAGEMENT

Health Information Management AAS: 550

: 550

Students who plan to major in health information management will be assigned the temporary major of pre-health information management, with POS code 550, until they are officially admitted to the health information management program. Students may take preparatory courses and courses that fulfill General Education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the health information management program may choose to major in general studies or any other open-enrollment program. The Admissions and Records Office at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the health information management program.

This curriculum is designed to prepare students to function as health information management technicians in health record services located in hospitals, nursing homes, ambulatory care facilities, physician offices, insurance offices, government agencies, and other facilities utilizing health records. The health information management program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education in cooperation with the American Health Information Management Association's Council on Accreditation. Upon successful completion of the program, the graduate will receive the AAS and will be eligible to apply to take the accreditation examination given by the American Health Information Management Association.

The health information management technician is trained in all the functions normally performed by a health record service, which can include analyzing and technically evaluating health records and reports; compiling, interpreting, and utilizing hospital and health care statistics; coding systems, diseases, and operations according to a recognized classification system; assisting with medical facility committee procedures; releasing confidential information in accordance with legal requirements; and abstracting and retrieving medical information. Students in the curriculum are required to earn a grade of C or better in each health information management course before being allowed to proceed to the next course. Full-time and part-time students must see the program coordinator to choose an appropriate sequence of courses as outlined in the Health Information Management Student Handbook. All students must complete HINM-designated courses within the three years prior to graduation. HINM-designated courses not meeting this time requirement must be retaken, or the student must test out in current course content. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:

HINM	134	Healthcare Delivery Systems	3
HINM	144	Health Data Content, Structure and Standards	3
HINM	154	Legal and Ethical Issues in Health Information Management	2
HINM	155	CPT Coding	2
HINM	165	ICD-10 Coding	4
HINM	180	Health Data Management	4
HINM	190	Supervision of Health Information Services	3
HINM	200	Professional Practice Experience I	1
HINM	220	Advanced Coding and Clinical Documentation Improvement	3
HINM	225	Ambulatory Coding	2
HINM	230	Revenue Cycle and Reimbursement Management	2
HINM	271	Professional Practice Experience II	2
HINM	272	Professional Practice Experience III	1
HINM	280	Research in Health Information	1

Other Requirements:

CMAP	120	Introduction to Computer Applications	3
ENGL	101	Introduction to College Writing	3*
HINM	115	Medical Terminology I	2
HINM	116	Medical Terminology II	2
HINM	120	Concepts of Disease	3
HINM	150	Introduction to Pharmacology	1

TOTAL CREDIT HOURS: 67

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

** AAS programs require one 3-credit Arts or Humanities General Education course.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate appropriate interpersonal and communication skills.
- Illustrate competency in compiling health records and coding medical data using different formats and coding systems.
- Identify the components of management and how they relate to running a health record department.
- Assess management techniques for controlling automated functions in a health record department.
- Apply entry-level knowledge, clinical skills, and professional abilities appropriate for an HIM professional.
- Demonstrate correct spelling, punctuation and proficiency in communicating through the oral and written use of basic medical terminology.

Medical Coding Certificate: 525

: 525

This is a selective program with specific admission requirements. Students who plan to major in medical coding will be assigned the temporary major of pre-medical coding: 525 until they are officially admitted to the medical coding certificate program. Students may take preparatory courses and courses that fulfill General Education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the medical coding certificate program may choose to major in general studies or any other open-enrollment program. The Office of Records and Registration will

assign a matriculated code once students are admitted to the medical coding certificate program. For additional information, contact the Office of Records and Registration at 240-567-5000 or the program advisor.

The medical coder/abstractor/biller certificate curriculum is designed to prepare students to function as medical coders, abstractors, and billers in health record services located in hospitals, nursing homes, ambulatory care facilities, insurance companies, and governmental agencies. The coder/abstractor/biller is trained in the following functions normally performed by a health record service: analyzing and technically evaluating health records and reports; compiling, interpreting, and utilizing hospital and health care statistics; coding symptoms, diseases, and operations according to recognized classification systems; and abstracting and retrieving medical information. Students will be introduced to specialty coding and electronic billing requirements in an outpatient setting. All students must complete HINM-designated courses within the three years prior to graduation. HINM-designated courses not meeting this time requirement must be retaken, or the student must test out in current course content. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

BIOL	130	The Human Body	3
BIOL	131	The Human Body Laboratory	1
ENGL	101	Introduction to College Writing	3
HINM	115	Medical Terminology I	2
HINM	116	Medical Terminology II	2
HINM	120	Concepts of Disease	3
HINM	134	Healthcare Delivery Systems	3
HINM	150	Introduction to Pharmacology	1
HINM	155	CPT Coding	2
HINM	165	ICD-10 Coding	4
HINM	220	Advanced Coding and Clinical Documentation Improvement	3
HINM	225	Ambulatory Coding	2
HINM	230	Revenue Cycle and Reimbursement Management	2

TOTAL CREDIT HOURS: 31

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate appropriate interpersonal and communication skills.
- Show competency in compiling health records and coding medical data using different formats and coding systems.
- Demonstrate entry-level knowledge, clinical skills, and professional abilities appropriate for an HIM professional.
- Demonstrate correct spelling, punctuation, and proficiency in communicating through the oral and written use of basic medical terminology.

HOMELAND SECURITY

Homeland Security Certificate: 258

: 258

This certificate offers students an overview of the nation's homeland security environment through an all-hazards approach. The curriculum consists of 18 credit hours with coursework in emergency management, intelligence and counterintelligence functions, terrorism, critical infrastructure protection, and other relevant topics. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

EMGT	101	Principles of Emergency Management	3
HMLS	201	Introduction to Homeland Security	3
HMLS	202	Introduction to Terrorism	3
HMLS	210	Critical Infrastructure Protection	3
HMLS	211	Introduction to Intelligence Studies	3
HMLS	212	Current Issues in Homeland Security	3

TOTAL CREDIT HOURS: 18

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Analyze the evolution of the Department of Homeland Security and list the agencies and responsibilities within the department.
- Summarize key Homeland Security responsibilities.
- Analyze the roles, responsibilities, and authorities of the various organizations responding to disasters and other emergencies.
- Describe the elements, structure, and purpose of the intelligence community.
- Describe the purpose and types of intelligence and the process by which intelligence is requested, gathered, and shared.
- Identify the key challenges for the 21st century facing U.S. Homeland Security.
- Assess critical infrastructures and key resources.
- Differentiate between cyberterrorism, cyberwarfare, cyberespionage, and cybercrime.

HOSPITALITY MANAGEMENT

Food and Beverage Management Area of Concentration, Hospitality Management AAS: 347A

(R): 347A

This program of study is for the student preparing to enter the lodging and food service industry in a supervisory and management capacity. The curriculum contains a core of required courses and general education requirements. Students can customize their remaining studies by taking one of two area of concentrations: food and beverage management and management/supervision.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
BSAD	101	Introduction to Business	3
HMGT	100	Customer Service in the Hospitality Industry	1
HMGT	101	Introduction to the Hospitality Industry	3
HMGT	105	Food Service Sanitation	1
Any HLTH General Education Course *3 semester hours (GEEL)*			

Second Semester

English Foundation *3 semester hours (ENGF)*			
COMM	108	Foundations of Human Communication	3(GEEL)
OR			
COMM	112	Business and Professional Speech Communication	3(GEEL)
HMGT	107	Food and Beverage Management	3
HMGT	110	Principles of Food Production-Lecture	2
HMGT	111	Principles of Food Production-Laboratory	2
Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*			

Third Semester

HMGT	208	Food and Beverage Cost Controls	3
HMGT	211	Supervision and Leadership in the Hospitality Industry	3
HMGT	240	Lodging and Food Service Sales and Advertising	3***
NUTR	101	Introduction to Nutrition	3
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **			

Fourth Semester

HMGT	204	Catering and Banquets	3
HMGT	290	Hospitality Practicum	3
Elective *2 semester hours*			
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed, for ENGL 102/ENGL 103, or elective.

** ECON 201 is recommended for the BSSD selection.

*** Offered Fall only.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate knowledge of the broad scope and complexity of the hospitality industry.
- Identify key components of exemplary customer service and explain how hospitality employees perform responsibilities in an ethical manner.
- Explain the importance of respecting and promoting diversity, and demonstrate cultural competency in the hospitality industry.
- Demonstrate ability to work individually or in a team to effectively identify, assess, and generate solutions for managerial challenges in the hospitality industry.

Food and Beverage Management Certificate: 055

(R): 055

This curriculum is designed for students seeking employment in the food industry. It provides students with a background in food and beverage management and costs, including an updating and/or upgrading of skills for workers already holding industry jobs. Students wishing to pursue a degree may continue in the hospitality management program.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

HMGT 100	Customer Service in the Hospitality Industry	1
HMGT 105	Food Service Sanitation	1
HMGT 107	Food and Beverage Management	3
HMGT 110	Principles of Food Production-Lecture	2
HMGT 111	Principles of Food Production-Laboratory	2
HMGT 204	Catering and Banquets	3
HMGT 208	Food and Beverage Cost Controls	3
HMGT 211	Supervision and Leadership in the Hospitality Industry	3
HMGT Elective *3 semester hours*		
HMGT 250	Meeting, Conference, and Event Planning	3‡

TOTAL CREDIT HOURS: 24

‡ Offered spring only.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate an understanding of the complexity of the hospitality industry as a whole.
- Explain general management theory as it applies to food and beverage management.
- Enter, with junior standing, a four-year university as a major in hospitality management.
- Enter a management training program in food and beverage management.
- Work effectively as a member of a team in a professional setting.
- Define and discuss exemplary customer service during in-class exercises.
- Demonstrate an ability to perform responsibilities in an ethical manner.
- Recognize and articulate the importance of diversity in the hospitality industry.

Hospitality Supervision and Leadership Certificate: 233

: 233

This program of study is designed for individuals in a lodging or food service operation who wish to supplement or enhance their college degree and receive supervisory/leadership training. Students can customize the program by choosing courses in lodging or food service specialties. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

HMGT 100	Customer Service in the Hospitality Industry	1
HMGT 211	Supervision and Leadership in the Hospitality Industry	3
HMGT 107	Food and Beverage Management	3
OR		
HMGT 143	Management of Front Office Operations	3
HMGT 201	Lodging and Food Service Law	3
HMGT 207	Legal Issues in Labor Management	3
HMGT 212	Managing Hospitality Human Resources	3
HMGT 220	Hotel Operations	3
HMGT Elective *3 semester hours*		

TOTAL CREDIT HOURS: 22

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Appreciate the complexity of the hospitality industry as a whole.
- Explain general management theory as it applies to hospitality supervision and leadership.
- Enter, with junior standing, a four-year university with a major in hospitality management.
- Enter a management training program in lodging management.
- Demonstrate an ability to work effectively as a member of a team.
- Demonstrate an ability to provide exemplary customer service.
- Demonstrate an ability to perform responsibilities in an ethical manner.
- Be sensitive to the importance of diversity in the hospitality industry.

Management/Supervision Area of Concentration, Hospitality Management AAS: 347B

(R): 347B

This program of study is for the student preparing to enter the lodging and food service industry in a supervisory and management capacity. The curriculum contains a core of required courses and general education requirements. Students can customize their remaining studies by taking one of two areas of concentration: food and beverage management and management/supervision.

SUGGESTED COURSE SEQUENCE:

Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
BSAD	101	Introduction to Business	3
HMGT	100	Customer Service in the Hospitality Industry	1
HMGT	101	Introduction to the Hospitality Industry	3
HMGT	105	Food Service Sanitation	1
Any HLTH General Education Course *3 semester hours (GEEL)*			

Third Semester

HMGT	201	Lodging and Food Service Law	3****
HMGT	220	Hotel Operations	3****
HMGT	240	Lodging and Food Service Sales and Advertising	3****
Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*			
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **			

Second Semester

English Foundation *3 semester hours (ENGF)*			
COMM	108	Foundations of Human Communication	3(GEEL)
OR			
COMM	112	Business and Professional Speech Communication	3(GEEL)
HMGT	143	Management of Front Office Operations	3***
HMGT	211	Supervision and Leadership in the Hospitality Industry	3
NUTR	101	Introduction to Nutrition	3

Fourth Semester

HMGT	212	Managing Hospitality Human Resources	3***
HMGT	290	Hospitality Practicum	3
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			
HMGT Elective *3 semester hours*			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed, for ENGL 102/ENGL 103, or elective.

** ECON 201 is recommended.

*** Offered Spring only.

**** Offered Fall only.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate knowledge of the broad scope and complexity of the hospitality industry.
- Identify key components of exemplary customer service and explain how hospitality employees perform responsibilities in an ethical manner.
- Explain the importance of respecting and promoting diversity, and demonstrate cultural competency in the hospitality industry.
- Demonstrate ability to work individually or in a team to effectively identify, assess, and generate solutions for managerial challenges in the hospitality industry.

Meeting, Conference, and Event Planning Certificate: 237

(R): 237

This program of study is designed for individuals working in the hospitality or related industry who wish to enhance their college degree in the field of meeting, conference, and event planning. The certificate focuses on all major aspects involved with planning a meeting, conference, or event, including courses in catering and banquets, food and beverage cost control, lodging and food service law, and sales and advertising of lodging and food services.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

HMGT 107	Food and Beverage Management	3
HMGT 110	Principles of Food Production-Lecture	2
HMGT 111	Principles of Food Production-Laboratory	2
HMGT 201	Lodging and Food Service Law	3*
HMGT 204	Catering and Banquets	3
HMGT 211	Supervision and Leadership in the Hospitality Industry	3
HMGT 240	Lodging and Food Service Sales and Advertising	3*
HMGT 250	Meeting, Conference, and Event Planning	3

TOTAL CREDIT HOURS: 22

* Offered Spring only.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Describe the complexity of the hospitality industry as a whole.
- Explain general management theory as it applies to hospitality management.
- Manage all major aspects of meeting, conference, or event planning, including catering and banquets, food and beverage cost control, lodging and food service law, and sales and advertising.
- Demonstrate an ability to work effectively as a member of a team, provide exemplary customer service, and perform responsibilities in an ethical manner.
- Explain the importance of diversity in the hospitality industry.

INTERIOR DESIGN

Advanced Interior Design Certificate: 224

(R): 224

This curriculum is intended to upgrade skills for currently employed individuals in interiors-related careers, to provide new skills, or to provide skills for a change in job specialization. The concentration is on technical and specialized education in advanced design topics, such as lighting, kitchen, bath, office, AA specifications, and other specialty career options within the interior design profession. Portfolio and/or résumé review approval by the program advisor is required prior to enrollment in the advanced courses.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

IDES	118	Interior Design Visualization & Presentation	3
OR			
IDES	123	CAD Drafting for Interior Design	3
IDES	221	Interior Design: Residential	3
OR			
IDES	222	Interior Design: Commercial/ Contract	3
IDES	272	Business Practices and Procedures for Interior Design	3*

ARCH or IDES Program Electives *21 semester hours* †

TOTAL CREDIT HOURS: 30

* This IDES course may not be offered every semester.

† IDES program electives: , , , , , , , one-credit IDES program elective, or ARCH elective as determined in consultation with the interior design advisor.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply design principles and color theory in the execution of interior design projects.
- Identify the correct textiles, materials, finishes, and furniture for specifications.
- Collect and interpret the data necessary to solve interior design problems.
- Execute presentation and construction drawings.
- Be familiar with interior design principles and ethics.

Interior Design--Preprofessional Area of Concentration, Arts and Sciences AA: 102

(R): 102

THIS PROGRAM IS SUSPENDED EFFECTIVE SPRING 2024 AND NEW STUDENTS MAY NOT BE ADMITTED TO SUSPENDED PROGRAMS. STUDENTS ADMITTED TO THIS PROGRAM PRIOR TO SPRING 2024 WILL NOT BE ABLE TO GRADUATE WITH THIS DEGREE AFTER FALL 2026. PLEASE REFER TO PREPROFESSIONAL GENERAL AREA OF CONCENTRATION, INTERIOR DESIGN-PREPROFESSIONAL AAS: 306A AND CONTACT A PROGRAM ADVISOR.

Students interested in interior design can earn an AA, an AAS, or a certificate (three certificates are available).

This transfer program offers beginning college-level courses for students who desire to continue study toward an advanced interior design degree. Content offerings will include concentration on general studies and interior design foundations,

fundamental design, drawing, color, space planning, finish treatments, and professional business practices for interior designers. Technical development will include basic knowledge of drafting, historical topics, and presentation techniques for interior designers.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
ARTT	100	Introduction to Drawing	3(ARTD)
IDES	101	Interior Design I	3
IDES	107	Interiors: Design Principles	3
IDES	110	Interiors: Technical Drawing and Drafting	3

Third Semester

ARTT	200	Art History: Ancient to 1400	3(GEIR)
IDES	221	Interior Design: Residential	3‡‡

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Humanities Distribution *3 semester hours (HUMD)*
Natural Sciences Distribution *3 semester hours (NSD)*

Second Semester

English Foundation *3 semester hours (ENGF)*
Mathematics Foundation *3 semester hours (MATF)*

COMM	108	Foundations of Human Communication	3
OR			
COMM	112	Business and Professional Speech Communication	3(GEIR)
IDES	111	Interior Design II	3‡‡
IDES	118	Interior Design Visualization & Presentation	3

Fourth Semester

ARTT	201	Art History: 1400 to Present	3
IDES	222	Interior Design: Commercial/ Contract	3‡‡

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*
Program Elective *2 semester hours* ‡

PROGRAM REQUIREMENTS:

ARTT	201	Art History: 1400 to Present	3
IDES	101	Interior Design I	3
IDES	107	Interiors: Design Principles	3
IDES	110	Interiors: Technical Drawing and Drafting	3
IDES	111	Interior Design II	3‡‡
IDES	118	Interior Design Visualization & Presentation	3
IDES	221	Interior Design: Residential	3‡‡
IDES	222	Interior Design: Commercial/ Contract	3‡‡
Program Elective *2 semester hour* ‡			
ENGL	101	Introduction to College Writing	3*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

‡ Choose a 200-level IDES course. Students should consult with interior design advisor before selecting the program elective.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply design principles and color theory in the execution of interior design projects.
- Identify the correct textiles, materials, finishes, and furniture for specifications.
- Collect and interpret the data necessary to solve interior design problems.
- Demonstrate their understanding of one of the following: historic interiors, art history, or architectural history.
- Apply interior design principles and ethics.
- Execute presentation and construction drawings.
- Demonstrate basic fine art drawing skills.

Introductory Interior Design Certificate: 226

(R): 226

This curriculum is intended to provide new skills for individuals with no previous related education or experience; for students currently employed in unrelated careers, intending to make a significant career change; and for individuals intending to enter a first career in an entry-level assistantship position. Focus includes general foundation core education in interior design, combined with advanced and more technical courses, geared specifically to meet the career goals of the student. Course selection requires close supervision by the interior design advisor.

PROGRAM REQUIREMENTS:

All students should review the Program Advising Guide and consult an advisor.

IDES	101	Interior Design I	3
IDES	107	Interiors: Design Principles	3
IDES	110	Interiors: Technical Drawing and Drafting	3
IDES	111	Interior Design II	3
IDES	118	Interior Design Visualization & Presentation	3
OR			
IDES	123	CAD Drafting for Interior Design	3
IDES Program Elective *3 semester hours* †			
IDES	221	Interior Design: Residential	3
OR			
IDES Program Elective *3 semester hours* †			
IDES	272	Business Practices and Procedures for Interior Design	3*
IDES Program Electives *6 semester hours* †			

TOTAL CREDIT HOURS: 30

* This IDES course may not be offered every semester.

† IDES program electives: IDES 118, IDES 123, IDES 221, IDES 222, IDES 234, IDES 275, and one-credit IDES program elective. Select electives in consultation with interior design advisor.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply design principles and color theory at a basic level in the execution of interior design projects.
- Identify the correct textiles, materials, finishes, and furniture for simple specifications.
- Collect and interpret the data necessary to solve simple interior design problems.
- Execute basic presentation and construction drawings.
- Be familiar with interior design principles and ethics.

Kitchen and Bath Design Area of Concentration, Interior Design-Preprofessional AAS: 306C

(R): 306C

This program prepares students for entry-level positions in interior design and related professions with a concentration on kitchen and bath design. Some students choose to continue their studies and have successfully transferred to four-year institutions with resulting portfolio. Emphasis is placed on the creative application of design principles, addressing environmental and human health and well-being, employing the design process, and developing effective visual communication and technical skills.

SUGGESTED COURSE SEQUENCE:

Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
IDES	101	Interior Design I	3
IDES	107	Interiors: Design Principles	3
IDES	110	Interiors: Technical Drawing and Drafting	3

Third Semester

IDES	123	CAD Drafting for Interior Design	3
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			
IDES	221	Interior Design: Residential	3
IDES	240	Textiles, Materials, and Finishes for Interior Design	3‡
IDES	244	Bath Design	1‡
Elective *1 semester hour*			

Second Semester

English Foundation *3 semester hours (ENGF)*			
IDES	111	Interior Design II	3
IDES	118	Interior Design Visualization & Presentation	3
IDES	243	Kitchen Design	1‡
IDES	247	Codes for Interiors	1‡
GDES	116	Digital Tools for the Visual Arts	4(GEEL)

Fourth Semester

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*			
IDES	222	Interior Design: Commercial/ Contract	3
IDES	245	Kitchen and Bath Appliances and Equipment	1‡
IDES	246	Interior Systems	1‡
IDES	272	Business Practices and Procedures for Interior Design	3‡
IDES	275	Interiors: Professional Practicum/ Internship	1-3(1 semester hour) ‡‡
ARTT	201	Art History: 1400 to Present	3(ARTD or HUMD)**

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective.

** AAS programs require one 3-credit Arts or Humanities General Education course.

‡ This IDES course may not be offered every semester; advising by interior design coordinator is required.

‡‡ Internship must be approved by interior design advisor.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply design principles, elements, and color theory in the execution of interior design projects including kitchen and bath design projects.
- Demonstrate an understanding of the factors that influence the ethical, environmentally responsible, and professional specification of textiles, materials, finishes & furnishings.
- Collect and interpret appropriate information to solve interior design problems in keeping with the industry-recognized project process.
- Incorporate an understanding of the history of interior design, art, architecture, and decorative arts from western and non-western cultures into design solutions for interiors projects including kitchen and bath projects.
- Exhibit proficient visual, oral, and written communication essential to convey design solutions, employ design intentions, and manage the project process effectively.
- Express an understanding of the role and value of interior designers as essential collaborators within the general building and kitchen and bath industries.
- Produce interior design solutions that are healthy, safe, pleasing, and functionally efficient demonstrating the value of interior design and kitchen and bath design.
- Communicate an understanding of trade and business issues, and professional practice standards.
- Utilize essential drafting, drawing, visualization, and software skills to develop and execute design projects.
- Demonstrate an understanding of codes, standards, and regulations that apply to interior environments including kitchens and bathrooms.

Preprofessional General Area of Concentration, Interior Design--Preprofessional AAS: 306A

(R): 306A

This program prepares students for entry-level positions in interior design and related professions with a general interior design concentration. Some students choose to continue their studies and have been successful transferring to four-year institutions with resulting portfolio. Emphasis is placed on the creative application of design principles, addressing environmental and human health and well-being, employing the design process, and developing effective visual communication and technical skills.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
IDES	101	Interior Design I	3
IDES	107	Interiors: Design Principles	3
IDES	110	Interiors: Technical Drawing and Drafting	3

Second Semester

English Foundation *3 semester hours (ENGF)*			
ARTT	100	Introduction to Drawing	3
IDES	111	Interior Design II	3
GDES	116	Digital Tools for the Visual Arts	4(GEEL)
IDES	118	Interior Design Visualization & Presentation	3

Third Semester

Program Elective *1 semester hour* ‡‡			
IDES	123	CAD Drafting for Interior Design	3
Program Elective *3 semester hours* ‡‡			
IDES	221	Interior Design: Residential	3
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			

Fourth Semester

IDES	222	Interior Design: Commercial/ Contract	3
ARTT	201	Art History: 1400 to Present	3(ARTD or HUMD) **
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*			
Program Elective *6 semester hours* ‡‡			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or an elective.

** AAS programs require one 3-credit Arts or Humanities General Education course.

‡‡ Students should consult with interior design advisor before selecting program electives. Select program electives from the following disciplines: ANTH, ARCH, ARTT, BLDG, BSAD, COMM, CMGT, ENES, GDES, GEOG, HIST, HMGT, HORT, IDES, PHOT, PHIL, PHYS, PSYC, SOCY.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply design principles, elements, and color theory in the execution of interior design projects.
- Demonstrate an understanding of the factors that influence the ethical, environmentally responsible, and professional specification of textiles, materials, finishes & furnishings.
- Collect and interpret appropriate information to solve interior design problems in keeping with the industry-recognized project process.
- Incorporate an understanding of the history of interior design, art, architecture, and decorative arts from western and non-western cultures into design solutions for interiors projects.
- Exhibit proficient visual, oral, and written communication essential to convey design solutions, employ design intentions, and manage the project process effectively.
- Express an understanding of the role and value of interior designers as essential collaborators within the building industry.
- Produce interior design solutions that are healthy, safe, pleasing, and functionally efficient demonstrating the value of interior design.
- Communicate an understanding of trade and business issues, and professional practice standards.
- Utilize essential drafting, drawing, visualization, and software skills to develop and execute design projects.
- Demonstrate an understanding of codes, standards, and regulations that apply to interior environments.

INTERNATIONAL STUDIES

International Studies Area of Concentration, Arts and Sciences AA: 152

: 152

The international studies area of concentration is designed for students who envision a career in the international arena and plan to transfer into the upper division of another college or university with the intention of continuing their studies in such areas as international relations and area studies.

This area of concentration is for students who, subsequently, wish to work in this field, be it in government, international organizations, trade, finance, business, or related areas. All students in this area of concentration must see an advisor from the Department of History and Political Science and identify as early as possible their transfer institution, as well as the particular field or area of concentration. The international studies area of concentration includes the general education requirements as well as a number of alternate course choices (listed in the footnotes), which prepare the student for particular transfer options in international studies, such as international relations and area studies.

Students may study abroad for a semester or travel in a foreign country during the summer as part of the international studies track. The international studies advisor will aid students in integrating their studies abroad into the degree program.

A suggested course sequence for full-time students follows; part-time students should consult an advisor. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
HIST	114	The World in the 20th Century	3(HUMD)
OR			
HIST	116	World History: A Comparative Survey from the Ancient World to A.D. 1500	3(HUMD)
OR			
HIST	117	World History: A Comparative Survey from A.D. 1500 to the Present	3(HUMD)
POLI	101	American Government	3(BSSD)
World Language *3 semester hours* **			

Third Semester

ANTH	201	Introduction to Sociocultural Anthropology	3‡‡
ENGL	201	Introduction to World Literature I	3(see alternatives ‡)
HIST	245	Latin American History	3(GEIR)
OR			
HIST	247	East Asian Civilization	3(GEIR)
OR			
HIST	250	Modern Asia	3(GEIR)
OR			
HIST	252	The United States and 20th Century World Affairs	3(GEIR)
OR			
HIST	266	African History from 1800	3(GEIR)
POLI	211	Comparative Politics and Governments	3
Natural Sciences Distribution *3 semester hours (NSD)*			

Second Semester

English Foundation *3 semester hours (ENGF)*			
ECON	105	Basic Economics	3(BSSD)
OR			
PSYC	100	General Psychology	3(BSSD)
OR			
SOCY	100	Introduction to Sociology	3(BSSD)
POLI	203	International Relations	3
Arts Distribution *3 semester hours (ARTD)*			
World Language *3 semester hours* **			

Fourth Semester

COMM	108	Foundations of Human Communication	3(GEIR)
OR			
COMM	112	Business and Professional Speech Communication	3(GEIR)
POLI	206	Political Ideologies	3
OR			
POLI	230	Introduction to International Conflict Resolution	3
OR			
POLI	256	Politics of the Developing World	3
OR			
POLI	270	Politics in Action	3
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			
Electives *5 semester hours*			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed, for ENGL 102/ENGL 103 or elective.

** Some world languages courses may carry 4 or 5 credits.

‡ ENGL 122, ENGL 202, ENGL 205, ENGL 208, ENGL 213, ENGL 214, ENGL 248, GHUM 101, HIST 255, PHIL 209, additional world language course.

‡ ‡ ANTH 256, ECON 201, GEOG 101, GEOG 105, GEOG 113, GEOG 124, GEOG 130, GEOG 211, PSYC 100, SOCY 105.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Articulate the political, cultural, ideological, historical, religious, and/or philosophical contexts of current global actors, systems, and controversies.
- Explain the historic and contemporary consequences of geographic and linguistic boundaries for cross-cultural dialog and diplomacy.
- Compare the costs and benefits of varying social, economic, and political structures in the context of globalization.

MUSIC

Music Area of Concentration, Arts and Sciences AA: 054

(R): 054

The music curriculum is designed for the student who plans (1) to earn the bachelor of arts degree with a major in music; (2) to earn the bachelor of music education degree; (3) to earn the bachelor of music degree with a major in performance, theory-composition, or history-literature; or (4) to seek employment upon completion of the AA. Montgomery College is a community college member of the National Association of Schools of Music.

Completion of all requirements for this area of concentration will lead to the award of the AA in arts and sciences. In addition to the specific course sequence outlined in this section, the following department requirements must be met:

1. Music majors enrolled in applied music courses must also register for MUSC 150 - Applied Music Laboratory.
2. Students receiving the AA must perform in a graduation recital.
3. All applied music students must register from the list of MUSC ensemble courses for a total of two credits as assigned by the department.

The student normally takes 16-17 credit hours each semester, for a total of 65-66 semester hours. The actual courses taken each semester will be selected by the student in consultation with a music advisor. Courses are selected from those general subjects required for graduation (General Education foundation and distribution requirements) and those necessary for acquiring musical knowledge (music requirements).

Anyone wishing to major in music at Montgomery College must first complete an audition interview with a full-time faculty member in the Department of Music. A suggested course sequence for full-time students follows; part-time students as well as full-time students must consult an advisor from the department before registering for music classes.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3
Mathematics Foundation *3 semester hours (MATF)*			
MUSC	147	Applied Music	2††
MUSC	150	Applied Music Laboratory	1‡
MUSC	184	Introduction to Music Theory	3†
MUSC ### - Large Ensemble *1 semester hour* ‡‡			
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **			

Third Semester

MUSC	150	Applied Music Laboratory	1‡
MUSC	191	Music Theory II	3
MUSC	195	Ear Training and Sightsinging II	2
MUSC	215	Applied Music	2
MUSC ### - Large Ensemble *1 semester hour* ‡‡			
Arts Distribution *3 semester hours (ARTD)*			
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
MUSC	117	World Music	3(GEIR)
OR			
MUSC	125	History of Jazz	3(GEIR)
MUSC	148	Applied Music	2
MUSC	150	Applied Music Laboratory	1‡
MUSC	190	Music Theory I	3
MUSC	194	Ear Training and Sightsinging I	2
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **			

Fourth Semester

COMM	108	Foundations of Human Communication	3(GEIR)
OR			
COMM	112	Business and Professional Speech Communication	3(GEIR)
MUSC	150	Applied Music Laboratory	1‡
MUSC	216	Applied Music	2
MUSC	233	Music Theory III	3
MUSC	237	Ear Training and Sightsinging III	2
Humanities Distribution *3 semester hours (HUMD)*			
Natural Sciences Distribution *3 semester hours (NSD)*			

TOTAL CREDIT HOURS: 66

* ENGL 101/ENGL 101A, if needed for ENGL 102, or MUSC Elective.

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

† If MUSC 184 is not required it may be substituted with MUSC 234 or MUSC 238 with department consent.

†† Students should consult a MUSC advisor before registering.

‡ Course must be taken four times for credit within the semester students are registered for Applied Music.

‡‡ Check with the department for the selection of the following list of courses: MUSC 161, MUSC 161C, MUSC 161D, MUSC 163, MUSC 166, MUSC 170, MUSC 172. Students can select the courses based on the instrument/voice they study and/or by audition.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply the fundamentals of music theory from basic notation and ear training through part writing and microanalysis to the creative process.
- Identify musical periods and styles from the Middle Ages to the present.
- Demonstrate the level of proficiency in music performance/education required to perform standard audition repertoire expected in four-year music programs or for work in a variety of music-related careers.
- Perform collaboratively in ensembles, practice self-reflective assessment and create a strategy of long-term intentional practice through applied music studies, technical studies, ensembles, and master classes in preparation for auditions.
- Work effectively in groups, as leaders or team members, to solve problems and interact productively with a diverse group of peers.

Music Certificate: 204

(R): 204

The music certificate curriculum consists of music courses that are required in music major programs at professionally accredited colleges, universities, and conservatories. It is intended for students who wish to transfer to these institutions.

Students would be advised to take approximately 30 additional credits chosen to match the first two years of the program into which they plan to transfer.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

Applied Music (8 Credits Hours)

MUSC 147	Applied Music	2
MUSC 148	Applied Music	2
MUSC 215	Applied Music	2
MUSC 216	Applied Music	2

Applied Music Laboratory (4 Credits Hours)

Large Ensemble (4 Credits Hours)

MUSC 161	Series-Small Ensembles	1
MUSC 161C - Jazz Ensemble *1 semester hour*		
MUSC 161D - World Ensemble *1 semester hour*		
MUSC 163	College Chorus	1
MUSC 166	College Orchestra	1
MUSC 170	Chamber Singers	1
MUSC 172	College Band - Wind Ensemble	1

Music Theory (12 Credit Hours)

MUSC 190	Music Theory I	3
MUSC 191	Music Theory II	3
MUSC 233	Music Theory III	3
MUSC 234	Music Theory IV	3

Ear Training and Sightsigning (8 Credit Hours)

MUSC 194	Ear Training and Sightsinging I	2
MUSC 195	Ear Training and Sightsinging II	2
MUSC 237	Ear Training and Sightsinging III	2
MUSC 238	Ear Training and Sightsinging IV	2

TOTAL CREDIT HOURS: 36

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply the fundamentals of music theory from basic notation and ear training through part writing and microanalysis to the creative process.
- Identify musical periods and styles from the Middle Ages to the present.
- Demonstrate the level of proficiency in music performance/education required to perform standard audition repertoire expected in four-year music programs or for work in a variety of music-related careers.
- Perform collaboratively in ensembles, practice self-reflective assessment, and create a strategy of long-term intentional practice through applied music studies, technical studies, ensembles, and master classes in preparation for auditions.

NURSING

Nursing AS: 570

(TP/SS): 570

Students who plan to major in nursing will be assigned the temporary major of pre-nursing, with POS code 570, until they are officially admitted to the nursing program. Students may take preparatory courses and courses that fulfill general education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the nursing program may choose to major in general studies or any other open-admission program. The Admissions and Records Office at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the nursing program.

The basic nursing curriculum covers two academic years, is approved by the Maryland Board of Nursing, and is accredited by the National League for Nursing Accrediting Commission. Upon successful completion of the curriculum, the graduate is granted the AS in nursing and is eligible to take the state board examination for registered nurse licensure. Graduates will be prepared to give competent nursing care to patients in hospitals, nursing homes, and other comparable health agencies under the supervision of more experienced practitioners and, with appropriate experience and further preparation, should be able to assume increasing responsibility in nursing. Hospitals, nursing homes, and other health agencies within the metropolitan area will provide the settings for a variety of clinical experiences, which are planned as a vital part of each nursing course.

In addition to the scholastic standards required of all students in the College, nursing students are required to achieve a grade of C or better in mathematics foundation, BIOL 210, BIOL 212, and BIOL 213, and each nursing course in order to continue in the program.

The nursing curriculum depends on proper sequencing of courses. All non-nursing courses in the curriculum, with the exception of the arts and humanities distribution courses, are to be completed prior to or during the semester in which they are listed.

This is a selective program with specific admissions requirements. Applications should be received in the Admissions Office by April 1 for fall semester and by August 1 for spring semester. For additional information, contact the Admissions and Records Office at the Takoma Park/Silver Spring Campus, 240-567-1501, or the program department.

After acceptance into the nursing program, all students must obtain current CPR certification for "Healthcare Provider" or "Professional Rescuer" as well as a TB test or chest X-ray showing no evidence of tubercular disease. Clinical agencies require documented evidence (titers) of immunity to measles, mumps, rubella, and hepatitis B (immunization series may be in progress with titer obtained at its conclusion). In addition, knowledge of varicella (chicken pox) immune status by blood titer is required.

A suggested course sequence for full-time students follows; part-time students should consult an advisor.

PROGRAM REQUIREMENTS:

NURS	113	Fundamentals of Nursing	7
NURS	114	Professionalism and Communication in Nursing	1
NURS	121	Basic Health Assessment	1
NURS	125	Nursing in Health and Illness I	4
NURS	126	Nursing Care of Special Populations I: Geriatric and Psychiatric Nursing	4
NURS	129	Pathophysiology and Pharmacology in Nursing	2
NURS	205	Transition to Professional Nursing Practice	1
NURS	225	Nursing in Health and Illness II	4
NURS	226	Nursing Care of Special Populations II: Maternal/Child Nursing	5
NURS	240	Nursing in Health and Illness III	7

Other Requirements:

BIOL	210	Microbiology	4

TOTAL CREDIT HOURS: 70

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Maintain legal, ethical, evidence-based, and professional standards in nursing.
- Utilize clinical reasoning in practice.
- Practice patient centered care.
- Demonstrate teamwork and collaboration.
- Effectively use current technology and informatics.
- Ensure a safe environment for patient, self, and others.

PARALEGAL STUDIES

Paralegal Studies AAS: 341

(G, TP/SS): 341

This curriculum provides the student with a general knowledge of the American legal system and concentrated knowledge on the various aspects of law. The student will be given basic skills in legal research, legal writing, interviewing, and law office administration and knowledge of legal ethics. The student will learn to prepare and interpret legal documents and analyze procedures and processes. Students will have the option to focus on various areas of the law including business law, civil law, criminal law, and domestic relations and family law. This curriculum will expose students to the new and growing fields within the legal system to include Cyber Law, Health Law, Intellectual Property, and Alternative Dispute Resolution. Students will have the opportunity to participate in an internship gaining real world experience.

This curriculum is designed for those interested in careers as a paralegal professional. Such careers include: working in a law office, court personnel, corrections employee, loan processor, etc. This curriculum is also designed for legal assistants presently employed in private law offices and corporate and government legal divisions who wish to improve their skills for career advancement. A paralegal is a trained specialist who can manage a law office operation under the supervision of an attorney, relieving a practicing attorney of those routine components of managing legal cases that require knowledge of the legal process and assisting the attorney with handling of complicated legal issues. The paralegal also assists the attorney in legal research and in preparing and interpreting legal documents. The paralegal will analyze procedural problems through the

selection, compilation, and use of technical information from various legal references. Completion of all requirements for this curriculum will lead to the award of the A.A.S. in paralegal studies.

IMPORTANT NOTE: PARALEGALS MAY NOT PROVIDE LEGAL SERVICES DIRECTLY TO THE PUBLIC EXCEPT AS PERMITTED BY LAW.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
CMAP	120	Introduction to Computer Applications	3
LGST	101	Introduction to the Legal System	3
POLI	101	American Government	3(BSSD)

Second Semester

English Foundation *3 semester hours (ENGF)*			
LGST	102	Legal Research	3
LGST	103	Legal Writing	3
LGST	104	Interviewing, Investigating, and Communication Techniques	3
LGST	106	Legal Ethics	3

Third Semester

BSAD	101	Introduction to Business	3
OR			
LGST Elective *3 semester hours*			
COMM	108	Foundations of Human Communication	3(GEEL)
OR			
COMM	112	Business and Professional Speech Communication	3(GEEL)
LGST	122	Law Office Administration	3
Arts or Humanities Distribution *3 semester hours (ARTD or HUMD)*			
200-Level LGST Elective *3 semeter hours*			

Fourth Semester

Natural Sciences Distribution with Lab *4 semester hours (NSLD)*
LGST Electives *11 semester hours*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if need for ENGL 102/ENGL 103, or any 200 Level LGST course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Describe the ethical responsibilities of members of the legal profession.
- Explain the basic concepts and procedures of various areas of law within the U.S. legal system including the operation of the U.S. legal system.
- Perform effective legal research utilizing traditional and digital research methodologies.
- Communicate with attorneys and clients utilizing effective writing and oral communication skills.
- Draft and interpret various legal documents.
- Utilize technologies currently associated with the modern practice of law.
- Describe the functions related to the operation and management of a modern law office.
- Apply critical thinking skills to identify, analyze, and interpret legal and factual issues.

PERFORMING ARTS

Performing Arts AA: 613

(R): 613

The performing arts curricula are planned to provide a fundamental course of study and training in basic skills for students who plan to continue study at a four-year institution, expect to enter a professional training program in theatre or dance, or wish to seek professional employment in theatre, dance, or related areas. Completion of all requirements will lead to the award of the AA in performing arts.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
Mathematics Foundation *3 semester hours (MATF)*			
DANC	100	Introduction to Dance	3(GEIR)
OR			
THET	100	Introduction to the Theatre	3(GEIR)
THET	110	Fundamentals of Acting	3(ARTD)
Program Elective *3 semester hours* ††			

Third Semester

THET	114	Stagecraft I	3
THET	205	Movement for the Performer	3
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)***			
Program Elective *3 semester hours* ††			
Program Elective *3 semester hours* ††			

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
COMM	108	Foundations of Human Communication	3(GEIR)
OR			
COMM	112	Business and Professional Speech Communication	3(GEIR)
MUSC	188	Performing Arts Production	1-3‡
OR			
THET	188	Performing Arts Production	1-3‡
Natural Sciences Distribution with Lab *4 semester hours (NSLD)*			
Program Elective *3 semester hours* ††			

Fourth Semester

ENGL	230	Introduction to Modern Drama	3(HUMD) †
Behavioral and Social Sciences Distribution *3 semester hours (BSSD) **			
Natural Sciences Distribution *3 semester hours (NSND)*			
Program Elective 3 *semester hours* ††			
Program Elective 3 *semester hours* ††			

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A if needed for ENGL 102/ENGL 103, or any program elective.

** Behavioral and Social Sciences Distribution courses (BSSD) must come from different disciplines.

† May substitute other 200-level Humanities Distribution course.

‡ Course must be taken for a minimum of 2 credits.

‡‡ Select 18 credits from the following based on your advising pathway (Performance, Production, Dance, or Musical Theatre): COMM 109; DANC 101, DANC 102, DANC 103, DANC 104, DANC 105, DANC 106, DANC 107, DANC 201, DANC 203, DANC 204, DANC 205, MUSC 147, MUSC 148, MUSC 194, THET 118, THET 122, THET 125, THET 201, THET 208, THET 216, THET 225, THET 230, THET 237. At least 6 program elective credits must be in 200-level courses.

One of the distribution or elective courses must fulfill the Global and Cultural Perspectives requirement.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Discuss the importance of dance, theatre, or music as performing arts situated in cultural, historical, and aesthetic contexts.
- Employ the specialized vocabulary of dance, theatre, or music as it applies to history and current professional practice.
- Analyze components of dance, theatre, or music in order to make informed aesthetic choices.
- Demonstrate mastery of skills and techniques required to produce or perform a work of dance, theatre, or music according to standards of professional and safe practice.

PHOTOGRAPHY

Electronic Photography Certificate: 193

(R): 193

This certificate curriculum is intended to upgrade skills for currently employed individuals or to provide new skills for a change in job specialization. It provides basic black-and-white and color photography skills and techniques in electronic photography and digital imaging as they apply to the modern business of professional photography.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

PHOT	161	Introduction to Digital Photography	3
PHOT	214	Photoshop for Graphics and Photography	4
PHOT	201	Photography II	4
PHOT	230	Advanced Image Editing and Correction	4

TOTAL CREDIT HOURS: 15

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Capture, edit, and output photographs for both print and web applications technology for use in commercial or fine art environments.
- Operate a wide variety of photographic lighting equipment for use in studio, architectural, and varied commercial environments.
- Consciously employ complex aesthetic strategies as they apply to visual problem-solving methods.

Photography AAS: 342

(R): 342

This photography program is intended to prepare students for careers in photography-industrial, commercial, portrait, lab technician-and management of photographic services. Some students choose to continue their studies and have successfully transferred to four-year institutions with resulting portfolio. Emphasis is on the development of technical knowledge and

craftsmanship, including use of multiple camera formats, accuracy with image capture when applying mixed lighting sources and diverse skill sets with multimedia technologies where video application can be applied.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*(ENGF)
GDES	116	Digital Tools for the Visual Arts	4(ARTD or HUMD)**
COMM	108	Foundations of Human Communication	3(GEEL)
OR			
COMM	112	Business and Professional Speech Communication	3(GEEL)
PHOT	161	Introduction to Digital Photography	3

Third Semester

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*
Natural Sciences Distribution with Lab *4 semester hours (NSLD)* ‡

PHOT	251	Portrait and Fashion Photography	3
PHOT	265	Advanced Color/Black and White Imaging	3
TVRA	134	Media Appreciation	3

Second Semester

English Foundation *3 semester hours (ENGF)*
Mathematics Foundation *3 semester hours (MATF)*

PHOT	201	Photography II	4
PHOT	214	Photoshop for Graphics and Photography	4

Fourth Semester

GDES	218	Graphic Design for the Web	4
PHOT	210	Photojournalism	3
PHOT	269	Special Photography Assignment	1-4‡‡
PHOT	275	Business Practices and Portfolio Development	3
PHOT	277	Advanced Concepts in Digital Capture	3

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A if needed for ENGL 102/ENGL 103 or elective.

** AAS programs require one 3-credit Arts or Humanities General Education course.

‡ BIOL 105 & BIOL 106 are recommended.

‡‡ PHOT 269 must be taken for a total of 4 credits.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Utilize current digital imaging technology to produce photographic images for use in commercial or fine art applications while also demonstrating an aesthetic understanding of historical film and print photography.
- Employ complex aesthetic strategies in visual problem solving methodologies that utilize a wide variety of lighting applications for use in studio, architectural, fine art, and varied commercial environments.
- Pursue academic research that involves complex evaluations of photographic ideas and applications of commercial and/or fine art photographs for the purpose of designing and implementing a career development strategy appropriate to the student's desired field of expertise in photography.
- Create and implement complex production strategies that require interdisciplinary applications of image production. These interdisciplinary applications with photography may include television production, web design, or graphic design.

Photography Master Certificate: 196

(R): 196

This certificate curriculum is intended to prepare students for careers in photography-industrial, commercial, portrait, lab technician-and management of photographic services. It provides a balanced aesthetic and technical foundation for entry into the professional field or for further study.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

PHOT	161	Introduction to Digital Photography	3
PHOT	201	Photography II	4
PHOT	214	Photoshop for Graphics and Photography	4
PHOT	265	Advanced Color/Black and White Imaging	3
PHOT	269	Special Photography Assignment	1-4*
PHOT	275	Business Practices and Portfolio Development	3

PHOT Electives *9 semester hours* ‡
Elective Selected From Art, Computer Applications, Graphic Design, Physics, Printing, Or Television/Radio Disciplines *3 semester hours* ‡

TOTAL CREDIT HOURS: 32

‡ Choice of electives must be approved by a photography advisor.

* PHOT 269 can be taken multiple times for 3 credits.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply traditional darkroom photographic principles, practicies and problem-solving methods to the current digital imaging technology.
- Operate a wide variety of photographic lighting equipment for use in studio, architectural, fine art, and varied commercial environments.
- Effectively evaluate photographs with a thorough understanding of the creative process, based on academic research.
- Design and implement a business development strategy appropriate for the field of photography.
- Create and implement a complex production plan that includes related disciplines including video production, web design, computer graphics, or gaming.

Portrait, Fashion, and Photojournalism Certificate: 172

(R): 172

This certificate curriculum is intended to upgrade skills for currently employed individuals or to provide new skills for a change in job specialization. It provides basic black-and-white and color photography skills, and advanced skills in the photography of people in the photojournalism, portrait, fashion, and illustration professional fields of photography.

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

PHOT	161	Introduction to Digital Photography	3	PHOT	210	Photojournalism	3
PHOT	201	Photography II	4	PHOT	251	Portrait and Fashion Photography	3

TOTAL CREDIT HOURS: 13

PROGRAM OUTCOMES

€‹Upon completion of this program, a student will be able to:

- Work with digital imaging technology and a variety of lighting equipment to produce photographic images for use in studio, architectural, fine art, and varied commercial environments.
- Design and create advanced converging media content for story telling with both print image sequencing and video.

- Design and create advanced photographic applications that specifically address the needs of commercial and fine art portrait and fashion markets.
- Consciously employ complex aesthetic strategies as they apply to visual problem-solving methods.

PHYSICAL THERAPIST ASSISTANT

Physical Therapist Assistant AAS: 580

(TP/SS): 580

Students who plan to major in physical therapist assistant will be assigned the temporary major of prephysical therapist assistant, with POS code 580, until they are officially admitted to the physical therapist assistant program. Students may take preparatory courses and courses that fulfill general education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the physical therapist assistant program may choose to major in general studies or any other open-admission program.

The Office of Records and Admissions at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the physical therapist assistant program. The program provides a foundation for graduates to become highly skilled in providing patient services using physical therapy techniques under the supervision and direction of a licensed physical therapist in clinics, hospitals, and many other health care settings. This is a selective program with specific admissions requirements. For additional information, contact the Office of Records and Admissions at the Takoma Park/Silver Spring Campus, 240-567-1501, or the program department.

Thirty to forty hours of volunteer experience in a physical therapy setting and completion of BIOL 212 - Human Anatomy and Physiology I are recommended before entering the program. It is advised that students not hold full-time jobs during enrollment in the program because physical therapist assistant students are required to attend full-time clinical practicum experiences and professional activities.

Each physical therapy course adds to material offered in previous courses. Students in this curriculum are expected to achieve a grade of C or better in each course in the curriculum. Upon completion of the curriculum, the graduate will receive the AAS and will be eligible to take the National Licensing Exam for Physical Therapist Assistants.

A suggested course sequence for full-time students follows; part-time students should consult an advisor.

PROGRAM REQUIREMENTS:

PHTH	101	Introduction to Physical Therapy	2
PHTH	102	Basic Health Skills for the Physical Therapist Assistant	2
PHTH	103	Therapeutic Procedures I	3
PHTH	104	Surface Anatomy, Palpation, and Massage	2
PHTH	105	Kinesiology I	2
PHTH	106	Kinesiology II	2
PHTH	112	Pathology for the Physical Therapist Assistant	2
PHTH	113	Seminar I	1
PHTH	114	Seminar II	1
PHTH	116	Measures and Interventions for Clinical Problems I	2
PHTH	201	Medical Reporting for the Physical Therapist Assistant	2
PHTH	204	Neurophysiology and Motor Learning	2
PHTH	205	Seminar III	1
PHTH	206	Measures and Interventions for Clinical Problems II	3
PHTH	215	Seminar IV	1
PHTH	216	Measures and Interventions for Clinical Problems III	2
PHTH	220	Therapeutic Procedures II	2
PHTH	223	Clinical Practicum I	5
PHTH	224	Clinical Practicum II	7

Other Requirements:

COMM	108	Foundations of Human Communication	3

TOTAL CREDIT HOURS: 67

*ENGL 101 prerequisite

ENGL 101/ENGL 101A, if needed, for ENGL 102/ENGL 103, or check with advisor.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate the entry-level knowledge, clinical skills, and professional abilities of a physical therapist assistant.
- Deliver competent patient care under the direction and supervision of a licensed physical therapist, in an ethical, legal, safe, and effective manner in a variety of health care settings.
- Manage an effective transition from the educational program to a career as a licensed physical therapist assistant.

PROFESSIONAL AND TECHNICAL WRITING

Professional and Technical Writing Certificate, Statewide Program: 261

(G): 261

This Professional and Technical Writing Certificate curriculum prepares students to meet the growing demands for workplace writing. The Professional and Technical Writing Certificate Program is designed for students from a variety of degree programs who want to move into professional writing careers, to enhance their employability, or to upgrade their skills.

The curriculum prepares students to design, write, and produce documents and presentations in a work environment. Students will advance their writing and editing skills as well as learn visual-design software. Students can tailor the certificate to focus on their specific area of interest, choosing from public relations, production of written documents, and graphic design. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

COMM	112	Business and Professional Speech Communication	3
ENGL	101	Introduction to College Writing	3*
ENGL	103	Critical Reading, Writing, and Research in the Work Place	3
ENGL	259	Organization and Development of Technical Documents	3
ENGL	110	Principles of English Grammar	3
GDES	116	Digital Tools for the Visual Arts	4
Program Elective *3-4 semester hours* **			

TOTAL CREDIT HOURS: 22

* ENGL 101/ENGL 011 if needed, for ENGL 103 or elective.

** Students choose one of the following program electives: ENGL 258, COMM 230, COMM 251, GDES 212, or DATA 110.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Write clearly for different audiences.
- Edit documents for correctness and consistency.
- Edit documents using sound grammar.
- Plan the document production process, including budgeting and scheduling.
- Plan, deliver, and critique presentations for the workplace.
- Use graphic design software to produce visual images that enhance communication in the written document.

RADIOLOGIC (X-RAY) TECHNOLOGY

Radiologic (X-Ray) Technology AAS: 520

(TP/SS): 520

Students who plan to major in radiologic (x-ray) technology will be assigned the temporary major of pre-radiologic (x-ray) technology, with POS code 520, until they are officially admitted to the radiologic (x-ray) technology program. Students may take preparatory courses and courses that fulfill general education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the radiologic (x-ray) technology program may choose to major in general studies or any other open-admission program. The Admissions and Records Office at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the radiologic (x-ray) technology program.

This curriculum requires a minimum of two years of didactic and clinical experience. It offers a basic general education as well as an in-depth study of radiologic technology (including assessment of critical thinking skills) which is supported by extensive clinical experience. The program is accredited by the Joint Review Committee on Education in Radiologic Technology, and course objectives are mandated by the American Society of Radiologic Technologists (ARRT). Upon successful completion of the program, the graduate will receive the AAS and will be eligible to apply to take the certification examination given by the American Registry of Radiologic Technologists. Radiographers are eligible for employment in the radiology departments of hospitals, clinics, and doctors' offices. The curriculum has been designed to provide a transfer option for students who elect to continue studies beyond the AAS.

Each of the radiologic technology courses builds upon material offered in the previous course. A grade of C or better in each radiologic technology course must be achieved before advancing to the next semester or summer session.

This is a selective program with specific admissions requirements. For additional information, contact the Admissions Office at the Takoma Park Campus, 240-567-1501, or the program department.

PROGRAM REQUIREMENTS:

RADT	101	Radiologic Technology I	4
RADT	102	Radiologic Technology II	4
RADT	111	Radiographic Positioning I	3
RADT	112	Radiographic Positioning II	2
RADT	119	Clinical Radiology I	3
RADT	120	Clinical Radiology II	2
RADT	124	Clinical Radiology III	2
RADT	125	Clinical Radiology IV	3
RADT	206	Radiologic Technology III	2
RADT	207	Radiologic Technology IV	2
RADT	211	Radiographic Positioning III	2
RADT	224	Clinical Radiology V	3
RADT	225	Clinical Radiology VI	3
RADT	240	Radiologic Technology V	2

Other Requirements:

ENGL	101	Introduction to College Writing	3*	HINM	115	Medical Terminology I	2
BIOL	213	Human Anatomy and Physiology II	4				

TOTAL CREDIT HOURS: 66

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103 or see advisor.

** AAS programs require one 3-credit Arts or Humanities General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Graduate as competent entry level radiographers.
- Demonstrate critical thinking skills through their performance in their competency in radiographic and patient care skills.
- Demonstrate professionalism.
- Demonstrate clinical competence.
- Demonstrate effective communication skills.
- Illustrate a strong commitment to excellent customer service.

SCIENCE

Biological Science Area of Concentration, Science AS: 412F

: 412F

The biological science area of concentration is one of the life sciences. Working closely with a counselor or advisor, students will be able to tailor their program of study to fit the needs of most, if not all, colleges and universities offering a degree in biology or the biological sciences. Also, students planning to transfer to a four-year institution prior to attending medical, dental, veterinary, physical therapy, podiatry, or chiropractic school will find all or most of the prerequisite courses needed for admission to these professional schools. Finally, students planning to transfer to pharmacy, medical technology, or optometry school programs that accept students after two years of undergraduate education will find all the courses needed for admission into these programs.

Students are strongly advised to work closely with a biology or chemistry faculty member or an academic transfer counselor in order to select courses that will prevent or minimize the loss of credits upon transfer.

Chemistry and Biochemistry Area of Concentration, Science AS: 412D

: 412D

The chemistry and biochemistry program is designed to provide the first two years of courses necessary to obtain a chemistry or biochemistry baccalaureate degree from a four-year college or university. In addition to general and organic chemistry knowledge, students will be trained in data collection and analysis, and scientific communication. Through the laboratory portion of the program, students will reinforce their understanding and application of the theory learned in class, develop laboratory skills and techniques, and formulate conclusions based on observations. Students are strongly encouraged to work with an advisor in course selection as transfer requirements between four-year institutions may differ.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. The chemistry and biochemistry area of concentration is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in chemistry or biochemistry. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	181	Calculus I	4(MATF)
CHEM	131	Principles of Chemistry I	4(NSLD)

Humanities Distribution *3 semester hours (HUMD)* ‡

Third Semester

CHEM	203	Organic Chemistry I	5
PHYS	161	General Physics I: Mechanics and Heat	3

Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Program Elective *1-4 semester hours #*

Second Semester

ENGL	102	Critical Reading, Writing, and Research	3(ENGF)
BIOL	150	Principles of Biology I	4(NSLD/ GEEL)
CHEM	132	Principles of Chemistry II	4(NSLD)
MATH	182	Calculus II	4

Fourth Semester

CHEM	204	Organic Chemistry II	5
PHYS	262	General Physics II: Electricity and Magnetism	4

Arts Distribution *3 semester hours (ARTD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)*
Program Elective *1-4 semester hours #*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, or ENGL 101/ENGL 011, if needed for ENGL 102/ENGL 103, or choose program elective.

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

‡ It is recommended that COMM 108 be taken as the HUMD distribution elective.

Courses can be taken from the following program electives: CHEM 272 ***, ENES 206, SCIR 297, MATH 280, MATH 282, or BIOT, BIOL, PHYS, CMSC elective. Check transfer institution requirements when selecting program electives.

*** CHEM 272 strongly recommended for transfer to UMD.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Apply knowledge of general and organic chemistry to analyze data, draw conclusions, and solve problems.
- Apply safe practices to execute laboratory techniques and use appropriate equipment and instrumentation to carry out experimental procedures.
- Access scientific information using basic scientific references and literature and evaluate technical information critically.
- Communicate scientific concepts, experimental results, and properly cited reference material in an ethical, clear, and organized manner.
- Work effectively in groups, as leaders or team members, to solve problems and interact productively with a diverse group of peers.

Environmental Science and Policy Area of Concentration, Science AS: 412E

: 412E

The environmental science and policy area of concentration is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in environmental science or policy. Working closely with a counselor or advisor, students will be able to tailor their program of study to fit the needs of most, if not all, colleges and universities offering a degree in environmental science or environmental policy.

SUGGESTED COURSE SEQUENCE:
Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL 101 Introduction to College Writing 3*
OR

Program Elective or Elective *3 semester hours*
MATH 150 Elementary Applied Calculus I 4(MATF) †

OR

MATH 165 Precalculus 4(MATF) †
OR

MATH 181 Calculus I 4 (MATF) †
Arts Distribution *3 semester hours (ARTD)*
CHEM 131 Principles of Chemistry I 4(NSLD)

Third Semester

BIOL 151 Principles of Biology II 4
Program Elective *4 semester hours* † †
Program Elective *4 semester hours* † †
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **

Second Semester

English Foundation *3 semester hours (ENGF)*
BIOL 150 Principles of Biology I 4(NSLD)
Program Elective *3 semester hours* † †
Behavioral and Social Sciences *3 semester (BSSD)* **
Humanitites Distribution *3 semester hours (HUMD)*

Fourth Semester

COMM 108 Foundations of Human Communication 3(GEEL)
OR

COMM 112 Business and Professional Speech Communication 3(GEEL)

- Program Elective *3 semester hours* † †
- Program Elective *3 semester hours* † †
- Program Elective *3 semester hours* † †
- Program Elective *3 semester hours* † †

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or a program elective or elective.

** The two BSSD courses must come from two different disciplines. Select from any BSSD on the College's general education list and/or BSSD courses noted in the following program electives: ECON, GEOG and POLI, depending on transfer institution.

† Choose a MATH course based on requirement of transfer institution(s).

† †Program Elective courses include: BSAD 210 or MATH 117, BIOL 105, BIOL 106, BIOL 210, BIOL 217, BIOL 222, BIOL 230, CHEM 132, CHEM 150, CHEM 203, CHEM 204, ECON 201, ECON 202, GEOG 101, GEOG 105, GEOG 124, GEOG 235, GEOG 240, GEOG 250, GEOG 260, GEOG 270, GEOL 101, MATH 181, MATH 182, PHYS 161, PHYS 262 or PHYS 203, PHYS 204, POLI 101, POLI 203, POLI 211, POLI 242, POLI 270.

Please note: A minimum of 12 course credits numbered at the 200-level must be completed to receive a degree.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Make observations, collect data, and analyze data.
- Apply basic biological and chemical principles to explain experimental results.
- Describe connections between the environment and human societies, including how humans affect the environment and how the environment in turn affects human welfare.

Mathematics Area of Concentration, Science AS: 412B

: 412B

The mathematics area of concentration is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in mathematics. **This program can be completed either on campus or online.**

SUGGESTED COURSE SEQUENCE:

Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL 101 Introduction to College Writing 3*
MATH 181 Calculus I 4(MATF)
Arts Distribution *3 semester hours (ARTD)*
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)* **
Humanities Distribution *3 semester hours (HUMD)*

Third Semester

MATH 117 Elements of Statistics 3(GEEL)
OR
COMM 108 Foundations of Human Communication 3(GEEL)
OR
COMM 112 Business and Professional Speech Communication 3(GEEL)
OR
General Education Elective *3 semester hours (GEEL)*
MATH 280 Multivariable Calculus 4
Natural Sciences Distribution with Lab *4 semester hours (NSLD)* ‡
Program Electives *4 semester hours* †

Second Semester

English Foundation *3 semester hours (ENGF)*
MATH 182 Calculus II 4
Program Electives *4 semester hours* †
Natural Sciences Distribution with Lab *4 semester hours (NSLD)* ‡

Fourth Semester

MATH 282 Differential Equations 3
MATH 284 Linear Algebra 4
Program Electives *4 semester hours* †
Behavioral and Social Sciences Distribution *3 semester hours (BSSD)***

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or program elective.

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

‡ Students are strongly encouraged to take two consecutive lab sciences courses.

† Students should choose electives carefully based on the requirements of their intended transfer institution. Students are encouraged to take a two-semester sequence of courses that fulfills their transfer goals. Program electives include: ACCT 221,

ACCT 222, BIOL 150, BIOL 151, BIOL 210, CHEM 131, CHEM 132, CHEM 203, CHEM 204, CMSC 140, CMSC 203, CMSC 207/MATH 207, COMM 108, DATA 101, DATA 110, DATA 201, DATA 205, ECON 201, ECON 202, ENEE 140, ENES 102, ENES 206, ENES 220, ENES 221, ENES 240, MATH 117, MATH 165, MATH 217, PHYS 161, PHYS 233, PHYS 234, PHYS 262, or PHYS 263. Students must take at least one 200 level program elective.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Effectively communicate the concepts of single and multivariable calculus, differential equations, and linear algebra using appropriate mathematical language.
- Apply mathematical approaches from single and/or multivariable calculus, differential equations, and linear algebra to analyze and solve problems in mathematics and other disciplines.
- Appropriately use current mathematical software, such as Matlab or MAPLE, for tasks in multivariable calculus, differential equations, and/or linear algebra.

Physics Area of Concentration, Science AS: 412C

: 412C

The physics area of concentration is a transfer program that provides the first two years of courses necessary for a four-year baccalaureate degree in physics.

SUGGESTED COURSE SEQUENCE:

Students should complete the required English and Math foundation courses within the first 24 credit hours. A suggested course sequence for full-time students follows. All students should review the Program Advising Guide and consult an advisor.

First Semester

ENGL	101	Introduction to College Writing	3*
MATH	181	Calculus I	4(MATF)
CMSC	140	Introduction to Programming	3

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

Program Elective, 3 *semester hours* †

Second Semester

English Foundation *3 semester hours (ENGF)*

PHYS	161	General Physics I: Mechanics and Heat	3(NSND/GEEL)
MATH	182	Calculus II	4

Program Elective, 3 *semester hours* †

Third Semester

PHYS	262	General Physics II: Electricity and Magnetism	4(NSLD)
MATH	280	Multivariable Calculus	4
MATH	282	Differential Equations	3

Arts Distribution *3 semester hours (ARTD)*

Program Elective, 3 *semester hours* †

Fourth Semester

PHYS	263	General Physics III: Waves, Optics, and Modern Physics	4(NSLD)
MATH	284	Linear Algebra	4

Behavioral and Social Sciences Distribution *3 semester hours (BSSD) ***

Humanities Distribution *3 semester hours (HUMD)*

TOTAL CREDIT HOURS: 60

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or elective. English course placement is determined by Accuplacer English/Reading Test, AP/IB, or transfer credits.

** Behavioral and Social Science Distribution (BSSD) courses must come from different disciplines.

† Program electives from the following disciplines: BIOL, CHEM, CMSC, DATA, ENES, ENEE, GEOL, depending on your transfer institution.

AA and AS programs require one global and cultural perspectives (GCP) General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Identify, formulate, and solve basic physics problems.
- Integrate natural sciences to build solid foundation in physics applications using appropriate mathematical skills.
- Use appropriate and varied computer application software in physics.
- Design, perform, collect, and analyze data for simple physics experiments using the scientific method.

SURGICAL TECHNOLOGY

Surgical Technology AAS: 590

(TP/SS): 590

Students who plan to major in surgical technology will be assigned the temporary major of pre-surgical technology, with POS code 590, until they are officially admitted to the surgical technology program. Students may take preparatory courses and courses that fulfill general education requirements during the waiting period. As an alternative to being assigned a temporary major, students waiting for admission to the surgical technology program may choose to major in general studies or any other open-admission program. The Admissions and Records Office at Takoma Park/Silver Spring will assign a matriculated code once students are admitted to the surgical technology program.

This curriculum is designed for those who wish to move into surgical technology careers or upgrade present surgical skills in this area. Credits earned in the degree provide transfer options for students who choose to continue studies beyond the AAS.

The curriculum, emphasizing both didactic and clinical experience, offers a broad base of surgical skills needed by those who function as integral members of the surgical team. The program is accredited by the Commission on Accreditation of Allied Health Education Programs. Upon successful completion of the program, the graduate will receive the AAS and will be eligible to apply to take the certification examination given by the National Board of Surgical Technology and Surgical Assisting. Surgical technologists are eligible for employment in hospitals, operating rooms, physicians' offices, surgery centers, labor and delivery, and freestanding minor surgery facilities.

Each of the surgical technology courses builds on materials offered in the previous course. Students must meet prerequisites to the first-semester courses. A grade of C or better in each surgical technology course must be achieved.

For information regarding the program and admissions, please contact the Admissions and Records Office at the Takoma Park/ Silver Spring Campus, 240-567-1501, or the program department.

PROGRAM REQUIREMENTS:

SURG	100	Introduction Surgical Technology	4
SURG	101	Surgical Technology I	6
SURG	102	Surgical Technology II	6
SURG	103	Pharmacology and Anesthesia	2
SURG	201	Surgical Technology III	6
SURG	205	Clinical Practicum I	3
SURG	211	Surgical Technology IV	6
SURG	215	Clinical Practicum II	3

Other Requirements:

BIOL	213	Human Anatomy and Physiology II	4	ENGL	101	Introduction to College Writing	3*

TOTAL CREDIT HOURS: 63

* ENGL 101/ENGL 101A, if needed for ENGL 102/ENGL 103, or check with an advisor.

** AAS programs require one 3-credit Arts or Humanities General Education course.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate expertise in the theory and application of sterile and aseptic technique.
- Demonstrate appropriate interpersonal and communication skills.
- Maximize patient safety by facilitating a safe surgical environment.
- Perform competently in the scrub and circulator role in accordance with AST standards.
- Apply principles of pharmacology as related to the surgical technologist.
- Demonstrate critical thinking skills in perioperative procedural management.
- Demonstrate cultural competence.

TRANSFER STUDIES

Transfer Studies Certificate: 234

: 234

This certificate is designed for students who intend to transfer to a four-year college or university. Students should meet with a counselor or advisor to select appropriate courses required by the transfer institution(s) of interest.

PROGRAM REQUIREMENTS:
All students should review the Advising Worksheet and consult an advisor.

Electives *11 semester hours* ‡

TOTAL CREDIT HOURS: 30

‡ Meet with a counselor or advisor to choose elective courses to fulfill additional General Education requirements and/or academic major requirements of the transfer institution(s). ENGL 101 may be used as elective credit for this certificate.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate general education competencies.
- Describe a connection between elective choices and his or her academic goals.
- Transfer to any four-year Maryland public institution and many private or out-of-state colleges and universities, having satisfied half of the basic (i.e., general education) lower-level requirements. This program is not eligible for federal and state financial aid.

This program is not eligible for federal and state financial aid.

WOMEN'S AND GENDER STUDIES

Women's and Gender Studies Certificate: 259

: 259

The Women's and Gender Studies certificate provides a solid foundation of coursework in the discipline. It provides students with the opportunity to specialize in women's and gender studies in preparation for further work at a four-year institution or for professional, personal and academic opportunities. Students in the program must complete a minimum of 12 credits in women's and gender studies-designated courses: WMST 101 - Introduction to Women's Studies (3 credits) or GNDS 101 - Introduction to Gender Studies (3 credits), and 9 additional credits, including a social sciences course, a humanities course, and a general elective, including WMST 101 or GNDS 101 if not taken as a required course. A 200-level course is recommended. **This program can be completed either on campus or online.**

PROGRAM REQUIREMENTS:
All students should review the Program Advising Guide and consult an advisor.

WMST	101	Introduction to Women's Studies	3*	GNDS	101	Introduction to Gender Studies	3*
OR							

Additional Courses

ENGL	208	Women in Literature	3*	PHIL	212	Women in Philosophy I	3
GNDS	102	Understanding LGBT Identities	3	PHIL	218	Women in Philosophy II	3
HIST	112	Women in World History	3	PSYC	207	Psychology of Women	3**
HIST	228	Women in the Western World	3	SOCY	208	Sociology of Gender	3
HLTH	215	Women's Health	3	SOCY	214	Sociology of the Family	3
				WMST or GNDS Elective *3 semester hours*			

TOTAL CREDIT HOURS: 12

* This course carries a co-prerequisite of ENGL 101/ENGL 011.

** These courses carry prerequisites.

This program can be completed either on campus or online.

PROGRAM OUTCOMES

Upon completion of this program, a student will be able to:

- Demonstrate a systematic knowledge of multidisciplinary and interdisciplinary scholarship about women and gender.
- Evaluate the influence gender and sexuality have had on contributions in various disciplines and their recognition in various realms.
- Analyze the ways that hierarchical systems, such as sexism and racism, have functioned, have changed, and have continued to change.
- Connect ideas across disciplines, compare theories with experiences, and contrast different academic perspectives on gender.
- Recognize how an awareness of women's and gender issues and roles in society may positively affect the futures of students (in all disciplines) and as professionals (in all professions).

€‹ This program is not approved for federal or state student financial aid.

Course Designators

Some courses or individual sections require off-campus field trips, seminars, or service learning assignments where students are required to provide their own transportation. Check with faculty members teaching specific courses or sections for these requirements.

An abbreviation listed here indicates that the course can be used to meet General Education distribution requirements: *ARTD* = arts; *BSSD* = behavioral and social sciences; *HUMD* = humanities; *NSLD* = natural sciences with a laboratory; *NSND* = natural sciences without a laboratory.

[M] indicates that the course is a global and cultural perspectives course. All A.A. and A.S. programs have a requirement that one course within the program must be a global and cultural perspectives course.

If a campus abbreviation is included, the course is offered only on the specified campus(es).*

This is the title of the course.

The course code includes the subject designator and the course number.

ZZZZ 110 The Course Description *(NSLD[M])* (R only) **CE**

The letters **CE** indicate that credit for the course may be obtained by taking an examination. For courses offered on multiple campuses, the letters **G**, **R** and/or **TP/SS** indicated the campus(es) offering the examination: CE-R, or CE-G and TP/SS.

Starts with a sentence fragment. The rest of the course description should be complete, declarative sentences that provide concise information. Be brief and try to limit it to 40 words or less.

A PREREQUISITE is a college-level course, equivalent expertise, or other knowledge that is required before a student may enroll in the desired course. A course listed under PRE- or COREQUISITE may be taken either before or with the desired course. In some cases, a prerequisite or corequisite may be waived with the consent of the instructor or the department.

PREREQUISITE: *ZZZZ 100.* COREQUISITE: *ZZZZ 115.*
PRE- or COREQUISITE: *ZZZZ 109 or consent of department.*
Assessment levels: ENGL 101/101A, MATH 093, READ 120.
Two hours lecture, four hours laboratory each week.

4 semester hours.

Assessment Levels identify the English, mathematics, and reading courses for which a student should be eligible to enroll. A slashmark between course codes indicates that either course is acceptable to meet the requirement; in the example shown here, students should be eligible to enroll in either ENGL 101 or ENGL 101A, as well as MATH 094 and READ 120.

The number of *semester hours* is the same as the number of credits.

Catalog Entry Components

ACCT - Accounting

ACCT 221 Accounting I CE-R
An introduction to the principles and procedures related to accounting theory and practice from the perspective of users of financial information. Topics include the accounting cycle, the preparation and analysis of financial statements, and accounting information. PREREQUISITE(S): *Two units of high school mathematics or appropriate score on the College's assessment test. Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Four hours each week.*

4 semester hours

ACCT 222 Accounting II CE-R
The study and analysis of managerial accounting. Topics include cost accumulation, evaluation, and analysis for decision making, as well as coverage of the statement of cash flows and financial statement analysis. PREREQUISITE(S): *ACCT 221. Four hours each week.*

4 semester hours

ACCT 225 Governmental and Nonprofit Accounting
General principles of fund accounting for municipal, governmental, and nonprofit institutions. The course will emphasize fund principles, budgetary controls, and financial reporting statements. PREREQUISITE(S): *ACCT 222. Three hours each week.*

3 semester hours

ACCT 228 Ethics and Professionalism in Accounting
Provides an examination of the major ethical issues encountered by accountants in the business environment. The AICPA Code of Professional Conduct and the reasoning, philosophy, and application of that code are examined. PREREQUISITE(S): *ACCT 222 or consent of department. Three hours each week.*

3 semester hours

ACCT 231 Intermediate Accounting I
An overview of the financial accounting process with an in-depth study of cash, receivables, inventory costing, property, plant and equipment, intangible assets, and current liabilities. The course also includes an introduction to financial accounting research analysis. PREREQUISITE(S): *ACCT 222. Four hours each week.*

4 semester hours

ACCT 232 Intermediate Accounting II
Major topics include accounting for long-term liabilities, stockholders equity, earnings per share, investments, accounting for income taxes, pensions, leases, and statement of cash flows. The course also includes financial accounting research analysis. PREREQUISITE(S): *ACCT 231. Four hours each week.*

4 semester hours

ACCT 235 Cost Accounting
The study and analysis of cost accumulation and product costing procedures for both job order and process costing systems, absorption versus variable costing in manufacturing, activity-based costing, standard costing and performance, and relevant costs for decision making. Accounting for capital budgeting decisions and ethical challenges in managerial accounting are also covered. PREREQUISITE(S): *ACCT 222. Three hours each week.*

3 semester hours

ACCT 237 Federal Income Taxation I
A critical examination, analysis, and application of the tax law for individuals. Interrelated subjects include income inclusions and exclusions, property transactions, nontaxable exchanges, capital asset transactions, general deductions and losses, business expenses, depreciation and amortization, and passive activities. Attention is given to tax procedures, accounting and inventory methods, retirement planning, exemptions, credits, filing status, and the alternative minimum tax. Students also engage in both electronic research and return preparation practica. PREREQUISITE(S): *ACCT 222 or consent of department. Four hours each week.*

4 semester hours

ACCT 239 Business Finance
The study and analysis of the theories and applications that the financial manager uses in making decisions. Emphasis is placed on financial analysis, economic value added, cash flow analysis, profit planning, risk and return, security valuation, and capital budgeting analysis. Capital markets, working capital policy, current asset and liability management, financial structure, dividend policy, and internal financing are to be addressed. PREREQUISITE(S): *ACCT 222. Three hours each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

ACCT 240 Auditing Theory and Practice
The study and analysis of fundamental components of auditing theory and risk, including inherent risk, control risk, and detection risk. Emphasis is placed on internal control procedures, risk assessment and examination of accounts. Additionally, the role of regulatory organizations and professional standards such as Generally Accepted Auditing Standards and Standards of the Public Company Accounting Oversight Board are discussed. PREREQUISITE(S): *ACCT 231 or consent of department. Four hours each week.*

4 semester hours

ACCT 245 Accounting Information Systems (R only)
Concepts and techniques of analyzing, designing, and implementing accounting information systems. Evaluation of computer- and non-computer-based information systems and software for organizations of various kinds. PREREQUISITE(S): *ACCT 231 or consent of department. Three hours each week.*

3 semester hours

ACCT 247 Federal Income Taxation II
A critical examination, analysis, and application of the tax law for Subchapter C and S corporations, limited liability companies, partnerships, estates and trusts. Attention is given to taxation of gifts, exclusions, net operating losses, determination of shareholder and partner basis, consolidated entities, book and income tax reconciliation, owner contributions and distributions, and beneficiary share of income. Students also engage in both electronic research and return preparation practica. PREREQUISITE(S): *ACCT 237. Four hours each week.*

4 semester hours

ACCT 249 Advanced Accounting
The study and analysis of accounting for business combinations. This course also includes accounting for partnerships, bankruptcy as well as the assembly, design, and interpretation of consolidated statements currently required by the SEC and the AICPA as well as other relevant bodies. A continuation of financial accounting research analysis is included. Other possible areas examined are the study of accounting for home and branch operations, foreign currency, and estates and trusts. PREREQUISITE(S): *ACCT 232 or consent of department. Three hours each week.*

3 semester hours

ANTH - Anthropology

ANTH 201 Introduction to Sociocultural Anthropology (BSSD, GEEL, GCP)
An exploration of fundamental anthropological concepts, methods, and theories used to interpret traditional and modern cultures. Emphasis is placed on the components of cultural systems and the investigation of the impact of globalization on changing cultures worldwide. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ANTH 215 Human Evolution and Archaeology (G and R only) (NSND, GEEL, GCP)
An introduction to the theories and evidence concerning human's biological evolution and archaeology worldwide. Emphasis is placed on the genetic and adaptive evidence for human variation, the fossil evidence for human evolution, primatology, domestication, state societies, and archaeological methods and techniques. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

ANTH 240 Introduction to Archaeology (BSSD, GEEL, GCP)
An introduction to the discipline of archaeology. The course provides background to the development of archaeology as a science, various theoretical approaches, archaeological data and dating, and interpretation. The course also includes a survey of global prehistoric archaeological cultures. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ANTH 256 World Cultures (G and R only) (BSSD, GEEL, GCP)
An examination of one culture area in a particular geographic region using theories and methods of anthropology. The emphasis is on the prehistory, colonialism, cultural systems, modernization, and globalization of the region. Case studies are used to examine current conditions. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

ANTH 260 Independent Study Anthropology (G and R only)

A course designed to enable advanced students to pursue a topic of their own choosing with the guidance and supervision of an assigned faculty member. Topics should not duplicate any course topics already offered in the program. PREREQUISITE(S): *ANTH 201, ANTH 215, ANTH 240 or ANTH 256 and consent of department. Three hours lecture/discussion each week.*

3 semester hours

AOSC - Meteorology

AOSC 100 Weather and Climate (NSND, GEEL)

Covers local and global weather phenomena. Topics include global and local energy budgets, geographic and seasonal variation, surface and upper air weather patterns, clouds and precipitation, catastrophic occurrences (snowstorms, thunderstorms, tornadoes, hurricanes, floods), and global climate change. Using real-time and archived web-based data, students analyze local and regional weather patterns and events. Students may receive credit for either AOSC 100 or AOSC 105, but not both. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Three hours each week.*

3 semester hours

AOSC 105 Meteorology: An Introduction to Weather (R only) (NSLD, GEEL)

Designed to give students an understanding of important global and local weather events. Lectures explore the elements responsible for weather and climate. Individual topics include global and local energy budgets, geographic and seasonal variation, surface and upper air weather patterns, clouds and precipitation, catastrophic occurrences (snowstorms, thunderstorms, tornadoes, hurricanes, floods), and global climate change. In laboratories, students apply lecture concepts through use of weather instruments, interpret and analyze real-time and archived data and make their own forecasts. Students may receive credit for either AOSC 100 or AOSC 105 , but not both. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Three hours lecture, three hours laboratory each week.*

4 semester hours

ARAB - Arabic

ARAB 101 Elementary Arabic I (HUMD, GEIR, GEEL, GCP)

A beginning language course focusing on the study of Modern Standard Arabic (MSA) language. Students begin to develop the ability to communicate in Arabic through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Arabic is required. In-class work is supplemented by 20 hours of online homework. *Five hours each week.*

5 semester hours

ARAB 102 Elementary Arabic II (HUMD, GEIR, GEEL, GCP)

A continuation of ARAB 101. Students continue their study of written language, conversation, and composition in Modern Standard Arabic (MSA) as they consider cultural themes, language functions, and authentic situations. In-class work is supplemented by 20 hours of online homework. PREREQUISITE(S): *ARAB 101 or equivalent proficiency. Five hours each week.*

5 semester hours

ARCH - Architectural Technology

ARCH 101 Introduction to Architecture and the Built Environment (R only)

An introduction to the architectural profession and the related fields of design and construction. An exploration of the impact of architecture within the built environment, including conservation and interior design issues; urban and regional planning; and construction implications. An examination of the entire building process and the legal, social, and cultural implications. *Assessment Level(s): ENGL 101/ENGL 011, MATH 098. Three hours each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

ARCH 103 Building Technology and Documentation (R only) CE

An in-depth examination of structural, surface, and detail elements of a building and its documentation. An introduction to drafting techniques of architectural and interior design spaces. A hands-on experience in which the student develops skills in the professional drafting standards, format and layout of drawings. *Assessment Level(s): ENGL 101/ENGL 011, MATH 117 or higher. Two hours lecture, four hours laboratory each week.*

3 semester hours

ARCH 104 Introduction to Architectural Graphics (R only)

The study of the various visual communications methods most commonly used in the architectural profession. Techniques will include both color and black/white, a variety of perspective systems, shade/shadow, exploded views, pencil-and-pen work, and watercolor. PREREQUISITE(S): *ARCH 101 or IDES 101 and ARCH 103. Assessment Level(s): ENGL 101/ENGL 011, MATH 098. Two hours lecture, four hours laboratory each week.*

3 semester hours

ARCH 183 CAD: Architectural Applications (R only) CE

Focuses on the mastering of computer aided drafting commands and drawing techniques for design professionals in the fields of architecture, design, and construction. Students create a series of drawings with the final assignment being a multi-page set of plans, elevations, and details. PREREQUISITE(S): *A grade of B or better in ARCH 103 or consent of department. Two hours lecture, four hours laboratory each week.*

4 semester hours

ARCH 200 CAD: 3D Presentation (R only)

Development of skills and understanding of a variety of graphic software to utilize the computer as a tool for rendering and presentation. Three-dimensional design development is emphasized including perspective views, rendering scenes with materials and lighting and backgrounds, and presentation packaging. Students create a series of projects and create a portfolio of 3D architectural designs. PREREQUISITE(S): *ARCH 183 or consent of department. Two hours lecture, four hours laboratory each week.*

4 semester hours

ARCH 201 Introduction to Architectural Design (R only)

Introduces design principles and their application to architectural design. The course develops and strengthens problem-solving skills from conceptual, environmentally sensitive, and sociocultural points of view resulting in three-dimensional forms. Instruction emphasizes model making and presentation skills as they resolve architectural problems. PREREQUISITE(S): *ARCH 101, ARCH 104, and CMGT 100. Two hours lecture, four hours laboratory each week.*

4 semester hours

ARCH 202 CAD: REVIT I (R only)

Development of skills and understanding of a parametric computer drafting system based on construction components, elements, and types. Students will learn to create building models with building information modeling software (BIM), and students will use skills such as views, sheets, tagging and scheduling, annotating and dimensioning, and detailing. Final project will be a set of BIM documents based on residential and commercial structure. PREREQUISITE(S): *A grade of B or better in ARCH 103 or consent of department. Two hours lecture, four hours laboratory each week.*

4 semester hours

ARCH 203 Principles of Sustainability (R only)

Fundamentals of sustainability in terms of the environment as a foundation for architectural design. Study of the various energy rating systems and exploration of the impact of architecture in terms of global environmental health, energy conservation concepts, and urban and regional planning. Topics include analysis of various mechanical and technical systems. Exploration of theories and practices of sustainable design with an actual building as students engage in hands-on experiences to analyze materials, systems, and construction methodology. *Assessment Level(s): ELAW 980/ ELAR 980. Three hours each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

ARTT - Art

ARTT 100 Introduction to Drawing (ARTD, GEIR, GEEL)
An introduction to drawing and creative visual problem solving. Emphasis is on the analysis and exploration of basic observational drawing techniques in the visual interpretation of natural and fabricated forms. Students will be introduced to a variety of drawing media. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 102 Introduction to 2D Design (ARTD, GEIR, GEEL)
An introduction to the elements and principles of visual expression with an emphasis on two-dimensional form. Students will explore a wide range of conceptual approaches and media to develop critical visual thinking and the capacity to engage in creative problem solving. An interdisciplinary, cross-cultural approach will be stressed to connect the formal and conceptual elements of visual expression within the context of both historical and contemporary visual culture. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 103 Introduction to 3D Design
An introduction to the elements and principles of visual expression, with an emphasis on three-dimensional form. Students will develop the visual vocabulary, technical skills, and critical thinking necessary to engage in creative problem solving. Students will employ a wide range of formal and conceptual approaches, and media, in an exploration of the interaction between surface, form, space, and time. An interdisciplinary, cross-cultural approach will be utilized in introducing methods, materials and concepts of visual expression within the context of both historical and contemporary visual culture. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 105 Color Theory and Application
An introduction to the expressive, symbolic, decorative, and aesthetic aspects of color. Investigation of color theories and solutions to a variety of problems using color as a tool. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 112 Digital Photography for Fine Arts I (ARTD, GEIR, GEEL)
A general introduction to electronic still photography, beginning with traditional photographic and art concepts. Students explore image manipulation using personal computers supported by digital cameras and other available technologies. Students create a series of projects using the most advanced photo editing software available to create artistic images. *Two hours lecture, four hours laboratory each week.*

3 semester hours

ARTT 120 Ceramics I (ARTD, GEIR, GEEL, GCP)
First of two related courses (with ARTT 220) that focus on the aesthetic and technical aspects of the ceramic process. Studio sessions will involve an exploration of the nature of clay, decorative processes, glazes, and firing via hand-built pottery. A survey of historical and contemporary ceramic art forms is included. Design and craftsmanship are emphasized. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 123 Crafts (R and TP/SS only) (ARTD, GEIR, GEEL)
An introduction to working in processes such as metalsmithing, enameling, ceramics, fiber craft, basketry, or paper craft. While cultivating respect for craft, students create functional or nonfunctional objects while they explore material as an art form. Students analyze the social and ethical aspects within craft as they develop technical competency. Coursework encourages an investigation into the potential of objects to possess visual, tactile, and conceptual information. Creative design and technical craftsmanship are emphasized. No prior experience required. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 127 Art Appreciation (Art in Culture) (ARTD, GEIR, GEEL, GCP)
An appreciation of the visual arts through an aesthetic understanding of the various art forms and their historical development throughout the world. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

ARTT 152 Photographic Expression I (ARTD, GEIR, GEEL)

Designed to achieve the basics of black-and-white still photographic techniques with additional emphasis on the development of ability to express and understand ideas and feelings communicated in photographs. Students are expected to supply own camera (35mm with manual controls), paper, and film. *One hour lecture, four hours laboratory each week.*

3 semester hours

ARTT 200 Art History: Ancient to 1400 (ARTD, GEIR, GEEL, GCP)

An introduction to architecture, painting, sculpture, and artifacts in Western civilization and around the world, from the Paleolithic inception of painting and sculpture through the Middle Ages, including prehistoric, Near Eastern, Egyptian, Aegean, Greek, Etruscan, Roman, Early Christian, Byzantine, Islamic, Indian, Chinese, Japanese, Pre-Columbian, Early Medieval, Romanesque, and Gothic Art. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ARTT 201 Art History: 1400 to Present (ARTD, GEIR, GEEL, GCP)

A survey and analysis of major trends in architecture, painting, and sculpture in Western civilization, including Proto-Renaissance, Renaissance, Mannerist, Baroque, Neoclassic, Romantic, Realist, Impressionist, Expressionist, Cubist, nonobjective, and 20th century art. There are no prerequisites, but students are advised to take the history of art courses in sequence. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ARTT 202 Introduction to Museums

(Students may not receive credit for both ARTT 202 and ARTT 140)

Provides an introduction to museum history, theory, and practice in a global context. Using an interdisciplinary approach, the course examines the complex histories, roles, and responsibilities museums have as cultural institutions and stewards of public trust. The course considers diverse types of museums through case studies and global perspectives on topics such as exhibitions, collections, education, operations, and ethics. Students have the option to complete coursework using physical and/or virtual museums. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture each week.*

3 semester hours

ARTT 204 Intermediate Drawing

A continuation of ARTT 100, with the further analysis and exploration of drawing skills, techniques, and concepts. Emphasis is on more complex problem solving in the visual interpretation of natural and fabricated forms. Students will utilize a variety of black-and-white and color drawing media. PREREQUISITE(S): *ARTT 100 or consent of department. Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 205 Figure Drawing I

An introduction to figure drawing. Emphasis is placed on the problems involved in the visual interpretation of the human figure as a separate study, and in relation to its environment. Students will utilize a variety of drawing media. PREREQUISITE(S): *ARTT 100 or consent of department. Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 206 Figure Drawing II

A continuation of ARTT 205, with further analysis and exploration of the concepts and techniques introduced in ARTT 205. Emphasis is placed on more complex problem solving in the visual interpretation of the human figure as a separate study and in relation to its environment. Students will use a variety of black-and-white and color drawing media. PREREQUISITE(S): *ARTT 205 or consent of department. Two hours lecture, four hours studio each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

ARTT 211 Painting I
An introductory studio course involving solutions to the problems related to the creation of representational, abstract, and non-objective paintings. Technical skills such as the ability to size and prime a canvas and to work in varied media are developed. Demonstrations, lectures, and class critiques will be employed. PREREQUISITE(S): *ARTT 100 or consent of department. Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 212 Painting II
A continuation of ARTT 211, with emphasis on solution to advanced problems related to the creation of representational, abstract, and non-objective paintings. Technical skills to work in varied media are developed. Demonstrations, lectures, and class critiques will be employed. PREREQUISITE(S): *ARTT 211 or consent of department. Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 213 Digital Photography for Fine Arts II
An advanced course that will enable students to use digital photography to create sophisticated, aesthetic images. The student will be encouraged to develop a personal style and technical proficiency for personal expression. PREREQUISITE(S): *ARTT 112 or consent of department. Two hours lecture, four hours laboratory each week.*

3 semester hours

ARTT 220 Ceramics II
Second of two related courses (with ARTT 120, which must be taken first). The aesthetic and technical aspects of the ceramic process. Studio sessions will involve a continued study of the nature of clay with the development of forms derived from the potter's wheel. Increased emphasis placed on surface decoration, glaze formulation, and kiln firing skills. Design and craftsmanship are emphasized. PREREQUISITE(S): *ARTT 120 or consent of department. Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 221 Sculpture I
The problems and principles of sculpture. Theory and basic techniques involved in additive and subtractive methods in both relief sculpture and sculpture in the round. Materials may include clay, wood, stone, modern plastics, plaster, and metal. PREREQUISITE(S): *ARTT 102 and ARTT 103, or consent of department. Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 222 Sculpture II
A continuation of ARTT 221 for students who have successfully completed that course. Emphasis on individual experimentation and expression. In addition to direct methods, casting methods are used. PREREQUISITE(S): *ARTT 221 or consent of department. Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 225 Woodcut: Global Printmaking (ARTD, GEIR, GEEL, GCP)
Basic woodcut and relief printing techniques and study of influences in imagery, concepts, and the use of materials from a Global Perspective. Students will develop a body of original work that represents their individual, creative expression through the medium of woodcut. Black-and-white and color work will be assigned, progressing from simple to more complex methods of printing. Among the techniques introduced will be Western and Japanese inspired approaches to woodcut. Students cannot also receive credit for ARTT 228. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 226 Monotype Workshop
An exploration of the monotype as an experimental printmaking medium. A range of materials, tools, and techniques will be introduced with an emphasis on individual experimentation and expression. *Two hours lecture, four hours studio each week.*

3 semester hours

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ARTT 227 Printmaking: Lithography (R and TP/SS only)
Processes, materials, and techniques of fine art lithography are explored. Emphasis is placed on expressing visual concepts and ideas through drawing and appropriate technical manipulations on stones and/or plates, and printing in both black and white and color. Students cannot also receive credit for ARTT 228. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 228 Lithography and Relief Printmaking
Materials and techniques of fine art lithography will be investigated, with an emphasis on the expression of one's ideas through appropriate technical manipulations. In addition, students may explore various relief printmaking procedures to produce woodcuts, linocuts, or collographs. Students cannot also receive credit for ARTT 225 or ARTT 227. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 230 Intaglio Printmaking
An introduction to the fine art of metal plate etching. The techniques of drypoint hardground, softground, aquatint, and engraving are explored. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 233 Screenprinting
Introduction to materials and techniques of screenprinting. Various types of stencils and resists are investigated. Emphasis on use of screenprinting as a multicolor process and fine art form. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 245 Jewelry and Metalsmithing (R only)
Introduction to the fundamental techniques and processes of jewelry fabrication and metalsmithing. Two- and three-dimensional forms in various metals explored. Design, craftsmanship, and expressive use of materials emphasized. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 247 Weaving and Textiles (TP/SS only)
Introduction to the fundamental techniques and processes of weaving. Two- and three-dimensional forms in textiles explored. Design and craftsmanship emphasized in both traditional and experimental approaches to fiber. *Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 252 Photographic Expression II (G and TP/SS only)
Problems designed to achieve mastery of basic still photographic techniques with an emphasis on individual creative expression. This course will allow for experimental projects in black-and-white photography. PREREQUISITE(S): *ARTT 152 or consent of department. One hour lecture, four hours laboratory each week.*

3 semester hours

ARTT 255 Studio Practicum
Directed studies providing opportunities for additional experience in the following studio areas: drawing, printmaking, ceramics, sculpture, weaving, jewelry, and painting. Students further develop proficiencies with previously introduced materials and techniques of a subject while expanding their understanding of the field through the pursuance of additional studio experience. Individual and class criticisms of work with integrated references to art history and to traditional and contemporary concepts of aesthetics. The following letters are added after the course number to indicate the various applied studio areas: A - Drawing B - Painting C - Printmaking D - Ceramics E - Sculpture G - Jewelry (R only) PREREQUISITE(S): *Consent of department and successful completion of ARTT 100 and ARTT 205 for drawing; ARTT 211 and ARTT 212 for painting; ARTT 228 or ARTT 230 for printmaking; ARTT 120 and ARTT 220 for ceramics; ARTT 221 and ARTT 222 for sculpture; ARTT 245 for jewelry. Students are limited to three hours of credit in each studio area of ARTT 255 and three hours of credit in each studio area of ARTT 256. Two hours lecture, four hours studio each week.*

3 semester hours

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ARTT 256 Studio Practicum
Directed studies providing opportunities for additional experience in the following studio areas: drawing, printmaking, ceramics, sculpture, weaving, jewelry, and painting. Students further develop proficiencies with previously introduced materials and techniques of a subject while expanding their understanding of the field through the pursuance of additional studio experience. Individual and class criticisms of work with integrated references to art history and to traditional and contemporary concepts of aesthetics. The following letters are added after the course number to indicate the various applied studio areas: A - Drawing B - Painting C - Printmaking D - Ceramics E - Sculpture G - Jewelry (R only) PREREQUISITE(S): *Consent of department and successful completion of ARTT 100 and ARTT 205 for drawing; ARTT 211 and ARTT 212 for painting; ARTT 228 or ARTT 230 for printmaking; ARTT 120 and ARTT 220 for ceramics; ARTT 221 and ARTT 222 for sculpture; ARTT 245 for jewelry. Students are limited to three hours of credit in each studio area of ARTT 255 and three hours of credit in each studio area of ARTT 256. Two hours lecture, four hours studio each week.*

3 semester hours

ARTT 257 Individualized Art Workshop
A directed open laboratory provides experience opportunities in a fine arts area. Students develop proficiencies with previously introduced materials and techniques and expand their understanding through additional study. Lectures and lab work integrate with art history and traditional and contemporary concepts of aesthetics. The following letters are added after the course number to indicate specific fine arts areas: A - Drawing B - Painting C - Printmaking D - Ceramics E - Sculpture G - Jewelry J - Crafts K - Design L - Art History, M - Photography. PREREQUISITE(S): *Basic coursework in the area of study and consent of department. Two hours lecture, four hours laboratory each week.*

3 semester hours

ARTT 263 Professional Practice for the Visual Artist
Capstone course to develop an artist statement, résumé, and digital portfolio in preparation for a formal presentation that conveys their experiences and skills as emerging artists. PREREQUISITE(S): *Completion of ARTT 204 or ARTT 205, and completion of ARTT 102 or ARTT 103, and completion of GDES 116. Two hours studio/laboratory each week.*

1 semester hour

ARTT 265 Architectural History: Ancient to 1400
A historical survey and critical study of the development of architecture and related arts from prehistoric times to the 15th century. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ARTT 266 Architectural History: 1400 to Present
A historical survey and critical study of the development of architecture and related arts from the 15th century to the present. Students in architectural programs are advised to take the history of architecture courses in sequence. Students may enroll in ARTT 266 without having taken ARTT 265. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ARTT 270 Survey of African Art (ARTD, GEIR, GEEL, GCP)
A survey and analysis of the art and culture of major African regions. Emphasis on architecture, sculpture, painting, crafts, and performance with reference to cross-cultural and outside influences, religion, philosophy, and everyday life as they relate to the art of various African peoples. Field trips to museums and galleries. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

ARTT 272 Survey of Asian Art (ARTD, GEIR, GEEL, GCP)
A survey and analysis of the art and culture of China, Japan, India, and southeast Asia. Emphasis on architecture, ceramics, painting, printmaking, and sculpture with reference to cross-cultural influences, religion, and philosophy as they relate to the art of those countries. Field trips to museums and galleries. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ARTT 274 Indigenous Art of the Americas (R and TP/ SS only)
An introduction to visual art and culture created by indigenous peoples of the Western Hemisphere. The course explores the diverse artistic production, histories, and cultural contexts of indigenous art from North, Central and South America and the Caribbean. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

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ARTT 275 Art of the Renaissance World
A survey of Renaissance art and its global impacts during the 15th and 16th centuries. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

ARTT 277 African American Art
A survey of art produced by people of African descent in the United States, South America, and the Caribbean from the 16th century to the present. The course explores the art of the African diaspora in the Western Hemisphere with a focus on the social, political, and aesthetic contexts of its production. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture each week.*

3 semester hours

ARTT 278 Art of the United States
A survey of art produced in the United States and its territories from the colonial period to the present. This course considers the central role of artistic production in the construction and dissemination of American identities and culture. The course explores the art of the United States in its global contexts with a focus on the social, political, and aesthetic contexts of its production in a multicultural society. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ARTT 280 Global Modernisms: Art of the 20th Century
A global survey of Modern art and artists from the late 19th and 20th centuries considered in social and historical contexts. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ARTT 285 Global Contemporary Art
An exploration of Global Contemporary art and theory from the late 20th century to the present with an emphasis on the historical and cultural contexts of the creation and reception of art. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ARTT 290 Art Internship
Students work for College credit in a museum or other professional arts organization or venue. Students may propose an internship for one of the limited number available in the arts each year. Typically, the internships are awarded during the last year of study at Montgomery College. PREREQUISITE(S): *Open to art majors who have completed 15 arts-related credits. A 3.2 GPA and consent of departmental arts internship coordinator and the Arts Institute internship coordinator are required. Fifteen hours each week per semester.*

3 semester hours

ASLP - American Sign Language (ASL)

ASLP 100 ASL I (R only) (HUMD, GEIR, GEEL, GCP)
A survey of conversational ASL hand-shapes and basic grammatical structures. Basic cultural information that influences forms and communication in ASL will be presented and studied. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

ASLP 105 Visual Gestural Communication (R only)
An introduction to the comprehension and expression of visual-gestural aspects of communication in relation to ASL. This course includes instruction in forms and hand shapes involved in mime and gesticulation. Emphasis is placed on activities that create visual, motor, and cognitive readiness for signed languages. Instructional activities will foster the development of visual, spatial, and motor language memory. Recommended to be taken with ASLP 106. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ASLP 106 Fingerspelling and Number Use in ASL (R only)
A foundation for comprehension, expression, and understanding of ASL hand-shapes as they are used in fingerspelling and numbers. The course includes an introduction to historical and physiological aspects of fingerspelling and number use in ASL. The course focuses on development skills for receptive and expressive spelling and reading of fingerspelling words and numbers, on proper biomechanical functions, on recognizing hand movements. Recommended to be taken concurrently with ASLP 105. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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ASLP 110 ASL II (R only) (HUMD, GEIR, GEEL, GCP)
Broadens the use of conversational ASL hand-shapes and basic grammatical structures. Co-selection of features and mutual monitoring possibilities for topics will be examined to formulate ASL conversational context for occupation, activities, location, and stages of life. PREREQUISITE(S): *A grade of C or better in ASLP 100 or equivalent, or consent of department. Three hours each week.*

3 semester hours

ASLP 121 Introduction to the Deaf Community and Culture (R only) (BSSD, GCP)
Provides a broad introduction to concepts related to the Deaf, Deaf culture, and the languages of people within Deaf communities in particular and Deaf society in general. The course examines current issues and languages in the Deaf community, including technology and diversity. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ASLP 200 ASL III (R only)
Development of advanced receptive and expressive skills in ASL, including politeness principles in ASL: fluency, tact, generosity, modesty, and solidarity. This course includes intensive work on conversational maxims in ASL: quantity, quality, relation, manner, and appropriateness. Recommended to be taken concurrently with ASLP 205. PREREQUISITE(S): *A grade of C or better in ASLP 110 or equivalent, or consent of department. Three hours each week.*

3 semester hours

ASLP 205 Structural ASL I (R only)
A consideration of the phonological, morphological, semantic, and pragmatic components of ASL. This course provides a foundation for the comprehension, expression, and understanding of ASL classifiers and their linguistic symbols and signing space for the ASL native. Topics include an examination of the grounded mental spaces utilized in narrative, constructed dialogue, constructed activity, and the non-manual signals used in narrative form. Recommended to be taken concurrently with ASLP 200. PREREQUISITE(S): *A grade of C or better in ASLP 105, ASLP 106, and ASLP 110; or consent of department. Three hours each week.*

3 semester hours

ASLP 206 Structural ASL II (R only)
A further consideration of the phonological, morphological, semantic, syntactic, and pragmatic components of ASL. This course includes a consideration of the sociolinguistic principles in American Sign Language and the cultural practices from which they derive, specifically focusing on language taboos, discourse, and linguistic variation. Recommended to be taken concurrently with ASLP 210. PREREQUISITE(S): *A grade of C or better in ASLP 205 or consent of department. Three hours each week.*

3 semester hours

ASLP 207 ASL Translation and Interpretation (R only)
Builds an integrated model of ASL translation and interpretation and includes skill development in the area of line-by-line translation, textual glossing, the interpretation of narratives, consecutive and simultaneous interpretation, semantic and syntactic circumlocution, and general interpretation. The course includes a consideration of ethics and issues in the practice of translation and interpretation. PREREQUISITE(S): *A grade of C or better in ASLP 200 and ASLP 205, or consent of department. Three hours each week.*

3 semester hours

ASLP 210 ASL IV (R only)
Cultivating the communicative approach by learning ASL functions in interactive contexts. Methods of confirming and correcting information, asking for clarification, agreeing, declining or hedging and appropriate ways of getting and directing attention in various situations will be examined to frame effective communication in ASL. Recommended to be taken concurrently with ASLP 206. PREREQUISITE(S): *A grade of C or better in ASLP 200 or equivalent, or consent of department. Three hours each week.*

3 semester hours

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ASLP 222 Deaf History and Culture (R only)
Provides students the opportunity to immerse themselves in Deaf culture, history, and language. This course will present an in-depth consideration of Deaf history and the social, cultural, political, educational, and social aspects of the community as a cohesive American co-culture. Students will examine the norms and values of Deaf culture, as well as the linguistic, educational, social, and professional influences in Deaf culture and history. Recommended to be taken concurrently with ASLP 210. PREREQUISITE(S): *ASLP 121 and ASLP 200, or consent of department. Three hours each week.*

3 semester hours

ASLP 269 Independent Study in ASL
This course invites advanced students to pursue a further in-depth independent study of a specialized aspect of ASL, to explore specific grammatical and cultural aspects of ASL, to consider the historical and practical implications of these aspects, or to explore their own specialization within the curriculum more closely. PREREQUISITE(S): *ASLP 207 or consent of department. Minimum of 30 hours per semester hour.*

1-4 semester hours

ASLP 285 Practicum in ASL
This course invites students to explore some specific practical applications of ASL, to consider the implications of these applications, and to examine their own assumptions of these ASL aspects more closely. The studies in this independent course will help students who want to make the most of their skills, using ASL in practical situations (interpreting, peer tutoring, helping other students, or working in ASL environment). PRE- or COREQUISITE(S): *ASLP 269 and an earned score of 3.0 or better in the ASL Proficiency Interview, or consent of department. Nine hours of work each week.*

3 semester hours

ASTR - Astronomy

ASTR 101 Introductory Astronomy (NSLD, GEEL)
A basic introduction to astronomy that emphasizes appreciation of the Earth's relationship to the universe. The basic laws of physics as they apply to astronomy are covered, along with telescopes and data collection and analysis techniques utilized by astronomers. Also covered are the evolution of stars, the solar system, galaxies, and the origin and evolution of the universe. Laboratory sessions, both computer- based and other, give practical application to material covered in lectures. Two nighttime observing sessions are also included. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Three hours lecture, two hours laboratory, one hour discussion each week.*

4 semester hours

ASTR 202 Introduction to Modern Astronomy
A basic course elaborating on topics briefly covered in ASTR 101 including black holes, pulsars, planetary structure, galactic structure, radio and x-ray astronomy. A major portion of the course is devoted to observing and observational techniques. Laboratory sessions cover such topics as the use of computer-controlled telescopes for visual and electronic observation, planning observations, CCD imaging and image processing techniques. Numerous nighttime observing sessions will be conducted. PREREQUISITE(S): *ASTR 101 or consent of course instructor. Three hours lecture, three hours laboratory each week.*

4 semester hours

AUTO - Automotive Technology

AUTO 099 Basic Automotive Maintenance (R only)
Designed to provide the car owner with basic information on maintenance service that can be performed at home. Introduces basic theory of the automobile. Includes simple troubleshooting techniques, the theory of preventative maintenance. Selection and safe usage of automotive tools. This course is not recommended for automotive degree and certificate students. *One hour lecture, two hours laboratory each week.*

2 semester hours

AUTO 101 Introduction to Automotive Technology (R only) CE
An introduction to the operating systems of the modern automobile. Explores current changes in the industry along with career opportunities. Covers identification and the safe use of hand, pneumatic, and electrical tools used in automotive service. Explains the basic operating procedures of shop equipment. Presents Occupational Safety and Health Act standards pertaining to the automotive field for greater individual and environmental safety. *Two hours lecture, two hours laboratory each week.*

3 semester hours

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AUTO 111 Engine Repair (R only) CE
Preparation for ASE A-1 Engine Repair technician certification exam. Course details the purpose, parts, and operation of the gasoline internal combustion engine. Class concentrates on engine rebuilding including mechanical assessment, removal, disassembly and cleaning, inspection, reconditioning and repair, assembly, installation, and break-in. All upper- and lower-end services are discussed. Laboratory exercises guide the student through their engine rebuild project. It is strongly recommended the student supply a personally owned engine for the class, but not required. PREREQUISITE(S): *A grade of C or better in AUTO 101. Two hours lecture, four hours laboratory each week.*

4 semester hours

AUTO 130 Manual Drive Train and Axles (R only) CE
Preparation for ASE A-3 Manual Drive Train and Axles technician certification exam. Discusses purpose, parts, operation, failure diagnosis, and overhaul of manual transmissions, transaxles, clutch assemblies, differentials and transfer cases, shafts, and joints. Laboratory exercises emphasize current service and diagnostic procedures. PREREQUISITE(S): *A grade of C or better in AUTO 101. Three hours lecture, four hours laboratory each week.*

5 semester hours

AUTO 140 Suspension and Steering (R only) CE
Preparation for ASE A-4 Suspension and Steering technician certification exam. Discusses purpose, parts, operation, and failure diagnosis of automotive suspension and steering systems. Topics include inspection, service, repair, and replacement of suspension system links, control arms, ball joints, bushings, shocks, struts, and springs. Steering columns, linkages, gearboxes, rack and pinion assemblies, pumps, lines, and hoses are covered. Two- and four-wheel alignment is included. Laboratory exercises emphasize current service and diagnostic procedures. PREREQUISITE(S): *AUTO 101. Three hours lecture, four hours laboratory each week.*

5 semester hours

AUTO 150 Brakes (R only) CE
Preparation for ASE A-5 Brakes technician certification exam. Discusses purpose, parts, operation, and failure diagnosis of automotive disc and drum brake systems. Topics include inspection, repair, and replacement of master cylinders, power boosters, hydraulic lines and hoses, control valves, friction linings, calipers and wheel cylinders, cables, brackets, and hardware. ABS operation and diagnosis is included. Laboratory exercises emphasize current service and diagnostic procedures. PRE- or COREQUISITE(S): *AUTO 101. Three hours lecture, four hours laboratory each week.*

5 semester hours

AUTO 161 Automotive Electricity I (R only) CE
Discusses basic electrical concepts applicable to automotive components, circuits, and systems. Common failures, diagnostic techniques, and repair procedures are covered. Selection, use, and maintenance of specialized service tools are emphasized. Use of printed and electronic wiring diagrams and service information to diagnose and repair faults is included. Laboratory exercises emphasize on-vehicle application of theory, tools, and technique. *Assessment Level(s): ELAR 980/IERW 002. Two hours lecture, three hours laboratory, one hour discussion each week.*

4 semester hours

AUTO 180 Basic Engine Performance (R only) CE
Concentrates on engine mechanical evaluation and electronic engine control. First half of the class discusses fluid leaks, engine noises, engine vibration, and exhaust smoke. Lubrication, induction, and cooling system assessment is also included. Second half of the class discusses PCMs, scanners, DTCs, and open- versus closed-loop mode. Sensor types, operation, diagnosis, and replacement are covered. Laboratory exercises emphasize current service and diagnostic procedures. PRE- or COREQUISITE(S): *AUTO 101 and AUTO 161. Two hours lecture, three hours laboratory, one hour discussion each week.*

4 semester hours

AUTO 200 Auto Tech Practicum (R only)
A cooperative effort with the automotive industry. Program is jointly developed to assure the student's participation is consistent with chosen academic plan and the employer's facilities and interests. The practicum enables the student to apply learned material in an automotive industrial environment. Periodic meetings monitor work progress and skills development. Minimum of 75 hours of work experience. PREREQUISITE(S): *10 credits or more in AUTO classes and consent of department.*

1 semester hour

AUTO 220 Automatic Transmission/Transaxles (R only) CE
Preparation for ASE A-2 Automatic Transmission/ Transaxle technician certification exam. Discusses purpose, parts, operation, failure diagnosis, and overhaul of automatic transmissions and transaxles. Laboratory exercises emphasize current service and diagnostic procedures. PREREQUISITE(S): *A grade of C or better in AUTO 101, AUTO 161, and AUTO 180. Two hours lecture, six hours laboratory each week.*

5 semester hours

AUTO 262 Battery/Starting/Charging (R only) CE
Discusses purpose, parts, operation, and failure diagnosis of automotive batteries, cranking systems, and charging systems. Cruise control, remote keyless entry, theft deterrent, and remote start systems are also covered. Laboratory exercises emphasize on-vehicle use of common and specialized electrical service tools. May be taken with AUTO 263. PREREQUISITE(S): *A grade of C or better in AUTO 161. Two hours lecture, two hours laboratory each week.*

3 semester hours

AUTO 263 Chassis Circuits (R only) CE
Discusses purpose, parts, operation, and failure diagnosis of interior/exterior lighting systems; gauge, warning, and driver information systems; horn, wiper/washer, and heated glass circuits; motor-driven accessory circuits and supplementary restraint systems. Laboratory exercises emphasize the use of common electrical service tools on-vehicle to diagnose failures. May be taken with AUTO 262. PREREQUISITE(S): *A grade of C or better in AUTO 161. Two hours lecture, three hours laboratory, one hour discussion each week.*

4 semester hours

AUTO 264 Hybrid/Electric Vehicles (R only) CE
Preparation for ASE L-3 Light Duty Hybrid/Electric Vehicle technician certification exam. Discusses the purpose, parts, operation and failure diagnosis of automotive hybrid electric vehicles. Topics include inspection, maintenance, testing, diagnosis and repair of high voltage battery systems, electric motor drive systems, power electronics and hybrid supporting systems. Special diagnostic requirements for the hybrid "ICE" will be included. Current hybrid platforms will also be discussed. PREREQUISITE(S): *A grade of C or better in AUTO 262 and AUTO 263. Two hours each week.*

2 semester hours

AUTO 270 Automotive HVAC (R only) CE
Preparation for ASE A-7 Heating and Air Conditioning technician certification exam and EPA 609 Refrigerant Handlers license. Discusses purpose, parts, operation, and failure diagnosis of heating, ventilation, and air conditioning systems. Manual, semiautomatic, and automatic systems are covered. Safe and proper use of refrigerant recovery/recycling/recharging machines is emphasized during the service of systems. Laboratory exercises concentrate on current service and diagnostic procedures. PREREQUISITE(S): *A grade of C or better in AUTO 161. Two hours lecture, three hours laboratory, one hour discussion each week.*

4 semester hours

AUTO 282 Engine Performance II (R only) CE
An advanced course covering fuel delivery and ignition systems. Course discusses inspection, testing, service, and repair of induction, fuel supply, and exhaust systems. Fuel pumps, pressure regulators, gauges, sending units, tanks, lines, and hoses are included. Fuel injector design, operation, testing, and replacement is covered. Distributor and electronic ignition systems are discussed. Laboratory exercises emphasize current service and diagnostic procedures. May be taken with AUTO 283. PREREQUISITE(S): *A grade of C or better in AUTO 180. Two hours lecture, three hours laboratory, one hour discussion each week.*

4 semester hours

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AUTO 283 Engine Performance III (R only) CE
An advanced course focusing on emission controls and driveability. Class discusses current OBD formats in detail including interpretation of DTCs, freeze-frame data, serial data, and readiness monitors. Exhaust gas analysis is covered. Laboratory exercises emphasize current service and diagnostic procedures. May be taken with AUTO 282. PREREQUISITE(S): *A grade of C or better in AUTO 180. Two hours lecture, three hours laboratory, one hour discussion each week.*

4 semester hours

BEHE - Behavioral Health

BEHE 100 Introduction to Behavioral Health Promotion
A study of the fundamental concepts of behavioral health, including emotional, psychological, physical, and social well-being. It includes the ability to cope with stressors, establish and maintain healthy relationships, engage in meaningful work, and contribute to society. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

BEHE 200 Group Dynamics
A study of the fundamental concepts and principles of group dynamics including group formation, structure, inclusion, and identity. This course also includes the study of processes which occur within a group such as influence, power, conflict and leadership. PREREQUISITE(S): *BEHE 100. Three hours each week.*

3 semester hours

BEHE 201 Field Experience in Behavioral Health
An opportunity for students to demonstrate an understanding of the fundamental concepts and skills of behavioral health in a community setting. In addition to the field work, students will explore core knowledge and fundamental principles of behavioral health in weekly lecture/discussion sessions. This course must be taken in the last semester prior to completion of the degree program. PREREQUISITE(S): *BEHE 100, BEHE 200, PSYC 100, HLTH 225 and consent of the department. Two hours lecture, nine hours clinical each week.*

5 semester hours

BIOL - Biological Sciences

BIOL 101 General Biology (NSLD, GEEL)
Designed to satisfy the General Education science requirement, this course introduces the basic principles governing living organisms with emphasis on the molecular and cellular basis of life. Concepts in genetics, reproduction, development, evolution, and ecology are discussed. Not recommended to those students with credit in BIOL 150 or BIOL 151. *Assessment Level(s): ELAI 990 or ENGL 101/ ENGL 011, ELAI 990, MATH 050. Two hours lecture, four hours laboratory each week.*

4 semester hours

BIOL 105 Environmental Biology (NSND, GEEL, GCP)
This course is designed for non-science majors and emphasizes environmental problems facing society. Topics include ecological principles, human population dynamics, energy sources, land and soil use, air pollution, water pollution, and endangered species. BIOL 105 will satisfy the NSND General Education requirement. A combination of BIOL 105 and BIOL 106 will satisfy the NSLD General Education requirement. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Three hours each week.*

3 semester hours

BIOL 106 Environmental Biology Laboratory (NSLD, GEEL, GCP)
A combination of laboratory investigations and field trips is used to introduce students to the scientific method and experimental design, demonstrate basic ecological principles, and familiarize students with local resources. A combination of BIOL 105 and BIOL 106 must be taken to satisfy the NSLD General Education requirement. PRE- or COREQUISITE(S): *BIOL 105. Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours laboratory each week.*

1 semester hour

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BIOL 114 Understanding Viruses
Designed for non-science majors, this is an introduction to the foundation of modern virology from smallpox to AIDS. The approach will be both historical and experimental, emphasizing the discovery of viruses as a biological form, the role of viruses in disease, and the impact of viruses in the development of modern cell and molecular biology. Various aspects of AIDS as a viral disease will be explored. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

BIOL 130 The Human Body (NSND, GEEL)
This course is designed for non-biology majors. Introduces the student to the structure and function of human body systems. Topics include basic chemistry, cell structure and function, tissues, organ systems (e.g. digestive, circulatory, reproductive systems), and associated common disease and illnesses. BIOL 130 will satisfy the NSND General Education requirement. A combination of BIOL 130 and BIOL 131 will satisfy the NSLD General Education requirement. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

BIOL 131 The Human Body Laboratory (NSLD, GEEL)
This course is designed for non-biology majors. Laboratory work that illustrates and reinforces the concepts discussed in BIOL 130. A combination of BIOL 130 and BIOL 131 must be taken to satisfy the NSLD General Education requirement. PRE- or COREQUISITE(S): *BIOL 130. Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours laboratory each week.*

1 semester hour

BIOL 136 Introduction to the Biology of Human Reproduction
This course introduces anatomical, hormonal, and neurological aspects of human reproductive biology. Topics include basic male/female anatomy, reproductive endocrinology, sexual differentiation, fertilization and early fetal development, pregnancy, labor and birth, and factors influencing fertility. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

BIOL 150 Principles of Biology I (NSLD, GEEL)
First in a two-semester sequence intended for natural science majors. This course covers the molecular and cellular basis of life, enzymes, energy transformation processes, genetics, and gene expression, with a particular emphasis on applying quantitative skills to interpret biological processes. PREREQUISITE(S): *MATH 117 or higher, OR PRE- OR COREQUISITE: MATH 150 or MATH 165 or higher. Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture, three hours laboratory each week.*

4 semester hours

BIOL 151 Principles of Biology II
Second in a two-semester sequence intended for Biological Science majors. This course examines the basis of life at the level of the organism, evolution, taxonomy, kingdoms of life, ecology, and behavior and applies quantitative skills to interpret biological processes. Biological Science majors are expected to take BIOL 150 first. PREREQUISITE(S): *A grade of C or better in MATH 165.* PRE- or COREQUISITE(S): *CHEM 131. Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture, three hours laboratory each week.*

4 semester hours

BIOL 202 Interdisciplinary Bioinformatics-An Introduction
Examines basic principles of bioinformatics, including genome sequencing, models, and evolution and computational approaches for analyzing biological data. PREREQUISITE(S): *MATH 165 or higher. Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

BIOL 210 Microbiology
Provides an overview of microorganisms, emphasizing bacteria and including the structure, metabolic activities, genetics, and mechanisms of control of microorganisms, as well as the relationships of microorganisms to humans, the environment, disease, and immunity. Laboratory sessions include basic techniques of culturing and identifying microorganisms, as well as observations of their activities. PREREQUISITE(S): *A grade of C or better in BIOL 150. Two hours lecture, four hours laboratory each week.*

4 semester hours

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BIOL 212 Human Anatomy and Physiology I (NSLD, GEEL)
Detailed study of the structure and function of the body, including tissues, skin, skeletal system, muscular system, nervous system, and sense organs. PREREQUISITE(S): *A grade of C or better in BIOL 150. Two hours lecture, four hours laboratory each week.*

4 semester hours

BIOL 213 Human Anatomy and Physiology II (NSLD, GEEL)
This course studies in detail the structure and function of the body, including digestion and metabolism, the respiratory system, the circulatory system and immunity, the excretory system and body fluids, the reproductive system, human development, and the endocrine system. PREREQUISITE(S): *A grade of C or better in BIOL 212. Two hours lecture, four hours laboratory each week.*

4 semester hours

BIOL 217 Ecology
Study of the relationships of organisms to their environment, with emphasis on classic studies and on recent advances in the field. Topics include evolutionary ecology, population growth and regulation, interspecific relationships (e.g., competition, predation), behavioral ecology, community ecology, systems ecology (e.g., energy flow, biogeochemical cycles), and ecological effects of human activities. *Assessment Level(s): ENGL 101/ENGL 011, MATH 117 or higher. Three hours lecture, three hours laboratory each week.*

4 semester hours

BIOL 222 Principles of Genetics
An introduction to the underlying principles, theories, technology, and vocabulary that constitute the discipline of genetics. Concentrating on the molecular aspect of classical and extended genetics, course topics include molecular organization of genetic information in viruses, prokaryotes, and eukaryotes; the molecular basis of phenotypic variation; and the molecular aspects of gene action, expression, and regulation. Collectively, this course provides a framework for understanding how genetics is used as a tool for investigation of issues related to human health, medicine, and in biotechnology. PREREQUISITE(S): *A grade of C or better in BIOL 150, CHEM 131, MATH 117 or higher, or consent of department. Students may not receive credit for both BIOL 220 and BIOL 222 . Three hours lecture, two hours of discussion/recitation each week.*

4 semester hours

BIOL 226 Nutrition
A course in basic nutritional requirements and considerations of the abnormalities caused by excesses or deficiencies of these requirements. Dietary habits and needs of various age groups and conditions will be studied. PREREQUISITE(S): *BIOL 150 with a grade of C or better. Three hours each week.*

3 semester hours

BIOL 228 Pathophysiology (TP/SS only)
Presents the underlying concepts and biological basis for common pathological disorders of all body systems. PREREQUISITE(S): *A grade of C or better in BIOL 212.* PRE- or COREQUISITE(S): *BIOL 213. Three hours each week.*

3 semester hours

BIOL 230 Molecular Cell Biology
A detailed study of the molecular structure and function of the eukaryotic cell including cell ultrastructure, molecular genetic mechanisms and techniques, structure of chromosomes and genes and transcriptional as well as posttranscriptional control of gene expression, structure of biomembranes and movement of molecules into and through cellular membranes, cell signaling mechanisms, cytoskeletal systems and cellular movement, interactions, division, lineage and death of cells, molecular cell biology of development, of nerve cells, of immunology and of cancer. PRE- or COREQUISITE(S): *BIOL 222. Three hours lecture, three hours laboratory each week.*

4 semester hours

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BIOL 252 Principles of Biology III
Synthesizes physical, chemical, and biological principles to understand the evolution of organismal form and function over the history of life on Earth. PREREQUISITE(S): *A grade of C or better in BIOL 150 and BIOL 151.* PRE- or COREQUISITE(S): *CHEM 131. Assessment Level(s): MATH 170 or MATH 181 or C or better in MATH 165. Three hours lecture, one hour discussion each week.*

4 semester hours

BIOT - Biotechnology

BIOT 110 Introduction to Biotechnology
Designed to introduce students to multiple aspects of the biotechnology industry. The biology behind biotechnology including an introduction to DNA, proteins, cells and cell function, and genetic engineering is the introductory unit. Another unit describes various sectors of the biotechnology industry including diagnostics, therapeutics, agriculture, and bioremediation. Product development in the context of a regulated environment (GLP, GCP, cGMP) and company structure is also described. A third area covers job search, employer expectations, and ethics at the workplace. Also discussed is an introduction to basic laboratory math, lab safety, equipment and reagents, and introduction to experimental design. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

BIOT 120 Introduction to Cell Culture
An introduction to the basic principles of cell culture. Classification and origin of cells in culture, growth curves and associated calculations, cell culture laboratory equipment, causes of contamination, detection of contamination, environmental monitoring, prevention of contamination, cell line authentication. Cell culture growth environment incubators, atmosphere, buffers, media and media supplements. Experimental design with an emphasis on root cause analysis. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Two hours lecture.*

2 semester hours

BIOT 121 Aseptic Technique and Cell Culture Skills (G only)
An introduction to fundamental laboratory methods required for the successful growth of both anchorage dependent and suspension animal cells in culture. The emphasis is on Good Laboratory Practice (GLP) as applied to animal cell culture. How to read and use SOPs including traceability. Proper gowning. Proper aseptic technique and use of the biological safety cabinet. Preparation of media, feeding and passaging of cells, and initial scale-up. Cell counting, including viability determination both manually and semi-automated and seeding at a specific concentration. Environmental monitoring and contamination testing. PRE- or COREQUISITE(S): *BIOT 120. Three hours laboratory each week.*

1 semester hour

BIOT 200 Protein Biotechnology
An introduction to protein structure and function. Primary, secondary, tertiary, and quaternary structure are discussed in relation to protein function and stability. Causes of protein denaturation and its prevention by formulations for biologics. Functional assays for proteins such as enzymes and receptors are described in terms of experimental design, data collection, and data analysis. Strategies and methods of protein purification and quality determination such as chromatographic, electrophoretic and spectrophotometric techniques, peptide mapping and sequencing are presented. Relevant calculations such as buffer and solution preparation, standard curves, and kinetic assays will be discussed. PREREQUISITE(S): *BIOL 150 or CHEM 131 or consent of the department. Three hours lecture.*

3 semester hours

BIOT 201 Protein Biotechnology Skills (G only)
Provides an introduction to the skills needed to assess protein structure and function, such as protein quantitation assays and standard curves. Solution and buffer preparation, micropipetting, and use of standard equipment such as centrifuges and spectrophotometers. SDS-PAGE, staining, and documentation of gels. Strategies and methods of protein purification are considered along with emphasis on chromatographic and electrophoretic techniques. An emphasis on peptide mapping and sequencing is included. PRE- or COREQUISITE(S): *BIOT 200 or consent of department. Three hours laboratory each week.*

1 semester hour

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BIOT 230 Applied Immunology
Brief survey of the critical, biotechnology relevant components of the innate and specific immune system including immune cells, cytokines, and antibodies. A survey of the related signal transduction systems such as JAK STAT and NfÎºB pathways. A brief description of immunotherapies such as Dendritic cell vaccines, CAR-T, immune checkpoint therapies monoclonal antibodies, and alternate antibody formats such as BiTEs and DARTs. Antigen antibody interactions, epitope mapping, and measurement of binding affinity. Principles of immunoassays with an emphasis on Western Blotting, ELISAs and Immunohistochemistry. Practical aspects such antibody labeling, antibody handling, storage and dilution, analysis of immunoassay data. PREREQUISITE(S): *BIOT 200 or consent of department. Three hours lecture.*

3 semester hours

BIOT 231 Immunological Methods (G only)
Brief survey of the most common immunoassay techniques used to detect biomarkers qualitatively and quantitatively. Sample preparation and buffers for immunoassays. Handling of antibodies such as reconstitution and dilution of primary and secondary antibodies. Determination of antibody specificity. Use of multichannel pipettes, multiwell plates and plate readers. Western blotting, ELISA and immunohistochemistry. Bench top purification of polyclonal or monoclonal antibodies using protein A chromatography. Preparation of an alum absorbed immunogen. PREREQUISITE(S): *BIOT 201.* PRE- or COREQUISITE(S): *BIOT 230 or consent of department. Three hours laboratory each week.*

1 semester hour

BIOT 240 Principles of Nucleic Acid Methods
An introduction to the theory of common molecular biology methods used in the study of nucleic acids. Topics include the structure of DNA and RNA, DNA isolation and sequencing, an introduction to genomics and bioinformatics, probe design and hybridization, PCR, microarrays, RNA isolation, enzymes used in molecular biology, principles of cloning including the use of vectors for sequencing and expression. PREREQUISITE(S): *BIOL 150, CHEM 131 and BIOT 200 or consent of department. Three hours lecture.*

3 semester hours

BIOT 241 Nucleic Acid Methods (G only)
Introduction to molecular techniques used in the study of nucleic acids. Topics include DNA and RNA isolation, an introduction to bioinformatic methods, agarose gel electrophoresis, qPCR or RT-qPCR, and PCR. PREREQUISITE(S): *BIOT 201.* PRE- or COREQUISITE(S): *BIOT 240 or consent of department. Three hours laboratory each week.*

1 semester hour

BIOT 250 Principles of Biomanufacturing
An overview of the processes and instrumentation required to produce a therapeutic protein or vaccine using cells as the manufacturing platform. Desirable host cell properties and methods of plasmid based selection. Survey of quality systems and cGMP in biomanufacturing including lean six sigma, RCA, CMCs, batch audits, specifications, and the role of QC and QA. Upstream processing focusing on bioreactors and process control, harvest and clarification. Downstream processing focusing on filtration and chromatography. A brief discussion of fill and finish. PREREQUISITE(S): *BIOT 120 and BIOT 200 or consent of department. Three hours lecture.*

3 semester hours

BIOT 251 Techniques of Biomanufacturing (G only)
Introduction to the process of producing a biological product using a cell line. The course will be organized as a production campaign in a simulated cGMP environment. Students will complete a batch record as they produce a biological product. Emphasis will be on upstream and downstream processes. Preparation of media and buffers. The upstream component begins with a vial thaw and flask seeding. Closed system scale-up from a shake flask to a 3-liter closed system single use bioreactor. Probe assembly and calibration. TFF separation of proteins. Use of FPLC protein purification systems including associated software. SDS-PAGE analysis of the purified protein. PREREQUISITE(S): *BIOT 121 and BIOT 201.* PRE- or COREQUISITE(S): *BIOT 250 or consent of department. Three hours laboratory each week.*

1 semester hour

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BIOT 260 Introduction to the Principles of Cell and Gene Therapy (G only)

Introduction to the basic concepts of cell and gene therapies. Viral and non-viral vectors will be described in detail with respect to vector characteristics and selection, production, and purification. Cell therapies will focus on cell collection, engineering, and scale out for cells commonly used in therapies (CAR-T, MSC, iPSC). The importance of cGMP and critical quality attributes for each will be included. PREREQUISITE(S): *BIOT 120, BIOT 200, and BIOT 240. Three hours lecture each week.*

3 semester hours

BIOT 261 Laboratory Fundamentals for Cell and Gene Therapy Production (G only)

Hands-on introduction to the essential methods used in the production of gene and cell therapies. Understanding of BSL levels and safety considerations. Basic cGMP with an emphasis on aseptic technique and GDP. Plasmid and vector production (bioreactor) in producer cells, plasmid and vector purification, characterization of vectors. Scale up and scale out of cells in bioreactors. Quality control assays including qPCR, ELISA, and rapid sterility testing. Lab math is associated with cell and gene therapy such as the determination of multiplicity of infection, cell concentration at infection, and vector genomes. PREREQUISITE(S): *BIOT 121, BIOT 201, BIOT 241.* PRE- or COREQUISITE(S): *BIOT 260. Three hours laboratory each week.*

1 semester hour

BLDG - Building Trades Technology

BLDG 130 Introduction to the Building Trades (R only) CE

An introduction to the construction process and the professional building trades. Topics include building process, materials, building systems and components, professional trades' roles and responsibilities, career opportunities, and construction industry issues. *Three hours each week.*

3 semester hours

BLDG 133 Building Trades Blueprint Reading (R only) CE

An introduction to reading, interpreting, and applying construction drawings in the residential and light commercial building trades. Topics include drawing types, symbols and terminology, scale and dimensioning, floor plans, elevation, and mechanical and detail plans. *Three hours each week.*

3 semester hours

BLDG 140 Fundamentals of Carpentry (R only) CE

An introduction to framing and the carpentry trade. Topics include material selection and estimating; basic calculations; tools; print reading; layout; and floor, wall, and ceiling framing. *Two hours lecture, four hours laboratory each week.*

4 semester hours

BLDG 150 Fundamentals of Electrical Wiring (R only) CE

An introduction to electrical wiring and the electrical trade. Topics include material identification and selection, tools, electrical theory, switch and receptacle wiring, electrical plans reading, and electrical safety. *Two hours lecture, four hours laboratory each week.*

4 semester hours

BLDG 160 Fundamentals of Plumbing (R only) CE

An introduction to plumbing and the plumbing trade. Topics include material identification and selection, tools, water supply and waste systems, pipes and fittings, fixtures, plumbing plans reading, and water heaters. *Two hours lecture, four hours laboratory each week.*

4 semester hours

BLDG 170 Fundamentals of Refrigeration (R only) CE

An introduction to the theory, principles, and applications of heat transfer as applied to refrigeration processes and the compression refrigeration cycle. Topics include refrigerants, system performance, tools, tubing and fittings, soldering and brazing, and system charging and evacuation. *Three hours lecture, two hours laboratory each week.*

4 semester hours

BLDG 172 HVAC Electricity (R only) CE
An introduction to the theory and applications of electricity as applied to heating, ventilation, and air conditioning systems. Topics include Ohm's Law, schematics, control and line voltage circuits, meters, motors, and troubleshooting. *Three hours lecture, two hours laboratory each week*

4 semester hours

BLDG 174 HVAC Technician Development (R only) CE
An overview of the HVAC technician's professional development responsibilities and opportunities. Refrigerant transition and recovery certification training will be provided. Topics include career opportunities, customer relations, safety, and environmental issues. PREREQUISITE(S): *BLDG 170. Two hours each week.*

2 semester hours

BLDG 182 Renewable and Sustainable Energy Technologies (R only)
An introduction to the theory, principles, and applications of renewable and sustainable energy technologies. Topics include solar thermal and solar photovoltaic systems, hydropower, wind generators, geothermal, biofuels, fuel cells, and climate change and fossil fuels. *Three hours each week.*

3 semester hours

BLDG 184 Solar PV Design and Installation (R only)
An overview of the fundamentals necessary to design and install a solar photovoltaic electrical system. Topics include grid-tied and battery systems, sizing, mounting, equipment, permitting, code requirements, and financial and environmental incentives. Successful completion of this course allows students to take the NABCEP PV Entry Level Exam. *Three hours lecture, one hour laboratory each week.*

3 semester hours

BLDG 200 Special Topics in Building Trades Technology
This course focuses on selected topics in building trades technology, presented as a result of technological change or new research emphasis or community or student interest. Topics may extend or specify any of the regular building trades technology course offerings. New topics appear each semester in the class schedule. PREREQUISITE(S): *Depends on topic.*

1-3 semester hours

BLDG 230 Building Codes and Standards (R only)
An examination of building codes and standards applied to residential buildings. The International Residential Code (IRC) will be emphasized, and local area amendments will be addressed. Topics include planning and permitting, foundations, floors, walls, roofs, energy efficiency, chimneys, and fireplaces. PREREQUISITE(S): *BLDG 130 and BLDG 133, or consent of department. Three hours each week.*

3 semester hours

BLDG 240 Advanced Framing and Exterior Finishing (R only)
A continuation of BLDG 140, emphasizing framing and exterior finishing of residential buildings. Topics include rafter layout and roof framing, stair calculations and installation, steel framing, exterior door and window installation, and roofing and siding materials and installation. PREREQUISITE(S): *BLDG 140. Two hours lecture, four hours laboratory each week.*

4 semester hours

BLDG 242 Remodeling and Interior Finishing (R only)
A continuation of BLDG 140, emphasizing remodeling and interior finishing of residential buildings. Topics include insulation, drywall installation and finishing, painting and wall coverings, cabinetry and countertops, trim and casing installation, floor finishing, tile, and remodeling techniques. PREREQUISITE(S): *BLDG 140. Two hours lecture, four hours laboratory each week.*

4 semester hours

BLDG 250 Residential Electrical Wiring (R only)
A continuation of BLDG 150, emphasizing electrical wiring of residential buildings. Topics include electrical theory, residential design and layout, electrical service calculation and installation, National Electrical Code (NEC), device wiring and installation, lighting, and swimming pool wiring. PREREQUISITE(S): *BLDG 150. Two hours lecture, four hours laboratory each week.*

4 semester hours

BLDG 252 Commercial Electrical Wiring (R only)
A continuation of BLDG 150, emphasizing electrical wiring of commercial buildings. Topics include conduits and cables, branch circuits and feeders, fasteners, motors and transformers, services and panelboards, and commercial wiring codes and specifications. PREREQUISITE(S): *BLDG 150. Two hours lecture, four hours laboratory each week.*

4 semester hours

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BLDG 256 National Electrical Code (R only) CE
An examination of the National Electrical Code (NEC) and its application in electrical construction. Topics include terminology, wiring specifications and methods, grounding and bonding, tables and calculations, overcurrent protection, services, branch circuits and feeders, raceways, cables, motors, and equipment. PREREQUISITE(S): *BLDG 150 or consent of department. Three hours each week.*

3 semester hours

BLDG 271 Heating Systems (R only)
A study of the operation, installation, servicing, and troubleshooting of gas, oil, and electric heating systems. Topics include installation and service procedures, tools, equipment, systems, fuels, and principles of combustion. PREREQUISITE(S): *BLDG 170 and BLDG 172, or consent of department. Three hours lecture, two hours laboratory each week.*

4 semester hours

BLDG 273 Air Conditioning and Heat Pump Systems (R only)
A study of the operation, installation, servicing, and troubleshooting of cooling-only and heat pump systems. Topics include installation and service procedures, tools, equipment, systems and subsystems, and cooling principles. PREREQUISITE(S): *BLDG 170, BLDG 172 and BLDG 174, or consent of department. Three hours lecture, two hours laboratory each week.*

4 semester hours

BLDG 275 Residential HVAC System Design (R only)
Intended for advanced HVAC students, this course covers the design and selection of equipment for residential heating and cooling systems. Topics include equipment sizing and selection, duct sizing, air distribution, code requirements, and energy efficiency. PREREQUISITE(S): *BLDG 271 and BLDG 273, or consent of department. Assessment Level(s): MATH 045. Two hours each week.*

2 semester hours

BLDG 284 Advanced Solar PV Design (R only)
Intended for advanced electrical students seeking to further their understanding of solar PV electrical systems. Topics include design calculations, NEC Article 690, micro- and central inverters, batteries and energy storage, wire sizing, electrical tables calculations, commercial PV systems, and more. PREREQUISITE(S): *BLDG 184 and BLDG 250, or consent of department. Two hours each week.*

2 semester hours

BSAD - Business Administration

BSAD 101 Introduction to Business CE-G and R
An introductory course designed to survey the field of business and its environment in order to give the student a broad overview of the principles, practices, institutions, and functions of business. PRE- or COREQUISITE(S): *A minimum grade of C or better in ELAI 990 or appropriate score on the English assessment test. Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

BSAD 111 Personal Finance CE
An introduction to some proven techniques of financial management for the individual. Emphasis on the development of a program of financial management, including budgeting, consumer credit, consumer spending, insurance, investments in real estate, securities, commodities, income tax planning, retirement planning, and other financial problems of the individual. *Assessment Level(s): ELAR 980/IERW 002. Three hours lecture/discussion each week.*

3 semester hours

BSAD 210 Statistics for Business and Economics CE-R
An introductory course in the business and economic application of descriptive and inferential statistics. The meaning and role of statistics in business and economics, frequency distributions, graphical presentations, measures of central tendency and dispersion, probability, discrete and continuous probability distributions, inferences pertaining to means and proportions, regression and correlation, time series analysis, and decision theory will be discussed. *Assessment Level(s): ENGL 101/ENGL 011, MATH 117. Three hours each week.*

3 semester hours

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BSAD 268 Macklin Business Institute Freshmen Internship (R only)

Provides students in the Macklin Business Institute honors program the opportunity for further experiential learning by combining business academics with a hands-on learning experience. To qualify for this course, a student must be an MBI honors student. To earn course credit, students must work a minimum of 45 hours in a clearly defined employment role for the MBI Café. The MBI Café role requires active involvement in some aspect of business management and not just routine assignment. It is expected that the student will be involved with the operational and/or administrative aspects of the MBI Café, which students will regularly meet on and report on in regularly scheduled MBI Café Board meetings. PREREQUISITE(S): *Consent of the department. One to two hours each week.*

1-2 semester hours

BSAD 269 Macklin Business Institute Sophomore Internship (R only)

Provides students in the Macklin Business Institute honors program the opportunity for further experiential learning by combining business academics with a hands-on learning experience. To qualify for this course, a student must be an MBI honors student completing at least one semester of BSAD 268. To earn course credit, students must work a minimum of 45 hours in a clearly defined employment role for the MBI Café. The MBI Café role requires active involvement in some aspect of business management and not just routine assignment. It is expected that the student will be involved with the operational and/or administrative aspects of the MBI Café, which students will regularly meet on and report on in regularly scheduled MBI Café Board meetings. Students in BSAD 269 will be required to take on a leadership role as part of this course. PREREQUISITE(S): *BSAD 268 and consent of the department. One to two hours each week.*

1-2 semester hours

BSAN - Business Analytics

BSAN 101 Introduction to Business Analytics (R only)

An introduction to business analytics and the use of data for decision making in business functions. Course topics focus on understanding various business functions such as sales, customer service, marketing, or IT, and applying essential skills and tools to measure and improve operational outcomes. Students use Microsoft Excel in practical business scenarios to summarize, visualize, and analyze data. Other data analytics software is also introduced. PREREQUISITE(S): *A minimum grade of C or better in ELAI 990 or appropriate score on the English assessment test. Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

BSAN 250 Business Analytics Capstone

A comprehensive, project-based course where students gain hands-on experience working with real-world data. Montgomery College partners in business and industry work alongside faculty and students providing expertise, guidance, and real data. The course includes topics in advanced data mining, data ethics, and reproducible research. PREREQUISITE(S): *A grade of C or better in DATA 110 or consent of the department. Two hours each week.*

2 semester hours

CCJS - Criminal Justice

CCJS 110 Administration of Justice (BSSD, GEEL, GCP)

An analysis of crime and the administration of justice in a diverse, democratic society operating within a global environment. Emphasis is on the theoretical and historical development of law enforcement, courts, and corrections and the agents and agencies responsible for administering justice. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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CCJS 200 Criminology
An exploration of the fundamental concepts, methods, and theories used in the scientific study of the nature, patterns, extent, cause, and control of crime and criminal behavior nationally and internationally. Emphasis is on the integrative relationship between theory, research, and social policy. PREREQUISITE(S): *SOCY 100 or consent of department. Three hours each week.*

3 semester hours

CCJS 201 Introduction to Law Enforcement
A survey of the philosophical and historical background, constitutional limitations, objectives, and processes in the enforcement of the law, and introduction to the nature and functions of public and private agencies responsible for enforcement. PREREQUISITE(S): *CCJS 110 or consent of department. Three hours lecture/discussion each week.*

3 semester hours

CCJS 211 Criminal Investigation
Fundamentals of investigation: crime scene search and recording, collection and preservation of physical evidence, modus operandi, sources of information, interviews and interrogations, follow-up, and case preparation. PREREQUISITE(S): *CCJS 110 or consent of department. Three hours each week.*

3 semester hours

CCJS 215 Organization and Administration
A study of the management and administration of the criminal justice system to include the role of management in organizing, controlling, coordinating, directing, staffing, and managing change and innovations in criminal justice agencies. PREREQUISITE(S): *CCJS 110 or consent of department. Three hours lecture/discussion each week.*

3 semester hours

CCJS 216 Police Operations
Operational services; patrol, including analysis and distribution of the force; criminal investigation; intelligence and vice units; juvenile units; traffic administration. In-service law enforcement personnel may substitute this course for CCJS 201. PREREQUISITE(S): *CCJS 110 and CCJS 201 for preservice students, or consent of department. Three hours each week.*

3 semester hours

CCJS 221 Criminal Law
A study of the development, application, and enforcement of local, state, and federal laws; a review of criminal offenses as defined by such laws. Includes a review of court decisions pertinent to the administration of justice, such as arrests, searches, and seizures. PREREQUISITE(S): *CCJS 110 or consent of department. Three hours each week.*

3 semester hours

CCJS 222 Criminal Evidence
A description of the nature, types, collection, preservation, and introduction of evidence. An analysis of laws and court decisions relating to the admissibility of evidence. PREREQUISITE(S): *CCJS 110 or consent of department. Three hours each week.*

3 semester hours

CCJS 230 Introduction to Corrections
An organized study of prisons and correctional processes; operational techniques for controlling and changing criminal behavior; model correctional programs and alternatives to confinement. History of punishment, confinement, and treatment for adult and juvenile offenders. PREREQUISITE(S): *CCJS 110 or consent of department. Three hours each week.*

3 semester hours

CCJS 232 Criminal Forensics
A study of the application of science to law enforcement, to include an examination of a crime scene, laboratory analysis of blood and serums, comparative micrography, firearms identifications and ballistics, fingerprint, and other techniques. PREREQUISITE(S): *CCJS 110 or consent of department. Three hours each week.*

3 semester hours

CCJS 242 Theory and Practice
This course consists of a practicum to include a supervised 100-hour internship in an approved criminal justice agency (police, courts, corrections). Coursework will consist of 20 class hours designed to review philosophical and pragmatic differences between theory and practice. Students planning to complete this course should apply to the criminal justice agency of their choice at least three months prior to the course's start date. Many criminal justice agencies incorporate an application/background investigation into the internship experience that can take a few months to complete. Advanced departmental advising is available to help students identify potential internship locations. PREREQUISITE(S): *CCJS 201, CCJS 230, or consent of department. One hundred twenty (120) hours each semester.*

3 semester hours

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CCJS 244 Contemporary Issues
This course focuses on contemporary issues, trends, and practices in the criminal justice field. PREREQUISITE(S): *CCJS 110 or consent of department. Three hours lecture/ discussion each week.*

3 semester hours

CCJS 246 Constitutional Law
A topical study of the development of the U.S. Constitution through interpretation by the Supreme Court. Subjects include judicial review, federalism, congressional and presidential authority, the First Amendment, criminal rights, due process, and equal protection of the law. *Assessment Level(s): ENGL 101/ENGL 011, or consent of department.*

3 semester hours

CCJS 250 Seminar: Criminal Justice
Topics of special interest such as social justice and deviant behavior, comparative criminal justice and criminology, victimology, and violence in America will be offered. PREREQUISITE(S): *CCJS 110, SOCY 100, or consent of department. Three hours lecture/discussion each week.*

3 semester hours

CCJS 255 Independent Study in Criminal Justice
A course designed to enable advanced students to pursue a topic of their own choosing with the guidance and supervision of an assigned faculty member. Topics should not duplicate any course topics already offered in the program. PREREQUISITE(S): *CCJS 110, ENGL 102 or ENGL 103, and consent of department. Three hours lecture/ discussion each week.*

3 semester hours

CHEM - Chemistry

CHEM 031 Principles of Chemistry I Exploration
Co-requisite course designed to equip students with the skills needed to be successful in CHEM 131 by providing support in fundamental chemistry and related mathematical principles. Focus is on problem-solving strategies and practice, the development of quantitative reasoning skills, and the application of relevant mathematical operations to define and solve chemical problems. Topics include the scientific method, chemical measurements and unit conversions, properties of matter, foundations of atomic theory and structure, and stoichiometric mole relationships and calculations. *Assessment Level(s): ELAI 990/ENGL 101/ ENGL 011; MATH 117 or higher. Two hours of classroom instruction each week.*

2 semester hours

CHEM 099 Introductory Chemistry
A treatment of fundamental chemical mathematics, computational methods, metric system, matter, energy, chemical and physical properties, law of conservation of mass-energy, foundations of atomic theories, elements, compounds, formulas, and stoichiometry. Other topics may be covered at the discretion of the instructor. *Assessment Level(s): ELAI 990/ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

CHEM 105 Chemistry and Society (NSND, GEEL, GCP)
Designed for non-science majors and emphasizing the significance of chemistry in everyday lives and society. Topics may include the connection of chemistry to environmental resources, global climate change, consumer products or industrial applications. CHEM 105 will satisfy the NSND General Education requirement. When CHEM 106 is taken concurrently or in any later term, the combination of CHEM 105 and CHEM 106 will instead satisfy the NSLD General Education requirement. *Assessment Level(s): ELAI 990/ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

CHEM 106 Chemistry and Society Laboratory (NSLD, GEEL)
Laboratory work deals with experiments that illustrate the significance of chemistry in our society and reinforces the principles discussed in CHEM 105. A combination of CHEM 105 and CHEM 106 must be taken to satisfy the NSLD General Education requirement. PREREQUISITE(S): *MATH 050.* PRE- or COREQUISITE(S): *CHEM 105. Assessment Level(s): ELAI 990/ENGL 101/ENGL 011, MATH 050. Three hours laboratory each week.*

1 semester hour

CHEM 131 Principles of Chemistry I (NSLD, GEEL)
First of two related courses (with CHEM 132). Includes concepts of atomic structure, periodic system, chemical bonding, nomenclature, stoichiometry, weight relationships, kinetic molecular theory, gases, liquids and solids, solutions, chemical reactions, and thermochemistry. PREREQUISITE(S): *Either guided placement eligibility or concurrent enrollment in CHEM 031, a grade of C or better in CHEM 099, completion of department-approved preparation module, or consent of the department. Assessment Level(s): ELAI 990/ENGL 101/ ENGL 011, MATH 117 or higher. Three hours lecture, one hour discussion, three hours laboratory each week.*

4 semester hours

CHEM 132 Principles of Chemistry II (NSLD, GEEL)
A continuation of CHEM 131. Topics include solutions, chemical reactions, acid-base theories, electrochemistry, equilibrium, kinetics, nuclear chemistry, and thermodynamics. PREREQUISITE(S): *A grade of C or better in CHEM 131 or consent of department. Three hours lecture, one hour discussion, three hours laboratory each week.*

4 semester hours

CHEM 135 General Chemistry for Engineers
Covers the nature and composition of matter, solutions, chemical reactions, equilibria, kinetics, thermodynamics, and electrochemistry with engineering applications. A one-semester general chemistry course designed for students majoring in engineering, except for biological resources engineering, chemical engineering, or general engineering majors. Not open to students who have completed CHEM 131 and CHEM 132. PREREQUISITE(S): *MATH 165 or appropriate score on the Mathematics placement test. Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture, one hour discussion, three hours laboratory each week.*

4 semester hours

CHEM 150 Essentials of Organic and Biochemistry (NSLD, GEEL)
An overview of organic chemistry with an introduction to biomolecules. Includes concepts of organic structures, functional groups, naming and reactivity, with an emphasis on biological applications. Biochemical structure-related topics include carbohydrates, lipids, enzyme activity, peptides/proteins, and nucleic acids. Course designed for students needing a one-semester introductory organic chemistry survey course and an introduction to structural biochemistry. PREREQUISITE(S): *CHEM 131 with a grade of C or better or consent of department. Three hours lecture, one hour discussion, three hours laboratory each week.*

4 semester hours

CHEM 203 Organic Chemistry I
Focuses on fundamental concepts of organic chemistry with emphasis on aliphatic hydrocarbons, alkyl halides, and alcohols. This course covers bonding theories, structures, nomenclature, physical properties, synthesis, and mechanisms of reactions. Laboratory work involves the preparation, analysis, and purification of organic compounds including spectroscopic techniques. PREREQUISITE(S): *A grade of C or better in CHEM 132 within the last five years, or consent of department chair, course coordinator, or designated member of Chemistry faculty. Three hours lecture, one hour discussion, four hours laboratory each week.*

5 semester hours

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CHEM 204 Organic Chemistry II
Continuation of CHEM 203 Organic Chemistry I with emphasis on aromatic compounds, alcohols, ethers, amines, and carbonyl compounds. Laboratory work reinforces organic synthesis techniques including isolation, purification, and structure determination using analytical methods. PREREQUISITE(S): *A grade of C or better in CHEM 203 within the last five years, or consent of department chair, course coordinator, or designated member of Chemistry faculty. Three hours lecture, one hour discussion, four hours laboratory each week.*

5 semester hours

CHEM 272 Bioanalytical Laboratory
Develop and practice analytical laboratory techniques used in advanced chemistry and biochemistry. Experiments will include statistics and error analysis, UV/vis spectroscopy, protein/DNA quantitation, chemical and biochemical kinetics, equilibrium, acids/bases/buffers, and oxidation/reduction. The course will also focus on computerized data processing techniques, data interpretation and critical analysis, technical writing, and formal presentations. PRE- or COREQUISITE(S): *A grade of C or better in CHEM 204 or consent of department. Four hours laboratory each week.*

1 semester hour

CHIN - Chinese

CHIN 101 Elementary Chinese I (HUMD, GEIR, GEEL, GCP)
Beginning language course focusing on the study of Chinese language and culture. Students begin to develop the ability to communicate in Chinese through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Chinese is required. In-class work is supplemented by 20 hours of online homework. *Five hours each week.*

5 semester hours

CHIN 102 Elementary Chinese II (HUMD, GEIR, GEEL, GCP)
A continuation of CHIN 101. Students continue to develop the ability to communicate in Chinese through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. In-class work is supplemented by 20 hours of online homework. PREREQUISITE(S): *CHIN 101 or consent of department. Five hours each week.*

5 semester hours

CHIN 201 Intermediate Chinese I (HUMD, GEIR, GEEL, GCP)
Study of Chinese language and culture at the intermediate level. Students further their ability to communicate in Chinese through an advanced consideration of cultural themes and a thorough review of Chinese grammar to support increased focus on outside reading and writing. In-class work is supplemented by 10 hours of online homework. PREREQUISITE(S): *CHIN 102 or consent of department. Five hours each week.*

5 semester hours

CHIN 202 Intermediate Chinese II (HUMD, GEIR, GEEL, GCP)
A continuation of CHIN 201. Students further their ability to communicate in Chinese through an advanced consideration of cultural themes and a review of Chinese grammar to support increased focus on outside reading and writing. In-class work is supplemented by 10 hours of online homework. PREREQUISITE(S): *CHIN 201 or consent of department. Five hours each week.*

5 semester hours

CMAP - Computer Applications

CMAP 106 Computer Literacy
Examine and practice computing and information technology concepts and skills fundamental to digital devices, digital technologies, digital defense, digital production, and digital socialization. Learn about the computer hardware and peripherals, computer networks, information security, data and file management, operating systems, emerging technologies, and the Internet. *Assessment Level(s): ELAW 980/ELAR 980, IERW 002. Three hours each week.*

3 semester hours

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CMAP 120 Introduction to Computer Applications CE

Introduces computer concepts and techniques applicable to various disciplines. This course covers the most widely used software packages while providing students hands-on experience with current computer applications. Prior knowledge of Windows is strongly recommended. *Assessment Level(s): ELAI 990 or ENGL 101/ ENGL 011, MATH 050. Three hours each week.*

3 semester hours

CMAP 232 Word Processing Applications

Designed to enable students to acquire Microsoft Word MOS expert certification which demonstrates that students can apply the product's principal features at an advanced level, can complete expert tasks independently, and are well prepared to succeed in the job market. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050, or consent of department. Three hours each week.*

3 semester hours

CMAP 245 Database Applications

Offers hands-on experience using a database management system. Students learn how to create and manipulate database objects including tables, forms, queries, reports, macros, and modules for practical business applications. Topics also include integration of databases with other applications. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050, or consent of department. Three hours each week.*

3 semester hours

CMAP 252 Spreadsheet Applications

Designed to enable students to acquire Microsoft Excel MOS expert certification which demonstrates that students can apply the product's principal features at an advanced level, can complete expert tasks independently, and are well prepared to succeed in the job market. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050, or consent of department. Three hours each week.*

3 semester hours

CMAP 269 Computer Applications Internship
(Also listed as CMSC 269. Credit cannot be received for both CMAP 269 and CMSC 269.)

Students work for college credit in a professional environment related to their particular track in the computer applications program. The intent is to give students an appropriate work experience that will expand their knowledge and aid them in making career decisions. A limited number of internships are available through the program each semester, or the student may propose an internship. A comprehensive record of the work experience is kept by the student and discussed in seminar meetings. PREREQUISITE(S): *Consent of internship coordinator and a minimum of 12 semester hours in program area. An internship will involve a minimum of five hours of work experience per semester hour each week for 15 weeks. Eight hours of seminar discussions each semester.*

1-4 semester hours

CMGT - Construction Management

CMGT 100 Construction Methods and Materials (R only) CE-R

Covers the characteristics, specifications, properties, terminology, and use of construction materials. The course emphasizes principles and methods for the selection and application or installation of materials and building components rather than development and production of materials. Laboratory experiences focus on the analysis, use, limitations, testing, and practical application of selected construction materials. *Assessment Level(s): ELAW 980/ ELAR 980. Three hours lecture/discussion, one hour laboratory each week.*

3 semester hours

CMGT 110 Construction Plan Reading (R only) CE-R

Covers construction documents, with emphasis on interpreting contract drawings. Topics include terminology, symbols, and conventions used in both commercial and residential drawings; methods and procedures for reading basic architectural and structural drawings; and introduction to mechanical and electrical drawings. *Assessment Level(s): ELAW 980/ELAR 980. Three hours lecture/discussion, one hour laboratory each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

CMGT 135 Construction Field Operations (R only) CE-R

Introduces field management from the superintendent's standpoint. Topics include job site analysis and planning, utilization of equipment, labor and material coordination, records and documentation, field scheduling, safety methods and programs, production efficiency and improvement, leadership and motivation, communications, and human relations. Site visitations and laboratory experiences supplement class discussions. *Assessment Level(s): ELAW 980/ELAR 980. Three hours lecture/discussion, one hour laboratory each week.*

3 semester hours

CMGT 190 Computer Applications in Construction (R only) CE-R

Reviews software applications in construction project management, administration, estimating, scheduling, and cost control. Topics include an introduction to software packages used in subsequent courses, and Internet applications in construction. PREREQUISITE(S): *CMAP 120 or consent of department. Two hours lecture, two hours laboratory each week.*

3 semester hours

CMGT 210 Construction Management (R only) CE-R

Covers all phases of construction project management. The course introduces the procedures, responsibilities, methodology, and techniques utilized in the construction management process. Topics include an overview of the construction and design industries, company organization, construction contracts and project delivery methods, project chronology, bidding procedures, construction estimating, scheduling, cost control, field operations, safety standards and procedures, and project administration. The course includes a general overview of the use of computers in project management. PREREQUISITE(S): *CMGT 135 or consent of department. Three hours each week.*

3 semester hours

CMGT 250 Construction Surveying (R only) CE-R

Introduces typical surveying methods and layouts. The course emphasizes the physical requirements of construction operations as viewed from the project superintendent's standpoint in order to maintain control and proper work placement. Topics include mathematics and formulas required to perform layout functions; use of layout equipment; establishment and measurement of lines and elevations, measurement of angles, common building layout; basic grading layout; and coordination of layout and drawings. Laboratory focuses on fieldwork, implementation of class theory, and equipment use. PREREQUISITE(S): *CMGT 100/CMGT 135, and MATH 098; or consent of department. Two hours lecture, two hours laboratory each week.*

3 semester hours

CMGT 270 Construction Estimating (R only) CE-R

Introduces methods of construction estimating and estimates. The course covers the stages of preparing construction estimates and construction document analysis. Topics include an estimator's qualifications and role of the estimating team, the process, accuracy, consolidation and bid preparation, submittal, and cost analysis. The course emphasizes quantity take-offs of general conditions, sitework, concrete, masonry, structural steel, wood and plastics, thermal and moisture control, and finish materials, as well as the use of computer estimating. PREREQUISITE(S): *CMGT 100 and CMGT 110, or consent of department. Assessment Level(s): MATH 050. Three hours lecture, one hour laboratory each week.*

3 semester hours

CMGT 275 Construction Planning and Scheduling (R only) CE-R

Reviews and analyzes requirements and preparation of construction planning and scheduling. Topics include scheduling techniques in resource leveling, equipment allocation, time-cost relationships, and monitoring/ controlling work progress. The course incorporates the use of computers in the planning and scheduling process. PREREQUISITE(S): *CMGT 100 and CMGT 210, or consent of department. Two hours lecture, two hours laboratory each week.*

3 semester hours

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CMGT 280 Mechanical and Electrical Systems (R only) CE-R
Studies materials and equipment used in heating, ventilating, air conditioning, electrical power, lighting, water supply, and sewage disposal systems in buildings. The scope of the course ranges from selection of necessary equipment to the development and coordination of mechanical, electrical, and related drawings. *Assessment Level(s): ELAW 980/ELAR 980, MATH 050. Three hours lecture, one hour laboratory each week.*

3 semester hours

CMGT 285 Practical Construction Law (R only) CE-R
This course is designed to acquaint the student with an understanding of the major legal issues affecting the construction industry. It is designed to provide the student with enough basic knowledge to understand the numerous contractual relationships that exist on a construction project; to recognize the basic varieties of claims and disputes that may arise; to obtain an understanding of the basic legal principles used to avoid, mitigate, or resolve construction disputes; and to achieve an appreciation of the practical legal considerations in addressing the relationships between the parties on a construction project. PREREQUISITE(S): *CMGT 210. Three hours each week.*

3 semester hours

CMGT 290 Professional Practicum (R only)
Work experience and field study on an actual project related to the student's curriculum. Participation supervised by the instructor and appropriate personnel at work. A comprehensive record of the work experience is kept by the student and discussed in seminar meetings. PREREQUISITE(S): *Second-year standing in curriculum. Eight hours of seminar discussions each semester and a minimum of 80 hours of work experience required per semester hour. A student may not accumulate more than four semester hours in this course.*

1 semester hour

CMSC - Computer Science and Technologies

CMSC 100 Fundamentals of Computer Programming
Designed for students with no prior programming experience, this course introduces students to fundamental structures of sequence, selection, and repetition, emphasizes solving simple problems using a flowchart. With a high-level language, students code, test, and debug short programs. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Two hours each week.*

2 semester hours

CMSC 110 Computer Concepts
Study of programming language hierarchy, elements of a software system, and program implementation. Exposure to hardware concepts including number systems, data representation, central processor, storage, input/output, and system configurations. An introduction to the scope, significance, history, and social implications of data processing. There is no detailed study or implementation of any specific programming language. *Assessment Level(s): ELAI 990 or ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

CMSC 135 Introduction to Scripting
Covers concepts of scripting languages based on languages such as Python, Perl, JavaScript, VBScript, and PowerShell. Students learn how to use scripting languages for rapid prototyping, web programming, data processing, and application extension. *Assessment Level(s): ENGL 101/ ENGL 011/ELAI 990, MATH 050. Three hours each week.*

3 semester hours

CMSC 140 Introduction to Programming
Introduces programming and problem solving using a contemporary programming language. Topics include principles of procedural programming, software development and debugging techniques, control structures, data types, functions, one-dimensional arrays, and file processing. Using a computer, students complete required lab assignments. Students with no prior technical background are highly recommended to also take CMSC 110. *Assessment Level(s): ELAI 990 or ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

CMSC 141 Intermediate Programming
Designed for students with prior programming experience. This course covers topics such as control structures, data types, functions/methods, arrays, and introduction to objects. PREREQUISITE(S): *A grade of C or better in CMSC 140 or consent of department. One hour each week.*

1 semester hour

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CMSC 201 Java Programming Language CE
Comprehensively covers Java programming environment and features. Topics include techniques of program structure, design, and type. Using the Java language, students code, load, execute, debug, and document programs. PREREQUISITE(S): *A grade of C or better in CMSC 140 or consent of department. Three hours each week.*

3 semester hours

CMSC 203 Computer Science I
Fundamental computer concepts. Studies methods of object-oriented program development and design. The course also covers language systems and semantics, structured program verification, different language paradigms, and documentation techniques. Students use a structured, high-level object-oriented programming language and learn to use both text-oriented and Windows-based user interfaces. Designing and implementing solutions to intermediate-level programming assignments are an integral part of the course. PREREQUISITE(S): *A grade of C or better in CMSC 140 or consent of department.* PRE- or COREQUISITE(S): *MATH 181. Four hours each week.*

4 semester hours

CMSC 204 Computer Science II
Builds on concepts introduced in CMSC 203, emphasizing writing larger programs and designing and implementing classical abstract data types such as list, stack, queue, binary search tree, graph, priority queue, hash table. Topics include string processing and recursion; data abstraction, encapsulation, and structure implementation; object-oriented program design; specification, implementation and application of these traditional ADTs. The course also emphasizes dynamic memory allocation, search and sorting algorithms, and introduces algorithm complexity. Designing and implementing advanced-level programming assignments are an integral part of the course. PREREQUISITE(S): *A grade of C or better in both MATH 181 and CMSC 203. Four hours each week.*

4 semester hours

CMSC 206 Python Programming
Comprehensively covers Python programming environment and features. Topics include fundamental programming concepts such as variables, data types, assignments, arrays, conditionals, loops, functions, and I/O operations using Python. Using the Python language, students code, load, execute, debug, and document programs. Students develop computational thinking skills and an understanding of the role of software programming in the larger social and organizational context. PREREQUISITE(S): *A grade of C or better in CMSC 140 or DATA 101 or DATA 110 or consent of department. Four hours each week.*

4 semester hours

CMSC 207 Introduction to Discrete Structures
MATH 207

An introduction to discrete structures as they relate to computer science. The course will stress computer science applications and will include relations, functions and algorithms, Naive Set Theory, combinatorics, logic, and mathematical induction. PREREQUISITE(S): *ENGL 101/ ENGL 101A, or appropriate score on English assessment test, and a grade of C or higher in MATH 182. Four hours each week.*

4 semester hours

CMSC 214 Advanced Java Programming
Explores Java Application Program Interface (API) and covers the latest release of Java including input and output, multithreading, networking, database connectivity, security, and Java Foundation Classes. Covers topics such as lists, searching and sorting, sets, stacks, queues, trees and an introduction to analyses of algorithm time. PREREQUISITE(S): *A grade of C or better in CMSC 201 or consent of department. Three hours each week.*

3 semester hours

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CMSC 216 Introduction to Computer Systems
Conveys the fundamental concepts that enable programs to execute on real hardware. These include how the operating system virtualizes the hardware to provide services and abstractions to allow a user program to effectively use available resources. The course also addresses how different programming constructs work at a low level. The basic abstraction of a program running as one or more threads of control in a single flat address space (a UNIX process), and emphasizing it as the model for understanding how a program works, from both the user program and hardware perspective (with the operating system in between), is a theme throughout the course. PREREQUISITE(S): *A grade of C or better in CMSC 204 and MATH 182. Four hours each week.*

4 semester hours

CMSC 220 Client-Server Programming with Java
Examines major topics in the development of applications for the World Wide Web: website development using HTML and related standards, implementation of client-side applications using Java programming language, and design of server-side web applications. PREREQUISITE(S): *CMSC 201 or consent of department. Three hours each week.*

3 semester hours

CMSC 222 Visual Programming
Concerns with writing programs for the Windows programming environment, including developing an application, tools, forms, the user interface, programming, built-in functions, procedures, arrays, records, testing, and debugging. Emphasis is on rapid development of useful applications. PREREQUISITE(S): *A grade of C or better in CMSC 140 or consent of department. Three hours each week.*

3 semester hours

CMSC 224 Developing Web Applications Using C# and ASP.NET
Examines developing web applications using C# and ASP.NET, and introduces web services. Students create applications using tools such as web Forms, Visual Studio.NET, ASP.NET, and ADO.NET. Students also optimize applications using configuration, security, and caching. PREREQUISITE(S): *CMSC 140 or consent of department. Three hours each week.*

3 semester hours

CMSC 226 Introduction to Object-Oriented Programming with C++
This course introduces students to C++ syntax and programming techniques such as decisions, loops, arrays, pointers, functions, and file processing. Covers object-oriented concepts such as data abstraction, classes, objects, overloading, and inheritance. Students complete required computer lab assignments. PREREQUISITE(S): *A grade of C or better in CMSC 140 or consent of department. Three hours each week.*

3 semester hours

CMSC 230 Advanced Object-Oriented Programming with C++
Examines more advanced topics in object-oriented programming with C++ such as dynamic memory allocation, various data structures, recursion, and object-oriented design. Students are required to complete lab assignments using a computer. PREREQUISITE(S): *A grade of C or better in CMSC 226 or consent of department. Three hours each week.*

3 semester hours

CMSC 234 Mobile Game and Application Programming
Focuses on building computer applications and games that can run on mobile devices supporting Java language and other technologies. Content includes an overview of mobile development, design user interface for mobile devices, data storage and operations, animation, sound, Internet connectivity, and other topics related to the mobile programming. PREREQUISITE(S): *CMSC 201 or consent of department. Three hours each week.*

3 semester hours

CMSC 240 Advanced Mobile App and Game Development
Covers advanced mobile programming topics for various mobile devices. Content includes design, coding, testing, debugging, and documenting programs using integrated development platform and other appropriate tools. Introduces cross platform mobile development environment tools and compares and contrasts responsive Web Applications versus native mobile applications. PREREQUISITE(S): *A grade of C or better in CMSC 234 or consent of department. Three hours each week.*

3 semester hours

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CMSC 243 Systems Analysis and Design
Exploration of the nature of systems work including studies, analysis, design, implementation, and evaluation. Introduction to the tools used in and techniques applied to systems development. A practical approach is emphasized and a systems study is expected of each student. PREREQUISITE(S): *CMSC 110 or consent of department. Three hours each week.*

3 semester hours

CMSC 246 Introduction to SQL Using Oracle
Covers the concept, design, architecture, and components of the Oracle database system and SQL (Standard Query Language). Topics include the database design, the data definition language, the data manipulation language, the data control language, the basics of SQL*PLUS, and the standard SQL. Students create database tables, implement business requirements utilizing constraints, and develop complex queries using features such as join, union, and subqueries. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

CMSC 250 UNIX/LINUX Operating System
Presents an overview of the components, structure, and features of the UNIX operating system. Students experience hands-on operation of the interrelating UNIX operating system components. Projects of moderate difficulty reinforce concepts. PREREQUISITE(S): *A grade of C or better in CMSC 140 or consent of department. Three hours each week.*

3 semester hours

CMSC 253 UNIX/LINUX System Administration
Introduction to concepts, procedures, tasks, and utilities of UNIX/LINUX system administration. Topics include UNIX/LINUX system architecture, user administration, process management, software installation and management, hierarchy, creation, and management of file systems, device configuration and management, as well as networking fundamentals. PREREQUISITE(S): *CMSC 110 or NWIT 127, or consent of department. Four hours each week.*

4 semester hours

CMSC 260 Computer Security
Surveys major topics in assessment and development of security procedures for a variety of computer systems. The course emphasizes security needs, risk assessment, and practical measures for security management. Topics include Internet and web security, LAN security, protection of personal computers, physical security, hardware and software protection and products, virus countermeasures, and the human aspects of computer security. PREREQUISITE(S): *CMSC 110 or consent of department. Three hours each week.*

3 semester hours

CMSC 266 Programming for Digital Devices
Focuses on new programming and problem solving techniques for digital devices. Students learn how to write simple to intermediate-level programs that examine, control, and integrate digital devices. Tasks include automate searching, interpretation, extraction, bookmarking, and external reporting of data encountered during the examination of computer systems. PREREQUISITE(S): *CMSC 135 or CMSC 140 or consent of department. Three hours each week.*

3 semester hours

CMSC 269 Computer Science and Technologies Internship
(Also listed as CMAP 269. Credit cannot be received for both CMAP 269 and CMSC 269 .)

Students work for college credit in a professional environment related to their particular track in the computer science and technologies program. The intent is to give students an appropriate work experience that will expand their knowledge and aid them in making career decisions. A limited number of internships are available through the program each semester, or the student may propose an internship. A comprehensive record of the work experience is kept by the student and discussed in seminar meetings. PREREQUISITE(S): *Consent of internship coordinator and a minimum of 12 semester hours in program area. An internship will involve a minimum of five hours of work experience per semester hour each week for 15 weeks. Eight hours of seminar discussions each semester.*

1-4 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

CMSC 299 Special Topics in Computer Science and Technologies

These courses focus on varied topics in computer science and technologies, presented as a result of technological change or community or student interest, that include a variety of computer-related skills or intensive study in a specific area of computer science and technologies. Topics are announced each semester in the class schedule. Course may be repeated for different topics. PREREQUISITE(S): *Depends on topic. Assessment Level(s): Depends on topic. Minimum of 15 hours of instruction for each credit hour.*

1-3 semester hours

COED - Cooperative Education

COED 260 Cooperative Education I

Provides a supervised work experience to help the student develop good work habits, attitudes, and career exploration skills. Student, instructor, and employer cooperatively develop a minimum of three learning objectives that the student must complete. The student will attend three seminars and complete a minimum of 75 hours of approved work experience per semester hour. PREREQUISITE(S): *A grade point average of 2.0, 12 semester hours of college coursework, 6 semester hours in the student's curriculum, and approval from the director of cooperative education.*

1-3 semester hours

COED 261 Cooperative Education II

Provides a supervised work experience to enhance a student's college education by providing the student with desirable work habits, attitudes, and further career exploration. Student, instructor, and employer cooperatively develop a minimum of three learning objectives that the student must complete. The student will attend three seminars and complete a minimum of 75 hours of approved work experience per semester hour. PREREQUISITE(S): *A grade point average of 2.0, 18 semester hours of coursework in the student's curriculum, a grade of C or better in COED 260, and approval from the director of cooperative education.*

1-3 semester hours

COMM - Communication Studies

COMM 108 Foundations of Human Communication (HUMD, GEIR, GEEL)

A survey course that covers communication theory and develops communication skills for personal and professional relationships in interpersonal, group, and public settings. Course content includes practice in the application of the principles of listening, verbal and nonverbal communication, group dynamics, and public speaking. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

COMM 109 Voice and Diction CE-TP/SS

The skills of voice and diction studied through an analysis of the individual's voice quality, articulation, pronunciation, and enunciation. Drills and exercises stressed. *Assessment Level(s): ELAR 980/IERW 002. Three hours lecture, two hours laboratory each week.*

3 semester hours

COMM 112 Business and Professional Speech Communication (HUMD, GEIR, GEEL)

A study of communication theory as applied to business and organizational environments. Emphasis on development of effective communication skills for professional situations including team building, interviewing, public speaking, and accommodating diverse perspectives. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

COMM 121 Public Speaking

Instruction and experience in preparation and delivery of speeches within a public setting. This course has an emphasis on research, preparation, delivery, and evaluation methods of informative, persuasive, demonstration, and special occasion speeches. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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COMM 204 Interpersonal Communication
Designed to increase understanding of personal communication behaviors, establish potential for improved communication capabilities, develop an effective sense of self in human encounters, and strengthen personal identity and social involvement through personal communication. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

COMM 220 Small Group Communication
An introduction to the principles and stages of small group communication, including problem solving, decision making, leadership, norms, member roles, and conflict resolution. Students will work extensively in groups to test theories, practice skills, and gain competency. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

COMM 225 Intercultural Communication
An introduction to the fundamental topics, theories, concepts, and themes at the center of the study of intercultural communication. The course defines and identifies different cultures at work in society and facilitates effective verbal and nonverbal communication across and between different cultures. *Assessment Level(s): ENGL 101/ENGL 011.*

3 semester hours

COMM 230 Introduction to Public Relations
Familiarize students with the basic concepts and principles of public relations. Designed to give students hands-on experience in public relations on campus, with external organizations, and with social media. This class is a supplemental course for students majoring in communication. PREREQUISITE(S): *COMM 108 or COMM 112. Three hours each week.*

3 semester hours

COMM 250 Introduction to Communication Inquiry and Theory
An introduction to the field of communication. Definitions, models, and contexts of communication are examined. Students are introduced to the research process in the field of communication and learn how the process relates to the development of communication theory. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

COMM 251 Introduction to Journalism
An introduction to the fundamentals of journalism and mass communication, including advertising and public relations. The course will look at the changing industry and career trends. The course explores media literacy and communications theories through print and electronic media. Writing focuses on generally accepted news writing principles. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

COMM 252 News Writing
Develops writing skills for news and news-feature stories. Students will work on all elements of writing news and feature stories for print and online delivery. Students will learn writing, reporting, interviewing and copyediting techniques for accuracy and readability in stories. Students will also study non-text elements, such as photos, videos, and other graphics related to news and news-feature stories both print and online. PREREQUISITE(S): *A grade of C or better in ENGL 101 or COMM 108, or consent of department. Three hours each week.*

3 semester hours

DANC - Dance

DANC 100 Introduction to Dance (R and TP/SS only) (ARTD, GEIR, GEEL, GCP)
An examination of dance as an art form and means of multicultural expression, ritual, and tradition. This course familiarizes the student with practices, philosophies, terminologies, styles of dance and careers in dance. The role of dance in world societies and how it relates to different cultures is explored through lectures, assigned readings, films, recordings, and experiential dance activities. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

DANC 101 Ballet I (R and TP/SS only)
An introduction to fundamental exercises, techniques, and steps of classical ballet. Basic ballet terminology, correct body alignment, and simple adagio and allegro combinations are introduced in barre and center work. *One hour lecture, two hours laboratory each week.*

2 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

DANC 102 Ballet II (R only)
Further study of classical ballet as offered in DANC 101. Emphasis on developing an aesthetic awareness of the art, understanding ballet theory, and perfecting technique. Review of basic exercises and terminology. Pirouettes and petite batterie are introduced. PREREQUISITE(S): *DANC 101 or consent of department. One hour lecture, four hours laboratory each week.*

3 semester hours

DANC 103 Modern Dance I (R and TP/SS only)
An introduction to fundamental exercises, techniques, and movement phrases of modern dance. Basic modern dance principles are introduced in axial and locomotor exercises and basic improvisation skills. Modern dance innovators and their styles are discussed. *One hour lecture, two hours laboratory each week.*

2 semester hours

DANC 104 Modern Dance II (R only)
Further study of modern dance as offered in DANC 103. Includes an understanding of contemporary dance as a creative art form, perfecting technique, developing improvisational skills, experimenting with creative movement studies, and analyzing rhythmic patterns. Review of basic exercises and terminology. PREREQUISITE(S): *DANC 103 or consent of department. One hour lecture, four hours laboratory each week.*

3 semester hours

DANC 105 Jazz Dance I (R and TP/SS only)
An introduction to fundamental jazz exercises, techniques, and styles. Basic jazz dance principles are introduced, including body isolations, flexibility exercises, and movement phrases. *One hour lecture, two hours laboratory each week.*

2 semester hours

DANC 106 Jazz Dance II (R only)
Further study of jazz dance as offered in DANC 105. Emphasis on perfecting technique, creating advanced-beginning jazz compositions, and developing a more in-depth understanding of the essence and components of jazz dance. Emphasis is placed on advanced-beginning steps and terminology, including double turns, body isolations, and elevation steps. PREREQUISITE(S): *DANC 105 or consent of dance program coordinator. One hour lecture, four hours laboratory each week.*

3 semester hours

DANC 107 Tap Dance I (R and TP/SS only)
An introduction to basic tap techniques, exercises, movements, and improvisational skills. A variety of rhythmic patterns and fundamental steps such as shuffles, ball changes, heel drops, time steps, flaps, and beginning turns are introduced. Tap dance history and styles will be discussed. *One hour lecture, two hours laboratory each week.*

2 semester hours

DANC 201 Ballet III (R only)
The development and execution of classical ballet technique on an intermediate level. Concentration is on body alignment, technical accuracy, increased movement vocabulary, and performance quality. Pirouettes, petite batterie, and petit and grand allegro are stressed. PREREQUISITE(S): *DANC 102 or consent of department. One hour lecture, four hours laboratory each week.*

3 semester hours

DANC 203 Modern Dance III (R only)
The study of contemporary modern dance on an intermediate level. Correct body alignment, development of technique, and efficient use of the body through movement are stressed. Various falls, turns, and contractions are studied. Elements of time, flow, weight, space, and varied rhythmic structures are incorporated into movement phrases. Improvisational skills are employed. PREREQUISITE(S): *DANC 104 or consent of department. One hour lecture, four hours laboratory each week.*

3 semester hours

DANC 204 Modern Dance IV (R only)
A progression of contemporary dance as presented in DANC 203. Emphasis is on more complex movement phrases. Individual expression, musicality, style, and performance are stressed. Improvisational skills are employed. PREREQUISITE(S): *DANC 203 or consent of department. One hour lecture, four hours laboratory each week.*

3 semester hours

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DANC 205 Jazz Dance III (R only)
The study of jazz dance on an intermediate level. Proficient technique, correct body alignment, and performance are stressed. Jazz isolations, triple turns, rhythmic sequences, and slides are studied in addition to high elevation steps. PREREQUISITE(S): *DANC 106 or consent of dance program coordinator. One hour lecture, four hours laboratory each week.*

3 semester hours

DANC 270 Special Topics in Dance (R only)
Topics in dance presented as a result of community or student interest, to include a variety of dance-related skills or intensive study in a specific area. Topics to be announced each semester in the class schedule. PREREQUISITE(S): *Consent of dance program coordinator and/or department chair. Assessment Level(s): ENGL 101/ENGL 011. One hour lecture, four hours laboratory each week.*

3 semester hours

DANC 280 Special Dance Practicum (R only)
Offered on an individual basis to dance majors with advanced standing. Students may extend their studies by exploration of a particular specialization within the curriculum. PREREQUISITE(S): *Consent of department. Assessment Level(s): ENGL 101/ENGL 011, or consent of department. One hour lecture, four hours laboratory each week.*

3 semester hours

DATA - Data Science

DATA 101 Introduction to Data Science
Fundamental coursework on the standards and practices for collecting, organizing, managing, exploring, and using data. Topics include preparation, analysis, and visualization of data and creating analysis tools for larger data sets. PREREQUISITE(S): *A grade of C or better in MATH 117, MATH 217, BSAD 210 or consent of department. Three hours each week.*

3 semester hours

DATA 110 Data Visualization and Communication
Emphasis on data visualization and communication skills for professional situations including effective quantitative summary and public speaking. Preparing and producing data visualizations, presentations, and technical documents for specific audiences and analyses for general audiences. PREREQUISITE(S): *A grade of C or better in MATH 117/MATH 117A, MATH 217, BSAD 210 or consent of department. Three hours each week.*

3 semester hours

DATA 201 Statistical Methods in Data Science
Statistical concepts and applications related to data science including advanced exploratory data analysis, nonparametric inference and simulation for larger datasets, logistic regression modeling, statistical programming, and basics of machine learning. PREREQUISITE(S): *A grade of C or better in DATA 101 or consent of department. Three hours each week.*

3 semester hours

DATA 205 Capstone Experience in Data Science
A comprehensive, project-based course where Montgomery College and its partners in industry, science, and government work alongside faculty and students providing expertise, guidance, and real data. Course includes topics in advanced data mining, data ethics, and reproducible research. PREREQUISITE(S): *A grade of C or better in DATA 110 or consent of department.* PRE- or COREQUISITE(S): *DATA 201. Four hours each week.*

4 semester hours

ECON - Economics

ECON 105 Basic Economics (BSSD, GEEL, GCP) CE-R
Economics is the study of how individuals and societies use limited resources to achieve their goals. Economics can help students understand human behavior and make better decisions throughout their lives. This course is a one-semester introduction to macroeconomics and microeconomics for non-business and non-economics majors. A broad range of basic economic concepts will be covered. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

ECON 201 Principles of Economics I (BSSD, GEEL) CE-R

Covers macroeconomics - the study of the economy as a whole. Macroeconomics can help students make personal and business decisions and assess public policy issues throughout their lives. Topics include: supply and demand, national income and product, unemployment, inflation, aggregate supply and demand, economic growth and development, money and banking, monetary and fiscal policy, international trade, and economic systems. PREREQUISITE(S): *High school algebra or its equivalent or consent of department. Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

ECON 202 Principles of Economics II (BSSD, GEEL) CE-R

Covers microeconomics- the study of how individuals, businesses, and governments make choices about limited resources to achieve their goals. Microeconomics can help students make personal and business decisions and assess public policy issues throughout their lives. Topics include supply and demand, elasticity, government controls, market failure, production, business costs, profit maximization, and market structures. PREREQUISITE(S): *High school algebra or its equivalent or consent of department. Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

EDUC - Education

EDUC 101 Foundations of Education

An introductory course exploring the historical, legal, philosophical, social, and practical aspects of American education. Students evaluate current educational trends, issues, and practices. They also explore teaching as a career and other career opportunities in contemporary education. PRE- or COREQUISITE(S): *ENGL 101/ENGL 101A. Three hours each week.*

3 semester hours

EDUC 102 Field Experience in Education

Provides a structured field-based experience for students to observe teachers and students in local public schools. Applying concepts learned in EDUC 101 or PHED 201, students reflect on the teaching and learning process. Experiences in small group and individual instruction provide a transition from theory to practice. Attendance at on-campus and school site orientations required before beginning observations. PRE- or COREQUISITE(S): *EDUC 101 or PHED 201. Five hours lecture and thirty hours practicum each semester.*

1 semester hour

EDUC 105 Step 1: Inquiry Approaches to STEM Teaching

A first exploration into mathematics and science teaching as a career. Following an introduction to the theory and practice behind excellent inquiry-based science and mathematics instruction, students observe master teachers leading a science or mathematics lesson in local elementary classrooms and then obtain firsthand experience with planning and implementing their own inquiry-based lesson. This course does not fulfill any requirements for the AAT degrees. *Assessment Level(s): ENGL 101/ENGL 011 or ELAI 990, ELAR 980, MATH 165 or higher or consent of department. A minimum of 30 hours, of 50 minutes each of supervised laboratory.*

1 semester hour

EDUC 115 Child Health, Safety, and Nutrition

Examines the health, safety, and nutritional needs of young children. Emphasizes common childhood illnesses and chronic conditions, health assessment tools and effective control measures; emergency care and first aid, safety management and practices; nutritional guidelines and activities. Offers opportunities for students to develop a curriculum that enhances children's education on health, safety, and nutrition. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

EDUC 119 Introduction to Early Childhood Education

Covers curriculum modes, a teacher's roles, and family relationships. Topics include historical development, significant issues, current trends, ethics, and national standards in early childhood education. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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EDUC 135 Child Growth and Development CE
Provides students with the principles of child growth and development necessary to work in programs serving children from infancy through age eight. It emphasizes the physical, intellectual, emotional, and social development of children and their implications for developmentally appropriate teaching practices in educational settings. Attention is given to observation methods and their application in the completion of a case study of one child in a classroom environment. Students who pass the course with the final grade of "C" or better will receive 45 of the 90 classroom hours needed to become senior staff in programs licensed by the Office of Child Care Licensing and Regulations. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

EDUC 136 Curriculum Planning in Early Childhood Education CE
Provides the student with an overview of the principles of developmentally appropriate curriculum planning for programs serving children from infancy and pre-K through age five. Specifically, this course emphasizes activity planning, teaching methods, material selection, assessment techniques, and classroom management appropriate for use in early childhood programs. Attention is also given to staff and parent communication and community resources. Students who pass the course with the final grade of "C" or better will receive 45 of the 90 classroom hours needed to become senior staff in programs licensed by the Office of Child Care Licensing and Regulation. 15 hours of documented field experience in a birth-through five or pre-K program are required. PREREQUISITE(S): *EDUC 135 or consent of department. Three hours lecture/discussion each week.*

3 semester hours

EDUC 153 Infant and Toddler Development and Curriculum Planning
Introduces the theory and practice of caring for infants and toddlers in a group setting. Topics include the significance of the early years; learning and development of infants and toddlers; socio-physical environment of group care setting; appropriate activities and interactions; and health, safety, and nutritional needs of infants and toddlers. Upon completion of this course, the student meets the coursework requirement for the position of infant/toddler senior staff in a child care center. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

EDUC 154 School-Age Child Care
Covers necessary elements for providing before-and-after-school programs serving children ages five to 13; quality, standards, and care issues; the growth and development of five- through 13- yearolds; teachers' roles and qualifications; working with families and communities. Topics also include activity planning, environment designing, scheduling, building relationships with children, guiding children's behavior, and caring for children with special needs. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

EDUC 170 First Start: Care of Infants and Toddlers with Disabilities
Provides an overview of a variety of disabling conditions and chronic illnesses that can afflict infants and toddlers. Students will learn about the care needs of these children, legal issues, parental issues, and child and family advocacy. This course will include sessions with health and education professionals from the community who specialize in specific disabling conditions. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

EDUC 180 Children's Literature
A survey of a variety of significant and exemplary children's literature for preschool through elementary school, with the emphasis on the evaluation and presentation of children's literature. The course offers opportunities for the student to develop activity plans that enhance children's language development and early literacy. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

EDUC 201 Introduction to Special Education
Covers psychological, sociological, and medical characteristics of the exceptional learner: mental retardation, learning disabilities, emotional or behavioral disorders, communication disorders, hearing impairments, visual impairment, physical disabilities, and giftedness. Topics also include classroom practices, current issues and trends, history and legal aspects, multicultural and bilingual implications. PREREQUISITE(S): *EDUC 101/EDUC 102, EDUC 135, or PSYC 215. Three hours each week.*

3 semester hours

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EDUC 202 Field Experience in Special Education
Provides a structured field-based experience for students to observe teachers and students in special education setting in local public schools. Applying concepts learned in EDUC 201, students reflect on teaching and learning with diverse student populations. Experiences in a small group and individual instruction provide a transition from theory to practice. Attendance at on-campus and school site orientations required before beginning observations. PRE- or COREQUISITE(S): *EDUC 201. Five hours lecture and thirty hours practicum each semester.*

1 semester hour

EDUC 208 Observation and Assessment of Young Children
Provides students with a broad set of observation and assessment tools and approaches. Covers guidelines and procedures of observation, documentation, and assessment. Emphasis is on analyzing and interpreting assessment results to enhance children's learning outcomes. Establishing partnerships with families and other professionals will be discussed. Students are required to do 15 hours of field experience. PRE- or COREQUISITE(S): *EDUC 136. Three hours each week.*

3 semester hours

EDUC 210 Curriculum Seminar-Science and Mathematics for Young Children
Science and mathematics concepts appropriate to the developmental levels of young children will be presented and analyzed. The student will develop curriculum activities and test these activities with young children to determine their usefulness in promoting logical thinking through interaction with concrete materials. PREREQUISITE(S): *EDUC 136. Two hours each week.*

2 semester hours

EDUC 224 Social-Emotional Development in Young Children
Enables the student to comprehend the process by which children develop social and emotional competence. The focus will be on the principles and techniques of a developmentally appropriate guidance approach, the role of adults and community in a child's social and emotional development, activity planning, and the ethical standards of the National Association for the Education of Young Children (NAEYC). PREREQUISITE(S): *EDUC 136. Three hours each week.*

3 semester hours

EDUC 227 Administering Early Childhood Programs
Designed to provide students with management skills necessary to operate an early childhood center or school that serves children from infancy through age eight. Topics include program policies and procedures, government regulations, finance and budget, facility operation, personnel management, health and safety, accreditation systems, and program evaluation and improvement. PREREQUISITE(S): *EDUC 136 or its equivalent. Three hours each week.*

3 semester hours

EDUC 233 Practicum in Early Childhood Education
Experience in working with young children in a naturalistic setting; learning to identify children's learning interests and to adapt curriculum to children's needs; planning and implementing large and small group activities; practicing effective communication skills and class management skills; and evaluating a quality child care program. PREREQUISITE(S): *EDUC 136. Fifteen hours lecture and 90 hours practicum.*

3 semester hours

EDUC 243 Processes and Acquisition of Literacy
Designed to provide teacher candidates and in-service teachers with the foundations related to literacy processes and acquisition. Effective literacy teaching begins with a deep understanding of the component processes associated with reading and writing and the ways that students develop into skilled and motivated readers and writers. The course is organized along five major themes: the component processes involved in reading and writing; the nature and structure of the English language; the ways that native English speakers and English learners differ in the ways they read and write; the developmental phases associated with learning to read and write for native English speakers and English learners, and the many factors that influence literacy development. Where appropriate, students in this course will also explore how to assess literacy processes and acquisition. PREREQUISITE(S): *A grade of C or better in EDUC 201, or consent of department. Three hours each week.*

3 semester hours

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EDUC 244 Instruction in Literacy
Designed to prepare teacher candidates and in-service teachers with the knowledge and skills to design and deliver effective literacy instruction for a diverse community of learners. Content will focus on the core components of reading that lead to proficient and motivated reading behavior for all students, provide instruction focused on the core components of writing that lead to proficient and motivated writing behavior for all students, and manage speaking and listening opportunities that lead to more active, equitable and academically oriented conversations for all students. In addition, participants will understand the role of classroom literacy instruction in a multi-tiered system of support and learn how to work with a myriad of stakeholders to provide evidence-based interventions for students who struggle as readers and writers. PREREQUISITE(S): *EDUC 243 or consent of department. Three hours lecture/discussion each week.*

3 semester hours

EDUC 245 Materials for Teaching Literacy
Designed to assist teacher candidates and in-service teachers in selecting, developing, and evaluating materials for teaching reading, writing and related skills. Learners will explore characteristics of effective literacy programming and instruction, use scientifically valid frameworks and evidenced-based criteria to select and organize print and multimedia resources for teaching reading and writing to all children, learn how to use a variety of print and multimedia/ multimodal resources to engage students as readers and writers, and examine how best to provide culturally responsive literacy instruction that promotes all students' cultural competence through inclusive and equitable literacy learning opportunities. PREREQUISITE(S): *EDUC 243 or consent of department. Three hours lecture/discussion each week.*

3 semester hours

EDUC 246 Assessment of Literacy
Designed to assist teacher candidates and in-service teachers in becoming proficient consumers and users of classroom-based assessment and assessment data. Participants will explore the purposes of assessments and types of assessment tools, learn how to administer and use valid and reliable, formal and informal assessments of literacy and related skills, examine how to effectively interpret the results of assessments, and learn how to communicate assessment results in a variety of contexts. Additionally, students will engage in comprehending the utility of qualitative and quantitative data in a myriad of contexts to inform instructional decisions and designs. PREREQUISITE(S): *EDUC 243 or consent of department. Three hours lecture/ discussion each week.*

3 semester hours

EDUC 256 Principles of Educational Assessment
This course is an introduction to tests and measurement in an educational setting. Students develop, use, and interpret classroom assessments, including tests, performance assessments, rating scales, portfolios, and observations. Basic standard setting, grading, testing ethics, locating and evaluating measurements, program evaluation, and classroom research are also presented. This course meets the Maryland State Department of Education (MSDE) Assessment for Students requirement for an initial certificate in Early Childhood Education, Elementary Education, and Secondary Education. This course also meets the MSDE Assessment, Diagnosis, and Prescriptive Techniques required for the initial certificate in Generic Special Education (Infant/ Primary), Generic Special Education (Elementary/ Middle), and Generic Special Education (Secondary/ Adult). *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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EDUC 260 Methods of Teaching for Elementary Education

Provides an overview of teaching methodology for effective instruction in elementary classrooms. Opportunities will be provided for planning and practicing instruction based on a knowledge of the theory and research supporting the strategies and models used. Emphasis will be on developing the habit of reflective practice and fostering collaborative problem solving. This course meets the Maryland State Department of Education Teaching Methodology requirement for an initial certificate in Elementary Education. This course does not fulfill any requirements for the A.A.T. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

EDUC 265 Methods of Teaching Secondary Students

This course provides an overview of teaching methodology for effective instruction for prospective and noncertified secondary teachers. Students plan, design, and conduct instruction. Topics include theory and practices, research-based instructional models, multiculturalism, classroom management, and inclusion of students with special needs. This course meets the Maryland State Department of Education Teaching Methodology requirement for an initial certificate in Secondary Education. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ELAI - English Language Academic Integrated Skills

ELAI 990 English Language Advanced Integrated Skills

An advanced integrated skills course in Academic American English for non- native speakers of English. Emphasis on reading and aural comprehension of academic input and appropriate use of academic English in writing expository essays and short responses to readings and lectures. PREREQUISITE(S): *ELAW 980, ELAR 980, and ELAS 980 with a grade of C or better or AELW 930 with a grade of C or better and AELR 930 and AELS 920 with a grade of D or better or placement by testing required by the college for non-native speakers of English. Six hours each week.*

6 semester hours

ELAR - English Language Academic Reading

ELAR 970 English Language Academic Reading I

The first required course in a sequence of two courses designed to teach academic reading of American English. Emphasis on intermediate college skills required for success in content courses, including vocabulary development, critical thinking, paragraph and essay comprehension, textbook and media analysis, test- and note-taking, and dictionary use. Additional laboratory required. PREREQUISITE(S): *AELR 910 with a grade of C or better or placement by testing required by the College of non-native speakers of English. Five hours each week.*

5 semester hours

ELAR 980 English Language Academic Reading II

The second required course in academic reading for non-native speakers of students continues the teaching of academic reading of American English presented in the preceding course. Emphasis on the advanced college skills required for success in content courses, including college-level paragraph and essay comprehension, critical reading, textbook and media analysis, and rhetorical patterns. Additional laboratory required. PREREQUISITE(S): *ELAR 970 or AELR 920 with a grade of C or better or placement by testing required by the College of non-native speakers of English. Five hours each week.*

5 semester hours

ELAS - English Language Academic Speaking/ Listening

ELAS 970 English Language Academic Speaking/ Listening I

An introductory course designed to enhance the speaking and listening skills of non-native English speakers. Emphasis is on pronunciation, stress, rhythm, and intonation patterns of American English. Oral communication, listening comprehension, and vocabulary development are stressed. Students build their skills through instruction and intensive practice. Additional laboratory required. PREREQUISITE(S): *Placement by testing required by the College for non-native speakers of English. Five hours each week.*

5 semester hours

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ELAS 980 English Language Academic Speaking/ Listening II

Emphasizes the development and use of language skills necessary for understanding others and expressing oneself orally in American English in academic, professional, and social contexts. The course includes vocabulary development, practice with appropriate language structures, and discussion of important aspects of cross-cultural communication. Additional laboratory required. PREREQUISITE(S): *ELAS 970 or AELS 910 with a grade of C or better or placement by testing required by the College of non-native speakers of English.* PRE- or COREQUISITE(S): *ELAR 970, ELAW 970, or placement by testing required by the College for non-native speakers of English. Five hours each week.*

5 semester hours

ELAW - English Language Academic Writing

ELAW 970 English Language Academic Writing I

The first course for ELAP students in a sequence of two courses designed to teach academic writing of American English. Emphasis on appropriate use of a variety of sentence structures, complex verb forms, modifiers, and punctuation, and to produce content based paragraphs in and out of class. Additional laboratory required. PREREQUISITE(S): *AELW 910 with a grade of C or better or placement by testing required by the College of non-native speakers of English. Five hours each week.*

5 semester hours

ELAW 980 English Language Academic Writing II

The second course in a sequence of two courses designed to teach academic writing of American English to non-native speakers of English. Emphasis on appropriate use of a variety of sentence structures, complex verb forms, modifiers, and punctuation, and ability to produce content based and expository multi-paragraph compositions in and out of class and short responses to academic readings. Additional laboratory required. PREREQUISITE(S): *ELAW 970 or AELW 970 with a grade of C or better or placement by testing required by the College of non-native speakers of English. Five hours each week.*

5 semester hours

EMGT - Emergency Preparedness Management

EMGT 101 Principles of Emergency Management

This course introduces students to the field of emergency management. Emphasis is on the role, duties, and importance of the Emergency Manager and how various emergency management services (fire personnel, police, security, healthcare providers, etc.) work together in a system of resources and capabilities. It includes the role of national, regional, and local services in a variety of disasters. *Assessment Level(s): ENGL 101 / ENGL 011. Three hours each week.*

3 semester hours

EMGT 103 Emergency Response and Recovery CE

Examines the necessary components required for incident response and recovery. The course will emphasize the role of human services organizations in providing assistance to people and communities affected by disasters in the immediate aftermath and for long-term recovery, as well as the roles and responsibilities of local, state, and federal officials and public service, private sector, and voluntary organizations. PREREQUISITE(S): *EMGT 101 or consent of department. Three hours each week.*

3 semester hours

EMGT 104 Incident Management System and EOC Interface

Overview of incident command, its role in emergency management, and how incident command and the emergency operations center interface to manage an emergency situation. Includes organization and staffing, organizing for incidents and events, incident resource management, air operations, and incident planning. PREREQUISITE(S): *EMGT 101 or consent of department. Three hours each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

EMGT 105 Hazard Mitigation and Preparedness
Introduces the major principles involved in preparing for and mitigating the impacts of hazards in the context of emergency management. Examines the role of the federal, state, and local governments in developing and carrying out hazard mitigation and preparedness policies, as well as the role that the private sector can play in protecting economic vitality. Characteristics of various hazards, both natural and man-made, that can affect our communities are investigated. PREREQUISITE(S): *EMGT 101 or consent of department. Three hours each week.*

3 semester hours

EMGT 106 Technology in Emergency Management
Provides an introduction and overview of the application of technology in emergency management. Students learn how to utilize technology in the support of emergency preparedness, response, recovery, and mitigation efforts and the key elements that must be in place for technology to enhance the emergency management process. PREREQUISITE(S): *EMGT 101 or consent of department. Three hours each week.*

3 semester hours

EMGT 200 Emergency Planning CE
Introduces students to the process and practice of emergency planning. Examines the concepts of writing an emergency operating plan and the elements necessary for inclusion in the plan (all-risk hazard planning). PREREQUISITE(S): *EMGT 101. Three hours each week.*

3 semester hours

EMGT 206 Public Health Preparedness
Provides an overview of the foundations of public health preparedness and response. Course content includes emergencies such as natural disasters, infectious disease and terrorism; topics such as working with vulnerable populations and mental health in disasters, as well as the role of public health in local planning and response to natural, accidental and intentional emergency events. Course replaces EMGT 205; Students cannot receive credit for both EMGT 205 and EMGT 206. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

EMGT 210 Health Care Emergency Management
Provides students with fundamental knowledge of healthcare emergency management. This course is designed for personnel who are responsible for development, implementation, and administration of emergency management plans for hospitals, clinics, community health centers, and other healthcare organizations. Course provides an overview of healthcare-oriented emergency management planning processes. Topics include standards and regulations, hazard vulnerability assessments, emergency operations plans, communication strategies, managing resources and assets, staff roles and responsibilities, and managing patients during an emergency. PREREQUISITE(S): *EMGT 101 or consent of department. Three hours each week.*

3 semester hours

EMGT 230 Community Emergency Response Teams
Trains students to be better prepared to respond to emergency situations in their communities. This course provides the students with the skills required by the Federal Emergency Management Agency (FEMA) to serve as a Community Emergency Response Team (CERT) member within their community. Topics covered include: disaster preparedness, fire safety, medical operations, search and rescue, organization, communications, operations, personal readiness and equipment and terrorism recognition. *Assessment Level(s): ENGL 101 / ENGL 011, or consent of department. Three hours each week.*

3 semester hours

EMGT 240 Capstone Emergency Management
Capstone course that provides an introduction to leadership and organizational theory in the context of emergency management. Students will also complete an internship or project related to Emergency Management. PREREQUISITE(S): *EMGT 101 and consent of department. Three hours each week.*

3 semester hours

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ENEE - Electrical Engineering

ENEE 140 Introduction to Programming Concepts for Engineers
Principles of software development, high-level languages, input/output, data types and variables, operators and expressions, program selection, repetition, functions, arrays, strings, introduction to algorithms, software projects, debugging, and documentation. Programs will use the C language. PREREQUISITE(S): *MATH 165. Assessment Level(s): ENGL 101/ENGL 011. Two hours lecture, one hour laboratory each week.*

2 semester hours

ENEE 150 Intermediate Programming Concepts for Engineers
Intermediate principles of software development: high-level languages, object-oriented design, documentation, data structures, graphs, dynamic memory allocation, software development for applications in electrical and computer engineering, and software development in teams. Programs will use the C and Java languages. PREREQUISITE(S): *A grade of C or better in ENEE 140 or consent of instructor and MATH 181. Three hours lecture, one hour laboratory each week.*

3 semester hours

ENEE 207 Electric Circuits
Design, analysis, simulation, construction, and evaluation of electric circuits. Covers basic concepts of electrical engineering such as terminal relationships; applications of Kirchhoff's laws to simple resistive circuits; solution of resistor networks using mesh and node analysis and Thevenin and Norton's theorems; transient analysis of first and second-order circuits; DC and AC steady state analysis; frequency response and transfer functions; ideal op-amp circuits and diode and transistor circuits. PREREQUISITE(S): *PHYS 262.* PRE- or COREQUISITE(S): *MATH 282. Three hours lecture, two hour laboratory each week.*

4 semester hours

ENEE 222 Elements of Discrete Signal Analysis
Introduction to discrete-time and continuous-time signals. Topics covered include sampling, linear transformations, discrete Fourier Transform and its properties/applications, Fourier Series, and discrete-time linear filters and their applications. Example problems in the context of electrical engineering applications are solved using a variety of software tools, including structured programming and high-level computational packages such as Matlab. PREREQUISITE(S): *ENEE 140 or CMSC 140. Three hours lecture, two hours laboratory each week.*

4 semester hours

ENEE 244 Digital Logic Design (G and R only)
This course is designed to introduce sophomores in electrical engineering to basic principles and design procedures of digital systems at the gate and chip levels. PREREQUISITE(S): *ENES 100 or consent of department. Three hours each week.*

3 semester hours

ENEE 245 Digital Circuits and Systems Laboratory
Introduction to basic measurement techniques and electrical laboratory equipment such as design, construction, and characterization of digital circuits containing logic gates, sequential elements, oscillators, and digital integrated circuits; introduction to digital design and simulation with the Verilog Hardware Description Language (HDL). PREREQUISITE(S): *ENEE 244, PHYS 262.* PRE- or COREQUISITE(S): *ENEE 150 or CMSC 204. One hour lecture, three hour laboratory each week.*

2 semester hours

ENES - Engineering Science

ENES 100 Introduction to Engineering Design (NSND, GEEL)
Overview and application of the basic tools and techniques of engineering design and graphic communications, including CAD, engineering reports, cost analysis, and use of software tools. Group projects are assigned. *Assessment Level(s): ELAI 990 or ENGL 101/ENGL 011, MATH 165. Two hours lecture, two hours laboratory each week.*

3 semester hours

ENES 102 Statics
Introduction to statics of particles and rigid bodies, equivalent systems of forces and moments, and equilibrium of rigid bodies. Topics include distributed forces, analysis of trusses, frames and simple machines, friction, centroids, and moment of inertia. PREREQUISITE(S): *MATH 181 with a grade of C or better.* PRE- or COREQUISITE(S): *PHYS 161. Three hours each week.*

3 semester hours

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ENES 104 Introduction to Engineering Professions
An introduction to the profession of engineering; guidance in the study of engineering and the fields of engineering, ethical responsibilities of engineers, and engineering hands-on activities. The course will provide information useful for making decisions in engineering fields of study and careers. Ethical and legal aspects of the engineering profession will be discussed. Workshops for resume writing, participation in the engineering club, and field trips may be required. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. One and one-half hours lecture/seminar each week.*

1 semester hour

ENES 120 Biology for Engineers
Introduction to the functions and interactions of biological systems from a quantitative perspective. Topics including concepts in molecular and cellular biology, mechanisms of concepts in molecular and cellular biology, mechanisms of thermodynamics, genetics, gene expression and regulation. Introduction to the modern biological experimental techniques, methods of data analysis and biostatistics. An overview of role of bioengineers. Students are strongly recommended to have taken a college-level biology course. PREREQUISITE(S): *CHEM 132 or CHEM 135 with grade of C or better, and MATH 181 with a grade C or better. Three hours lecture / one hour discussion each week.*

3 semester hours

ENES 206 MATLAB for Engineers
Introduction to MATLAB and prepare students for subsequent courses requiring computation with MATLAB in engineering. It covers basics of MATLAB including simple commands, variables, vector, matrix, plotting, solving equations, differentiation, integration, differential equations and fundamentals of programming in the MATLAB environment. Examples will be given in the applications of physics and engineering. As examples will be given in physics or engineering, students are strongly recommended to have taken a physics course. PREREQUISITE(S): *MATH 182. One hour lecture, one hour laboratory each week.*

1 semester hour

ENES 220 Mechanics of Materials
Distortion of engineering materials in relation to changes in stress or temperature. Geometry of internal strain and external displacement. Elementary applications of beams, columns, shafts, tanks, trusses, and connections. PREREQUISITE(S): *A grade of C or better in ENES 102.* PRE- or COREQUISITE(S): *A grade C or better in MATH 182. Three hours each week.*

3 semester hours

ENES 221 Dynamics
Kinematics of particles, force, mass, and acceleration. Kinetics of particles, work and energy, impulse, and momentum. Kinematics of rigid bodies, plane motion of rigid bodies, forces and accelerations, energy, and momentum methods. Kinetics of rigid bodies in three dimensions. PREREQUISITE(S): *A grade of C or better in ENES 102, MATH 182, and PHYS 161. Three hours each week.*

3 semester hours

ENES 232 Thermodynamics
A study of the properties, characteristics, and fundamental equations of substances in the solid, liquid, and vapor states, as well as the basic laws of work and heat transfer. Application of the first and second laws of thermodynamics to the analysis of heat engines, refrigeration systems, gas mixtures, and reactions. PREREQUISITE(S): *PHYS 161 with a grade of C or better. Three hours each week.*

3 semester hours

ENES 240 Scientific and Engineering Computation
Course covers: elementary numerical analysis, roots of equations, systems of linear equations (Gaussian elimination, matrix diagonalization and inversion, iterative methods), interpolation and curve fitting, numerical integration, differential equations. Example problems in the context of engineering applications are solved using a variety of software tools, including structured programming and high-level computational packages such as Matlab. PREREQUISITE(S): *MATH 182 with a grade of C or better. Two hours lecture, two hours laboratory each week.*

3 semester hours

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ENES 272 Introduction to Computer Aided Design
Fundamentals of CAD, using solid modeling packages (such as, Creo Parametric, SolidWorks, and Autodesk Inventor). Two and three dimensional drawing. Dimensioning and specifications. Introduction of CAD based analysis tools. Student teams will complete and present a design project. PREREQUISITE(S): *ENES 100 and ENES 102. Two hours lecture, one hour laboratory each week.*

2 semester hours

ENGL - English

ENGL 011 Introduction to College Writing Support
A corequisite course designed to equip students with the skills needed to be successful in ENGL 101. ENGL 011 provides extended guidance and in-class practice with all stages of the writing process, with deliberate emphasis on grammar skills and critical reading and thinking. Upon successful completion, students will advance to ENGL 102 or ENGL 103 according to discipline guidelines. PREREQUISITE(S): *Placement through assessment testing; or completion of IERW 001 with a grade of B or better; or completion of IERW 002 with a grade of C or better; or completion of AELW 940/ELAI 990 with a grade of C or better; or consent of the department. Two hours each week.*

2 semester hours

ENGL 101 Introduction to College Writing CE
An introduction to college writing. The first of two sequential freshman composition courses, this course emphasizes the process of critical thinking, reading, and writing. Student writing progresses from a personal to an academic perspective. Students write for different audiences and purposes using a variety of rhetorical strategies. Students write in response to reading and are introduced to standard documentation procedures. Students are required to submit a final portfolio that meets department requirements. PREREQUISITE(S): *Placement through assessment testing; or concurrent enrollment in ENGL 011; or completion of IERW 002 with a grade of A; or completion of AELW 940/ELAI 990 with a grade of C or better; or consent of the department. Three hours each week.*

3 semester hours

ENGL 102 Critical Reading, Writing, and Research (ENGF)
Studies in argumentation and research. A second of two sequential freshman composition courses, this course is designed to help students learn to identify, critically read, analyze and evaluate, and write arguments using logic and appropriate rhetorical techniques. Students construct thesis-driven academic essays, synthesizing and incorporating the words and ideas of others and using formal documentation. Students learn to identify audience as well as employ effective tone, word choice, and sentence patterns. To comply with Maryland state requirements for English Foundation (ENGF), ENGL 102 must be completed with a final grade of C or better for a student to graduate with an associate's degree. PREREQUISITE(S): *A grade of C or better in ENGL 101/ENGL 011 or consent of department. Three hours each week.*

3 semester hours

ENGL 103 Critical Reading, Writing, and Research in the Work Place (ENGF)
Studies in argumentation and research in the workplace. A second of two sequential freshman composition courses, this course is designed to help students understand the processes and products associated with writing used in technology and business. Emphasis will be on the writing process, including writing to different audiences and supporting claims persuasively with appropriate evidence and detail. Students will write a variety of reports, documentation, and proposals, employing a range of stylistic options. The course will include an introduction to the rules for integrating visual aids into technical documents and a major research project focusing on developing an appropriate research question, conducting scholarly research, and incorporating information into writing with the proper conventions of citation.To comply with Maryland state requirements for English Foundation (ENGF), ENGL 103 must be completed with a final grade of C or better for a student to graduate with an associate's degree. PREREQUISITE(S): *A grade of C or better in ENGL 101/ENGL 011 or consent of department. Three hours each week.*

3 semester hours

ENGL 110 Principles of English Grammar CE
A study of the various aspects of English grammar, such as sentence structure, agreement, tenses, pronoun reference, and punctuation, to increase students' knowledge of the English language and to enhance their writing capabilities. *Three hours each week.*

3 semester hours

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ENGL 115 College Vocabulary Development
Intended to expand vocabulary development to improve writing and reading efficiency for effective communication skills. Emphasis placed on affixes, roots, contextual clues, lexical training, and phonic and structural analyses of words. *Thirty hours lecture over an eight-week period.*

2 semester hours

ENGL 122 Introduction to World Mythology (HUMD, GEIR, GEEL, GCP)
An introduction to world mythology across a range of periods and cultures. This is an interdisciplinary reading course of special relevance to students of psychology, anthropology, art, history, literature, and religion. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. *Assessment Level(s): ENGL 101 /ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

ENGL 190 Introduction to Literature (HUMD, GEIR, GEEL, GCP)
An introduction to the study of literary forms, including fiction, essays, poetry, and drama with an emphasis on understanding literature as an integral part of intellectual development. Students learn to apply critical thinking skills as they read, analyze, interpret, and respond to texts in class discussions, projects, examinations, and essays. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/ discussion each week.*

3 semester hours

ENGL 201 Introduction to World Literature I (HUMD, GEIR, GEEL, GCP)
An introduction to world literature from antiquity through the mid-17th century, including oral traditions, poetry, fiction, the essay, and drama. Emphasis is placed on key ideas that express the commonality of the human spirit and experience across cultures. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 202 Introduction to World Literature II (HUMD, GEIR, GEEL, GCP)
An introduction to world literature from the mid-17th century to the present, including oral traditions, poetry, fiction, the essay, and drama. Emphasis is placed on key ideas that express the commonality of the human spirit and experience across cultures. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. Students may enroll in ENGL 202 without having taken ENGL 201. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 205 Masterpieces of Asian Literature (HUMD, GEIR, GEEL, GCP)
Epics, drama, poetry, stories, novels, and essays of Near East, Southeast, and Far East Asia. Students read basic texts for class discussion and prepare papers in areas with special appeal to themselves. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 208 Women in Literature (HUMD, GEIR, GEEL, GCP)
An introduction to literature by and about women from a multicultural perspective, focusing on women's diverse experiences and backgrounds. Representative texts are studied in their historical and socio-political contexts. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 211 Survey of American Literature I (HUMD, GEIR, GEEL, GCP)
A survey of American literature from its beginnings through the mid-19th century, focusing on representative works in poetry, fiction, the essay, drama and/or oral traditions studied in the context of the multicultural American experience. The course introduces recurrent themes in the scope of American literature and culture. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

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ENGL 212 Survey of American Literature II (HUMD, GEIR, GEEL, GCP)

A survey of American literature from the mid-19th century to the present, focusing on representative works in poetry, fiction, the essay, drama, and/or oral traditions studied in the context of the multicultural American experience. The course introduces recurrent themes in the scope of American literature and culture. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. Students may enroll in ENGL 212 without having taken ENGL 211. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 213 Survey of British Literature I (HUMD, GEIR, GEEL)

A survey of British literature, including prose, poetry, and drama, from its beginnings circa the 9th century through the mid-18th century. Representative works of major authors are studied in their literary, historical, and sociopolitical contexts. The course introduces recurrent themes in the scope of British literature and culture. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 214 Survey of British Literature II (HUMD, GEIR, GEEL)

A survey of British literature, including prose, poetry, and drama, from the mid-18th century to the present. Representative works of major authors are studied in their literary, historical, and sociopolitical contexts. The course introduces recurrent themes in the scope of British literature and culture. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. Students may enroll in ENGL 214 without having taken ENGL 213. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 226 Survey of African American Literature I (HUMD, GEIR, GEEL, GCP)

A survey of African American literature from its earliest beginnings to the Harlem Renaissance, including vernacular tradition, spirituals, folk tales, slave and emancipation narratives, poetry, speeches, fiction, non-fiction and drama. This course emphasizes the trends, patterns and historical incidents that have influenced recurrent themes in African American literature. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 227 Survey of African American Literature II (HUMD, GEIR, GEEL, GCP)

A survey of African American literature from the Harlem Renaissance to the present, including poetry, speeches, blues, jazz, hip-hop, fiction, non-fiction, and drama. This course emphasizes the trends, patterns, and historical incidents that have influenced recurrent themes in African American literature. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. Students may enroll in ENGL 227 without having taken ENGL 226. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

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ENGL 228 Survey of Latina/o/x Literature in the US
Through key drama, fiction, and poetry, this course offers a survey of Latina/o/x literature from its origins in the Spanish colonization of North America to the present, with an emphasis on the major themes and trends of creative writing sparked by the migration of Cubans, Dominicans, and Central Americans necessitated by political turmoil in the twentieth century and the Chicano and Nuyorican Movements in the 1960s and 1970s. Students read, analyze, and respond critically to texts by Puerto Rican, Cuban-, Dominican-, Mexican-, and Salvadoran-Americans in class discussions, examinations, and essays. Readings showcase the unique and diverse voices of Latina/o/x writers exploring the construction and complexity of identity; bilingualism and code-switching; the experiences of the colonial subject, the immigrant, the refugee, and the exile; borders literal and figurative; and the relationship between the writer's ancestral homeland and the United States. PREREQUISITE(S): *A grade of C or better in ENGL 101/ENGL 011 or ENGL 101 or consent of the department. Three hours each week.*

3 semester hours

ENGL 230 Introduction to Modern Drama (HUMD, GEIR, GEEL, GCP)
An introduction to modern drama from the late 19th century to the present, including representative works in realism, naturalism, expressionism, the absurd, and post-modern and post-colonial forms. Students read, analyze, and respond critically to plays in class discussions, examinations, and essays. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 233 The Short Story (HUMD, GEIR, GEEL, GCP)
A study of the short story in world literature with emphasis on the literary form. Students will examine the basic elements of fiction as they appear in short stories. Concentration will be on the literary analysis of short stories from a variety of critical perspectives. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 235 Film and Literature (ARTD, GEIR, GEEL, GCP)
A comparative study of films and the literary sources upon which they are based. Special attention is given to the practical and theoretical problems of adapting literature to film and the basic differences between the two. The course explores how character development, plot, narrative, symbols, and language are translated from literary texts to film, and considers the limitations of film adaptation. Students read, analyze, and respond critically to literature and films in class discussions, examinations, and essays. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week, plus film viewings.*

3 semester hours

ENGL 245 The Bible as Literature
A survey of major books of the Hebrew and Christian Scriptures considered from literary and historical points of view. Major attention is devoted to themes, symbols, and archetypes that have influenced subsequent literature. Students read, analyze, and respond critically to texts in class discussions, examinations, and essays. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 248 Literature of the Holocaust
Examines the experience of the Holocaust through poetry, drama, the novel, and the diary. Emphasis on the literary responses of individual survivors and of witnesses, and the literature of atrocity the Holocaust evoked. Historical background helpful, but not required. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of department. Three hours lecture/discussion each week.*

3 semester hours

ENGL 258 Techniques of Proofreading and Editing
For students in or preparing for careers that require them to proofread or edit material written by others. Emphasis is placed on the fundamental concepts of proofreading and editing, including copy marking, levels of editing, and procedures. PREREQUISITE(S): *A grade of C or better in ENGL 101 and ENGL 110, or consent of department. Three hours each week.*

3 semester hours

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ENGL 259 Organization and Development of Technical Documents

For students in or preparing for careers that require preparation, editing, or production of technical documents of significant length. Students examine the roles and functions of managers, reviewers, editors, and writers throughout the document development cycle and study tools and techniques appropriate to each role. By studying relationships among functions, tools, and techniques, students will be able to assess and recommend procedures and policies for developing documents in the workplace. PREREQUISITE(S): *A grade of C or better in ENGL 103 or consent of department. Three hours each week.*

3 semester hours

ENGL 264 Introduction to Creative Writing of Fiction (ARTD, GEIR, GEEL)

A foundation course in the forms and techniques of short story writing. Special attention is given to point of view, plot, characterization, setting, and atmosphere in standard and experimental modes in the pursuit of establishing each student's style and expression. Extensive class discussion of fiction of proven merit and student writing. Designed for students who have fully mastered basic writing skills and who are literate writers but who have written little or no fiction previously. One college-level literature course or extensive previous outside reading of fiction is desirable. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/ discussion each week.*

3 semester hours

ENGL 265 Advanced Creative Writing of Fiction

An advanced workshop designed to raise a student's work to a professional level for eventual publication. Manuscripts are analyzed in class discussion with emphasis on the finer elements of narrative, characterization, dialogue, and pacing. Techniques of novella and novel writing are presented. The work of established mainstream and genre writers is also scrutinized to heighten awareness of various literary approaches. May not be taken concurrently with other fiction writing courses. PREREQUISITE(S): *ENGL 264 or the equivalent or consent of instructor based upon a writing sample. Three hours each week.*

3 semester hours

ENGL 272 Introduction to Creative Writing of Poetry (ARTD, GEIR, GEEL)

Designed to provide students a foundation for understanding the forms, techniques, and aesthetics of poetry writing in order that they may develop their skills. Emphasis will be on both traditional and contemporary modes to establish each student's style of expression and understanding of the craft. Students' poems, the poems of their peers, and poetry of proven merit will be discussed in a workshop setting. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A or consent of instructor based on a writing sample. Three hours each week.*

3 semester hours

FILM - Film

FILM 110 Introduction to Film (TP/SS only) (ARTD, GEIR, GEEL)

This course presents a basic introduction to the study of narrative film. Analysis of film structure and content will be developed through the use of genre analysis system. Basic film technique and language as it affects structure and content will also be examined. Students will view and discuss examples of both historic and contemporary film at the American Film Institute Theatre and in class, and will read and write about film structure and technique. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

FILM 210 Screenwriting (TP/SS only)

This course will teach the techniques of narrative storytelling through the camera arts. The student will study writing dialogue and action for film and television through several small projects culminating in a final 10-minute script. Films will be screened at the American Film Institute Theatre and in class as examples of effective screenwriting. PREREQUISITE(S): *FILM 110 or consent of instructor. Two hours lecture, two hours laboratory each week.*

3 semester hours

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FILM 220 Basic Movie Production (R and TP/SS only)
The theory and practice of single video camera filmmaking, including script preparation, shooting, and editing. The student will produce several short video projects that tell stories that are artistic and with cultural relevance. PREREQUISITE(S): *FILM 110 and TVRA 120, or consent of instructor. Two hours lecture, three hours laboratory each week.*

3 semester hours

FILM 230 Movie Making Independent Study: Editing (TP/SS only)
This independent study course for the advanced film student requires mastery of professional-level digital editing software. Students write, direct, and edit a short video, at least five minutes long, with a public screening upon completion of the project. PREREQUISITE(S): *A grade of A or B in FILM 110, FILM 210, FILM 220; and consent of film curriculum coordinator. Hours to be assigned and arranged by coordinator. It is expected that students will spend approximately 150 hours to complete the work for the course.*

3 semester hours

FILM 240 Movie Making Independent Study: Production (TP/SS only)
This independent study course for the advanced film student focuses on producing a longer film, at least 20 minutes long, with a public screening upon completion of the project. PREREQUISITE(S): *A grade of A or B in FILM 110, FILM 210, FILM 220, FILM 230; and consent of film curriculum coordinator. Hours to be assigned and arranged by coordinator. It is expected that students will spend approximately 150 hours to complete the work for the course.*

3 semester hours

FIRE - Fire Science

FIRE 101 Principles of Emergency Services CE
Provides an overview to fire protection and emergency services; career opportunities in fire protection and related fields; philosophy and history of fire protection and emergency services; fire loss analysis; organization and function of public and private fire protection and emergency services; fire/rescue departments as part of local government; laws and regulations affecting the fire service; fire and emergency service nomenclature; specific fire protection functions; basic fire chemistry and physics; introduction to fire protection systems; introduction to fire strategy and tactics. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

FIRE 102 Fire Behavior and Combustion CE
Explores the theories and fundamentals of how and why fires start and spread, and how they are controlled. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

FIRE 103 Building Construction for Fire Protection
Provides the components of building construction related to firefighter and life safety. The elements of construction and design of structures are shown to be key factors when inspecting buildings, preplanning fire operations, and operating at emergencies. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Three hours each week.*

3 semester hours

FIRE 104 Principles of Fire and Emergency Services Safety & Survival
Introduces the basic principles and history related to the national firefighter life safety initiatives, focusing on the need for cultural and behavior change throughout the emergency services. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

FIRE 105 Fire Prevention
Provides fundamental knowledge relating to the field of fire prevention. Topics include: history and philosophy of fire prevention; organization and operation of a fire prevention bureau; use and application of codes and standards; plans review; fire inspections; fire and life safety education; and fire investigation. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

FIRE 201 Fire Protection Systems
Provides information relating to the features of design and operation of fire detection and alarm systems, heat and smoke control systems, special protection and sprinkler systems, water supply for fire protection, and portable fire extinguishers. *Assessment Level(s): ENGL 101/ENGL 011, or consent of department. Three hours each week.*

3 semester hours

FIRE 202 Fire Protection Hydraulics and Water Supply

Provides a foundation of theoretical knowledge in order to understand the principles of the use of water in fire protection and to apply hydraulic principles to analyze and solve water supply problems. *Assessment Level(s): ENGL 101/ENGL 011, or consent of department. Three hours each week.*

3 semester hours

FIRE 203 Principles of Fire and Emergency Service Administration CE

Introduces the student to the organization and management of a fire and emergency services department and the relationship of government agencies to the fire service. Emphasis is placed on fire and emergency service, ethics, and leadership from the perspective of the company officer. PREREQUISITE(S): *FIRE 202 or consent of department. Three hours each week.*

3 semester hours

FIRE 220 Strategy and Tactics

Provides the principles of fire ground control utilization of personnel, equipment, and extinguishing agents. PREREQUISITE(S): *FIRE 101 or consent of department. Three hours each week.*

3 semester hours

FIRE 250 Fire Protection Internship

Students work for college credit in the professional setting of a fire protection agency, doing management or research-related work for such agencies at the federal, state, local government, or private sector level. PREREQUISITE(S): *Consent of department. Minimum average of 110 hours work experience and 10 one-hour seminars per semester.*

3 semester hours

FREN - French

FREN 101 Elementary French I (HUMD, GEIR, GEEL, GCP)

A beginning language course focusing on the study of French language and culture. Students begin to develop the ability to communicate in French through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of French is required. In-class work is supplemented by 20 hours of online homework. *Three hours each week.*

3 semester hours

FREN 102 Elementary French II (HUMD, GEIR, GEEL, GCP)

A continuation of FREN 101. Students continue their study of written language, conversation, and composition as they consider cultural themes, language functions, and authentic situations. In-class work is supplemented by 20 hours of online homework. PREREQUISITE(S): *FREN 101 or consent of department. Three hours each week.*

3 semester hours

FREN 201 Intermediate French I (HUMD, GEIR, GEEL, GCP)

Focuses on the study of French language and culture at the intermediate level. Students further their ability to communicate in French through an advanced consideration of cultural themes and a thorough review of French grammar to support increased focus on reading and composition. In-class work is supplemented by 10 hours of online homework. PREREQUISITE(S): *FREN 102 or consent of department. Three hours each week.*

3 semester hours

FREN 202 Intermediate French II (HUMD, GEIR, GEEL, GCP)

A continuation of FREN 201. Students further their ability to communicate in French through an advanced consideration of cultural themes and a review of French grammar to support an increased focus on reading and composition. In-class work is supplemented by 10 hours of online homework. PREREQUISITE(S): *FREN 201 or consent of department. Three hours each week.*

3 semester hours

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FREN 207 Readings in French Literature (HUMD, GEIR, GEEL, GCP)
An introduction to French literature through the reading of representative genres. Includes advanced composition, conversation, and an introduction to literary criticism through frequent themes, explications de texte, and class discussion. Class conducted in French. PREREQUISITE(S): *FREN 202, four years of high school French, or the equivalent. Three hours each week.*

3 semester hours

FREN 208 Readings in French Literature II (HUMD, GEIR, GEEL, GCP)
A survey of selected French literary works. It includes readings, textual analysis, and writing on a broad selection of text from different genres and periods. Close reading approach and introduction to literary vocabulary. Conversation and composition develop students' abilities in all four language skills: reading, writing, listening and speaking. Class conducted in French. PREREQUISITE(S): *FREN 202, four years of high school French, or the equivalent. Three hours each week.*

3 semester hours

GDES - Graphic Design

GDES 116 Digital Tools for the Visual Arts (ARTD, GEIR, GEEL) CE
An introduction to the digital tools used in the visual arts and the social, cultural and ethical application of those tools. Students are exposed to the theory and function of the major software packages, basic digital design principles, and collaborative processes utilized in the visual arts. Topics include operating systems, typography, vector and bitmap imaging, page layout, PDF creation and editing, timeline-based video editing, file transfer, output, web, emerging technologies, and other material relative to the digital visual arts workflow. *Two hours lecture, four hours laboratory each week.*

4 semester hours

GDES 121 Fundamentals of Graphic Design I CE
An introduction to elements of design, spatial relationships, typography, and imagery as they apply to practical visual solutions for self-promotion, resumes, logo design, web design, and sequential systems. This course instructs the student in graphic design skills employing traditional and digital tools, materials and procedures employed in the communication arts industry. The focus will be on finding creative visual solutions to communication problems using technical skills. *Two hours lecture, three hours laboratory each week.*

3 semester hours

GDES 124 Fundamentals of Graphic Design II
A continuing examination of elements of design, spatial relationships, typography, and imagery as they apply to practical visual solutions for print and web applications. PREREQUISITE(S): *GDES 121 or consent of department. Two hours lecture, three hours laboratory each week.*

3 semester hours

GDES 134 Illustration I (R only)
Introduction to illustrative drawing and painting, using traditional and digital media. Topics include units on drawing from observation, basic composition, conceptualizing, visual narrative and sequential storytelling, and output for print and interactive media, the employment market, and business practices. PREREQUISITE(S): *ARTT 100 or portfolio placement by consent of department. Two hours lecture, three hours laboratory each week.*

3 semester hours

GDES 135 Illustration II (R only)
A study of major illustration topics, including advertising, editorial, narrative, sequential illustration, and storyboards. Students explore drawing from life and photo reference material, basic composition, output for print reproduction and web, the employment market and business practices. PREREQUISITE(S): *GDES 134 or consent of department. Two hours lecture, three hours laboratory each week.*

3 semester hours

GDES 140 Introduction to Animation
An introduction to 2-D animation. Topics include a brief history of animation, principles of 2-D animation, use of storyboards, 2-D animation techniques, and the employment market and business practices. PREREQUISITE(S): *None. Digital Animation majors should take GDES 134 concurrently, or prior to taking this course. Two hours lecture, four hours laboratory each week.*

4 semester hours

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GDES 210 Graphic Design I
An introduction to visual thinking with an exploration of graphic design principles and practices, concept development, typography, composition, process, vocabulary, materials, and methods. Students develop problem-solving skills, creating, combining, and manipulating text and images while employing traditional and electronic design techniques. PREREQUISITE(S): *ARTT 100 and ARTT 102, GDES 116, or consent of department. Assessment Level(s): ENGL 101/ENGL 011. Two hours lecture, three hours laboratory each week.*

3 semester hours

GDES 211 Graphic Design II
A continuation of GDES 210, concentrating on developing a more personal approach to design solutions, conceptual skills, invention, discovery, and perceptual abilities within a communications context. Using both traditional hand and computer technologies, students do a thorough research process on more advanced projects that explore both static and moving formats. PREREQUISITE(S): *GDES 116, GDES 210, and GDES 220; or consent of department. Two hours lecture, three hours laboratory each week.*

3 semester hours

GDES 212 Publication Design with InDesign
A practical application of design fundamentals for single and multipage publications. Students use industry standard page assembly software while creating well-designed layouts for publications of all kinds. In addition to the functions of the software, topics include typography, graphics, color, aesthetic page flow, and transition design. PREREQUISITE(S): *GDES 116 or consent of department. Two hours lecture, four hours laboratory each week.*

4 semester hours

GDES 214 Photoshop for Graphics and Photography
(Also offered as PHOT 214. Credit cannot be received for both GDES 214 and PHOT 214.)

An in-depth study of digital editing as it applies to the needs of the graphics or photography student and professional. Students manipulate scanned images and digital photographs in preparation for publication layout and design, web output, use in other software packages, or immediate output. Topics include photo-restoration, composite imaging, masking, and the adjustment and correction of images used in graphic design and photography. PREREQUISITE(S): *None, but previous computer experience is necessary. It is strongly recommended that photography majors take PHOT 161 prior to this course. Two hours lecture, four hours laboratory each week.*

4 semester hours

GDES 216 Illustrator for Vector Graphics
An in-depth study of vector graphics creation. Students design, create, and manipulate images for integration in publication layout and design, web output, use in other software packages, or immediate output. Topics include vector imaging tools, technical illustration, bitmap to vector conversion, typography, and output considerations. PREREQUISITE(S): *None, but previous computer experience is necessary. Two hours lecture, four hours laboratory each week.*

4 semester hours

GDES 218 Graphic Design for the Web
An examination of principles of design and design considerations as applied to the creation of web pages and websites. Emphasis is on visual communication principles and visual presentation aspects of webpages, including page layout, typography, color theory, navigation, and image creation and editing. Students will apply principles of design in the creation of a website. PREREQUISITE(S): *GDES 116 or GDES 214/PHOT 214 or consent of department. Two hours lecture, four hours laboratory each week.*

4 semester hours

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GDES 220 Typography I
Typography is introduced as both an art form and visual communication tool. Students will gain an understanding of the historical, technical, and practical aspects of typography, including a solid foundation in type classification and measurements systems. Students will produce compositions in a variety of formats emphasizing original solutions to problems concerning the organization of textual information. PREREQUISITE(S): *ARTT 100 and ARTT 102, GDES 116, or consent of department. Assessment Level(s): ENGL 101/ENGL 011. Two hours lecture, three hours laboratory each week.*

3 semester hours

GDES 221 Typography II
Builds upon the basic knowledge and experience gained in GDES 220. Students will further their awareness of the expressive nature of type with an emphasis toward developing their own personal typographic style. Students will create work in a variety of formats emphasizing originality. Typography in motion will be introduced. PREREQUISITE(S): *GDES 116, GDES 210, and GDES 220; or consent of department. Two hours lecture, three hours laboratory each week.*

3 semester hours

GDES 224 Graphic Design III
A study in creative design applied to graphic problems for publication, web, and television media. Topics include studio skill development and production methods, portfolio review, and resume preparation. PREREQUISITE(S): *GDES 124 or consent of department. Two hours lecture, three hours laboratory each week.*

3 semester hours

GDES 228 Advanced Graphic Design for Web and Interaction (R only)
Intended for students seeking advanced web, user interface and interaction design strategies. Emphasis is on visual aspects of responsive, adaptive and content-first approaches. Students will apply advanced principles of design in the creation of layouts and graphics for a variety of web/mobile environments. PREREQUISITE(S): *GDES 214 or PHOT 214, and GDES 218, or consent of department. Two hours lecture, four hours laboratory each week.*

4 semester hours

GDES 230 Advanced Image Editing and Correction (R only)
(Also offered as PHOT 230. Credit cannot be received for both GDES 230 and PHOT 230.)

An advanced study of digital editing and image correction as it applies to the needs of the graphics or photography student and professional. Students perform contrast and color correction on more difficult scanned images and digital photographs in an effort to gain aesthetic control of the image prior to final output. Topics also include visual and mechanical calibration of input and output devices. PREREQUISITE(S): *GDES 214, PHOT 214 or consent of department. Two hours lecture, four hours laboratory each week.*

4 semester hours

GDES 234 Illustration III
Advanced projects selected and completed by students in consultation with the instructor, departmental faculty, or working professionals. PREREQUISITE(S): *GDES 135 or consent of department. Two hours lecture, three hours laboratory each week.*

3 semester hours

GDES 240 Animation 2: 3-D Modeling
An introduction to 3-D animation. Topics include principles of 3-D animation, virtual environments, modeling, image enhancement and 3-D animation techniques. PREREQUISITE(S): *GDES 140. Two hours lecture, four hours laboratory each week.*

4 semester hours

GDES 242 Animation 3: Motion Capture and Character Development (R only)
The study of motion capture systems and character development as it applies to the production of animation, gaming, and video. Students will gain practical experience in the use of motion capture technology to collect real-time data. Following data capture, students will transfer the information to a computer system using 3-D software where it will be manipulated, enhanced, and assigned to a character. PREREQUISITE(S): *GDES 240. Two hours lecture, three hours laboratory each week.*

4 semester hours

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GDES 269 Special Graphic Design Assignments (R only)
Offered on an individual basis to majors so that students may extend their studies by in-depth exploration of a particular specialization within the curriculum. Students develop proficiencies with previously introduced materials and techniques and their application to specific communication problems. The following letter symbols indicate the specific area of study: A - Book Illustration D - Graphic Design. PREREQUISITE(S): *GDES 121 and consent of department. Hours to be assigned by the chairperson.*

1-4 semester hours

GDES 285 Graphic Design Internship (R only)
An opportunity for college credit in a professional design studio, lab, or other facility. A limited number of internships are available through the department each semester, or the student may propose an internship. PREREQUISITE(S): *Graphic design majors with advanced standing and consent of department. Forty-five hours of work required per semester hour of credit. Letter designators in the schedule of classes will indicate the number of credits. Periodic meetings with coordinator.*

1-4 semester hours

GEOG - Applied Geography

GEOG 101 Introduction to Geography (BSSD, GEEL) CE-R
Introduction to geography as a field of study. The course consists of an extensive examination of physical and cultural factors that contribute to and produce the variable character of the Earth's surface and a discussion of the significance of geographic concepts and factors to world affairs. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

GEOG 105 Cultural Geography (BSSD/GEEL) CE-R
Examination of the basic concepts of human geography and the forces and factors shaping the cultural character of the surface of the earth viewed as the home of the human race. Topical studies include population, settlement patterns, and other political, economic, and cultural phenomena. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

GEOG 113 Economic Geography (BSSD, GEEL) CE-R
Introduction to the principles of economic geography. Lecture and studio/laboratory study of modern concepts and techniques underlying the whys of locational analysis, spatial and functional organization of economic areas and regions. Special emphasis placed on the relationship of culture, resources, technology, and the physical biotic landscape to the world geographic patterns of economic activity. Projects and field assignments. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Two hours lecture, two hours studio/ laboratory each week.*

3 semester hours

GEOG 124 Physical Geography (R only) (NSLD, GEEL) CE
Fundamentals of physical geography as a foundation for human activities. Lecture and studio/laboratory study of the role and patterns of climate, soil, landforms, drainage, vegetation, and other geographic phenomena. Special analysis of the physical biotic character of the surface of the Earth as determined by natural and cultural processes with emphasis on the physical geography of urban places. Projects and field assignments. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours lecture, two hours studio/laboratory each week.*

4 semester hours

GEOG 130 Global Geography (BSSD, GEEL, GCP)
Examination for the general student of global regions, patterns, trends, and geographic relationships which together form a basis for comprehending the mosaic of world affairs. An introduction to geographic facts and development of skills needed to appraise critical topics and issues normally covered in college-level disciplines. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Three hours each week.*

3 semester hours

GEOG 211 Political Geography CE-R
An extensive examination of the political-geographic factors involved in shaping the character of world, national, and local political communities. Special emphasis placed on the controversial concepts of geopolitics and geostrategy as well as selected contemporary problems affecting the viability of modern-day political units. Field tripsand special projects. PREREQUISITE(S): *Second-year standing or consent of program coordinator. Three hours each week.*

3 semester hours

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GEOG 222 Geography of the United States (R only) CE

A regional examination of the physical and cultural patterns characteristic of the United States. Students will study geographic concepts and perspectives associated with different regions of the nation. The environment and cultural variables in each region are examined in detail to determine their role in the formation of its unique landscape. *Three hours each week.*

3 semester hours

GEOG 235 Preserving Our Natural Heritage: The Geography of Conservation and Natural Resources CE-R

This course will explore issues in conservation responsibilities and concepts relating to environmental and natural resources including soils, minerals, water, forests, pollution, wildlife, natural hazards, aesthetics, and human interaction. Fieldwork required. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

GEOG 240 Introduction to Cartography (R only) CE

General introduction to cartography's history, theory, and use of maps. Study of various types of maps, charts, and plans, mapscales, coordinates, and projections. Techniques, methods, problems of design, compilation, and construction of maps and graphics. Map symbolization and representation of topographic, hydrographic, geographic, and other phenomena. Fundamental concepts as applicable to mapping, surveying, and aerial photography. Techniques and methods of presenting data in graphic forms. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Two hours lecture, two hours laboratory each week.*

3 semester hours

GEOG 250 Interpretation of Geographic Imagery: Use and Analysis (R only) CE

Map and remote sensing image evaluation. History, theory, and techniques of map and remote sensing analysis. Examination of the reliability and utility of maps and remote sensing imagery for solving geographic problems. Interpretation of cultural and natural phenomena using these types of images. PREREQUISITE(S): *GEOG 240 or consent of program coordinator. Two hours lecture, two hours studio/ laboratory each week.*

3 semester hours

GEOG 251 Principles of Map Design (R only)

Studio/laboratory experience with the application and utilization of modern tools and techniques of cartography and graphics. Develops special skills associated with the broad scope of cartographic activities as practiced in public and private mapping and allied agencies. Special projects encompass mapmaking, field studies, map reproduction, photo-compilation, and other tasks as assignments under the direction of an experienced practitioner. PREREQUISITE(S): *GEOG 240 and GEOG 250, or consent of program coordinator. One hour lecture, four hours studio/laboratory each week.*

3 semester hours

GEOG 255 Introduction to Computer Mapping (R only) CE

Introducing students to concepts and applications that are essential to the study of automated cartography, this course explores techniques used to capture, store, process, and display data in map form. Emphasis in the course is placed on the application of computer use and graphic design to create assorted map products, both general purpose and thematic. PREREQUISITE(S): *GEOG 240 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*

3 semester hours

GEOG 260 Introduction to Geographic Information Systems (R only) CE

Geographic information systems (GIS) integrates the application of spatial data handling procedures with the study of geographic problems. The course utilizes computer software designed for the study of environmental problems based upon data compiled from maps and remote sensing imagery. This course will serve as a basic introduction to the concepts and techniques of GIS. The problems used for study in this course are selected to provide real-world examples suitable for solution through the use of GIS. PREREQUISITE(S): *GEOG 240 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*

3 semester hours

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GEOG 265 Research Topics in Applied Geography (R only) CE

Research topics in geography, designed to develop the ability to originate, formulate, and perform geographic studies commonly encountered in public and private agencies. Special topics cover physical, economic, social, and political matters selected to fit individual and team approaches to geography problems characteristic of the Washington metropolitan area. Standard research techniques are stressed. PREREQUISITE(S): *Minimum of nine hours in applied geography and consent of program coordinator. Two hours lecture, two hours studio/laboratory each week.*

3 semester hours

GEOG 270 Advanced Geographic Information Systems (R only)

Offers training in several advanced GIS analytical methods widely used by industry and government, such as network, spatial, and three-dimensional analyses. Uses the latest software: Network Analyst, Spatial Analyst, and 3-D Analyst, and may introduce other GIS operations and analyses, as developed. Course components include laboratory exercises, exams, and a term project using one or more of the analytical tools learned during the semester. PREREQUISITE(S): *GEOG 260 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*

3 semester hours

GEOL - Geology

GEOL 101 Physical Geology (NSLD, GEEL)

A study of the physical aspects of the earth. Topics explored in this course include minerals, rocks, soils, structures, landforms, plate tectonics, volcanoes, earthquakes, streams, erosion, and weathering. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Three hours lecture, three hours laboratory each week; field trips.*

4 semester hours

GEOL 102 Historical Geology (NSLD, GEEL)

This course covers the application of geologic concepts to the interpretation of the evolution of the earth. Topics include the use of sedimentary rocks as tools for unraveling earth history, the historical development of geologic principles, the nature and utility of fossils, the importance of plate tectonics, and a survey of the evolution of earth systems and organisms. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours lecture, three hours laboratory each week; field trips.*

4 semester hours

GERM - German

GERM 101 Elementary German I (HUMD, GEIR, GEEL, GCP)

A beginning language course focusing on the study of German language and culture. Students begin to develop the ability to communicate in German through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of German is required. In-class work is supplemented by 20 hours of online homework. *Three hours each week.*

3 semester hours

GERM 102 Elementary German II (HUMD, GEIR, GEEL, GCP)

A continuation of GERM 101. Students continue their study of written language, conversation and composition as they consider cultural themes, language functions, and authentic situations. In-class work is supplemented by 20 hours of online homework. PREREQUISITE(S): *GERM 101 or consent of department. Three hours each week.*

3 semester hours

GERM 201 Intermediate German I

Focuses on the study of German language and culture at the intermediate level. Students further their ability to communicate in German through an advanced consideration of cultural themes and a thorough review of German grammar to support increased focus on reading and composition. In-class work is supplemented by 10 hours of online homework. PREREQUISITE(S): *GERM 102 or consent of department. Three hours each week.*

3 semester hours

GERM 202 Intermediate German II

A continuation of GERM 201. Students further their ability to communicate in German through an advanced consideration of cultural themes and a review of German grammar to support an increased focus on reading and composition. In-class work is supplemented by 10 hours of online homework. PREREQUISITE(S): *GERM 201 or consent of department. Three hours each week.*

3 semester hours

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GHUM - Global Humanities

GHUM 101 Introduction to Global Humanities (HUMD, GEIR, GEEL, GCP)
Study of the many humanities themes from the standpoint of global interconnections. This course takes an interdisciplinary humanities approach to a number of themes. Specifically, it encourages students to consider a number of topics related to global issues using historical, literary, linguistic, and philosophical lenses. The course encourages students to recognize their responsibilities to society-locally, nationally, and globally--and to consider their academic and personal goals. Students will also consider current issues of global importance. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

GNDS - Gender Studies

GNDS 101 Introduction to Gender Studies (BSSD, GEEL, GCP)
A multicultural, interdisciplinary introduction to the study of gender in contemporary society. Readings, films, and discussions explore how gender matters in a person's daily life; how that impact is socially constructed both historically and cross-culturally; and how gender permeates institutions in societies, operating as a system of power and reinforcing distinctions that contribute to inequality. This course investigates gender as it intersects with race-ethnicity, nationality, sexuality, class, age, and ability to shape diverse femininities and masculinities. In learning how gender is not something innate or static-that it is created and that it has changed and it can change (gender is both a process and a performance)-and by reflecting on their unique location within power structures, students will be encouraged to believe that change for equality is possible and to assume more engaged forms of citizenship. PRE- or COREQUISITE(S): *ENGL 101/ENGL 101A or consent of Women's and Gender Studies Program Coordinator. Three hours each week.*

3 semester hours

GNDS 102 Understanding LGBT Identities (BSSD, GEEL, GCP)
An inter-disciplinary, cross-cultural examination of lesbian, gay, bisexual and transgender (LGBT) identities in contemporary United States society that draws from history, literature, sociology, philosophy, psychology and communications studies to understand the diversity of gender expressions and sexual orientations. This course surveys who LGBT people are and how academic study of these identities has developed. It explores the connection between women's studies and gender studies, and the ways women's studies has grown to include analysis of how gender and sexual orientation interact and intersect, and how heterosexism and homophobia function in various contexts and affect everyone in society. This course requires students to engage both written and visual texts, to apply and connect material from the course to life outside the classroom, and to investigate sexual minority identities in terms of communities, cultures and political movements. *Assessment Level(s): ENGL 101/ ENGL 011, or consent of program coordinator. Three hours each week.*

3 semester hours

HINM - Health Information Management

HINM 115 Medical Terminology I CE
The basic structure of medical words, including prefixes, suffixes, roots, combining forms, and plurals. Pronunciation, spelling, and definition of medical terms. Emphasis on building a professional vocabulary required of the beginning medical professional. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 045/MATH 050, or consent of program coordinator. Two hours each week.*

2 semester hours

HINM 116 Medical Terminology II CE
A continuation of HINM 115. Includes medical terminology related to body systems, cancer medicine, radiology and nuclear medicine, and pharmacology. PREREQUISITE(S): *HINM 115. Two hours lecture/discussion each week.*

2 semester hours

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HINM 120 Concepts of Disease CE
A survey course designed specifically for students enrolled in health programs. General principles, classification, causes, and treatment of selected disease processes are presented. PREREQUISITE(S): *BIOL 130 and BIOL 131 or HINM 115. Three hours each week.*

3 semester hours

HINM 134 Healthcare Delivery Systems CE-TP/SS
Introduces the student to the contents of the health record in paper and electronic-based formats. The student will analyze, synthesize and evaluate the contents of the health record gaining a detailed understanding of documentation requirements, health care data sets, data - monitoring and compliance reporting, data definitions, vocabularies, terminologies, nomenclatures, and dictionaries. The student will comprehend the difference between data and information, classification systems and nomenclatures, and primary and secondary data sources. This course also provides an introduction to the historical development of the health care field and organization of health institutions, the health information profession, and health information departments. PREREQUISITE(S): *Admission to the Health Information Management or Coding Certificate Program. Assessment Level(s): ENGL 101/ENGL 011, MATH 117. Three hours each week.*

3 semester hours

HINM 144 Health Data Content, Structure and Standards CE-TP/SS
Introduces the student to health data structure, content, and standards including the collection and maintenance of health data; application of policies and procedure to ensure the accuracy of health data; verification of timeliness, completeness, accuracy, and appropriateness of data and data sources for patient care, management, billing reports, registries, and databases; collection, maintenance, and reporting of data for clinical indices, databases, and registries to meet organizational needs. PREREQUISITE(S): *Admission to the Health Information Management or Coding Certificate Program. Assessment Level(s): ENGL 101/ENGL 011, MATH 117. Two hours lecture, one hour laboratory each week.*

3 semester hours

HINM 150 Introduction to Pharmacology CE
Designed to give an overview of pharmacology to the student. Examines the prescription drug process (dosage calculation, administrations, and different drug forms) and reviews basic federal and state regulations. Focuses on specific disease states and how certain drugs work to alleviate and treat the conditions for which they are prescribed. Approaches the various drug classes, the actions on physiology, and their relationship to various disease states. PREREQUISITE(S): *BIOL 130 and BIOL 131 and HINM 115. One hour each week.*

1 semester hour

HINM 154 Legal and Ethical Issues in Health Information Management CE-TP/SS
A course on the health record as a legal document. The student is introduced to the following: healthcare legal terminology, HIPAA (the Health Information Portability and Accountability Act), legal requirements for health record documentation, legal and ethical issues pertaining to the contents of the health record, privacy, confidentiality and security, accreditation/regulatory requirements, risk management, physician credentialing and professional ethics. PREREQUISITE(S): *Admission to the Health Information Management (HIM) or Coding Certificate Program. Assessment Level(s): ENGL 101/ENGL 011. Two hours lecture, one hour laboratory each week.*

2 semester hours

HINM 155 CPT Coding CE
An introduction to the principles and conventions of CPT/ HCPCS clinical classification system used in outpatient and physician office settings. Related topics such as ethical coding standards, federal rules and regulations, and fraud and abuse definitions/issues are included. Students should have a basic knowledge of human anatomy and physiology in order to succeed in this coding course. PREREQUISITE(S): *HINM 120, and either HINM 115 or BIOL 130 and BIOL 131, or consent of program coordinator. Two hours each week.*

2 semester hours

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HINM 165 ICD-10 Coding CE
An introduction to ICD-10-CM/PCS classification with considerable time spent coding diagnoses and procedures. This course will include exposure in abstracting and indexing diagnostic and procedure codes as well as retrieving medical information for research. PREREQUISITE(S): *HINM 120, and either BIOL 130 and BIOL 131 or HINM 115, or consent of program coordinator. Three hours lecture, two hours laboratory each week.*

4 semester hours

HINM 180 Health Data Management CE
An introduction to the use of technology in the capture, delivery and analysis of health data. The course focuses on the use of electronic health records, data mining, statistical collection of health data, quality data management, report generation and health data project management. Students interact with simulations of key EHR and HIM tasks. PREREQUISITE(S): *CMAP 120, HINM 134, HINM 144, HINM 154 with a minimum grade of C. Three hours lecture, two hours laboratory each week.*

4 semester hours

HINM 190 Supervision of Health Information Services CE
An introduction to the principles of organization and supervision of human, financial and physical resources. Topics such as problem solving, conflict resolution, leadership, decision-making skills, budget creation and analysis, contract evaluation, team-building techniques, staffing and productivity management, information governance, regulatory/ accreditation compliance, and quality management techniques are presented in this course. PREREQUISITE(S): *CMAP 120, HINM 134, HINM 144, and HINM 154. Two hours lecture, one hour laboratory each week.*

3 semester hours

HINM 200 Professional Practice Experience I
Supervised practice in a health information department. The student will perform functions related to the analysis and reporting requirements for health records, the storage and retrieval of health records, and the patient admission process. PREREQUISITE(S): *Consent of program coordinator. Requires 60 hours of combined supervision on campus and/or in a clinical setting.*

1 semester hour

HINM 220 Advanced Coding and Clinical Documentation Improvement CE
Emphasis on management principles and techniques of clinical classification and reimbursement systems in health care settings. The course covers coding competency skills, coding quality control and compliance issues, clinical documentation improvement strategies and federal government compliance institutions. Other topics include reimbursement software applications, data definitions, data security, data compliance and regulatory requirements. PREREQUISITE(S): *HINM 155 and HINM 165, or consent of program coordinator. One hour lecture, four hours laboratory each week.*

3 semester hours

HINM 225 Ambulatory Coding CE
Designed to enhance the student's ability in ambulatory care classification and coding. Students apply CPT and ICD coding for outpatient records in a variety of ambulatory settings including physician office, emergency room, and outpatient surgery. PREREQUISITE(S): *HINM 155 or consent of program coordinator. Two hours each week.*

2 semester hours

HINM 230 Revenue Cycle and Reimbursement Management CE
An introduction to electronic patient billing in ambulatory settings using various insurance and reimbursement systems. Students prepare health insurance claim forms for various types of insurance plans and use this information as a practice management and outcomes assessment tool. Additional topics include billing and claims management issues. PREREQUISITE(S): *Admission to the health information management program or consent of program coordinator. Two hours each week.*

2 semester hours

HINM 271 Professional Practice Experience II
Supervised practice in the following health record functions: release of information, supervision, vital records, coding of medical data, data abstracting, DRG coding and assignment, and cancer registry activities. PREREQUISITE(S): *HINM 120, HINM 155, and HINM 165, or consent of program coordinator. Requires 120 hours of combined supervision on campus and/or in a clinical setting.*

2 semester hours

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HINM 272 Professional Practice Experience III
Provides preparation for the Registered Health Information Technician (RHIT) examination, which is taken in the final semester of study. This course focuses on review of all competency categories known as domains as outlined by the American Health Information Management Association (AHIMA). Students will be required to sit for the AHIMA Registered Health Information Technician (RHIT) certification examination and take a mock RHIT Examination. PREREQUISITE(S): *Consent of program coordinator.* PRE- or COREQUISITE(S): *HINM 271 or consent of program coordinator. One lecture hour.*

1 semester hour

HINM 280 Research in Health Information CE
This course is designed to enhance the student's ability in research methodologies. The student will use computerized databases and spreadsheets to prepare a project related to a health care topic. Basic computer literacy and keyboarding skills are necessary. PREREQUISITE(S): *CMAP 120, MATH 117 or MATH 120, or consent of program coordinator. Two hours laboratory each week.*

1 semester hour

HINM 285 Independent Study Health Information Management
Provides an opportunity to conduct research in cutting edge Health Information Management, professional advancements and/or case studies. For those students where intensive review to prepare for the Registered Health Information Technician Certification is required, students will be assigned to Health Information Management faculty for guidance and supervision. Letter designators in the schedule of classes will distinguish the 1, 2, 3, and 4-credit versions of HINM 285 . *Minimum 45 hours of work for each credit hour.*

1-4 semester hours

HIST - History

HIST 112 Women in World History (HUMD, GEIR, GEEL, GCP)
The course deals with the history of women in Asia, the Middle East, Africa, and Latin America in the context of the history of these cultural regions. It also addresses some of the common issues facing women in the Third World. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HIST 114 The World in the 20th Century (HUMD, GCP)
Focuses on global developments: the origins and aftermath of two world wars; the birth of mass movements and mass society; the crisis of democracy and the rise of communism and fascism; the emergence of the superpowers; modernization, conflicts, and revolutions in the non-Western world as well as autonomous processes in Africa, Asia, Latin America; North-South relations. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture / discussion each week.*

3 semester hours

HIST 116 World History: A Comparative Survey from the Ancient World to A.D. 1500 (HUMD, GEIR, GEEL, GCP)
One of two related courses (with HIST 117), which may be taken in either order. These courses cover the world's great cultures, religious, and political systems. They offer the student an opportunity to understand contemporary life in terms of the accumulated cultural experiences of the world and to appreciate the growing interdependence of modern nations. HIST 116 is a comparative inquiry into the emergence and flowering of ancient Near Eastern and Mediterranean civilizations; the Christian Middle Ages and Renaissance in Europe; China and the development of Confucianism, Taoism, and Buddhism; Hinduism and Indian empires; Islam- its conquests and the rise of the Ottoman Empire; civilizations of the Americas, and African developments. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

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HIST 117 World History: A Comparative Survey from A.D. 1500 to the Present (HUMD, GEIR, GEEL, GCP)

One of two related courses (with HIST 116), which may be taken in either order. These courses cover the world's great cultures, religious and political systems. They offer the student an opportunity to understand contemporary life in terms of the accumulated cultural experiences of the world and to appreciate the growing interdependence of modern nations. HIST 117 is a comparative course covering autonomous local developments in the various parts of the world as well as the settling of the New World; the scientific and industrial revolutions and their diffusion; Western dominance of the non-Western world and its decline; the rise of mass societies, Marxism, worldwide revolutions; the effects of two world wars; the struggles to modernize. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

HIST 146 History of the Ancient World (HUMD, GEIR, GEEL)

A survey of the ancient Near Eastern and Greco-Roman societies and cultures in their unique setting, exploring the path that led to the organization of cities; written communication; forms of early science and technology; the artistic traditions in Mesopotamia and Egypt; a golden age of art, literature, and philosophy in Greece; and Roman accomplishments in politics, administration, law, and engineering. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

HIST 147 History of Europe from the Fall of Rome to the 17th Century (HUMD, GEIR, GEEL)

One of two related courses (with HIST 148), which may be taken in either order. These courses trace the accumulated experience of Western civilization and its worldwide relationships and provide a contextual framework for integrating all areas of Western human activity and thought. HIST 147 is an inquiry into the foundations of Western civilization and its odyssey to the 17th century. Focuses on areas such as the background and the legacy of the ancient world, the distinctive medieval world view, the creation of new social and religious ideals during the Renaissance and Reformation, relationships between cultural and political institutions, the growth of absolutism and constitutionalism, artistic and literary creativity. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/ discussion each week.*

3 semester hours

HIST 148 History of Europe from the 17th Century to the Present (HUMD, GEIR, GEEL)

One of two related courses (with HIST 147), which may be taken in either order. These courses trace the accumulated experience of Western civilization and its worldwide relationships and provide a contextual framework for integrating all areas of Western human activity and thought. HIST 148 spotlights the changes in thought, social, economic, and political structures from the Copernican revolution and the Enlightenment through the American and French revolutions, the traumas of economic depressions, world wars, and the upheavals of the contemporary world. Topics will be examined such as the tensions between individual liberty and traditional powers of state and society, the rise of ideologies, pressures of industrialism and national identity, the problems of the Darwinian hypothesis, the role of women in society, the rise of masses, the disenchantment with traditional liberalism and totalitarian alternatives, as well as the reflections of these human endeavors and anxieties in the arts and letters of these centuries. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

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HIST 190 History of Sport in America
History of organized sport; America at the Olympics; increased involvement in sports by women and minorities-mid-1900s; post-World War II sports, domestic and global; business involvement in sports-1960s; collegiate versus professional athletes from the 1970s to the present; the state of American sport today. *Assessment Level(s): ENGL 101/ ENGL 011.*

3 semester hours

HIST 200 History of the United States, a Survey Course: from Colonial Times to 1865 (HUMD, GEIR, GEEL)
One of two related courses (with HIST 201), which may be taken in either order. European exploration, settlement, and culture in the British North American colonies; movement for independence and constitutional government; foreign relations and foreign policy; efforts toward a more democratic and egalitarian society; social, cultural, and intellectual growth in the new republic; Western expansion and economic development; conflict over slavery and the nature of the union; the Civil War. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

HIST 201 History of the United States, a Survey Course: from 1865 to the Present (HUMD, GEIR, GEEL)
One of two related courses (with HIST 200), which may be taken in either order. Post-Civil War Reconstruction; the industrial revolution and rise of the city; the new immigration; the social, cultural, and political responses to these changes; the emergence of the United States as a more active world power. American society in the 1920s, the Great Depression, the Cold War, and the controversies over the American role in world affairs; new developments in modern American society and culture. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

HIST 205 Technology and Culture in the Western World (R only) (HUMD, GEIR, GEEL)
Focus upon selected topics in the history of technology, concentrating on the period from the Renaissance to the 20th century's "brave new world" of science, technology, and industry. Relates technological development with diverse patterns of Western culture as it evolved within this historic framework. Designed to fit the needs and interests of students in technological programs, as well as those following general education or liberal arts curricula. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

HIST 209 History of Asian Americans (R only)
A historical survey of the diverse experience of Asian Americans in the United States. Topics include international context of Asian immigration; immigration and livelihood; hostility and conflict; social organization of Asian immigrant communities; resistance to oppression; women, families, and cultural dilemma; changing fortunes; new immigrants and refugees; the myth of a "model minority"; and other current issues. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HIST 211 History of Latinos in the United States (HUMD, GEIR, GEEL, GCP)
Addresses the historical, cultural, and contemporary experiences of six of the major Latino groups in the United States: Mexicans, Cubans, Puerto Ricans, Dominicans, Central Americans, and South Americans. Traces the Native American, Spanish, and African roots of Latinos and follows their economic, political, and cultural development in the United States up to the present. Highlights the similarities and differences in the Latino experience of migration and settlement. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

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HIST 225 History of Maryland
A survey of Maryland political, economic, social, and cultural history from colonial times to the present. Special attention is focused on the people who came to Maryland and contributed their heritage to the rich social and cultural institutions taking shape in this state. Maryland is viewed both as a microcosm of American history and as a unique institution with its own special identity. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

HIST 228 Women in the Western World (R only) (HUMD, GEIR, GEEL, GCP)
Surveys the realities and myths of woman's role from the ancient world to modern American and European industrial society. It examines the position of women in the cultures and social structures at various stages in the development of Western history, explores the emergence and growth of the women's rights movement, and the modes of continuity and change when new opportunities emerge for women. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HIST 233 Alternative Lifestyles: 19th Century American Utopias (R only)
An examination of various searches for utopian order through communitarian experiment in 19th century United States. Major emphasis on religious and secular communitarian experiments of the period, for example, Brook Farm, Oneida, and Amana. The class will create a constitution for its own model community to conform to the ideals, circumstances, and realities of those experiments. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

HIST 235 The History of African Americans to 1865 (HUMD, GEIR, GEEL, GCP)
One of two related courses (with HIST 236), which may be taken in either order, that survey the history of African Americans in America. Topics include theories of the origins of human life and civilization in Africa; slavery in the ancient and modern worlds; the Atlantic slave trade; slavery in the Americas; the transformation of Africans to African Americans; the development of African American culture; the antislavery movement; and the attempt of African Americans to make the Civil War a war for emancipation. This course does not substitute for HIST 236. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HIST 236 The History of African Americans Since 1865 (HUMD, GEIR, GEEL, GCP)
One of two related courses (with HIST 235), which may be taken in either order, that survey the history of African Americans from their beginnings in Africa to the present. Topics include the Washington-Du Bois debate, African American contributions to the world wars, the Harlem Renaissance, the struggle for equality, and strategies for continued economic, political, and social progress. This course does not substitute for HIST 235. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HIST 240 Civil Rights in America (HUMD, GEIR, GEEL, GCP)
A survey of the civil rights movement in America from post-Reconstruction to the present. Designed to show how the civil rights movement transformed America and how the struggle for rights in America has become a struggle of communities and individuals trying to weave civil rights into a tapestry of social and economic reality. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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HIST 242 Open Topics in History, Including Foreign Travel

This course outlines briefly the geographic, economic, political, and cultural background of the region in which travel will take place. It focuses on the particular country of the journey's destination and examines the scope of its history, culture, and special achievements from early times to the present. Special lectures by local professors on selected topics at universities, the country's parliament, or other institutions of interest are scheduled in addition to visits to museums and the country's most outstanding sites.

3 semester hours

HIST 245 Latin American History (HUMD, GEIR, GEEL, GCP)

A brief historical survey from Cortes to Castro: Latin America's triple origin in Iberia, Africa, and Indian civilization; the conquest and three centuries of colonial existence as determinants of nationality and culture; the political break with Europe and the development of independent national life. Emphasis on economic development, agrarian reform, and 20th century movements for political and social change in the major states and upon relations with the United States. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/discussion each week.*

3 semester hours

HIST 247 East Asian Civilization (HUMD, GEIR, GEEL, GCP)

An interdisciplinary survey of the development of civilization in China, Japan, and Korea from prehistory to early seventeenth century. Topics for discussion include society, economy, politics, religion, philosophy, literature, art, science, and technology. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

HIST 250 Modern Asia (HUMD, GEIR, GEEL, GCP)

A survey of the political, economic, and social changes of Asian societies, mainly from the 16th century to the present. The course emphasizes the creation of modern Asia by the West and the response of Asian societies to Western impact. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HIST 252 The United States and 20th Century World Affairs (HUMD, GEIR, GEEL, GCP)

A study of the emergence of the United States as a more active and involved world power from the presidency of Theodore Roosevelt to the present. More than a study of diplomatic history, this course gives much attention to the internal debates and struggles over foreign policy-neutrality, internationalism, the peace movements, isolationism, and interventionism. Aspects of social, political, and economic history are examined in terms of their relationship to and impact upon the nation's foreign relations. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HIST 255 Conflict in the Modern Middle East

This course examines the contemporary conflicts and problems of the Middle East and their impact upon world politics, including U.S. foreign policy. It covers the period from the late 18th century to the present and explores the Islamic heritage, the impact of Western imperialism, modernization and the tension between traditionalism and modernity, the rise of Arab nationalism and political revolutionary change, inter-Arab rivalries, the Arab-Israeli conflict, the impact of oil, and the role of the superpowers. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HIST 257 Modern Military History 1494-1815

Surveys European military history within a broad framework through which the student may view many aspects of historical events and human behavior. The course includes an examination of theoretical concepts and debates over the analysis of warfare in history. Topics include: the dynastic wars of the 15th to the 18th centuries, the Thirty Years War, colonialism, the American and French Revolutions, and the Napoleonic Wars. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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HIST 258 Modern Military History 1815-Present
Surveys European military history within a broad framework through which the student may view many aspects of historical events and human behavior. The course includes an examination of theoretical concepts and debates over the analysis of warfare in history. Topics include: the financial, strategic, tactical, and technological developments of warfare; new imperialism; total war; race and gender; terrorism; and torture. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

HIST 260 The United States since 1945
An intensive examination of the American experience since World War II. The course will highlight America's emergence as a "superpower" and its expanding role in the world; the movements of the 1950s and 1960s to expand the civil rights of women and minorities in our society; the growth of the federal government in the postwar era and critiques of that expansion; and the cultural experience of the United States since World War II, with particular emphasis on the shocks of the 1950s and 1960s. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HIST 262 The History of England from 55 B.C. to 1688 (HUMD, GEIR, GEEL)
One of two related courses (with HIST 263), which may be taken in either order. These courses survey the history of England from Roman Britain to the present. Emphasis is on the development of uniquely English institutions as well as political, legal, social, intellectual, imperial, and economic history. They offer the student the opportunity to understand the history of a country that has had a unique and lasting impact on American history and culture. HIST 262 is an inquiry into the history of England from Roman Britain until the advent of the Glorious Revolution in 1688. Several themes will be highlighted, including the formation of the English nation, conversion to Christianity, the development of the Church as a distinctive national institution, feudalism, political centralization, the effects of the Renaissance and Reformation, overseas expansion, and the achievement by 1689 of responsible parliamentary government. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HIST 263 The History of England from 1688 to the Present (HUMD, GEIR, GEEL, GCP)
One of two related courses (with HIST 262), which may be taken in either order. These courses survey the history of England from Roman Britain to the present. Emphasis is on the development of uniquely English institutions, as well as political, legal, social, intellectual, imperial, and economic history. It offers the student the opportunity to understand the history of a country that has had a unique and lasting impact on American history and culture. HIST 263 is a survey of the history to Great Britain from the Glorious Revolution through the early 1980s. The course will trace several themes, including the change from a pre-modern to a modern society, the rise and fall of the British Empire, the development of cabinet government and limitations upon the power of the monarchy, the emergence of an identifiable working class as well as the industrial revolution, mass culture, the Irish Question, and the question of Britain's decline overall in the 20th century. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HIST 265 African History to 1800 (HUMD, GEIR, GEEL, GCP)
One of two related courses (with HIST 266), which may be taken in either order. This course examines African history from early times until the end of the Atlantic slave trade with special attention paid to the political, social, and economic sectors of pre-colonial Africa. Topics for discussion include the origin of humankind; the development and expansion of early large states across Africa; and the establishment of early trade networks among Africa, Europe, and the Arab world. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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HIST 266 African History from 1800 (HUMD, GEIR, GEEL, GCP)

One of two related courses (with HIST 265), which may be taken in either order. This course examines African history from 1800 to the present. It also includes studies of African societies in the first half of the 19th century; the impact of "New Imperialism" and the scramble for Africa by Europeans at the end of the century; colonial states and societies; African nationalist and independent movements; the impact of decolonization; and Africa in the modern world. Additional case studies focus on individual areas such as South Africa and Nigeria. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

HLTH - Health

HLTH 100 Principles of Healthier Living CE-R and TP/SS

A study of current health issues focused on information for making prudent personal health decisions. Course explores lifestyle wellness and preventive medicine concepts and practices. Includes mental, social, sexual, physical, and environmental health topics. *Assessment Level(s): ENGL 101/ENGL 011. One hour each week.*

1 semester hour

HLTH 105 Personal and Community Health (GEIR, GEEL)

Examines the meaning and significance of physical, mental, and social health as related to the individual, society, and the influence they have on each other's behavior and function. The student will use a variety of methods to collect, analyze, interpret, and apply data and information as it relates to health behaviors and the outcomes of these behaviors have on college students, young people, and the local and global communities. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HLTH 113 First Aid and CPR CE

Theory and practical application of standard and advanced techniques of first aid and cardiopulmonary resuscitation (CPR). Students will learn how to recognize the signs and symptoms of injuries and sudden illness, how to recognize a life-threatening emergency, how to provide basic life support, and what to do in the case of an airway obstruction or choking. Students will gain the necessary skills for the administration of CPR to adults, children and infants, and learn how to use an automated external defibrillator (AED). Information on how to deal with emergencies like shock, burns, strokes, seizures, and other medical emergencies will be covered. Course consists of lecture, discussions, demonstrations, safety education, and practical work as suggested by OSHA, the American Red Cross, National Safety Council, American Academy of Orthopedic Surgeons, and/or American Heart Association. Upon successful completion of the course, students will receive nationally recognized First Aid and CPR course completion cards. *Assessment Level(s): ENGL 101/ ENGL 011. Two hours each week.*

2 semester hours

HLTH 121 Nutrition for Fitness and Wellness (GEIR, GEEL)

An overview of the scientific principles of nutrition and weight management with particular application to fitness and sport. The focus is on optimal wellness and disease prevention. Nutritional and body composition guidelines will be critically examined in order to personalize them for the individual as well as for high-level participants in a variety of fitness activities. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HLTH 125 Personalized Health Fitness (GEIR, GEEL)

An introduction to basic nutrition, exercise science and wellness principles which contribute to a healthy lifestyle. Students will demonstrate and understanding of how these scientific principles contribute to the prevention and management of disease. Through this course, students will learn the basic anatomy and applied physiology necessary to develop and implement an individualized fitness and wellness plan to achieve a healthier lifestyle. Assessment and class activities will allow students to collect and analyze data, evaluate results and apply skills in a practical setting. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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HLTH 131 Drugs and Lifestyle Wellness (BSSD, GEIR, GEEL)

An overview of the cultural drug phenomenon, its impact on society as well as the individual's quality of life. Course content includes physiological and psychological effects of the use and abuse of street, over-the-counter, prescription, and other drug substances. Additionally, wellness lifestyle strategies will be examined as methods to avoid all types of chemical dependency. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

HLTH 150 Fitness and Nutrition for Weight Management (GEIR, GEEL)

Focus on strategies for a healthier lifestyle; the physiological, sociological, psychological aspects of weight management including an understanding of health behaviors. Topics include an explanation of nutritional behaviors and fundamentals, the impact of lifestyle behaviors on weight management and an understanding of the impact of physical and social environments on a healthy lifestyle. Learn to assess and evaluate various weight loss programs and critique information coming from the media. Students will complete assessments, lifestyle evaluation and develop behavior change programs to address all aspects of weight management including impact on self, family, and society. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HLTH 160 The Science and Theory of Health (R only) (BSSD, GEIR, GEEL)

Introduces students to approaches for improving the health of individuals and communities locally and around the world through health education, health promotion, and public health practice. Students examine risk factors for disease and disability in various populations, the impact society, culture, and behavior have on a population's health status, and strategies to reduce the risk for disease and hence improve the health of individuals and communities. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HLTH 170 Introduction to Aging (R only) (BSSD, GEIR, GEEL, GCP)

An introduction to the study of the aging process. Personal and societal myths about older adults and the process of aging will be confronted via examination of demographic data, sociological trends, anatomical/physiological changes, and psychological issues such as memory, cognition, and personality. The influence of factors such as race, economics, globalization, living environment, long-term care, and health policy, as they impact quality of life will also be addressed. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HLTH 200 Health Issues in Human Sexuality (GEIR, GEEL, GCP)

An introduction to the health issues of human sexuality, including, but not limited to, reproduction and contraception, sexually transmitted diseases, health issues for special populations, and sexual health through the life span. In this course, we will provide students with information that will empower them to make responsible and appropriate decisions regarding their sexual behavior. This course will focus on the health aspects of sexual behavior. Sexuality is a multifaceted and interdisciplinary topic; however, emphasis in this course is on health issues from a healthy lifestyle perspective. Students interested in exploring the psychological nature of sexuality are encouraged to enroll in PSYC 206, Psychology of Human Sexuality. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HLTH 212 Controlling Stress and Tension (BSSD, GEIR, GEEL)

A basic understanding of the physiology and psychology of the stress response and how stress affects individuals will be the focus of this course. Course topics include physiology of the stress response and its effect on wellness especially physical and mental health; current theoretical models concerning sources of stress, coping and adapting; and strategies for the prevention and management of stress.

Students will have opportunities for self-assessment and development of personalized coping strategies. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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HLTH 215 Women's Health (GEIR, GEEL, GCP)
An introduction to the study of the diverse yet interconnected factors which affect the health of women. Women's health includes the study of female biology and reproductive health but it also incorporates the psychological and social issues which impact the quality of life for women around the world. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HLTH 220 Emergency Medical Responder
Provides a comprehensive study of emergency care principles and procedures. Course includes basic human anatomy, disease pathophysiology, mechanisms of trauma, drug actions; CPR and Automated External Defibrillator; management of bleeding and injuries; and care of special patients including obstetric, pediatric, and elderly. Students must pass all competency exams with a score of 70% or better and achieve an overall course grade of "C" or better to receive Emergency Medical Responder and Health Care Provider CPR certifications. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

HLTH 225 Introduction to Health Behaviors (R only) (BSSD, GEIR, GEEL)
An intersection of psychology, biology and health. It is the study of the mind-body connection. This course explores health risk behaviors, health protective behaviors and the underlying processes and mechanisms by which health related decisions are made. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

HLTH 250 Emergency Medical Responder Refresher (R and TP/SS only)
Refresher course for those who possess current Emergency Medical Responder and Healthcare Provider or Professional Rescuer CPR certifications. Students must pass competency exams with a score of 70% or better to receive Emergency Medical Responder and Healthcare Provider CPR certifications. PREREQUISITE(S): *Current Emergency Medical Responder and Healthcare Provider or Professional Rescuer CPR certifications and consent of department. Assessment Level(s): ENGL 101/ENGL 011. One hour each week.*

1 semester hour

HLTH 297 Community Health Worker (CHW) Practicum
In-service training and practical experience, totaling a minimum of 45 hours. The 40-hour practicum experience will take place in an approved health or clinical education setting. Students will spend five additional hours meeting with a full-time faculty member to develop goals and objectives for their practicum experiences and spend time in training and preparation for the onsite clinical practicum. Students will keep a journal of their accomplishments and will submit a final reflection analyzing their overall experiences. PREREQUISITE(S): *HLTH 105.* PRE- or COREQUISITE(S): *HLTH 160, HLTH 225, HLTH 298. Five hours lecture, 40 hours practicum.*

1 semester hour

HLTH 298 Global Health Capstone
Expand knowledge of public health into a broader perspective of globalization. Embedded within the course will be what the public health model is and how it applies personally, professionally and globally. Lectures structured around the sustainable health goals built on the success of the Millennium health goals to help transform our world. The course will expand concepts of socioeconomic status, inequalities, and the impact on health among low, moderate, and high-income countries. Student will have the opportunity to analyze the sustainable health goals as they relate to one's own choices, education, and background. This course will give the students a broad perspective to evaluate future decisions of occupation in the public health field. PREREQUISITE(S): *HLTH 160 and HLTH 225. Three hours each week.*

3 semester hours

HLTH 299 Capstone in Public Health Sciences
This capstone course provides students with an opportunity to further explore the dimensions of health and wellness and how they relate to the individual and society. This course will examine current national and local health issues, and strategies for tackling these problems at the community and national level. As part of the course, students will complete a capstone project that will allow them to assess the risk factors for a disease, its impact on the quality of life of a person with the disease, as well as construct intervention strategies to enhance the person's quality of life. This course must be taken in the last semester prior to completion of the degree program. PREREQUISITE(S): *HLTH 160, and HLTH 225, and consent of department. One hour each week.*

1 semester hour

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HMGT - Hospitality Management

HMGT 100 Customer Service in the Hospitality Industry
An examination of the role of customer service for lodging and food service operations, large and small. Course stresses understanding customer wants and needs, interaction with customers, customer service support, handling difficult situations, and building long-term relationships with customers. *Assessment Level(s): ENGL 101/ENGL 011. One hour each week.*
1 semester hour

HMGT 101 Introduction to the Hospitality Industry (R only) CE
Introduction to the hospitality field including the historical development, opportunities and challenges, current trends, and regulations governing the industry. Analysis of functions performed at the three levels of organization within the hotel-institutional organization and the role of domestic and international chains. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*
3 semester hours

HMGT 105 Food Service Sanitation (R only) CE
This course meets the 15 clock hours plus test required by the Maryland State Department of Health and Mental Hygiene. Topics include foodborne diseases, importance of employee personal hygiene and habits, and approved procedures for handling utensils and equipment. *One hour each week.*
1 semester hour

HMGT 107 Food and Beverage Management
Study of volume of food and beverage setup and service management. Analysis of quantity food operations, menu construction, raw material estimates, food storage facilities, and related use of institutional food and beverage service equipment. Emphasis on various types of table setup and service as required for different functions. *Assessment Level(s): ELAW 970/ELAR 970, ELAR 980/IERW 002. Two hours lecture, two hours laboratory each week.*
3 semester hours

HMGT 110 Principles of Food Production- Lecture (R only)
The study of basic principles of cookery, standardization of recipes, and production techniques. *Two hours each week.*
2 semester hours

HMGT 111 Principles of Food Production-Laboratory (R only)
Production, presentation, and evaluation of foods as related to commercial kitchens. *Four hours laboratory each week.*
2 semester hours

HMGT 143 Management of Front Office Operations
A study of methods and procedures used by managers of front office operations. Review and analysis of the guest cycle, maintaining proper guest records, including registration, cashiering, reservations, credit accounting, and auditing. Review of personnel requirements, including job duties and responsibilities of staff and managers. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*
3 semester hours

HMGT 201 Lodging and Food Service Law
History of laws governing innkeeping from early times to present; host responsibilities to guest and guest to innkeeper; protection of guest's health, life, and safety; theories of innkeeper's liability for negligence, evictions, crimes, dangers, and accidents; lien rights; equitable charges; house rules and regulations. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*
3 semester hours

HMGT 204 Catering and Banquets (R only)
Study of the planning and operation of catering facilities in hotels and as an independent business. Includes preparation, presentation, and service of food for catered events. PREREQUISITE(S): *HMGT 110 and HMGT 111 or consent of department. Two hours lecture, three hours laboratory each week.*
3 semester hours

HMGT 207 Legal Issues in Labor Management
Introduction to the legal implications of employer/employee relations. Topics include a brief history of the labor movement in the United States, the major acts establishing the framework for labor/management relations, union negotiations, procedures and contracts, and the economic impact of unionization. Discrimination in employment, Title VII and its implications in hiring, firing, and working conditions, as well as other statutes and regulations affecting employment relations. PREREQUISITE(S): *HMGT 211 or consent of department. Three hours each week.*
3 semester hours

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HMGT 208 Food and Beverage Cost Controls (R only)
Emphasis on additional food and beverage service dealing with problem areas stressing personnel aspects. On-the-job personnel placement, control, supervision, and training. Analysis of cost control elements and budgeting implications. PREREQUISITE(S): *HMGT 107 or consent of department. Two hours lecture, two hours laboratory each week.*

3 semester hours

HMGT 211 Supervision and Leadership in the Hospitality Industry
An examination of the management/supervision/leadership responsibilities in the typical lodging and/or food service establishment. Course stresses leadership, communication, morale, motivation, training, team building, and employee development and retention unique to lodging and food service operations. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HMGT 212 Managing Hospitality Human Resources (R only)
An examination of the managerial human resources function of the typical lodging and/or food service operation. Topics include job analysis and job design, planning, recruiting, hiring, orientation, training, and evaluating personnel. Staff turnover, discipline, exit interviews, compensation and benefit plans will also be discussed. PREREQUISITE(S): *HMGT 211 or consent of department. Three hours each week.*

3 semester hours

HMGT 220 Hotel Operations
An examination of hotel ownership and management structures within different types of hotel and lodging operations. Students will learn about the various roles and responsibilities of managers within hotel operations. Students will learn how each of the operating departments of a typical hotel work and how the departments interrelate and work with one another to deliver exceptional guest service and experience. Students will learn about the major operating departments in a hotel that include housekeeping, front office, guest services, reservations, food and beverage, sales and marketing, conference and banquets, spa and fitness facilities, accounting, human resources, purchasing, information systems and technology, maintenance and engineering, security, revenue management, as well as the executive and administrative offices. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HMGT 240 Lodging and Food Service Sales and Advertising (R only)
Concepts of publicity, communications, public recognition, and goodwill. Stresses methods of developing advertising, merchandising, and profitable use of the media. Attention to the use of convention and group sales, catering, and banquet sales and the importance of promotion in general to build an attractive public image. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

HMGT 250 Meeting, Conference, and Event Planning
The growing field of meeting and event planning is discussed in detail. Starting with an overview of the nature of meetings and why people meet, the course will look at a variety of topics, including site selection, contract negotiating, program planning, budgeting and financial management, food and beverage arrangements, and contracted services. A review of the meeting and event planner's job description is also provided. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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HMGT 290 Hospitality Practicum (R only)
In-service training and practical experience, totaling a minimum of 120 hours in an approved hospitality operation, lodging, commercial food service, institutional food service, meeting planning, or the related travel and tourism field. Requires a minimum of 10 hours of seminars with case study analysis. PREREQUISITE(S): *Consent of department.*

3 semester hours

HMGT 299 Special Topics in Hospitality Management
These courses focus on varied topics within the hospitality industry. The topics are presented as a result of industry driven demands, trends, or technology advancement or student interest, that include a variety of hospitality industry required skills or intensive study in a specific area of the hospitality industry and all that it encompasses. Topics are announced each semester in the class schedule. Course may be repeated for different topics. Minimum of 15 hours of instruction for each credit hour. PREREQUISITE(S): *Consent of department, One to three hours each week.*

1-3 semester hours

HMLS - Homeland Security

HMLS 201 Introduction to Homeland Security
Provides insight into the complex nature of homeland security through an interdisciplinary approach. Threats to homeland security, including natural and technological disasters, as well as intentional threats of domestic and international terrorism, including weapons of mass destruction, are examined. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HMLS 202 Introduction to Terrorism
Introduces terrorism, ranging from low-level acts of threats and acts of violence that may represent significant risk to human life and property to large-scale acts of violence using "weapons of mass destruction" that may have devastating, long-term effects. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

HMLS 210 Critical Infrastructure Protection
This course provides an introduction to the policy, strategy, and practical application of critical infrastructure protection from an all-hazards perspective. The focus of this course is the predominant infrastructure sectors such as water, energy, power, telecommunications, Internet and cyber infrastructure. PRE- or COREQUISITE(S): *HMLS 201. Three hours each week.*

3 semester hours

HMLS 211 Introduction to Intelligence Studies
Provides a comprehensive overview of intelligence and security issues confronting the United States today. The course will focus on intelligence and security issues, the functions of the intelligence world - intelligence collection, counterintelligence, information management, critical thinking, and decision-making. It also covers such vital issues as laws and ethics and the emerging threats and challenges that intelligence professionals will face in the future. PRE- or COREQUISITE(S): *HMLS 201. Three hours each week.*

3 semester hours

HMLS 212 Current Issues in Homeland Security
Covers timely issues such as Human Trafficking, Cybersecurity and Cyber Crime, Border and Port Security, terrorist movements and other relevant topics. Students will reference recent publications and other resources for topics covered. PRE- or COREQUISITE(S): *HMLS 201. Three hours each week.*

3 semester hours

HONR - Honors Program

HONR 101 Fundamental Concepts of Inquiry in Literature and the Arts
Selected themes and topics in literature and the arts will be used to help students develop a better understanding of the concepts, terminology, and methodology of the study of literature and the arts. Students may take this course twice to fulfill the requirements of the Honors Scholar Program, provided each time it is taken, a different topic is covered. Specific information about each section of this course will be published prior to the start of each registration and may be obtained from the campus honors coordinator.

1 semester hour

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HONR 105 Fundamental Concepts of Inquiry in the Natural Sciences and Mathematics

Selected themes and topics in the natural sciences and mathematics will be used to help students develop a better understanding of the concepts, terminology, and methodology of the study of natural sciences and mathematics. Students may take this course twice to fulfill the requirements of the Honors Scholar Program, provided each time it is taken, a different topic is covered. Specific information about each section of this course will be published prior to the start of each registration and may be obtained from the campus honors coordinator.

1 semester hour

HONR 110 Fundamental Concepts of Inquiry in Culture and History

Selected themes and topics in culture and history will be used to help students develop a better understanding of the concepts, terminology, and methodology of the study of culture and history. Students may take this course twice to fulfill the requirements of the Honors Scholar Program, provided each time it is taken, a different topic is covered. Specific information will be published prior to the start of each registration and may be obtained from the campus honors coordinator.

1 semester hour

HONR 114 Fundamental Concepts of Inquiry in the Behavioral and Social Sciences

Selected themes and topics in the behavioral and social sciences will be used to help students develop a better understanding of the concepts, terminology, and methodology of the study of behavioral and social sciences. Students may take this course twice to fulfill the requirements of the Honors Scholar Program, provided each time it is taken, a different topic is covered. Specific information about each section of this course will be published prior to the start of each registration and may be obtained from the campus honors coordinator.

1 semester hour

HONR 251 Independent Study-Tutorial in the Humanities

This tutorial emphasizes independent study in areas not listed among the credit courses in the humanities. Appropriate faculty tutor individual students in specific studies: e.g., philosophy, the problem of knowledge; literature, a comparative study of literary utopias; art, a project in oil painting; and language, Schiller and Goethe. Students may repeat this course provided that each time it is taken, a different topic is covered.

3 semester hours

HONR 258 Tutorial in Science

This tutorial emphasizes independent study in areas not listed among the other credit courses in the natural sciences. Appropriate science faculty tutor individual students. This tutorial instruction provides background material for a number of research experiments. Students may repeat this course provided that each time it is taken, a different topic is covered. PREREQUISITE(S): *Consent of instructor.*

3 semester hours

HONR 260 Independent Study-Tutorial in the Social Sciences

This tutorial emphasizes independent study in areas not listed among the other credit courses in the social sciences. Appropriate social sciences faculty tutor individual students in specific studies. Students may repeat this course provided that each time it is taken, a different topic is covered.

3 semester hours

HONR 265 Independent Study-Tutorial in Mathematics/Computer Science

This tutorial emphasizes independent studies in areas not listed among the credit courses in mathematics. Appropriate mathematics/computer science faculty tutor individual students in specific studies, e.g., in computer science, the study and comparison of modern programming languages; in mathematics, topology, complex analysis, abstract algebra, and logic. Students may repeat this course provided that each time it is taken, a different topic is covered.

3 semester hours

HONR 270 Study-Travel Seminar
This travel-study experience offers academic, aesthetic, and cultural opportunities within the USA or abroad to honor students. The course includes pre- and post-trip advising, on-site orientation sessions, and directed readings. Grades are based on Montgomery College faculty evaluation of student portfolios, and Montgomery College credit is awarded. Transportation, tuition, room and board and other costs are in addition to Montgomery College tuition. PREREQUISITE(S): *Completion of at least 12 college credits, a 3.4 grade point average or higher, a grade of A or B in ENGL 101 or ENGL 101A, and consent of campus Honors coordinator or Honors program director.*

3 semester hours

HONR 275 Honors Internship
Available through the Honors Program in partnership with other programs, for example the Paul Peck Humanities Institute and the Women's and Gender Studies Program. Internships are offered at museums, archives, historic and cultural organizations as well as college based programs, such as the Potomac Review literary journal. PREREQUISITE(S): *Permission of instructor.*

3 semester hours

HONR 280 Capstone: Research in Disciplines
Encourages students to explore a theme in their chosen discipline. Through a variety of activities and assignments, this course helps to improve students' skills in textual analysis, critical thinking, research, discussion, presentation and academic writing. Enrolled students, from diverse disciplines, will undertake and complete a mentor- approved academic project that may also be explored in the context of an interdisciplinary discussion. PRE- or COREQUISITE(S): *ENGL 102 or ENGL 103 and consent of campus honors coordinator or honors program director. Three hours each week.*

3 semester hours

HORT - Environmental Horticulture and Sustainable Agribusiness

HORT 100 Introduction to Plant Sciences (NSLD, GEEL)
This course explores the many facets of plant science and provides students with a strong foundation in the basics of botany and horticulture. Included topics are plant anatomy, morphology, physiology, classification, genetics, and the importance of plants to society. Students will apply learned fundamentals of plant propagation and nutrition during laboratory investigations. Field trips may be required. *Assessment Level(s): ENGL 101/ENGL 011. Two hours lecture, two hours laboratory one hour discussion/ recitation each week.*

4 semester hours

HORT 105 Introduction to Sustainable Landscaping (G only) CE
An overview of the basic aspects of the green industry, highlighting current environmental trends and sustainability issues. This course will introduce students to the theoretical and practical aspects of the industry, including techniques and approaches for maintaining and improving soil health and managing stormwater, as well as provide a basic understanding of growth and nutrition to ensure environmental sustainability. Students will learn about national, state, and local guidelines promoting sustainability in landscape design and management. *Two hours each week.*

2 semester hours

HORT 115 Water Garden Management (G only)
This course, a comprehensive survey directed toward planning, installing, and maintaining water gardens, examines construction materials and techniques. Topics also include the study of aquatic plants-their propagation, culture, and function in the aquatic ecosystem-and the selection and care of ornamental fish and scavengers. *One hour lecture, two hours laboratory each week.*

2 semester hours

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HORT 135 Landscape Technologies for Stormwater Maintenance (G only)
Instruction in how to perform inspection, minor repairs and maintenance of plant materials surrounding bio-retention facilities and similar Low Impact Development (LID) techniques according to Montgomery County and Maryland State guidelines. Other topics include planning reading and developing a maintenance plan for bio-retention facilities. *One half hour lecture, one hour laboratory each week.*

1 semester hour

HORT 141 Beekeeping (G only)
Provides the knowledge to start and maintain a honeybee hive. Key topics include honeybee life cycle and functions, seasonal management, parasite and pathogen management, and products from the hive. Course gives students hands-on opportunity at an apiary. *Two hours each week.*

2 semester hours

HORT 145 Creating Gardens in a Digital Age (G only)
This course introduces students to historical garden designs as well as current ecologically influenced trends, such as sustainable landscaping and native planting designs. Through traditional and digital media, students will learn to apply these influences to create their own designs and to prepare graphic presentations, plant palettes, and price quotes. Three Saturday field trips will look at garden designs that will form the basis of the students' projects. *Assessment Level(s): ELAR 980/IERW 002. One hour lecture, two hours laboratory each week.*

2 semester hours

HORT 150 Introduction to Arboriculture (G only)
Hands-on course teaches the skills and techniques necessary to access the upper parts of large trees; safety when working in and around large trees; and proper selection, use, and maintenance of equipment used in the arboriculture profession. Other topics include selection and care of personal protective equipment. The course is physical in nature. This course has been endorsed by the Maryland Arborist Association. *Assessment Level(s): ELAR 980/IERW 002. Two hours laboratory each week.*

1 semester hour

HORT 161 Landscape Graphics (G only) CE
This course in landscape design is for beginning students who wish to develop the graphic skills necessary to prepare planting designs and construction drawings for presentations to clients and for construction implementation. Topics include site analysis, conceptual design, schematic design, working drawings, and construction details. Students will prepare colored site plans and basic three-dimensional drawings. *Two hours lecture, two hours laboratory each week.*

3 semester hours

HORT 170 Medicinal Plants
Overview of the growth, culture, and science related to the production and use of medicinal plants. Emphasis on plant source, plant description, the active agent and its beneficial or detrimental physiological action and effects. Emphasis on herbal medicine; secondary chemistry of active compounds, oil extraction, and utilization of these plants. Field trips and classroom demonstrations are integrated into the course. *One hour lecture, two hours laboratory each week.*

2 semester hours

HORT 171 Fruit Production
An overview of fruit crops suitable for central Maryland including native fruits. Topics include proper site selection, soils, choice of varieties, pruning, cultivation, fertilization, control of common pests and diseases, and harvesting of fruit crops including native fruits, as well as economic considerations and future trends. Labs include practical hands-on experience in the classroom and the field. Four Saturday field trips required. *One hour lecture, two hours laboratory each week.*

2 semester hours

HORT 190 Pesticide Use and Safety (G only)
This course prepares the horticultural professional for the examination for pesticide application certification. Course content includes principles of pest control, pesticides, laws and regulations, pesticide labeling, pesticides and human health, personal protective equipment, pesticides and the environment, handling pesticides, pesticide emergencies, and pesticide alternatives. *Two hours each week.*

2 semester hours

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HORT 215 Integrated Pest Management and Entomology (G only)
Identification of insects, mites, and other arthropods attacking landscapes, nursery plants, and greenhouse crops. Topics include life cycles of plant-damaging insects/mites and identification of commonly attacked plant materials; integrated pest management control options; pesticide uses and limitations; pesticide safety, equipment, and application methods. *Assessment Level(s): ELAR 980/IERW 002. Two hours lecture, two hours laboratory each week.*

3 semester hours

HORT 222 Sustainable Turfgrass Management (G only)
Management of turfgrass with respect to residential, commercial, and athletic field lawn care. Emphasis on the use of the newest and most adaptable turfgrass varieties for minimum insect and disease problems. Turfgrass establishment procedures, lawn maintenance schedules, renovation procedures, pest control methods, and weed control options will be covered. Laboratory assignments will include identification of grass species, weeds, and turf insects. *Assessment Level(s): ELAR 980/IERW 002. Two hours lecture, two hours laboratory each week.*

3 semester hours

HORT 244 Herbaceous Plant Materials (G only)
This course, designed to help students make appropriate selections for landscaping situations, identifies and examines herbaceous plant material commonly used in residential and commercial landscaping, with an emphasis on annuals, perennials, and ornamental grasses. *Assessment Level(s): ELAR 980/IERW 002. Two hours lecture, two hours laboratory each week.*

3 semester hours

HORT 253 Plant Materials I (G only)
Identification and uses of deciduous plant material commonly used in the landscape in Maryland and surrounding states for residential and commercial plantings. Emphasis on native and non-native deciduous trees and shrubs. Plant heights, shapes, seasonal interest, flower time, colors, fruiting characteristics, and other landscape characteristics are covered. This course is intended to prepare the student to make appropriate selection of plant materials for particular landscape situations. *Assessment Level(s): ELAR 980/IERW 002. Two hours lecture, two hours laboratory each week.*

3 semester hours

HORT 254 Plant Materials II (G only)
Identification and uses of evergreen plant material commonly used in the landscapes of Maryland and surrounding states. Evergreens with outstanding qualities that are not commonly used and that are recent plant introductions will also be covered. The course will emphasize native and non-native evergreen shrubs, trees, ground covers, and vines. Evergreen plant heights, shapes, colors, seed pod characteristics, and bark patterns will be covered. *Assessment Level(s): ELAR 980/IERW 002. Two hours lecture, two hours laboratory each week.*

3 semester hours

HORT 258 Sustainable Landscape Management (G only)
Landscape management skills in site preparation and modification for landscape planting. Handling of balled and burlapped plant stock and container nursery stock in the transplanting process. Evaluating the soils of planting sites. Study of fertility practices, drainage problems, use and limitations of soil amendments, methods for selecting healthy plant material, pruning techniques, mulch materials, and chemical and nonchemical methods of weed control. Understanding the job estimating process. *Assessment Level(s): ELAR 980/IERW 002. Two hours lecture, two hours laboratory each week.*

3 semester hours

HORT 271 Plant Propagation and Production (G only) CE
Introduction to the principles, techniques, and facilities used to propagate and produce a broad range of ornamental plants, including native plants, annuals and perennials, small fruit and tree fruit. Topics include seed propagation, cutting, grafting, budding, division, layering, and tissue culture. *Two hours lecture, two hours laboratory each week.*

3 semester hours

HORT 280 Landscape Technology Internship (G only) CE
Students will design, with guidance from an instructor, an individual career work experience in the horticulture or turfgrass industry. The intent is to give students an appropriate work experience that will expand their knowledge and aid them in making career decisions. PREREQUISITE(S): *Completion of 16 semester hours of landscape technology courses or consent of department. Six hours each week.*

2 semester hours

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HSCI - Health Sciences

HSCI 101 Introduction to Health Sciences
Course is designed to give students interested in allied health careers the opportunity to explore the basic concepts surrounding professions related to this field. Instruction includes an introduction to: anatomy and physiology, medical terminology, medical ethics, communications, and application of professional practices to both hospital and pre-hospital environments. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

IDES - Interior Design

IDES 101 Interior Design I (R only) CE
An introduction to the relationship of people to their environment and the design process necessary to create functional aesthetic interior space. The study of design theory using conceptual problem-solving methods. Emphasis on the basic elements and principles of design and use of drafting instruments required to translate design concepts into completed projects. *Two hours lecture, four hours studio each week.*

3 semester hours

IDES 107 Interiors: Design Principles (R only) CE
Introduces design elements, including color, space, texture, line, lighting, sound, and form in two- and three-dimensional spaces. Topics include principles and design theory, as related to environmental applications. Two-dimensional studies include applications in elevations and plans; three-dimensional studies include applications in interiors models. *Two hours lecture/discussion, four hours studio each week.*

3 semester hours

IDES 110 Interiors: Technical Drawing and Drafting (R only) CE
Introduces basic drawing and drafting techniques, employed as the foundation for all graphic communications for interior designers. Three-dimensional and two-dimensional drawings, as well as freehand sketching, are incorporated in weekly projects and assignments. *Two hours lecture/ discussion, four hours studio each week.*

3 semester hours

IDES 111 Interior Design II (R only) CE
A continuation of IDES 107, with emphasis on creating design solutions for both residential and nonresidential spaces. Projects will be more complex. Students will utilize appropriate scale, color, materials, furniture, form, and light to define and solve major interior space problems and design objectives in an organized method. PREREQUISITE(S): *IDES 101, IDES 107, IDES 110 or consent of interior design coordinator. Two hours lecture, four hours studio each week.*

3 semester hours

IDES 118 Interior Design Visualization & Presentation (R Only) CE
Traditional and new methods and techniques for visualization, communication, and presentation. Perspective drawing, graphic design principles, sketching and rendering for design development and communication. Digital software, Sketchup, and 3-D models. Editing with Photoshop. PREREQUISITE(S): *IDES 101 and IDES 110 or consent of the interior design coordinator. Two hours lecture, four hours lab each week.*

3 semester hours

IDES 123 CAD Drafting for Interior Design (R Only) CE
An introduction to computer-aided drafting (CAD) in the interior design profession utilizing AutoCAD to create design and construction drawings for residential and commercial interior design projects. PREREQUISITE(S): *IDES 101 and IDES 110 or ARCH 103, or consent of the interior design coordinator. Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Two hours lecture, four hours studio each week.*

3 semester hours

IDES 221 Interior Design: Residential (R only)
To develop the student's concepts and ideas by designing the interior spaces of an apartment and house. Analysis of aesthetics of style, function, and space culminating in finished perspective rendering in color, floor plan, sample boards, and cost estimates. PREREQUISITE(S): *IDES 111 and IDES 118, IDES 123 or ARCH 183. Two hours lecture/discussion, four hours studio each week.*

3 semester hours

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IDES 222 Interior Design: Commercial/Contract (R only)
The design and planning of public interiors and commercial spaces such as offices, stores and/or showrooms. Students learn to analyze and organize the elements of interior design and cost estimates, including the role of function and structure in space planning and lighting. Focus is on interiors systems, technical project presentations, codes, and teamwork. PREREQUISITE(S): *(IDES 111 and IDES 118) and (ARCH 183 or IDES 123). Two hours lecture, four hours studio each week.*

3 semester hours

IDES 234 Textiles (R only)
An introduction to textiles and materials used for interior applications and their historical development. Fibers, weaves, textures, piles, dyes, printing, finishes, codes, environmental issues, and scientific testing will be studied. Field trips required. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture, two hours laboratory/studio each week.*

3 semester hours

IDES 240 Textiles, Materials, and Finishes for Interior Design (R only)
Introduction to interior materials and finishes. Research, specification, and installation. Environmental impact and human health and well-being. History and role of decorative arts. Showroom visits and product representative demonstrations. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture each week.*

3 semester hours

IDES 243 Kitchen Design (R only)
The design of kitchens using National Kitchen and Bath Association (NKBA) guidelines and graphic standards. Mechanical, electrical, and plumbing requirements are analyzed and incorporated into design. Students must demonstrate drafting skills and knowledge of space planning and design or meet prerequisites. PREREQUISITE(S): *IDES 101 and IDES 110 or consent of interior design coordinator. One hour lecture, one hour laboratory each week.*

1 semester hour

IDES 244 Bath Design (R only)
The design of baths using National Kitchen and Bath Association (NKBA) guidelines and graphic standards. Mechanical, electrical, and plumbing requirements are analyzed and incorporated into design. Students must demonstrate drafting skills and knowledge of space planning and design or meet prerequisites. PREREQUISITE(S): *IDES 101 and IDES 110 or consent of interior design coordinator. One hour lecture, one hour laboratory each week.*

1 semester hour

IDES 245 Kitchen and Bath Appliances and Equipment (R only)
An introduction to the selection, specification, and installation of appliances and equipment used in residential and commercial kitchens and baths. Hands-on demonstrations of appliances and equipment will be provided by representatives, vendors, and contract specialists. PREREQUISITE(S): *IDES 101 or IDES 110 or consent of interior design adviser. Assessment Level(s): ELAR 980/IERW 002. Field trip(s) required. One hour lecture/discussion; one hour laboratory each week.*

1 semester hour

IDES 246 Interior Systems (R only)
An introduction to the selection and installation of interior kitchen and bath systems including plumbing, ventilation, and electrical. Projects are examined and options and solutions explored using National Kitchen and Bath Association (NKBA) guidelines. PREREQUISITE(S): *IDES 111 or consent of interior design coordinator. One hour each week.*

1 semester hour

IDES 247 Codes for Interiors (R only)
An introduction to issues related to codes and building requirements for furniture, finishes, systems, accessibility, and installations in the interior environment. Students examine standards, codes, National Kitchen and Bath Association (NKBA) guidelines, resources, and local code procedures. Students analyze sample projects and resolve issues related to codes and specify accordingly. PREREQUISITE(S): *IDES 101 or IDES 110 or consent of interior design coordinator. Assessment Level(s): ENGL 101/ENGL 011, MATH 050. One hour each week.*

1 semester hour

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IDES 248 Interior Materials and Finishes (R only)
An examination of the characteristics, use, specification, and installation of current materials and finishes applied to interior walls, floors, furniture, and cabinetry. Materials and finishes explored will include woods, metals, plastics, ceramics, and natural products. Product manufacturer's representatives will provide in-class product demonstrations. *One hour each week.*

1 semester hour

IDES 250 Lighting Design (R only)
Intensive technical instruction in the principles of lighting design: light source and fixture selection, fixture specification, and installation. Real projects will be examined and possible solutions explored in order to determine appropriate decisions relative to product selection, placement, and electrical requirements. Drafting proficiency will be applied to exercises or assignments. PREREQUISITE(S): *IDES 101 and IDES 110 or consent of interior design adviser. Assessment Level(s): ELAI 990/ELAW 980/ELAR 980, IERW 002. One hour each week.*

1 semester hour

IDES 262 Interiors: Professional Experience (R only) CE
Provides work experience and field study on an actual project related to the student's curriculum. Each student drafts a comprehensive record of the work experience and discusses it with the interior design adviser. Each student submits a descriptive paper, documenting the learning outcomes and benefits of the work, as related to the career goals and program objectives. Students may receive credit by examination for work experience, as demonstrated by examination, portfolio review, resume, and employer recommendations. PREREQUISITE(S): *Consent of interior design coordinator or department.*

1-3 semester hours

IDES 272 Business Practices and Procedures for Interior Design (R only)
The student will be exposed to the professional and business essentials necessary to conduct a successful interior design practice. Client-designer relationships, contracts, fees, and office management are covered. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

IDES 275 Interiors: Professional Practicum/ Internship (R only)
Provides work experience and field study on an actual project related to the student's curriculum. Each student drafts a comprehensive record of the work experience and discusses it with the interior design adviser. Each student submits a descriptive paper, documenting the learning outcomes and benefits of the work, as related to the career goals and program objectives. Participation supervised by the instructor and appropriate personnel at work. PREREQUISITE(S): *Consent of interior design coordinator or department.*

1-3 semester hours

IDES 280 Interiors: Independent Study/Research (R only)
Provides independent research and study in an area not listed among the credit courses in interior design. Individual students are tutored in specific areas (e.g., study of psychological or sociological implications of spatial interpretations); students research and record data related to a selected topic of interior design. The course culminates in the production of a research paper. Students may repeat this course to advance the previous topic or for a different topic. PREREQUISITE(S): *Consent of interior design coordinator or department.*

1-3 semester hours

IDES 285 Interiors: Advanced Independent Project (R only)
Provides independent research and study in an area not listed among the credit courses in interior design. Individual students are tutored in specific areas (e.g., study of psychological or sociological implications of spatial interpretations); students research and produce a project related to a selected topic of interior design, which culminates in the production of a design project or product. Students may repeat this course provided that each time it is taken, a different project is produced, for a maximum of 3 semester hours. PREREQUISITE(S): *Consent of interior design coordinator or department.*

1-3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

IERW - Integrated Reading and Writing

IERW 001 Integrated Reading and Writing I
A developmental course for native speakers of English designed to improve reading and writing skills. This course integrates the critical reading and writing skills students need to comprehend and interact with college-level texts and to produce original college-level writing in standard written English. Writing skills start at the sentence and paragraph level and culminate in multi-paragraph essays. Upon successful completion, students will advance to IERW 002 or ENGL 101 or ENGL 101A according to discipline guidelines. PREREQUISITE(S): *Placement through assessment testing or consent of the department. Six hours each week.*

6 semester hours

IERW 002 Integrated Reading and Writing II
A developmental course for native speakers of English designed to improve reading and writing skills. This course integrates the critical reading and writing skills students need to comprehend and interact with college-level texts and to produce original college-level writing in standard written English. Writing skills start at the multi-paragraph essay level. Upon successful completion, students will advance to ENGL 101 or ENGL 101A according to discipline guidelines. PREREQUISITE(S): *Placement through assessment testing or completion of IERW 001 with a grade of C or better. Five hours each week.*

5 semester hours

ISTD - Interdisciplinary Studies

ISTD 173 Integrated Arts (ARTD, GEIR, GEEL, GCP)
This introductory course explores basics in visual arts, dance, music, and theatre through an exploration of representative works. It also focuses on the relationship of terms and concepts to the perceptual process and on developing both artistic and critical perception. This interdisciplinary studies course meets the integrated arts requirement of the Maryland Higher Education Commission-approved A.A.T. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

ITAL - Italian

ITAL 101 Elementary Italian I (HUMD, GEIR, GEEL, GCP)
A beginning language course focusing on the study of Italian language and culture. Students begin to develop the ability to communicate in Italian through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Italian is required. In-class work is supplemented by 20 hours of online homework. *Three hours each week.*

3 semester hours

ITAL 102 Elementary Italian II (HUMD, GEIR, GEEL, GCP)
A continuation of ITAL 101. Students continue their study of written language, conversation, and composition as they consider cultural themes, language functions, and authentic situations. In-class work is supplemented by 20 hours of online homework. PREREQUISITE(S): *ITAL 101 or consent of department. Three hours each week.*

3 semester hours

ITAL 201 Intermediate Italian I
Focuses on the study of Italian language and culture at the intermediate level. Students further their ability to communicate in Italian through an advanced consideration of cultural themes and a thorough review of Italian grammar to support increased focus on reading and composition. In-class work is supplemented by 10 hours of online homework. PREREQUISITE(S): *ITAL 102 or consent of department. Three hours lecture each week.*

3 semester hours

JAPN - Japanese

JAPN 101 Elementary Japanese I (HUMD, GEIR, GEEL, GCP)
Beginning language course focusing on the study of Japanese language and culture. Students begin to develop the ability to communicate in Japanese through the consideration of cultural themes, language functions and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Japanese is required. *Four hours each week.*

4 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

JAPN 102 Elementary Japanese II (HUMD, GEIR, GEEL, GCP)
Continuation of JAPN 101. Students continue to develop the ability to communicate in Japanese through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. PREREQUISITE(S): *JAPN 101. Four hours each week.*

4 semester hours

KORA - Korean

KORA 101 Elementary Korean I (HUMD, GEIR, GEEL, GCP)
A beginning language course focusing on the study of Korean language and culture. Students begin to develop the ability to communicate in Korean through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Korean is required. In-class work is supplemented by 20 hours of online homework. *Three hours each week.*

3 semester hours

KORA 102 Elementary Korean II (HUMD, GEIR, GEEL, GCP)
A continuation of KORA 101. Students continue their study of written language, conversation, and composition as they consider cultural themes, language functions, and authentic situations. In-class work is supplemented by 20 hours of online homework. PREREQUISITE(S): *KORA 101 or consent of department. Three hours each week.*

3 semester hours

KORA 201 Intermediate Korean I (HUMD, GEIR, GEEL, GCP)
Focuses on the study of Korean language and culture at the intermediate level. Students further their ability to communicate in Korean through an advanced consideration of cultural themes and a thorough review of Korean grammar to support increased focus on reading and composition. In-class work is supplemented by 20 hours of online homework. PREREQUISITE(S): *KORA 102. Three hours each week.*

3 semester hours

KORA 202 Intermediate Korean II
A continuation of KORA 201. Students further their ability to communicate in Korean through an advanced consideration of cultural themes and a review of Korean grammar to support an increased focus on reading and composition. In-class work is supplemented by 20 hours of online homework. PREREQUISITE(S): *KORA 201. Three hours each week.*

3 semester hours.

LATN - Latin

LATN 101 Elementary Latin I (HUMD, GEIR, GEEL, GCP)
A foundation for reading, writing, and understanding of the Latin language. Each course includes the structure, grammar, syntax, and vocabulary of Latin. Students will read and translate Latin texts. *Three hours each week.*

3 semester hours

LATN 102 Elementary Latin II (HUMD, GEIR, GEEL, GCP)
A foundation for reading, writing, and understanding of the Latin language. Each course includes the structure, grammar, syntax, and vocabulary of Latin. Students will read and translate Latin texts. PREREQUISITE(S): *LATN 101. Three hours each week.*

3 semester hours

LGST - Paralegal Studies (Legal Assistant)

LGST 101 Introduction to the Legal System
An overview of the U.S. legal system with an additional focus on the role of the paralegal professional within that system. Specific topics studied include the operation and structures of federal and state criminal and civil law systems; federal and state court organization; career opportunities for the paralegal professional in various sectors of the U.S. legal system; basic ethical considerations in the practice of law; legal research and writing skills; trial preparation activities and interviewing techniques; and introduction to specific areas of law such as real property law, tort law, contract law, environmental law, criminal law/procedure etc. PRE- or COREQUISITE(S): *ENGL 101 and POLI 101. Three hours lecture/discussion each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

LGST 102 Legal Research
Focuses on the importance of legal research as a valuable skill set for the paralegal professional. This introductory course will explore the elements of an organized approach to legal research, including traditional and electronic sources of research and commonly used research tools to include online research and use of secondary sources to include treatises, annotations, and legislative histories. PREREQUISITE(S): *LGST 101. Three hours lecture/discussion each week.*

3 semester hours

LGST 103 Legal Writing
Focuses on the language, format, and content of legal writings. This introductory legal writing course will emphasize the techniques of legal composition and the required application of key facts, relevant law, and citation of sources, among others, in various forms of legal writings such as memoranda, letters, and legal instruments. PREREQUISITE(S): *LGST 101. Three hours lecture/discussion each week.*

3 semester hours

LGST 104 Interviewing, Investigating, and Communication Techniques
Introduction to the factors underlying effective communications and investigation within the legal environment. Techniques in interviewing, listening, and investigating will be presented and discussed. Students will have an opportunity to prepare for and to conduct interviews and draft investigation plans. PRE- or COREQUISITE(S): *LGST 101. Three hours lecture/discussion each week.*

3 semester hours

LGST 106 Legal Ethics
An exploration of fundamentals in ethics as applied to individuals in public and private settings affecting both personal and public policy judgments and decisions. In addition to the ABA Model Rules of Professional Conduct, this course will focus on the Maryland Attorneys' Rules of Professional Conduct. PREREQUISITE(S): *LGST 101. Three hours each week.*

3 semester hours

LGST 122 Law Office Administration
A study of the principles of law office administration including organizational structures, law office personnel, systems approach, equipment, timekeeping, bookkeeping and accounting practices, indexing and filing, calendar and monitoring systems, library and retrieval systems, the office manual, and the law office layout. Students will complete practical problems in several areas. Major emphasis will be on the development and use of systems in the law office, including software, with the expectation of increasing efficiency and reducing legal costs. PRE- or COREQUISITE(S): *LGST 101. Three hours lecture/ discussion each week.*

3 semester hours

LGST 200 Cyber Law
Examine the developing and growing body of laws associated with cyberspace. Students will examine laws governing e-commerce including intellectual property rights laws and discuss issues related to the internet involving contracts, criminal law, torts, constitutional and privacy matters, among others. PREREQUISITE(S): *LGST 101 or consent of department. Three hours lecture/discussion each week.*

3 semester hours

LGST 205 Alternative Dispute Resolution
In this course students will examine negotiation, mediation, and arbitration as alternatives for dispute settlement to avoid litigation. The course will focus on the resolution of conflicts utilizing the developed techniques, strategies, and methodology associated with mediation and arbitration and goal achievement negotiation. Students will also learn the training required for ADR practitioners and the role of the paralegal in this process. PREREQUISITE(S): *LGST 101 or consent of department. Three hours lecture/discussion each week.*

3 semester hours

LGST 210 Torts
The study of civil wrongs regarding the liability for harm caused by wrongful acts that violate non-contractual duties imposed by law. This course will cover various theories of tortious liabilities to include: negligence, intentional torts, and strict liability. The course will cover defenses and remedies arising from civil actions. PREREQUISITE(S): *LGST 101. Three hours lecture/discussion each week.*

3 semester hours

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LGST 211 Maryland Contract Law
This course focuses on the common law of contracts and sales. Emphasis is placed on the elements of a contract, the types of sales, and the legal consequences as a result of a contract or sale. Students will become familiar with the negotiation of a contract, creation of a sale, and the interpretation of the relevant laws. Students will be required to draft several contracts and sales agreements according to the laws of Maryland and the Uniform Commercial Code. Includes the paralegal's role in assisting attorneys in contract review. PREREQUISITE(S): *LGST 101. Three hours lecture/discussion each week.*

3 semester hours

LGST 212 Immigration Law
An introduction to U.S. immigration laws as applied to personal, corporate, and public policy judgments. This course concentrates on questions of philosophy, public policy, and constitutional interpretation and will develop an awareness of how legislation affects administrative and judicial decisions involving immigration. PREREQUISITE(S): *LGST 101 or consent of department. Three hours lecture/discussion each week.*

3 semester hours

LGST 214 Domestic Relations
An introduction to the practice of domestic relations law in Maryland. Instruction includes an overview of the process through which a divorce or child custody action proceeds from the attorney's office through the courts. The rights of the parties are examined to include alimony, child custody, child support, and property. The role of the paralegal in this field will also be examined. PREREQUISITE(S): *LGST 101. Three hours lecture/discussion each week.*

3 semester hours

LGST 216 Real Property
An introduction to the basics of real property law designed to enable students to identify the various forms of holding title to real property; to recognize the most commonly used types of deeds and to assess their validity; to understand the purpose and mechanics of title searches; and to recognize the parties and documentation associated with real property sales transactions. Students will have an opportunity to draft valid deed clauses and to conduct online title searches. PREREQUISITE(S): *LGST 101. Three hours lecture/discussion each week.*

3 semester hours

LGST 218 Civil Litigation
A practical course in examining the process through which a civil lawsuit advances from the lowest to the highest courts in the Federal and state court systems with a focus on the role and participation of the paralegal professional at every stage of the process. Students will have an opportunity to draft pleadings, motions, discovery requests, and letters related to legal matters. PREREQUISITE(S): *LGST 101. Three hours lecture/discussion each week.*

3 semester hours

LGST 220 Wills and Estate Administration in Maryland
A practical course in managing probate proceedings. The first of the course will be devoted to the types of Wills recognized in Maryland; the elements necessary to create a valid Will; and what happens if the decedent dies without a Will. The second half of the course will be devoted exclusively to the steps necessary to administer Small, Regular, and Modified estates in Maryland and to identify when Judicial Probate becomes necessary. PREREQUISITE(S): *LGST 101. Three hours lecture/discussion each week.*

3 semester hours

LGST 230 Criminal Law and Procedure for Paralegals
An introduction to substantive criminal laws as well as procedures and rules related to criminal trials in the Federal system and in Maryland. Students will learn the elements of substantive criminal laws and the application of those elements to various fact patterns. Students will also be introduced to the rules of practice directly related to criminal law trials. Students may not earn credit for CCJS 221 and this course. PREREQUISITE(S): *LGST 101. Three hours lecture/discussion each week.*

3 semester hours

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LGST 250 Paralegal Internship
Students will gain on the job training and practical experience as a paralegal. The intent is to give students an appropriate work experience that will expand their knowledge and aide them in making career decisions. Responsibilities will include assisting attorneys with preparing court documents, client interviews, and appearing in court. In lieu of clinic, students may be placed within their current employment under the supervision of an attorney to participate in legal work. PREREQUISITE(S): *LGST 101, LGST 102, LGST 103, LGST 104, and with a grade point average of 3.0 or better in all LGST courses. Students are required to complete 45 hours of 50 minutes each for one credit hour including a one-hour weekly seminar.*

1-3 semester hours

LGST 260 Law Office Technology
Provides training in a variety of specialized legal software applications in use in the modern practice of law through lecture, discussion, and other classroom and online activities which include legal software utilized for law practice management, timekeeping, litigation support, and trial preparation/management, among others. Successful completion of course modules will lead to a Legal Technology Certification by the National Society for Legal Technology. PREREQUISITE(S): *LGST 101 and LGST 122. Three hours lecture/discussion each week.*

3 semester hours

LGST 265 eDiscovery Software Applications
Explores the rapidly developing role of software in the area of legal data, eDiscovery, and information governance. We will take an in-depth look at the role of software in the litigation lifecycle from data collection and document review to production and presentation at trial. Exploration of technology used in litigation support and by litigation teams in the acquisition of data and eDiscovery processing. Successful completion of the course will lead to the award of a certificate in eDiscovery Software Application Basics being jointly presented by National Society for Legal Technology (NSLT) and Association of Certified E-Discovery Specialists (ACEDS). PREREQUISITE(S): *LGST 218 or consent of the department. Three hours lecture/discussion each week.*

3 semester hours

LIBR - Library

LIBR 110 Fundamentals of Library Research
An introduction to library research, including experience in analyzing and using various types of sources and research tools. Emphasis will be placed on developing techniques for effective research. *Assessment Level(s): ENGL 101/ENGL 011. One hour each week.*

1 semester hour

LING - Linguistics

LING 200 Introduction to Linguistics (HUMD, GEIR, GEEL, GCP)
A survey of the core areas of linguistic analysis-phonology, morphology, syntax, semantics, and pragmatics-and of the major areas of study to which linguistic theory can be applied. The latter include psycholinguistics, sociolinguistics, first and second language learning, history of languages, writing systems, and language universals. PREREQUISITE(S): *A grade of C or better in ENGL 101/ENGL 101A or consent of department. Three hours each week.*

3 semester hours

MATH - Mathematics

MATH 017 Elements of Statistics Support
A corequisite course designed to equip students with the skills needed to be successful in MATH 117 by providing support in fundamental mathematics. Topics include operations on real numbers, evaluation of algebraic expressions, finding the mean and median of sets of data, analyzing and interpreting graphs of data sets, and basic probability. Two hours each week. PREREQUISITE(S): *Appropriate score on the mathematics assessment test or consent of the department. Assessment Level(s): ENGL 101/ENGL 011 or ELAI 990. Two hours each week.*

2 semester hours

MATH 020 Survey of College Mathematics Support
A corequisite course designed to equip students with the skills needed to be successful in MATH 120 by providing support in fundamental mathematics. Topics include operations on real numbers, evaluation of algebraic expressions, solving linear equations and inequalities, and analyzing and interpreting graphs. PREREQUISITE(S): *Appropriate score on the mathematics assessment test or consent of the department. Assessment Level(s): ENGL 101/ENGL 011 or ELAI 990. Two hours each week.*

2 semester hours

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MATH 030 Elements of Mathematics I Support
A corequisite course designed to equip students with the skills needed to be successful in MATH 130 via an examination of number sense, mathematical reasoning, algebraic reasoning, and problem solving. Topics include operations in base-ten, operations with fractions, number theory, and algebraic operations. PREREQUISITE(S): *Appropriate score on the mathematics assessment test or consent of the department. Assessment Level(s): ENGL 101/ENGL 011 or ELAI 990. Two hours each week.*

2 semester hours

MATH 045 Foundations of Algebra Support
A corequisite course intended to equip students with the skills needed to be successful in MATH 050 by providing support in fundamental mathematics. Topics include operations on real numbers, evaluation of algebraic expressions, solving equations, and operations on polynomials. PREREQUISITE(S): *Appropriate score on the mathematics assessment test or consent of the department. Assessment Level(s): IERW 002 or ELAR 980. Two hours each week.*

2 semester hours

MATH 050 Foundations of Algebra
An examination of algebraic skills and concepts intended to prepare students for MATH 130, MATH 150, and MATH 165. Numerical, graphical, and algebraic approaches are represented throughout as well as applications. Topics include operations on polynomial and rational expressions, analysis of quadratic and rational functions and graphs, solving quadratic, rational, and radical equations, and graphing and evaluating polynomial and exponential functions. PREREQUISITE(S): *Appropriate score on the mathematics assessment test; or concurrent enrollment in MATH 045; or consent of the department. Assessment Level(s): IERW 002 or ELAR 980. Four hours each week.*

4 semester hours

MATH 092 Foundations of Mathematical Reasoning
Development of algebraic and numerical skills in a context of applications and problem-solving skills and to prepare students for a mathematics foundation course. Topics include quantitative relationships, patterning and algebraic reasoning, functional reasoning, probabilistic and statistical reasoning, incorporating quantitative communication skills and technology. This course does not satisfy the prerequisite for MATH 130, MATH 150, or MATH 165. Not intended for students who have a grade of C or better in MATH 093, MATH 096, or their equivalent. PREREQUISITE(S): *Appropriate score on mathematics assessment test. Assessment Level(s): IERW 002 or ELAR 980. Three hours each week.*

3 semester hours

MATH 098 Introduction to Trigonometry
An examination of right triangle trigonometry and applications. Topics include graphs and equations involving sine, cosine, tangent, and related basic concepts. Usually scheduled to meet 5-7 weeks in the first half or second half of a semester. PREREQUISITE(S): *A grade of C or better in MATH 050, appropriate score on mathematics assessment test, or consent of department.*

1 semester hour

MATH 117 Elements of Statistics (MATF, GEEL)
An introductory noncalculus statistics course to serve a variety of students who need a working knowledge of statistics. Descriptive analysis and treatment of data, probability and probability distributions, statistical inferences, linear regression and correlations, chi-square, and some nonparametric statistics. Preexisting statistical computer programs may be used for some applications. PRE- or COREQUISITE(S): *Appropriate score on mathematics assessment test, a grade of C or better in MATH 050 or MATH 092, or concurrent enrollment in MATH 017, or consent of department. Assessment Level(s): ENGL 101/ ENGL 011 or ELAI 990. Three hours each week.*

3 semester hours

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MATH 120 Survey of College Mathematics (MATF, GEEL)

A general college mathematics course whose topics include linear equations, matrix algebra, linear programming, probability, and mathematical finance. The applications are primarily from business, economics, and the life sciences. Emphasis is on developing, analyzing, and interpreting mathematical models. PRE- or COREQUISITE(S): *Appropriate score on mathematics assessment test; a grade of C or better in MATH 050 or MATH 092; or concurrent enrollment in MATH 020; or consent of department. Assessment Level(s): ENGL 101/ENGL 011 or ELAI 990. Three hours each week.*

3 semester hours

MATH 130 Elements of Mathematics I: Mathematical Reasoning and Number Systems (MATF, GEEL)

Intended for elementary education majors, requires students to examine and explain concepts and processes involving numeration systems, number theory, problem solving, whole numbers, integers, and rational numbers. PRE- or COREQUISITE(S): *Appropriate score on mathematics assessment test, a grade of C or better in MATH 050, or concurrent enrollment in MATH 030, or consent of department. Assessment Level(s): ENGL 101/ENGL 011 or ELAI 990. Four hours each week.*

4 semester hours

MATH 131 Elements of Mathematics II: Geometry and Algebra

This course covers proportions, percents, and real numbers; basic geometry that includes congruence, similarity, symmetry, and transformations; measurement and coordinate geometry; and algebra emphasizing multiple representations. Intended for elementary education majors, this course is also suitable for parents of school-age children. PREREQUISITE(S): *A grade of C or better in MATH 130 or consent of department. Four hours each week.*

4 semester hours

MATH 132 Elements of Mathematics III: Probability, Statistics, and Problem Solving

This course covers descriptive statistics, sampling, standardized tests, basic probability, counting techniques, expectations, and problem solving in a variety of settings. Intended for elementary education majors, this course is also suitable for parents of school-age children. PREREQUISITE(S): *A grade of C or better in MATH 131 or consent of department. Four hours each week.*

4 semester hours

MATH 150 Elementary Applied Calculus I (MATF, GEEL)

Differential and integral calculus with applications in business, economics, social and the life sciences. Topics include functions and their graphs, constructing mathematical models, the derivative and its applications, the integral and its applications, exponential and logarithmic functions, and functions of several variables. This course is recommended for business majors and does not fulfill the calculus requirement for most science or engineering degrees. This course is not open for credit to students who have a grade of C or better in MATH 181 or equivalent. PREREQUISITE(S): *A grade of C or better in MATH 050, appropriate score on mathematics assessment test, or consent of department. Assessment Level(s): ENGL 101/ENGL 011 or ELAI 990. Four hours each week.*

4 semester hours

MATH 165 Precalculus (MATF, GEEL)

An examination of topics from advanced algebra, trigonometry, conics, and functions and applied problems. This course is designed to prepare students for MATH 181. PREREQUISITE(S): *A grade of C or better in MATH 050 appropriate score on mathematics, assessment test, or consent of department.* PRE- or COREQUISITE(S): *MATH 098. Assessment Level(s): ENGL 101/ ENGL 011 or ELAI 990. For computation of tuition, this course is equivalent to five semester hours. Five hours each week.*

4 semester hours

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MATH 170 Calculus for Life Sciences I (MATF, GEEL)
Intended primarily for students of the life sciences. An introduction to the major ideas of single variable calculus including limits, derivatives, and integrals of algebraic and transcendental functions; applications to the life sciences. Credit may not be earned in both MATH 170 and MATH 181. Not intended for students of the physical sciences, engineering, or mathematics. PREREQUISITE(S): *A grade of C or better in MATH 165, appropriate score on mathematics assessment test, or consent of department. Assessment Level(s): ENGL 101/ENGL 011 or ELAI 990. Five hours each week.*

4 semester hours

MATH 171 Calculus for Life Sciences II
A continuation of MATH 170; intended primarily for students of the life sciences. Topics include: integration, partial derivatives, systems of linear equations, normal and binomial distributions, sampling distributions, an introduction to differential equations, and discrete dynamical systems. Alongside the mathematical concepts will be applications to the life sciences. Not intended for students of the physical sciences, engineering, or mathematics. PREREQUISITE(S): *A grade of C or better in MATH 170 or MATH 181. For computation of tuition, this course is equivalent to five semester hours. Five hours each week.*

4 semester hours

MATH 181 Calculus I (MATF, GEEL)
MATH 181 and MATH 182 are intended primarily for students of the physical sciences, engineering, and mathematics. An introduction to major ideas of single variable calculus including limits, derivatives, and integrals of algebraic and transcendental functions; applications. PREREQUISITE(S): *A grade of C or better in MATH 165, appropriate score on mathematics assessment test, or consent of department. Assessment Level(s): ENGL 101/ ENGL 011 or ELAI 990. For computation of tuition, this course is equivalent to five semester hours. Five hours each week.*

4 semester hours

MATH 182 Calculus II CE-R
A continuation of MATH 181. Further differentiation and integration of transcendental functions. Methods of integration with applications, indeterminate forms, improper integrals, Taylor's formula; infinite series; polar coordinates. PREREQUISITE(S): *A grade of C or better in MATH 181 or equivalent, or consent of department. For computation of tuition, this course is equivalent to five semester hours. Five hours each week.*

4 semester hours

MATH 207 Introduction to Discrete Structures
An introduction to discrete structures as they relate to computer science. The course will stress computer science applications and will include relations, functions and algorithms, Naive Set Theory, combinatorics, logic, and mathematical induction. PREREQUISITE(S): *ENGL 101/ ENGL 101A or appropriate score on English assessment test, and MATH 182. Four hours each week.*

4 semester hours

MATH 217 Statistics for Scientists
A course in statistical methods for students in STEM disciplines. The course will explore foundational concepts and applications in descriptive and inferential statistics including: conditional probability, sampling distribution, estimation, odds ratios, formal probability distributions (e.g., binomial, Gaussian and Poisson), confidence intervals, hypothesis testing (e.g., t-tests, Wilcoxon Rank Test, ANOVA, chi-square tests), correlation, simple and multiple linear regression, relative risk, and logistic regression. Coursework will rely heavily on technology in order to focus on the applications of statistical concepts and methods within STEM disciplines. PRE- or COREQUISITE(S): *MATH 150 or MATH 170 or MATH 181 or consent of department. Three hours each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

MATH 264 Applications in Linear Algebra
For students who wish to focus on the practical applications of Linear Algebra. A wide range of applications are discussed and coursework will rely heavily on technology in order to focus on the applications of concepts and methods. The main topics include matrix calculations and determinants, vector spaces over the real numbers, orthogonality, linear transformations, eigenvalues, eigenvectors, graphical explorations of vectors, and inner products. Applications incorporating problem solving are presented in the context of real-world situations with an emphasis on model creation and interpretation. PREREQUISITE(S): *A grade of C or better in MATH 150 or MATH 181 or consent of department. Four hours lecture each week.*

4 semester hours

MATH 280 Multivariable Calculus CE-R
Calculus of vector functions; analytic geometry of space; partial differentiation; multiple integrals; classical theorems of Green, Gauss, and Stokes. PREREQUISITE(S): *A grade of C or better in MATH 182 or equivalent, or consent of department. For computation of tuition, this course is equivalent to five semester hours. Five hours each week.*

4 semester hours

MATH 282 Differential Equations
First order differential equations; higher order linear differential equations and systems of linear equations; solution by power series and numerical methods; the Laplace transform and some applications. PREREQUISITE(S): *A grade of C or better in MATH 182 or equivalent, or consent of department. Three hours each week.*

3 semester hours

MATH 284 Linear Algebra
Basic concepts of linear algebra including vector spaces, linear equations and matrices, determinants, linear transformations, similar matrices, eigenvalues, and quadratic forms. PREREQUISITE(S): *A grade of C or better in MATH 182 or consent of department. For computation of tuition, this course is equivalent to five semester hours. Five hours each week.*

4 semester hours

MGMT - Management

MGMT 101 Principles of Management CE-G
Overview of the management movement, including development of management theory; survey of the organizational structure and basic managerial functions within organizations; the integration of the functions of management and application of decision making and leadership to general managerial situations. Includes the relationship of the internal and external environment to the organization. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

MGMT 110 Small Business Management
Designed for those students desiring to start a business venture. Emphasis will be on capital acquisition, start-up issues, marketing functions, management, and commercial issues that the small business person faces today. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture/ discussion each week.*

3 semester hours

MGMT 140 Foundations of Entrepreneurship
Multi-disciplinary study designed to introduce students to the basic business, strategy, and leadership skills needed to launch and manage new ventures. Topics include learning how to assess the feasibility of a new venture, as well as how to apply best practices for planning, launching, and managing new companies. Students discuss a wide range of issues of importance and concern to entrepreneurs and learn to recognize opportunities, assess the skills and talents of successful entrepreneurs, and learn models and "rules of thumb" that help them navigate uncertainly. The opportunities and challenges of entrepreneurship are explored, as is the ability to use entrepreneurial skill sets in a corporate environment. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Three hours each week.*

3 semester hours

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MGMT 201 Business Law
Examination of the foundations of the U.S. legal system, focusing on those aspects of legal liability that might impose the greatest monetary penalties and damages on the commercial enterprise. Topics covered include the law of torts, product liability, accountants' liability, business crimes, contracts, agency, and public policy issues dealing with ethics and international law. PREREQUISITE(S): *ENGL 101/ENGL 011 or consent of department. Three hours each week.*

3 semester hours

MGMT 210 Entrepreneurial Opportunity Analysis and Decision-Making in Technology Ventures
Interdisciplinary studies in the principles of entrepreneurial opportunity analysis and decision-making in an increasingly dynamic and technically-inclines society. Emphasis is placed on how aspiring technology entrepreneurs can develop their entrepreneurial mindset and opportunity recognition capabilities to develop winning entrepreneurial plans for future ventures. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

MGMT 211 Introduction to Marketing CE
A survey of the global marketing environment in terms of both business and consumer goods and services. Buying behavior and targeting markets are emphasized. The marketing mix, including product, promotion, price, and distribution, is featured through the use of experiential marketing applications. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

MGMT 214 Human Resources Management CE-G
Discusses the functions and trends in human resources management that include staffing, the legal environment, compensation and benefits, safety and health, employee and union relations, training and career development, performance appraisal, and the global environment. PREREQUISITE(S): *MGMT 101. Three hours lecture/discussion each week.*

3 semester hours

MUSC - Music

MUSC 110 Listening to Music (ARTD, GEIR, GEEL)
For non-music majors or by consent of the department. Directed listening with emphasis on how to listen to music such as symphony, opera, ballet, chamber music, art song, and contemporary music. Students are required to devote time to listening outside of class. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

MUSC 117 World Music (ARTD, GEIR, GEEL, GCP)
This course presents a survey of cross-cultural popular music and the traditional music that influenced it. The class will address social and cultural roles of the music and factors influencing its development and dissemination. Students will learn by participating in music-making, listening to live and recorded music, reading, writing, and discussing. *Three hours each week.*

3 semester hours

MUSC 125 History of Jazz (R and TP/SS only) (ARTD, GEIR, GEEL, GCP)
A survey of jazz in the United States from the turn of the century to the present. Several major African American figures will be studied in depth. The art of listening to jazz music will be emphasized; outside listening will be required. Open to all students. *Three hours each week.*

3 semester hours

MUSC 131 American Popular Music (ARTD, GEIR, GEEL)
A survey of American popular music from the turn of the 20th century to the present with an emphasis on rock music. Open to all students. *Three hours each week.*

3 semester hours

MUSC 137 Class Voice (R only)
Functional training in correct breathing, tone production, and diction through which the student may develop specific vocal abilities. Discussion of the general principles of singing. A selected and graded number of repertoire forms the basis for study. Required of piano and organ majors in music education but open to all students by consent of department. *Four hours each week.*

2 semester hours

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MUSC 138 Class Guitar I
Fundamental playing techniques of the guitar. This includes basic finger technique and leads to a fundamental technical proficiency. Open to all students. *Four hours class instruction each week.*

2 semester hours

MUSC 141 Class Piano (R only) CE
Functional piano training for beginners, using methods and materials suitable for public school teaching. Basic keyboard skills for development of ability to improvise accompaniments, transpose, sight read, and play by ear. Technical studies and repertoire of elementary piano pieces. Required of all students in music education. MUSC 141 offered fall semester; MUSC 142 offered spring semester. *Four hours class instruction each week.*

2 semester hours

MUSC 142 Class Piano (R only)
Functional piano training for beginners, using methods and materials suitable for public school teaching. Basic keyboard skills for development of ability to improvise accompaniments, transpose, sight read, and play by ear. Technical studies and repertoire of elementary piano pieces. Required of all students in music education. MUSC 141 offered fall semester; MUSC 142 offered spring semester. PREREQUISITE(S): *MUSC 141 or consent of department. Four hours class instruction each week.*

2 semester hours

MUSC 145 Applied Music Elective
Provides individual voice and instrument instruction for students who may qualify as music majors but need additional study or time before beginning the music major curriculum. Music majors who need additional instruction, in primary or secondary instruments, after beginning the music major applied sequence are also eligible to enroll. This course is also suitable for performing arts majors in other departments within the college. PREREQUISITE(S): *Consent of department. One half-hour lesson and six hours of practice each week.*

1 semester hour

A	- Flute	L	- Harp
B	- Oboe	M	- Piano
C	- Clarinet	MM	- Jazz Key
D	- Bassoon	N	- Violin
E	- Saxophone	O	- Viola
F	- French Horn	P	- Cello
G	- Trumpet	Q	- Double Bass
H	- Trombone	QQ	- Electric Bass
I	- Baritone/Euphonium	R	- Organ
J	- Tuba	U	- Voice
K	- Percussion	UU	- Jazz Vocal
KK	- Jazz Percussion	V	- Guitar
KV	- Vibraphone	VV	- Jazz Guitar

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MUSC 146 Applied Music Elective
Provides individual voice and instrument instruction for students who may qualify as music majors but need additional study or time before beginning the music major curriculum. Music majors who need additional instruction, in primary or secondary instruments, after beginning the music major applied sequence are also eligible to enroll. This course is also suitable for performing arts majors in other departments within the college. PREREQUISITE(S): *Consent of department. One half-hour lesson and six hours of practice each week.*

2 semester hours

A	- Flute	L	- Harp
B	- Oboe	M	- Piano
C	- Clarinet	MM	- Jazz Key
D	- Bassoon	N	- Violin
E	- Saxophone	O	- Viola
F	- French Horn	P	- Cello
G	- Trumpet	Q	- Double Bass
H	- Trombone	QQ	- Electric Bass
I	- Baritone/Euphonium	R	- Organ
J	- Tuba	U	- Voice
K	- Percussion	UU	- Jazz Vocal
KK	- Jazz Percussion	V	- Guitar
KV	- Vibraphone	VV	- Jazz Guitar

MUSC 147 Applied Music (R only) CE
Individual instruction in voice, piano, organ, classical guitar, harp, and band and orchestral instruments; only for students matriculated in the music curriculum. Jury examination required at close of each semester. Published course requirements in applied music are available from the Music Department. *One hour lesson and 21 hours practice each week.*

2 semester hours

A	- Flute	L	- Harp
B	- Oboe	M	- Piano
C	- Clarinet	MM	- Jazz Key
D	- Bassoon	N	- Violin
E	- Saxophone	O	- Viola
F	- French Horn	P	- Cello
G	- Trumpet	Q	- Double Bass
H	- Trombone	QQ	- Electric Bass
I	- Baritone/Euphonium	R	- Organ
J	- Tuba	U	- Voice
K	- Percussion	UU	- Jazz Vocal
KK	- Jazz Percussion	V	- Guitar
KV	- Vibraphone	VV	- Jazz Guitar

MUSC 148 Applied Music (R only)
Individual instruction in voice, piano, organ, classical guitar, harp, and band and orchestral instruments; only for students matriculated in the music curriculum. Jury examination required at close of each semester. Published course requirements in applied music are available from the Music Department. PREREQUISITE(S): *MUSC 147 with grade of C or better. One hour lesson and 21 hours practice each week.*

2 semester hours

A	- Flute	L	- Harp
B	- Oboe	M	- Piano
C	- Clarinet	MM	- Jazz Key
D	- Bassoon	N	- Violin
E	- Saxophone	O	- Viola
F	- French Horn	P	- Cello
G	- Trumpet	Q	- Double Bass
H	- Trombone	QQ	- Electric Bass
I	- Baritone/Euphonium	R	- Organ
J	- Tuba	U	- Voice
K	- Percussion	UU	- Jazz Vocal
KK	- Jazz Percussion	V	- Guitar
KV	- Vibraphone	VV	- Jazz Guitar

MUSC 150 Applied Music Laboratory (R only)
Required of and restricted to students enrolled in applied music courses. *Three hours of laboratory each week and performance at least twice each semester.*

1 semester hour

MUSC 161 Series-Small Ensembles (R only)
The study and performance of the literature for various small groups. Students may choose to perform in one or more of the following: MUSC 161C Jazz Ensemble MUSC 161D World Ensemble Open to all students by consent of department. *Three hours each week.*

1 semester hour

MUSC 163 College Chorus
The great choral literature forms the basis of study and presentation. Programs include works with orchestra. Concert numbers comprise part of the repertoire. Required of vocal music majors and open to all students. *Three hours each week.*

1 semester hour

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MUSC 166 College Orchestra (R only)
The study and performance of orchestral and choral works from the Baroque, Classic, Romantic, and contemporary music literature. Required of instrumental music majors who play orchestral instruments. Open to all by consent of department. *Three hours each week.*

1 semester hour

MUSC 170 Chamber Singers (R only)
Established as a madrigal-inspired chorus. Music from Renaissance through modern classical, jazz, and popular styles is performed on both the collegiate and recital concert series. Required of vocal music majors. Open to other students by consent of department. *Three hours each week.*

1 semester hour

MUSC 172 College Band - Wind Ensemble (R only)
The preparation and performance of marching band, concert band, and symphonic band (wind ensemble) literature. Concerts are a regular part of the course. Required of instrumental music majors who play band instruments, but open to all students by consent of department. *Three hours each week.*

1 semester hour

MUSC 174 Introduction to Music Technology
An introductory course leading to a basic understanding and appreciation of the elements of music technology, including MIDI, computer music applications, digital audio recording, and sound design. This includes an examination of the elements, instruments, styles, and history of electronic music as well as an overview of necessary music theory. PRE- or COREQUISITE(S): *MUSC 141 or MUSC 184, or consent of department. Computer experience (Completion of CMAP 106 is strongly recommended) and a background in music are preferred. Three hours each week.*

3 semester hours

MUSC 178 Advanced Applications in Music Technology
A projects-oriented multilevel course studying computer-based sequencing, digital audio recording, sound design, and music notation, as well as multimedia and Internet music applications. Students are required to compose/ arrange musical compositions and demonstrate proficiency in computer music applications, MIDI, and multi-track recording. PREREQUISITE(S): *MUSC 174 or consent of department. Three hours each week.*

3 semester hours

MUSC 181 Musical Recording Techniques
Major recording techniques used in music, including multi-track recording, computer applications and acoustics. PRE- or COREQUISITE(S): *MUSC 141 or MUSC 184, or consent of department. Computer experience (Completion of CMAP 106 is strongly recommended) and a background in music are preferred. Three hours each week.*

3 semester hours

MUSC 184 Introduction to Music Theory (R only) (ARTD, GEIR, GEEL)
An introduction to the basic elements of music, intended for students with limited musical background. Emphasis is on terminology, notation, scales, intervals, triads, and traditional diatonic harmony with a further emphasis on the practical application of these various aspects of music theory. Open to all students. *Three hours each week.*

3 semester hours

MUSC 188 Performing Arts Production
An exploration, development, and creation of all devices necessary to present a performing arts offering such as a play, dance concert, or musical theatre production. Lectures include all phases of drama, music, dance, and business production. Open to all students. MUSC 188 and THET 188 may be repeated for a total of 6 semester hours. *A minimum of 15 contact hours per credit.*

1-3 semester hours

MUSC 190 Music Theory I (R only) CE
The nature of musical sound and its perception, fundamentals of musical notations, scales, intervals, triads, simple diatonic harmony, keyboard application. Normally taken concurrently with MUSC 194. PREREQUISITE(S): *Music major status or consent of department. Three hours each week.*

3 semester hours

MUSC 191 Music Theory II (R only)
Continued study of diatonic harmony, including inversions and non-harmonic tones. Dominant and leading-tone seventh chords, secondary dominants, modulation, keyboard application. Normally taken concurrently with MUSC 195. PREREQUISITE(S): *MUSC 190 with a grade of C or better. Three hours each week.*

3 semester hours

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MUSC 194 Ear Training and Sightsinging I (R only) CE

Vocal reading and dictation of rhythm patterns, intervals, interval groups, scales, diatonic patterns, and simple diatonic melodies. Assignments will include work with recorded exercises. Normally taken concurrently with MUSC 190. PREREQUISITE(S): *Music major status or consent of department. Two hours each week.*

2 semester hours

MUSC 195 Ear Training and Sightsinging II (R only)

Vocal reading and dictation of rhythm patterns, intervals, and melodies. Dictation of chords and harmonic progressions. Assignments will include work with recorded exercises. Normally taken concurrently with MUSC 191. PREREQUISITE(S): *MUSC 194 with a grade of C or better. Two hours each week.*

2 semester hours

MUSC 196 Jazz Improvisation (R only)

The study and use of the basic materials needed to improvise in jazz style. Scales, basic chords, and jazz patterns are learned and applied in classroom performances. In addition, listening to jazz, basic composition, and analysis are employed to bring into focus materials learned and to enhance the skill of the improviser. *Three hours lecture/practicum each week.*

3 semester hours

MUSC 199 Class Guitar II

In-depth study of right hand techniques, continuation of left hand development, and introduction to guitar literature. PREREQUISITE(S): *MUSC 138 or consent of department. Four hours laboratory instruction each week.*

2 semester hours

MUSC 215 Applied Music (R only)

Continued individual instruction in voice, piano, organ, classical guitar, harp, and band and orchestral instruments; only for students matriculated in the music curriculum. Jury examination required at close of each semester. Published course requirements available from the Music Department. Graduation recital is a degree requirement. *One hour lesson, 21 hours practice each week.*

2 semester hours

A	- Flute	L	- Harp
B	- Oboe	M	- Piano
C	- Clarinet	MM	- Jazz Key
D	- Bassoon	N	- Violin
E	- Saxophone	O	- Viola
F	- French Horn	P	- Cello
G	- Trumpet	Q	- Double Bass
H	- Trombone	QQ	- Electric Bass
I	- Baritone/Euphonium	R	- Organ
J	- Tuba	U	- Voice
K	- Percussion	UU	- Jazz Vocal
KK	- Jazz Percussion	V	- Guitar
KV	- Vibraphone	VV	- Jazz Guitar

MUSC 216 Applied Music (R only)

Continued individual instruction in voice, piano, organ, classical guitar, harp, and band and orchestral instruments; only for students matriculated in the music curriculum. Jury examination required at close of each semester. Published course requirements available from the Music Department. Graduation recital is a degree requirement. PREREQUISITE(S): *MUSC 215 with a grade of C or better. One hour lesson, 21 hours practice each week.*

2 semester hours

A	- Flute	L	- Harp
B	- Oboe	M	- Piano
C	- Clarinet	MM	- Jazz Key
D	- Bassoon	N	- Violin
E	- Saxophone	O	- Viola
F	- French Horn	P	- Cello
G	- Trumpet	Q	- Double Bass
H	- Trombone	QQ	- Electric Bass
I	- Baritone/Euphonium	R	- Organ
J	- Tuba	U	- Voice
K	- Percussion	UU	- Jazz Vocal
KK	- Jazz Percussion	V	- Guitar
KV	- Vibraphone	VV	- Jazz Guitar

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MUSC 233 Music Theory III (R only)
Study of chromatic harmony, introducing the augmented sixth chords and the Neapolitan sixth chord as well as the diatonic seventh and dominant ninth chords. Keyboard application. Study of homophonic forms through the analysis of larger works. Normally taken concurrently with MUSC 237. PREREQUISITE(S): *MUSC 191 with a grade of C or better. Three hours each week.*

3 semester hours

MUSC 234 Music Theory IV (R only)
Review of tonal harmony, ninth, eleventh, and thirteenth chords. Keyboard application. Introduction to counterpoint. Beginning serial technique. Normally taken concurrently with MUSC 238. PREREQUISITE(S): *MUSC 233 with a grade of C or better. Three hours each week.*

3 semester hours

MUSC 237 Ear Training and Sightsinging III (R only)
Vocal reading and dictation of intervals and difficult melodies and rhythm patterns. Dictation of progressions containing some chromaticism. Easy two-part dictation. Assignments will include work with recorded exercises. Normally taken concurrently with MUSC 233. PREREQUISITE(S): *MUSC 195 with a grade of C or better. Two hours each week.*

2 semester hours

MUSC 238 Ear Training and Sightsinging IV (R only)
Two-part dictation of moderate difficulty, vocal reading, dictation of nontonal melodies, and dictation of chromatic chord progressions and modulations. Assignments will include work with recorded exercises. Review of the material from MUSC 237. Normally taken concurrently with MUSC 234. PREREQUISITE(S): *MUSC 237 with a grade of C or better. Two hours each week.*

2 semester hours

MUSC 245 Advanced Applied Music (R only)
Continued individual instruction, for music majors, in any applied instrument or voice. Extensive repertoire study and performance. Students must appear in recital as part of degree requirement. PREREQUISITE(S): *Consent of department and MUSC 216. By audition placement or by sequence. One hour lesson and 21 hours practice each week.*

2 semester hours

A	- Flute	L	- Harp
B	- Oboe	M	- Piano
C	- Clarinet	MM	- Jazz Key
D	- Bassoon	N	- Violin
E	- Saxophone	O	- Viola
F	- French Horn	P	- Cello
G	- Trumpet	Q	- Double Bass
H	- Trombone	QQ	- Electric Bass
I	- Baritone/Euphonium	R	- Organ
J	- Tuba	U	- Voice
K	- Percussion	UU	- Jazz Vocal
KK	- Jazz Percussion	V	- Guitar
KV	- Vibraphone	VV	- Jazz Guitar

MUSC 246 Advanced Applied Music (R only)
Continued individual instruction, for music majors, in any applied instrument or voice. Extensive repertoire study and performance. Students must appear in recital as part of degree requirement. PREREQUISITE(S): *Consent of department and MUSC 245. By audition placement or by sequence. One hour lesson and 21 hours practice each week.*

2 semester hours

A	- Flute	L	- Harp
B	- Oboe	M	- Piano
C	- Clarinet	MM	- Jazz Key
D	- Bassoon	N	- Violin
E	- Saxophone	O	- Viola
F	- French Horn	P	- Cello
G	- Trumpet	Q	- Double Bass
H	- Trombone	QQ	- Electric Bass
I	- Baritone/Euphonium	R	- Organ
J	- Tuba	U	- Voice
K	- Percussion	UU	- Jazz Vocal
KK	- Jazz Percussion	V	- Guitar
KV	- Vibraphone	VV	- Jazz Guitar

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MUSC 285 Music Internship
Students work for College credit in a professional performing arts organization or venue. Students may propose an internship for one of the limited number available in music each year. Typically, the internships are awarded during the last year of study at Montgomery College. PREREQUISITE(S): *Open to music majors who have completed 24 music-related credits. A 3.2 GPA and consent of departmental music internship coordinator and the Arts Institute internship coordinator are required. Fifteen hours each week per semester.*

3 semester hours

NURS - Nursing

NURS 113 Fundamentals of Nursing (TP/SS only)
Introduces the theoretical concepts of clinical reasoning, nursing process, teaching-learning, culture, caring, growth and development, evidence-based practice, delegation, conflict, and basic human needs as they relate to nursing care. Psychomotor and affective skills are taught and practices. PRE- or COREQUISITE(S): *A grade of C or better in BIOL 150, NURS 121, ENGL 102/ENGL 103; or consent of program coordinator. Three hours lecture/discussion, 12 hours clinical each week.*

7 semester hours

NURS 114 Professionalism and Communication in Nursing (TP/SS only)
Facilitates the student's entry into the nursing program and the health care system. Emphasis is placed on concepts related to professional practice and the development of communication skills necessary for nursing practice. Legal and ethical issues related to health care are introduced. Therapeutic communication, documentation, and delegation are examined. PREREQUISITE(S): *Admission to the nursing program or consent of program coordinator.* PRE- or COREQUISITE(S): *NURS 121. Three hours laboratory each week.*

1 semester hour

NURS 121 Basic Health Assessment (TP/SS only)
Provides instruction and guided practice in the assessment techniques used to gather subjective and objective data from patients in a health care setting and the documentation of that data. Assessment of all body systems is covered. PREREQUISITE(S): *Admission to the nursing program or consent of the program coordinator.* PRE- or COREQUISITE(S): *A grade of C or better in BIOL 150. Three hours laboratory each week.*

1 semester hour

NURS 122 Supplemental Clinical Practicum (TP/SS only)
Optional clinical elective for nursing students who want the opportunity to increase their clinical skills, their ability to organize and prioritize patient care, and their familiarity with the hospital setting. Students work under the guidance of a clinical instructor. PREREQUISITE(S): *Consent of program coordinator. Three eight-hour days each week for three weeks.*

2 semester hours

NURS 125 Nursing in Health and Illness I (TP/SS only)
Introductory medical surgical nursing course which builds on the conceptual foundations and core integrated nursing concepts taught in previous courses. Nursing concepts are applied in an interdisciplinary practice environment where emphasized. PREREQUISITE(S): *NURS 113, NURS 114, NURS 121.* PRE- or COREQUISITE(S): *A grade of C or better in mathematics foundation, BIOL 212, PSYC 100 or consent of program coordinator. Two hours lecture, twelve hours of clinical each week.*

4 semester hours

NURS 126 Nursing Care of Special Populations I: Geriatric and Psychiatric Nursing (TP/SS only)
Introduces concepts related to mental health and illness across the lifespan as well as the unique physiologic and psychosocial needs of the older adult. Healthy aging of the older adult patient is emphasized. PREREQUISITE(S): *NURS 113, NURS 114, NURS 121.* PRE- or COREQUISITE(S): *A grade of C or better in mathematics foundation, PSYC 100 and BIOL 212 or consent of program coordinator. Two hours lecture, twelve hours of clinical each week.*

4 semester hours

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NURS 129 Pathophysiology and Pharmacology in Nursing (TP/SS only)

Introduces pharmacodynamics, pharmacokinetics, and pharmacotherapeutics of various classifications of medications as they relate to basic pathophysiology seen in each body system. Emphasis is on the nursing implications and patient education required for safe administration of each class. Students explore the role and responsibility of the registered nurse in administering and evaluating medications. Some content in this course will be covered in an online format. PREREQUISITE(S): *NURS 113, NURS 114, NURS 121.* PRE- or COREQUISITE(S): *A grade of C or better in mathematics foundation and BIOL 212, PSYC 100 or consent of program coordinator. Minimum of two hours each week.*

2 semester hours

NURS 130 Transition to Nursing (TP/SS only)

Designed to ease the transition of para-professional healthcare workers into the Associate Degree Nursing (ADN) program. Specific concepts drawn from the first year of the AD nursing program, related to professional nursing practice, are taught. Other concepts familiar to para-professional healthcare workers are enlarged upon in both breadth and depth. The nursing process is stressed with a focus on health assessment and the use of care plans for planning, implementing and evaluating nursing care. All aspects of professional communication are explored and practiced. Supervised clinical experiences enhance the para-professional healthcare worker's grasp of professional nursing care for patient with alterations in the physiological and psychosocial processes.Upon successful completion of the NURS 130 course, the students will receive credit for NURS 113, NURS 114, NURS 121, NURS 125, NURS 126 and NURS 129. This course is to be completed during the summer session prior to entry into NURS 225 & NURS 226 in the fall semester. Students will be permitted entrance into NURS 130 only one (1) time. If the student is unsuccessful in NURS 130 with a grade lower than 75% = C, the student must apply for entrance into NURS 113, NURS 114, and NURS 121. Consequently, the student will not be eligible for the advanced placement into NURS 225 despite the para-professional healthcare licensure. PREREQUISITE(S): *Admission to the nursing program or consent of program coordinator. A grade of C or better in BIOL 212, BIOL 213, mathematics foundation, and ENGL 102 /EENGL 103. Six hours of lecture/ discussion/ blended course / 16 hours laboratory each week for 10 weeks.*

7 semester hours

NURS 140 Independent Study in Nursing (TP/SS only)

An independent study course to enable nursing students to pursue a topic of their own choosing with the guidance and supervision of an assigned faculty member. It will provide a structured learning experience to broaden the student's understanding of a particular aspect of nursing, health care, or disease modality. Topics will not duplicate curriculum content, but may expand on that content. This course may be repeated provided that a different topic is covered each time. PREREQUISITE(S): *Admission to the nursing program and consent of program coordinator. Forty-five hours of work required per semester hour of credit. Letter designators in the schedule of classes will indicate the number of credits.*

1-4 semester hours

NURS 205 Transition to Professional Nursing Practice (TP/SS only)

Facilitates the entry of the graduate into the profession of nursing, including trends in the scope of practice and roles of the nurse in an ever-changing health care delivery system. Includes discussion of professional nursing organizations, accountability in nursing practice, identification of socio-political factors influencing professional nursing, and evidence based practice. Legal and ethical responsibilities related to nursing practice are further considered. Aspects of nursing leadership and healthcare management are reviewed. Must be taken during the final semester of the program. PREREQUISITE(S): *Admission to the nursing program or consent of program coordinator. One hour each week.*

1 semester hour

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NURS 225 Nursing in Health and Illness II (TP/SS only)
Intermediate medical-surgical nursing course continues the progression of concepts learned in the first two nursing semesters. Students now apply the basic principles learned in prior nursing courses to patients with complex, multi-system disease processes. Core integrated nursing concepts include: safety, clinical reasoning, patient centered care, interdisciplinary collaboration, professionalism, informatics and evidence based practice. Students are now expected to assess, plan and deliver care, evaluate outcomes, and critically reflect on learning while providing care for multiple complex medical-surgical patients. PREREQUISITE(S): *NURS 125, NURS 126, NURS 129 or consent of program coordinator.* PRE- or COREQUISITE(S): *A minimum grade of C or better in Arts Distribution and BIOL 213. Two hours lecture/discussion, twelve hours of clinical each week.*
4 semester hours

NURS 226 Nursing Care of Special Populations II: Maternal/Child Nursing (TP/SS only)
Provides the student opportunities to implement the nursing process in acute and community settings. The focus of care is on women and the family during the childbearing cycle, the newborn, and the child through adolescence. PREREQUISITE(S): *NURS 125, NURS 126, NURS 129 or consent of program coordinator.* PRE- or COREQUISITE(S): *A minimum grade of C or better in Arts Distribution and BIOL 213. Three hours lecture/discussion, twelve hours of clinical each week.*
5 semester hours

NURS 240 Nursing in Health and Illness III (TP/SS only)
Concentration is placed on the principles involved in organizing, managing and delivering care appropriate for the adult with various complex health problems. The focus moves from self-limiting and chronic health issues to acute emergent care of the adult patient. PREREQUISITE(S): *NURS 225, NURS 226.* PRE- or COREQUISITE(S): *A minimum grade of C for BIOL 210 and SOCY 100, SOCY 105 or SOCY 240 and Humanities distribution. Three hours lecture/discussion, twelve hours of clinical each week.*
7 semester hours

NUTR - Nutrition and Food

NUTR 101 Introduction to Nutrition (NSND, GEEL)
Study of nutrition as it relates to health and disease. Includes functions of nutrients; factors affecting nutrient intake, absorption, and utilization; and nutrient needs during the life cycle and illness. Emphasis on planning and preparing daily diets for optimal health. Course concludes by applying the principles of diet modifications to the treatment of disease. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050, appropriate score on the mathematics placement test, or consent of department. Three hours each week.*
3 semester hours

NUTR 202 Nutrition Through the Life Cycle (R only)
Designed to examine the nutritional needs of humans as they move through the life cycle stages from pre-conception through elder years. It also examines conditions that may alter or substantially impact nutrition at these stages; reviews programs which provide support for food or nutrition education at various life cycle stages; and uses case study data to assess nutrition issues/conditions. Students will assess adequacy of diets as well as design diets to meet needs during various life cycle stages. PREREQUISITE(S): *BIOL 226, NUTR 101 or consent of department. Three hours each week.*
3 semester hours

NUTR 212 Food Science and Technology
A general overview of principles of food science and technology, covering food constituents and properties; quality and safety; preservation methods; food regulation; and sensory evaluation. PREREQUISITE(S): *BIOL 226 or NUTR 101, or consent of department. Three hours lecture each week.*
3 semester hours

NWIT - Network and Wireless Technologies

NWIT 101 Introduction to the Internet of Things (IoT) CE
An introduction to the development of inter-connectivity of objects involving electronics in all aspects of life including transportation, health care, safety, environment, energy, etc. This class covers theoretical and practical applications of Internet of Things (IoT) concepts such as sensing, actuation and configuration. Students will gain applied experience in the fundamentals of electricity, components, circuitry, wireless communication and programming associated with physical computing as well as databases. *Assessment Level(s): MATH 050. Three hours each week.*
3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

NWIT 105 Introduction to Cloud Computing
Introduces essential characteristics of a cloud environment, various cloud services and deployment models, the role of virtualization in cloud computing, and major cloud providers. Students will explore some of the challenges of cloud deployment, with emphasis in the area of security. *Assessment Level(s): ELAR 980/IERW 002. Three hours each week.*

3 semester hours

NWIT 127 Microcomputer Essentials CE
An introduction to microcomputer hardware, peripheral, networking, and security components. Students will understand the basic functionality of the operating system and basic troubleshooting methodology, practice proper safety procedures, and will effectively interact with customers and peers. In addition, the course includes programming concepts, the study of applications, such as spreadsheets, databases, presentation, and web site development. This course also prepares students to take the Essential exam for the CompTIA A+ Certificate. *Assessment Level(s): ELAR 980/IERW 002. Three hours each week.*

3 semester hours

NWIT 130 Network Cabling Technology (G only)
Features hands-on instruction designed to cover cabling techniques using co-ax, copper, and fiber for video, voice data communications, and networking. Students will master basic cabling techniques using state-of-the-market equipment in accordance with industry standards. *Assessment Level(s): MATH 050, ELAR 980/IERW 002. Three hours each week.*

3 semester hours

NWIT 151 Introduction to Networking CE
An introduction to networking technologies. This course covers the basics of networking, the open systems interconnection (OSI) reference model, transmission control protocol/Internet protocol (TCP/IP) addressing, electricity, specifications and techniques of building data cabling, and local area network/wide area network (LAN/WAN) technologies. In addition, this course is also the first in a series of courses designed to prepare students for the Cisco Certified Network Associate (CCNA) examination. *Assessment Level(s): MATH 050. Three hours each week.*

3 semester hours

NWIT 170 Network and Cloud Infrastructure CE
An introduction to computer network and cloud components that enable connectivity, communication, operations, and management of modern enterprise infrastructure. The topics include networking devices, network operating systems (OS), cloud services and storage area network (SAN). Students will install and configure Windows, Linux, and Mac OS servers as well as virtual machines (VM) and virtual private cloud (VPC)/Network (VPN). *Assessment Level(s): MATH 050, ELAR 980/IERW 002. Three hours each week.*

3 semester hours

NWIT 173 Network Security CE
An in-depth review of systems security, access control, network infrastructure, assessments and audits, cryptography and organizational security across both private and public enterprises. Real-world scenarios reinforce material covered. This course will help prepare students for the CompTIA Security+ certification exam. *Assessment Level(s): MATH 050. Three hours each week.*

3 semester hours

NWIT 200 Microsoft Modern Desktops
An introduction to the concepts and skills necessary to support the most current Microsoft Windows network client operating system. The course covers technical areas that include installation, administration, basic security, and troubleshooting, and is designed for students seeking Microsoft professional certification (MCSA and MCSE). PREREQUISITE(S): *NWIT 151 or NWIT 170 or successful completion of CompTIA's Network+ certification examination, or appropriate networking experience with consent of department. Three hours each week.*

3 semester hours

NWIT 203 Microsoft Windows Server (G only)
Introduction to the concepts and skills necessary to support the current Windows server operating system. Enterprise server systems areas include installation, administration, and troubleshooting. Designed for students on the Microsoft Certified Systems Engineer Track, this course provides them with the knowledge and skills required for NWIT 204 and helps prepare them for Microsoft Professional Certification for installing, configuring, and administering the current version of Microsoft Windows. PREREQUISITE(S): *NWIT 151 or NWIT 170 or consent of department. Three hours each week.*

3 semester hours

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NWIT 204 Network Virtualization and System Administrator
Introduces concepts and skills necessary to install, configure, manage and support a virtual network infrastructure. Students will learn why companies are steadily virtualizing, the differences between technical alternatives, and how to optimize a virtualized environment. Lecture topics will be reinforced through hands-on exercises involving the installation, configuration, and management of both virtual workstations and servers. PREREQUISITE(S): *NWIT 200 or NWIT 203 or consent of department. Four hours each week.*

4 semester hours

NWIT 208 Cloud Architecting
Fundamentals of building IT infrastructure on AWS. The course is designed to teach students how to optimize their use of the AWS Cloud by understanding AWS services and how they fit into cloud-based solutions. Best practices for applying to all solutions are emphasized. Throughout the course, students will explore a scenario that provides opportunities for students to build a variety of infrastructures through a guided, hands-on approach. PREREQUISITE(S): *NWIT 105 and (NWIT 151 or NWIT 170). Three hours lecture each week.*

3 semester hours

NWIT 209 Cloud Administration
Fundamentals of implementing, managing, and monitoring IT infrastructure on Microsoft cloud platform - Azure. The course is designed to teach students technical skills that manage Azure identities and governance, implement and manage storage, deploy and manage Azure computer resources, configure and manage virtual networking, and monitor and back up Azure resources. PREREQUISITE(S): *NWIT 105 and (NWIT 151 or NWIT 170). Three hours lecture each week.*

3 semester hours

NWIT 230 Intro to Cyber Ops
An online/applied lab course providing an overview of the architecture of modern computers, including how a CPU works, memory and hardware relationships with operating systems, an introduction to both Windows and Linux, programming and scripting logic, as well as security limitations that allow systems to be exploited. The course offers lab-based exercises to increase familiarity with the command line and provides experiences with the underlying facets of a modern operating system. Instruction includes a balance of lab applications and theory for practical security experience. NWIT 230 also prepares students for the SANS Five Basics of Cybersecurity Certification(s). PREREQUISITE(S): *NWIT 127, NWIT 245, and CMSC 253 or consent of the department. Three hours each week.*

3 semester hours

NWIT 245 Defending the Network CE
An overview of network defense and countermeasures and the fundamentals of defending networks, such as layered defense. The course introduces students to protective technologies commonly deployed on today's networks, such as system hardening, enterprise firewalls, VPNs, IDS, and antivirus. The course also develops and examines risk analysis and security policies to help build a secure network within Windows and Linux operating systems. PREREQUISITE(S): *NWIT 173 or consent of department. Three hours each week.*

3 semester hours

NWIT 246 Attacker Tools and Techniques CE
Focuses on methods attackers use to successfully compromise target networks. Students learn how attackers perform initial reconnaissance and footprinting and then move on to scanning and eventual exploitation. This course approaches security from the hacker's perspective. PREREQUISITE(S): *CMSC 253 and NWIT 245, or consent of department. Three hours each week.*

3 semester hours

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NWIT 247 Introduction to Incident Response CE
A methodical approach to dealing with the aftermath of a security breach (also known as an incident). Students will learn how to manage incidents so that damage is limited and recovery time is optimal. Most organizations accept the fact that they will eventually be compromised despite implementing security best practices. As a result, they redirect strategies from the traditional defense-in-depth approach to an assume breach model. Organizations are improving their incident response capabilities by creating sophisticated incident response plans and elite incident response teams. PREREQUISITE(S): *NWIT 246 or consent of department. Three hours each week.*

3 semester hours

NWIT 252 Cisco Networking 2 CE
Describe basic switching concepts and technologies such as Switching, VLANs, and trunking. Learn Spanning Tree Protocol and EtherChannel architecture. Configure and troubleshoot a small switched network. Describe the purpose and operation of a router. Perform basic router configurations, including static routing, default routing, and Inter-VLAN routing. Describe the concepts of FHRP and Switch Security Configuration. It also describes the WLAN concepts and configuration. Describe the operations and benefits of Dynamic Host Configuration Protocol (DHCP) and SLAAC/DHCPv6. In addition, this course is the second in a series of courses designed to prepare students for the Cisco Certified Network Associate (CCNA) examination. PREREQUISITE(S): *NWIT 151 or completion of Cisco Academy Semester 1 (Exploration 1), or consent of department. Three hours each week.*

3 semester hours

NWIT 253 Cisco Networking 3 CE
An examination of initial switch configuration, Cisco ISO Software managements, and LAN design. Students configure Virtual LANs (VLANs), Virtual Trunking Protocol (VTP), Spanning Tree Protocol (VTP), Inter-VLAN Routing, and are introduced to basic Cisco wireless concepts and configuration. This course is the third in a series of four designed to help prepare students to take the CCNA certification exam. This course is equivalent to CyberWATCH course CW 250. PREREQUISITE(S): *NWIT 252 or completion of Cisco Academy Semester 2 (Exploration 2), or consent of department. Three hours each week.*

3 semester hours

NWIT 254 Cisco Networking 4 (G only) CE
An examination of Cisco IOS Software management, WAN protocols and technologies, and WAN design. Students configure Point-to-Point Protocol (PPP), Frame Relay, Network Security, Access Control Lists (ACLs), and TCP/IP. In addition, this course is the fourth in a series of four designed to help prepare students for the CCNA certification exam. This course is equivalent to CyberWATCH course CW 251. PREREQUISITE(S): *NWIT 253 or completion of Cisco Academy Semester 3 (Exploration 3), or consent of department. Three hours each week.*

3 semester hours

NWIT 261 CCNA SECURITY (G only) CE
Focuses on the overall security processes in a network with particular emphasis on skills in the following areas: (1) security policy design and management; (2) security technologies, products, and solutions; (3) firewall and secure router design, installation, configuration, and maintenance; (4) AAA implementation using routers and firewalls; and (5) securing the network at both layer 2 and 3 of the OSI model. This course helps prepare students to sit for the Securing Networks with Cisco Routers and Switches (SNRS) and Securing Networks with PIX and ASA (SNPA) Security Certification exams. These are two of the five exams that count toward the Cisco Certified Security Professional (CCSP) certification. In addition, Cisco Network Academy students who pass these two exams will be able to apply for Cisco Firewall/ASA Specialist status. PREREQUISITE(S): *NWIT 254 or CCNA certification or consent of department. Four hours each week.*

4 semester hours

NWIT 263 Introduction to Digital Forensics
Introduction to the techniques and tools of digital forensics investigations. The course emphasizes digital forensic procedures, digital forensic tools, and legal issues relating to digital forensics. Students receive step-by-step explanations on how to use the most popular forensic tools. Topics include coverage of the latest technology, including PDAs, cell phones, and thumb drives. This course includes many hands-on activities that allow students to practice skills as they are learned. This course is equivalent to Cyber WATCH course CW 170. PREREQUISITE(S): *NWIT 127. Three hours each week.*

3 semester hours

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NWIT 264 Network and Cloud Forensics
Focuses on the technical aspects of network and cloud intrusions and discusses the methodology commonly used by attackers. The course begins with an overview of networking protocols and then addresses topics, such as session hijacking, capturing network traffic, and the importance of collecting volatile data from on-premise and/or cloud-hosted environments. Students learn how to examine a compromised server or workstation in the field to obtain log files and forensic images of hard disk drives. Students examine server log files and forensic artifacts for evidence of the attacker's methods and activities. PREREQUISITE(S): *NWIT 151 or NWIT 170 or consent of department. Three hours lecture each week.*

3 semester hours

NWIT 269 Network and Wireless Technologies Internship (G only)
Internship in a professional environment related to the network and wireless technologies program. Students accumulate appropriate work experience that enriches their knowledge and expands career possibilities. Students must propose the internship on their own, but assistance is provided in developing their resume. Students maintain comprehensive records of work experience for course purposes and for seminar discussions. An internship credit requires a minimum of five hours of work experience per semester hour each week for 15 weeks and eight hours of seminar discussions each semester. Students may work five hours per week for one semester to earn 1 credit and can earn 4 credits in four semesters or may work 20 hours per week for one semester and earn four credits in a semester. PREREQUISITE(S): *Consent of department. Five to twenty hours work experience per week and eight hours of seminar discussions.*

1-4 semester hours

NWIT 270 Advanced Topics in Cloud Computing
This course covers advanced topics in cloud computing. Current trends as well as new cloud technologies will be examined and explored. Focus will be on applications and innovation to various industries. PREREQUISITE(S): *NWIT 101 and NWIT 105. Three hours lecture each week.*

3 semester hours

NWIT 275 Wi-Fi Pen Testing
An examination of the latest wireless local area network (WLAN) security protocols, techniques, and applications. Students will learn how to use software tools to capture very specific types of WLAN traffic related to security. They will then learn the most common applications used to attack and compromise today's WLANs. Linux is the primary OS environment for this course. PREREQUISITE(S): *CMSC 253 and NWIT 245, or consent of department. Three hours each week.*

3 semester hours

NWIT 290 Information Security Capstone
Provides a review of methods for identifying network vulnerabilities, implementing net- work defense, and exploring network forensics. Students have opportunities to implement a layered defense on a practical network, including using tools to analyze the vulnerabilities of a net- work. Additionally, students will research products that could serve as countermeasures against potential attacks, implement security features of the network's operating systems, and develop alternate solutions based upon cost and level of security required. The course also provides students with the practice skills necessary to enhance their existing network security background and prepare for Professional Security Certification(s). PREREQUISITE(S): *NWIT 246 or consent of department. Three hours each week.*

3 semester hours

NWIT 291 Cybersecurity Capstone
A culmination of cybersecurity and networking theory and practice. Students will combine knowledge and skills gained by implementing the eight CISSP domain topic areas into a fictitious organization. Students will learn how to apply the tools, techniques, and knowledge gained in the program in a practical real-world example. The course culminates with a formal capstone paper and presentation. The course also prepares students for the ISC2 Professional Security Certification(s). PREREQUISITE(S): *NWIT 246 or consent of department. One hour each week.*

1 semester hour

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PHED - Physical Education

PHED 101 Badminton and Pickleball
Emphasizes learning individual skills, tactics, strategy, rules, and etiquette in the sports of badminton and pickleball. Competitive techniques of singles and doubles play in both sports. *Assessment Level(s): ELAI 990/ELAW 980/ELAR 980, ELAR 970/IERW 001. Two hours each week.*
1 semester hour

PHED 103 Fencing I
Introduction to fencing. Rules and customs. Use of the foil, its application in offense and defense for competition. *Assessment Level(s): ELAI 990/ELAW 980/ ELAR 980, ELAR 970/IERW 001. Two hours each week.*
1 semester hour

PHED 104 Fencing II
Further study of foil fencing techniques as offered in PHED 103. Stresses perfecting foil techniques and further development of fencing skills as a means of recreational enjoyment. PREREQUISITE(S): *PHED 103 or consent of department. Two hours each week.*
1 semester hour

PHED 105 Beginning Golf
Emphasis on the full swing, chipping and putting skills, rules, etiquette, and history. *Assessment Level(s): ELAI 990/ELAW 980/ELAR 980, ELAR 970/IERW 001. Two hours each week.*
1 semester hour

PHED 106 Intermediate Golf
Provides for further development of individual skills in the full swing, chipping, and putting. Also covers techniques including unusual lies and creative shotmaking, rules, and etiquette. PREREQUISITE(S): *A grade of C or better in PHED 105 or consent of department. Two hours each week.*
1 semester hour

PHED 111 Martial Arts I
Introduces self-defense techniques taken from various Asian martial arts such as karate, jujitsu, and judo. *Assessment Level(s): ELAI 990/ELAW 980/ELAR 980, ELAR 970/IERW 001. Two hours each week.*
1 semester hour

PHED 112 Martial Arts II
Continuation of basic exercises and terminology. Emphasis on the most popular forms of martial arts in this country, karate and jujitsu. PREREQUISITE(S): *PHED 111 or consent of department. Two hours each week.*
1 semester hour

PHED 116 Tennis I
Emphasis on learning basic skills including forehand, backhand, serve, and volley. Strategy, history, rules, and etiquette of the sport. *Assessment Level(s): ELAI 990/ELAW 980/ELAR 980, ELAR 970/IERW 001. Three hours each week for 10 weeks.*
1 semester hour

PHED 117 Tennis II
Review of basic strokes. Emphasis on intermediate-level skills including spin serves, overhead smash, and lob. Competitive techniques and strategy of both singles and doubles. Attention given to execution of a variety of strokes in simulated game conditions. PREREQUISITE(S): *PHED 116 or consent of department. Three hours each week for 10 weeks.*
1 semester hour

PHED 120 Beginner Swimming
The beginning skills for the nonswimmer. Designed to build confidence and develop a water-safe student. *Two hours each week.*
1 semester hour

PHED 121 Intermediate Swimming
Designed for students who have some swimming experience. Front crawl, elementary backstroke, breaststroke, sidestroke, overarm sidestroke, and inverted breaststroke. *Two hours each week.*
1 semester hour

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PHED 125 Lifeguard Training
To teach lifeguards the skills and knowledge needed to prevent and respond to aquatic emergencies. Upon satisfactory completion of the course, the student will receive American Red Cross Certifications in Lifeguard Training, Standard First Aid, CPR for the Professional Rescuer, AED Essentials, and Prevention of Disease Transmission. PREREQUISITE(S): *Must be at least 15 years of age and must pass a swimming proficiency test on first day of class. Assessment Level(s): ELAR 980/IERW 002. Two hours each week.*

1 semester hour

PHED 128 Water Exercise
Stimulating exercises providing for optimum fitness. Water resistance for developing muscle tone, increased endurance, and figure improvement. Water buoyancy for aiding relaxation, endurance, flexibility, and figure improvement. Stress and tension release through creative exercises in shallow water. *Assessment Level(s): ELAI 990/ELAW 980/ ELAR 980, ELAR 970/IERW 001. Two hours each week.*

1 semester hour

PHED 131 Swimming for Fitness
An individualized exercise program to develop cardiorespiratory fitness. Training methodology and conditioning principles applied to distance swimming. Emphasis on a personalized training program. This course does not include stroke technique. PREREQUISITE(S): *Swimming proficiency. Assessment Level(s): ELAR 980/ IERW 002. Two hours each week.*

1 semester hour

PHED 137 Whitewater Kayak I
Introduction to the basics of flatwater and river kayaking with rapids of moderate difficulty. Instruction covers paddling skills, equipment selection, water reading, river tactics, trip planning, safety practices, and rescue techniques. Includes three Saturday or Sunday field trips to Potomac and/or Shenandoah rivers. PREREQUISITE(S): *Basic swimming ability and water confidence. Assessment Level(s): ELAI 990/ ELAW 980/ELAR 980, ELAR 970/IERW 001. Two hours each week.*

1 semester hour

PHED 143 Soccer
Emphasizes the basic individual skills including shooting, passing, trapping, and heading. Discussion of tactical and strategic concepts of team play and rules. *Assessment Level(s): ELAI 990/ELAW 980/ELAR 980, ELAR 970/IERW 001. Two hours each week.*

1 semester hour

PHED 149 Yoga
This course includes exercises, postures, and breathing techniques which relieve tension, increase muscle flexibility, and promote good health. The important aspects of yoga such as concentration, body awareness, and body-mind integration will be discussed. Deep relaxation will be practiced at the end of each class. *Assessment Level(s): ELAI 990/ELAW 980/ ELAR 980, ELAR 970/IERW 001. Two hours each week.*

1 semester hour

PHED 152 Basketball
Individual physical skills, team play, rules, and game strategy including techniques in passing, shooting, dribbling, offensive and defensive play. *Assessment Level(s): ELAI 990/ ELAW 980/ELAR 980, ELAR 970/IERW 001. Two hours each week.*

1 semester hour

PHED 155 Self-Defense for Men
An introduction to basic self-defense skills. The course includes an exploration of escape and avoidance strategies, offensive and defensive postures, defensive techniques, and simulated attacks. The course will also examine male violence prevention, managing anger, and communication principles in confrontational situations. Finally, fitness principles, such as strength, flexibility, and cardiovascular fitness, will be addressed, particularly in regard to the impact of personal fitness on one's ability to perform the self-defense skills presented in the class. *Assessment Level(s): ELAI 990/ ELAW 980/ELAR 980. Two hours each week.*

2 semester hours

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PHED 156 Self-Defense for Women
An introduction to basic self-defense skills. The course includes an exploration of escape and avoidance strategies, offensive and defensive postures, defensive techniques, and simulated attacks. The course will also examine community services available for both violence prevention and victim abuse services. Finally, fitness principles, such as strength, flexibility, and cardiovascular fitness, will be addressed, particularly in regard to the impact of personal fitness on one's ability to perform the self-defense skills presented in class. *Assessment Level(s): ELAI 990/ELAW 980/ELAR 980. Two hours each week.*

2 semester hours

PHED 163 Weight Training Designs for Women
Emphasizes the design and implementation of individualized weight training programs to meet the specific muscular fitness needs and interests of women. Students will experience and evaluate the potential benefit of weight training exercises to increase lean body tissue, reduce body fat, improve bone density, and develop firmer, more efficient muscles for enhanced appearance and performance. Conditioning techniques will focus on the utilization of weight resistance machines and free weights. *Assessment Level(s): ELAI 990/ ELAW 980/ELAR 980, IERW 002. Two hours each week.*

1 semester hour

PHED 166 Personal Fitness I
An individualized self-paced fitness course with emphasis on improving the health-related components of physical fitness. Principles of conditioning will be applied to develop a personalized training program to enhance cardiovascular conditioning, strength and muscular endurance, flexibility, and body composition. *Assessment Level(s): ELAI 990/ELAW 980/ELAR 980, IERW 002. May not be taken in the same semester as PHED 170 or PHED 171. Two hours each week.*

1 semester hour

PHED 167 Personal Fitness II
An individualized exercise program will be utilized to continue the maintenance and improvement of the health-related components of physical fitness. Includes concepts and methods associated with sustaining motivation and developing a lifestyle adherence to exercise. PREREQUISITE(S): *PHED 166. Two hours each week.*

1 semester hour

PHED 170 Strength Training and Conditioning I
Application of training principles and the development of safe and effective techniques involved in progressive resistance weight training. Free weights, resistance machines, and specific strength exercises will be utilized by the student to implement an individualized program for optimal gains in muscular strength, muscular endurance, lean body composition, and motor performance. *Assessment Level(s): ELAI 990/ELAW 980/ELAR 980, IERW 002. Two hours each week.*

1 semester hour

PHED 171 Strength Training and Conditioning II
Research-supported techniques and training procedures are applied in the development of strength training and conditioning for sport and physical activity. Programs for absolute strength, speed strength, strength endurance, power, quickness, agility, running speed, jumping ability, anaerobic endurance, and flexibility will be planned and implemented based on personal sport or fitness interests. PREREQUISITE(S): *PHED 170 or consent of department. Two hours each week.*

1 semester hour

PHED 174 Circuit Fitness
Utilizes timed sequences of exercises to produce gains in total fitness. A variety of circuit training techniques will be used during this class including HITT techniques, multi-planar exercises Alternate strength-cardio circuits, Body weight circuits, and the use of a variety of exercise equipment. Participants need to be able to safely exercise at higher intensities. The benefits of this class can include improvement in muscular strength and endurance, balance, agility, body composition, and cardiovascular endurance. *Assessment Level(s): ELAI 990/ELAW 980/ELAR 980, IERW 002. Two hours each week.*

1 semester hour

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PHED 177 Rock Climbing and Outdoor Challenges
Introduction to basic skills, techniques, equipment, and safety practices used in rock climbing and rappelling. Additional activities include initiative problems, confidence course tasks, and rope traverse events, all designed to challenge students both individually and in group situations. Students will participate in off-campus experiences at Carderock, Great Falls, and the Smith Outdoor Education Center. *Assessment Level(s): ELAI 990/ELAW 980/ELAR 980, IERW 002. Two and a quarter hours each week for 12 weeks.*

1 semester hour

PHED 183 Introduction to Cycling
Course includes skill development in efficient riding techniques, equipment selection, safety and crucial riding maneuvers, basic maintenance and repair, fitness training, touring, and trip planning with field trips to local bike trails. Students must provide a bike with five to ten or more speeds and transportation to off-campus bikeways. *Three hours each week for ten weeks.*

1 semester hour

PHED 186 Volleyball
This course will teach individual physical skills, team play, rules, and game strategies for the various types of volleyball including two-person, four-person, and six-person formats. *Assessment Level(s): ELAI 990/ELAW 980/ELAR 980, ELAR 970/IERW 001. Two hours each week.*

1 semester hour

PHED 201 Overview of Physical Education (R only)
Covers the historical, philosophical, social, and practical aspects of American physical education. Students evaluate the field of physical education and its unique contribution to students' physical, social and emotional development. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

PHED 204 Foundations of Elementary School Physical Education (R only)
Emphasizes the concepts, theories, and practical application of both activity-based and movement education-based elementary school physical education programs. Material will include movement concepts, locomotor and nonlocomotor activities, manipulative skills, and skill themes. Additional topics will focus on rhythmic activities, low-organized games, educational gymnastics, and other movement experiences for early childhood and elementary school-aged children. Evaluative techniques, teaching strategies, and organizational plans will also be discussed. PREREQUISITE(S): *A grade of C or better in PHED 201. Three hours each week.*

3 semester hours

PHED 206 Principles and Practices of Health-Related Fitness (R only)
Covers fundamental principles of health-related fitness. Students develop individualized programs, acquire knowledge of relevant concepts and techniques, assess fitness status, utilize a variety of fitness equipment, and participate in physical activities to promote an understanding of the value of exercise and to encourage permanent lifestyle change. Note: Successful completion of course prepares student to sit for a variety of NCCA-approved Personal Trainer Exam certifications including one from the American Council on Exercise (ACE), American College of Sports Medicine (ACSM), and National Academy of Sports Medicine (NASM). Students should contact the departmental advisor before enrolling in this class. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

PHED 225 Invasion Games: a Tactical Games Approach (R only)
Focuses on teaching methodologies and performance of several field/court invasion games including ultimate, team handball, soccer, hockey, and lacrosse. Students will improve teaching aspects related to skill analysis, planning of developmentally appropriate learning activities and development of appropriate activity progressions and modifications for effective differentiated teaching and learning. The content of this course will be presented using diverse approaches including hands-on teaching experiences, group activities and lectures. PREREQUISITE(S): *PHED 201. Assessment Level(s): ENGL 101 /ENGL 011, MATH 050. Three hours lecture each week.*

3 semester hours

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PHED 226 Net-Wall Games: a Tactical Games Approach

Focuses on teaching methodologies and technical and tactical performance of several net and wall activities, which may include badminton, tennis, volleyball, and pickle ball. Application of multiple learning models, including tactical games for understanding model, sport education, and cooperative learning, will be used to link these sports. PREREQUISITE(S): *A grade of C or better in PHED 225. Three hours lecture each week.*

3 semester hours

PHED 228 Group Fitness Instructor Training (R and TP/SS only)

Course designed to develop skills and knowledge necessary to provide safe and effective group fitness instruction using a variety of exercise modalities. This course includes knowledge and application of training principles and exercise techniques to develop cardiorespiratory fitness, muscular strength, muscular endurance, and muscular flexibility. Scientific principles of anatomy, kinesiology, and exercise physiology are studied and applied. Instructional techniques such as effective communication, motivational skills, class design, injury prevention, cueing, and accommodations for special populations are studied and applied. Course assignments include lesson and unit plan preparations and class teaching experiences. Students successfully completing the course will have the opportunity to sit for the ACE Group Fitness Instructor Certification Exam. *Assessment Level(s): ENGL 101/ENGL 011. One and a half hour lecture, two hours laboratory each week.*

3 semester hours

PHED 230 Advanced Weight Training: Theory and Program Design (R only)

Emphasis on instructional techniques and skill development in progressive resistance strength training. Anatomical, physiological, and biomechanical principles are studied and applied to design effective programs for individuals and specific populations. Equipment considerations, maintenance, safety, organization, and injury prevention are covered in the use of free weights, resistance machines, and plyometric training methods. Students develop the skills to assess, develop, and evaluate muscular strength and endurance programs. Course assignments include in-class practice teaching experiences. Students should contact the departmental advisor before enrolling in this class. PREREQUISITE(S): *A grade of C or better in PHED 206, or consent of department. Three hours each week.*

3 semester hours

PHED 232 Health Fitness/PE Major Practicum (R only)

In-service training and practical experience, totaling a minimum of 60 hours in an approved health and fitness or physical education setting. Students will meet with a full-time faculty member to develop goals and objectives for their practicum experiences, will keep a weekly journal of accomplishments, and will submit a final report analyzing their overall experiences. PREREQUISITE(S): *Consent of department. Combines 60 hours of practicum and faculty preceptor's meetings.*

1 semester hour

PHED 237 Fitness Assessment and Programming (R only)

An examination of scientifically-based assessment techniques used to evaluate cardio-respiratory endurance and body composition. Principles of exercise, interpretation of assessment results, and program design are applied to develop safe, individualized exercise programs for apparently healthy individuals and special populations using American College of Sports Medicine guidelines. Safety considerations, identification of risk factors, and contradictions are emphasized. PREREQUISITE(S): *A grade of C or better in PHED 206, or consent of department. Three hours each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

PHED 240 Personal Training Techniques (R only)
An examination of personal training programming concepts, training methodology, and business practices. Creative program design, motivation strategies, appropriate assessment techniques, communications and interpersonal skills, training styles, and client expectation issues are explored. Students learn various one-to-one instructional techniques appropriate for working with clients at a fitness center, in the home, and in other activity settings. Topics concerning career opportunities, role and responsibilities of trainers, recruitment and retention of clients, business ethics, promotion and marketing strategies, liability insurance, fee structures, certification, and continuing education opportunities will be addressed. Students will gain experience as an apprentice personal trainer during the course sequence. PREREQUISITE(S): *PHED 230 and PHED 237, or consent of department. Three hours each week.*

3 semester hours

PHED 250 Prevention and Management of Exercise Injuries (R only)
Concepts of prevention, recognition, treatment, and management of injuries and physical disabilities, which affect physical activity and conditioning. Course will include medical history and physical assessment, as well as, adaptations for training and program design needed for various diseases, functional disabilities, injuries, and functional imbalances for the prevention of injuries and safe physical conditioning. This course includes both theoretical and practical aspects of exercise design and program development for healthy populations and those populations with special needs. PREREQUISITE(S): *HLTH 220, PHED 230, PHED 237, or consent of department. Three hours each week.*

3 semester hours

PHIL - Philosophy

PHIL 101 Introduction to Philosophy (HUMD, GEIR, GEEL)
Introduction to philosophical analysis of the problem of knowledge, the problem of reality, and the problem of the good. Major philosophical attitudes of Western civilization are introduced. Special attention is paid to some of the philosophical implications of contemporary natural and social science. The basic themes of the course are that the major questions philosophy deals with are present in the lives of all persons; that we must clarify the questions, if possible, before we try to answer them; and that the basic questions are always concerned with the nature and meaning of human existence. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

PHIL 140 Introduction to the Study of Ethics (HUMD, GEIR, GEEL)
Covers contemporary ethical issues in public policy and personal conduct. Topic areas may include bioethics and medicine; inequality and discrimination; justice and punishment; information ethics; environmental ethics; or other areas. Practical issues in these areas will be discussed in relation to ethical theories. Various ethical perspectives will be critically examined. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

PHIL 143 Introduction to the Study of Religion (HUMD, GEIR, GEEL, GCP)
Discusses theories of the source of religion and examines representative Eastern and Western religions. Philosophical implications of the presence of religion in human life will be explored. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

PHIL 190 Elementary Logic and Semantics (HUMD, GEIR, GEEL)
An introductory study of logic and language, intended to increase the student's ability to use language with precision and to reason correctly. Topics include the logic of science and the principles of induction and deduction. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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PHIL 201 Morality and Contemporary Law (HUMD, GEIR, GEEL)
An examination of some social issues that seem to be of current interest from the legal/ethical viewpoint, e.g.: privacy, crime and punishment, civil and human rights, victimless crimes, police and court practice, sexual and medical practice, freedom and authority. An attempt will be made to view these contemporary problems in a historical perspective. The student is encouraged and expected to know facts, think logically, and develop an independent sense of critical judgment. PREREQUISITE(S): *One course in philosophy, political science, or sociology, or consent of department. Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

PHIL 205 Philosophy in Literature (HUMD, GEIR, GEEL, GCP)
Reading and philosophical criticism of novels and plays containing ideas significant for ethics, metaphysics, religion, and social policy. Particular attention will be given to modern writers. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

PHIL 209 Introduction to Peace and Justice Studies
Introduces the students to peace and justice thought both in Western and Eastern philosophic literature. It will also explore how the Hindu, Buddhist, Chinese, Jewish, Christian, and Islamic traditions address the issues of peace and justice in individual, family, communal, national, and global life. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

PHIL 212 Women in Philosophy I (HUMD, GEIR, GEEL, GCP)
Introduces the student to the contributions by women in philosophy from ancient times through the Middle Ages. The course provides a critical examination of their philosophic views and explores philosophical issues such as oppression, morality, the meaning of equality, and the role of the family. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

PHIL 218 Women in Philosophy II
Introduces the student to the contributions by women in philosophy in modern and contemporary times. The course provides a critical examination of their philosophic views and explores philosophical issues such as oppression, morality, the meaning of equality, and the role of the family. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

PHIL 222 Asian Thought
Explores the philosophical, mythical, and religious thought of the traditions of the East, examining secular thought and religious convictions and studying their influence on each other. Buddhism, Hinduism, Shintoism, Taoism, Confucianism, and other substantive thought systems, as well as some indigenous religions, will be discussed. Each tradition's views of nature, society, self, deity, and afterlife will be studied; attention will be paid to the roles of women and/or minority groups within the traditions. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

PHIL 231 Western Religions
Explores the philosophical, mythical, and religious thought of the traditions of the West. Judaism, Christianity, and Islam, as well as some indigenous religions, will be discussed. Each tradition's views of nature, society, self, deity, and afterlife will be studied; attention will be paid to the roles of women and/or minority groups within the traditions. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

PHOT - Photography

PHOT 110 Contemporary Topics in Photography (R only)
Variable topics in photography, presented as a result of community or student interest, to include a variety of photography-related skills or intensive study in a specific area. Topics to be announced each semester in the class schedule. *Assessment Level(s): MATH 050, ELAR 980/IERW 002. Minimum 15 hours of instruction for each credit hour.*

1-3 semester hours

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PHOT 161 Introduction to Digital Photography (R only) (ARTD, GEIR, GEEL)

An introduction to digital photography using digital cameras and basic image editing software. This course includes print production for making black-and-white and color photographs and studio techniques that include portrait lighting and still life photography. No prior photography experience is required. Students use digital photography for the production of a photographic portfolio. *One hour lecture, four hours laboratory each week.*

3 semester hours

PHOT 201 Photography II (R only)

A transition course between basic photography and advanced photography courses. Students learn control techniques resulting in high-quality digital files and prints. Students work with various camera designs and explore photographic color theory. Lighting techniques are taught in detail including studio strobes and continuous lighting. The working methods of the professional photographer are explored in the production of a portfolio of black-and-white and color images for commercial or fine art applications. PREREQUISITE(S): *PHOT 161, or consent of department. Two hours lecture, four hours laboratory each week.*

4 semester hours

PHOT 210 Photojournalism (G and R only)

Designed to acquire the skill of story telling within the context of exploring social justice as it relates to political, social, ethical and cultural issues. In addition to digital stills, the incorporation of fundamental video technology wiil be taught providing a complementary dynamic to the narrative. The end product will be optimized for publication across multiple and current social media platforms. PREREQUISITE(S): *PHOT 161, or consent of department. Two hours lecture, three hours laboratory each week.*

3 semester hours

PHOT 214 Photoshop for Graphics and Photography (R only)

(Also offered as GDES 214. Credit cannot be received for both PHOT 214 and GDES 214.)

An in-depth study of digital editing as it applies to the needs of the graphics or photography student and professional. Students manipulate scanned images and digital photographs in preparation for publication layout and design, web output, use in other software packages, or immediate output. Topics include photo-restoration, composite imaging, masking, and the adjustment and correction of images used in graphic design and photography. PREREQUISITE(S): *None, but previous computer experience is necessary. It is strongly recommended that photography majors take PHOT 161 prior to this course. Two hours lecture, four hours laboratory each week.*

4 semester hours

PHOT 230 Advanced Image Editing and Correction (R only)

(Also offered as GDES 230. Credit cannot be received for both PHOT 230 and GDES 230.)

An advanced study of digital editing and image correction as it applies to the needs of the graphics or photography student and professional. Students perform contrast and color correction on more difficult scanned images and digital photographs in an effort to gain aesthetic control of the image prior to final output. Topics also include visual and mechanical calibration of input and output devices. PREREQUISITE(S): *GDES 214 or PHOT 214 or consent of department. Two hours lecture, four hours laboratory each week.*

4 semester hours

PHOT 251 Portrait and Fashion Photography (R only)

Advanced techniques for photographing portraits and fashion for illustrative purposes. Lighting for both studio and location shoots are covered in detail implementing known techniques of digital capture. Completed assignments will be used to create a professional printed portfolio in both black-and-white and color. PREREQUISITE(S): *PHOT 201 or consent of department. Two hours lecture, three hours laboratory each week.*

3 semester hours

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PHOT 265 Advanced Color/Black and White Imaging
Exposes students to the contemporary and traditional use of color and black and white imaging and printing techniques. This involves color theory applications, tonal control and advanced metering functions derived from the concepts and practices of traditional film photography. Current Image editing software will continue to be explored for advanced features as they relate to the outcomes of this course. Students will develop strategies for producing a printed fine art color and black and white portfolios utilizing some of the highest quality fine art papers on the market. PREREQUISITE(S): *PHOT 201 or consent of department. Two hours lecture, three hours laboratory each week.*

3 semester hours

PHOT 269 Special Photography Assignment (R only)
Offered on an individual basis to majors with advanced standing. Students may extend their in-depth studies by exploration of a particular specialization within the curriculum. PREREQUISITE(S): *Consent of curriculum coordinator and department chairperson. Hours to be assigned by chairperson. Minimum of 30 hours work per semester hour.*

1-4 semester hours

PHOT 275 Business Practices and Portfolio Development (R only)
This course surveys the usual and customary practices in the field of photography, both as salaried employment and as an independent contracting enterprise. Topics include the role of professional organizations in photographic business; staff and freelance work; self-assessment and self-marketing strategies; forms of business organization; differentiation of types of business expenses for billing purposes; estimating and pricing of photographs and photographic services; use rights fees and licensing; the design of contracts; release agreements; the ownership of photographic images and of related intellectual property; copyright; stock photography; First Amendment and privacy issues; and the new business aspects of digital imaging. Individual and group portfolio and print critiques lead to improvement in the marketability of the student's portfolio, and of the student, through strengthening of image quality and variety and improvement of job interview and portfolio presentation skills. PREREQUISITE(S): *Advanced standing (PHOT 201 plus one other 200-level photography course) or consent of curriculum coordinator. Three hours lecture and discussion each week, plus scheduled individual conferences.*

3 semester hours

PHOT 277 Advanced Concepts in Digital Capture (R only)
The purpose of this course is for students to expand the realm of possibilities in creating dynamic imagery beyond the fundamentals of image capture. Your previous knowledge of lighting, exposure, image editing, printing, and problem solving will be explored utilizing advanced concepts of photography with merging technologies. Students will develop strategies and multiple skillsets for the production of panoramic stitching, timelapse capture, focus stacking, extended and multiple exposures, cinemagraphs along with the use of ambient, continuous, and strobe lighting applications. PREREQUISITE(S): *PHOT 265. Two hours lecture, two hours laboratory each week*

3 semester hours

PHTH - Physical Therapist Assistant

PHTH 101 Introduction to Physical Therapy (TP/SS only) CE
Provides an introduction and orientation to the field of physical therapy. Course includes historical background, medical-professional ethics and conduct, the role of physical therapist assistant as part of the health care team, PT/PTA collaboration, and orientation to psychological and social needs of the ill and disabled. PREREQUISITE(S): *Admission to the physical therapist assistant program or consent of program coordinator. Assessment Level(s): ENGL 101/ ENGL 011. Credit by exam offered to qualified individuals, determined by PTA Program Coordinator. Two hours each week.*

2 semester hours

PHTH 102 Basic Health Skills for the Physical Therapist Assistant (TP/SS only) CE
Instruction in basic health skills used in physical therapy, including anatomical and movement terminology, and chemical, mechanical, and physical principles relative to body function. Skills and practice in body mechanics, patient positioning and transfers, gait training, bandaging, vital signs, and medical asepsis also included. PREREQUISITE(S): *Admission to the physical therapist assistant program or consent of program coordinator or PHTH 101. One hour lecture, two hours laboratory each week.*

2 semester hours

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PHTH 103 Therapeutic Procedures I (TP/SS only) CE
Presents therapeutic modalities used by physical therapist assistants, including therapeutic use of heat and cold, massage, and hydrotherapy. In addition, traction, intermittent pressure pumps, and use of electrical currents. Specific conditions requiring use of these treatment modalities will be presented, and contraindications and special precautions for their use will be discussed. Procedures for documentation of patient care will be included. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 104 , PHTH 112, and PHTH 113. Two hours lecture, three hours laboratory each week.*

3 semester hours

PHTH 104 Surface Anatomy, Palpation, and Massage (TP/SS only)
In-depth exploration of surface anatomy and palpation of structures essential for physical therapy practice. Students are introduced to joint movement terminology and performance. Massage techniques are presented along with tests and measures necessary for the safe application of range of motion and massage techniques. PREREQUISITE(S): *A grade of C or better in BIOL 150. One hour lecture, two hours laboratory each week.*

2 semester hours

PHTH 105 Kinesiology I (TP/SS only)
First of a two part course is the study of human movement. Provides an introduction to kinetics, mechanics, and science. Regional anatomy and kinesiology of the extremities is covered along with the skills of goniometry and MMT. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 104, PHTH 112, and PHTH 113. One hour lecture, two hours laboratory each week.*

2 semester hours

PHTH 106 Kinesiology II (TP/SS only)
Second part of the two-part course in the study of human movement. Rational anatomy and kinesiology of the cervical, thoracic, lumbar spine, and pelvis are discussed. Principles of kinesiology are applied to posture and gait. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 103, PHTH 104, PHTH 105, PHTH 112, PHTH 113, PHTH 114, and PHTH 116. One hour lecture, two hours laboratory each week.*

2 semester hours

PHTH 112 Pathology for the Physical Therapist Assistant (TP/SS only)
General pathology with emphasis on the study of diseases and disorders most commonly seen in physical therapy practice. Diseases of the musculoskeletal, nervous, and cardiopulmonary systems as well as metabolic disorders will be emphasized. PREREQUISITE(S): *BIOL 212. Two hours each week.*

2 semester hours

PHTH 113 Seminar I (TP/SS only)
First of four seminars dealing with themes of professional issues, core values, and the development of a comprehensive portfolio. These courses will challenge the student to apply professional theme content during standardized patient scenarios and patient simulations. Themes for Seminar I: Interpersonal and professional communication, duty, and integrity (ethical, legal, and safe clinical practice). PRE- or COREQUISITE(S): *PHTH 101. One hour each week.*

1 semester hour

PHTH 114 Seminar II (TP/SS only)
Second of four seminars dealing with themes of professional issues, core values, and the development of a comprehensive portfolio. These courses will challenge the student to apply professional theme content during standardized patient scenarios and patient simulations. Themes for Seminar II: altruism, caring, compassion, and cultural competence in health care settings. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 104, PHTH 112, and PHTH 113. One hour each week.*

1 semester hour

PHTH 116 Measures and Interventions for Clinical Problems I (TP/SS only)
First course in the three-course sequence that integrates clinical tests and measures with clinical interventions for common problems encountered in physical therapy care. This course includes tests, measures, and interventions for problems of the integument and non-complex problems of the musculoskeletal system. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 104, PHTH 112, and PHTH 113. One hour lecture, two hours laboratory each week.*

2 semester hours

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PHTH 201 Medical Reporting for the Physical Therapist Assistant (TP/SS only)

Principles of medical reporting, including the ability to abstract pertinent information from actual medical records. The writing of patient progress notes in standardized formats and medical terminology is emphasized. Evidence-based practice, clinical research, and justifying interventions based on clinical literature are integrated in the study of medical documentation. An introduction to quality assessment and improvement, fiscal and organizational management is provided. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 103, PHTH 104, PHTH 105, PHTH 112, PHTH 113, PHTH 114, and PHTH 116. Two hours lecture/discussion each week.*

2 semester hours

PHTH 202 Independent Study in Physical Therapist Assistant (TP/SS only)

Through independent study, physical therapist assistant students will conduct research in special topics in physical therapy and rehabilitation technology, professional advancements, and/or case studies. Students will be assigned to a physical therapist assistant faculty member for guidance and supervision. Letter designators in the schedule of classes will distinguish the 1, 2, 3, and 4-credit versions of PHTH 202 . PREREQUISITE(S): *BIOL 150. Minimum 45 hours of work for each credit hour.*

1-4 semester hours

PHTH 204 Neurophysiology and Motor Learning (TP/SS only)

In-depth review of neurological physiology, anatomy, and pathology and an introduction to motor control and motor learning throughout the lifespan. Course content will focus on developing sufficient foundational knowledge to work with neurological pathology encountered in physical therapy practice, and with geriatric and pediatric populations. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 103, PHTH 104, PHTH 105, PHTH 106, PHTH 112, PHTH 113, PHTH 114, PHTH 116, and PHTH 201. Two hours each week.*

2 semester hours

PHTH 205 Seminar III (TP/SS only)

Third of four seminars dealing with themes of professional issues, core values, and the development of a comprehensive portfolio. These courses will challenge the student to apply professional theme content during standardized patient scenarios and patient simulations. Themes for Seminar III: fiscal responsibility, Physical Therapist and Physical Therapist Assistant collaboration, and education of patients, families, and others. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 103, PHTH 104, PHTH 105, PHTH 106, PHTH 112, PHTH 113, PHTH 114, PHTH 116, and PHTH 201. One hour lecture/discussion each week.*

1 semester hour

PHTH 206 Measures and Interventions for Clinical Problems II (TP/SS only)

Second course in the three course sequence which integrates tests and measures with clinical interventions for common problems encountered in physical therapy care. This course includes tests, measures, and interventions for complex problems of the musculoskeletal and cardiopulmonary systems. Posture awareness training, conditioning and reconditioning, skills training, and plyometrics are discussed. An introduction to post-surgical protocols and return to function and activity are discussed along with aerobic conditioning, changes in vital signs with exercise, breathing patterns, Chest PHTH, and pulmonary function rehabilitation. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 103, PHTH 104, PHTH 105, PHTH 106, PHTH 112, PHTH 113, PHTH 114, PHTH 116, and PHTH 201. One and one half hour lecture, three hours laboratory each week.*

3 semester hours

PHTH 215 Seminar IV (TP/SS only)

Capstone seminar dealing with professional issues, core values, and the development of a portfolio. The theme for Seminar IV is career development, continuing professional competence, and social responsibility. Activities completed include national board exam review preparation, job search strategies, resume development, and professional interview skills. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 103, PHTH 104, PHTH 105, PHTH 106, PHTH 112, PHTH 113, PHTH 114, PHTH 116, PHTH 201, PHTH 204, PHTH 205, PHTH 206 and PHTH 223. Two hours each week.*

1 semester hour

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PHTH 216 Measures and Interventions for Clinical Problems III (TP/SS only)
Third course in the three-course sequence that integrates clinical tests and measures with clinical interventions for common problems encountered in physical therapy care. This course includes tests, measures, and interventions for problems of the neuromuscular systems. Measures of arousal, mentation, cognition, balance, and motor control are discussed along with the theories and practice of therapeutic exercise interventions for patients with neuromuscular problems across the lifespan from pediatric to geriatric conditions. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 103, PHTH 104, PHTH 105, PHTH 106, PHTH 112, PHTH 113, PHTH 114, PHTH 116, PHTH 201,PHTH 204, PHTH 205, PHTH 206, and PHTH 223. One hour lecture, two hours laboratory each week.*

2 semester hours

PHTH 220 Therapeutic Procedures II (TP/SS only)
Study of advanced technical skills in therapeutic practice. Orthotics and prosthetics, as well as modifying intervention principles for unique populations such as women's health, work injury, elite sports, emerging clinical evidence, and nontraditional therapies will be examined. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 103, PHTH 104, PHTH 105, PHTH 106, PHTH 112, PHTH 113, PHTH 114, PHTH 116, PHTH 201, PHTH 204, PHTH 205, PHTH 206, and PHTH 223. One hour lecture, two hours laboratory each week.*

2 semester hours

PHTH 223 Clinical Practicum I (TP/SS only)
Supervised clinical experience in a physical therapy setting. The student will practice skills learned on actual patients under the supervision and direction of a licensed physical therapist of a licensed physical therapist assistant in a variety of local clinical facilities. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 103, PHTH 104, PHTH 105, PHTH 106, PHTH 112, PHTH 113, PHTH 114, PHTH 116, PHTH 201 and consent of PTA department. This course consists of 240 hours in a clinical setting. Forty hours each week for six weeks.*

5 semester hours

PHTH 224 Clinical Practicum II (TP/SS only)
Capstone clinical course consisting of eight fulltime weeks of supervised clinical experience in a physical therapy setting. The student will practice advanced skills learned in the physical therapist assistant curriculum under the supervision and direction of a licensed physical therapist or supervision team of licensed physical therapist and physical therapist assistant. The student will develop entry-level skills in the legal and ethical issues of clinical practice, the measures and interventions required of a clinical population, documentation and progression of patient care, and the comprehensive non-direct patient related skills necessary for the professional role and responsibilities of the entry level physical therapist assistant. PREREQUISITE(S): *PHTH 101, PHTH 102, PHTH 103, PHTH 104, PHTH 105, PHTH 106, PHTH 112, PHTH 113, PHTH 114, PHTH 116, PHTH 201, PHTH 204, PHTH 205, PHTH 206, PHTH 223 and consent of department. This course consists of 320 hours in a clinical setting, 40 hours each week for eight weeks.*

7 semester hours

PHYS - Physics

PHYS 103 Introduction to Physics
Basic concepts in physics and their mathematical framework including problem solving techniques, experimental measurements, and simple data analysis. Topics include force, energy, momentum, density, pressure, waves, dimensional analysis, measurement, precision, and estimation; and power, trigonometric, exponential, and logarithmic functions. *Assessment Level(s): MATH 050. One hour lecture, two hours laboratory each week.*

2 semester hours

PHYS 105 Conceptual Physics (NSND, GEEL)
This course introduces fundamental concepts of physics with emphasis on applications to the world around us. The course is concept oriented and does not make extensive use of mathematics. Although the course does not satisfy the requirements of professional or engineering schools, it provides familiarity with basic principles prior to enrolling in other physics courses. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Three hours each week.*

3 semester hours

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PHYS 110 Sound and Light in the Arts (R only) (NSLD, GEEL)

Selected topics in sound and hearing; traditional and electronic music; light and vision; lasers and holography; color theory; photography; recording and reproduction of sound and light; the broadcast media. Frequent demonstrations, occasional field trips, and guest lecturers. Laboratory work consists of further exploration of lecture-related topics by individuals or small groups. Projects are encouraged if time permits. *Assessment Level(s): ENGL 101/ ENGL 011, MATH 050. Three hours lecture, three hours laboratory each week.*

4 semester hours

PHYS 161 General Physics I: Mechanics and Heat (NSND, GEEL)

Fundamental laws of motion, force and energy, particle collisions, rotational mechanics, gravitation, thermodynamics, and kinetic theory. A calculus-based general physics course, required for students majoring in engineering or one of the physical sciences. PREREQUISITE(S): *MATH 181.* PRE- or COREQUISITE(S): *MATH 182 or consent of department. Three hours lecture, one hour discussion each week.*

3 semester hours

PHYS 203 General Physics I (Non-Engineering) (NSLD, GEEL)

The first of two related courses (with PHYS 204) designed for pre-professional programs and for transfer to four-year institutions. The two-course series presents fundamental concepts and laws of physics with emphasis on principles and development of scientific methods applied to physical relationships. PHYS 203 presents the laws of mechanics, including waves and sound, and selected topics in material properties and thermodynamics. Calculus is not needed, but strong algebra and trigonometry knowledge is required. *Assessment Level(s): ENGL 101/ENGL 011, MATH 165. Three hours lecture, four hours laboratory/discussion each week.*

4 semester hours

PHYS 204 General Physics II (Non-Engineering) (NSLD, GEEL)

The second of two related courses (with PHYS 203) designed for pre-professional programs and for transfer to four-year institutions. The two-course series presents fundamental concepts and laws of physics with emphasis on principles and development of scientific methods applied to physical relationships. PHYS 204 presents the laws of electricity and magnetism, optics, and selected topics in modern physics. Calculus is not needed, but strong algebra and trigonometry knowledge is required. PREREQUISITE(S): *PHYS 203 or consent of department. Assessment Level(s): ENGL 101/ ENGL 011. Three hours lecture, four hours laboratory/ discussion each week.*

4 semester hours

PHYS 233 Physics for the Life Sciences I

The first part of a two-semester course in general physics specifically oriented towards applications relevant for students in biology and pre-medical programs. The course covers basic mechanics including forces and energy, properties of matter, and thermodynamics done in authentic biological contexts. PREREQUISITE(S): *BIOL 150, CHEM 131, and either MATH 170 or MATH 181 or consent of department.* PRE- or COREQUISITE(S): *Either MATH 171 or MATH 182. Three hours lecture, four hours laboratory/discussion each week.*

4 semester hours

PHYS 234 Physics for the Life Sciences II

The second part of a two-semester course in general physics specifically oriented towards applications relevant for students in biology and pre-medical programs. The course covers basic statistical physics, electricity and magnetism, and optics done in authentic biological contexts. PREREQUISITE(S): *PHYS 233 or consent of department. Three hours lecture, four hours laboratory/ discussion each week.*

4 semester hours

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PHYS 262 General Physics II: Electricity and Magnetism (NSLD, GEEL)
Topics incude Coulomb's law, electric fields, Gauss' law, direct-current and alternating-current circuits, magnetic fields, Ampere's law, electromagnetic induction, and electromagnetic waves. Laboratory exercises also develop familiarity with electrical measuring instruments.A calculus-based general physics course, required for students majoring in engineering or one of the physical sciences. PREREQUISITE(S): *A grade of C or better in both MATH 182 and PHYS 161.* PRE- or COREQUISITE(S): *MATH 280, MATH 282, or MATH 284, or consent of department. Three hours lecture, three hours laboratory, one hour discussion each week*

4 semester hours

PHYS 263 General Physics III: Waves, Optics, and Modern Physics (NSLD, GEEL)
Topics include mechanical and electromagnetic waves, geometrical and wave optics, selected topics in special relativity, quantum mechanics, atomic, nuclear physics, and solid state physics, and related fields. A calculus-based general physics course, required for students majoring in engineering or one of the physical sciences. PREREQUISITE(S): *A grade of C or better in PHYS 262 or consent of department. Three hours lecture, three hours laboratory, one hour discussion each week.*

4 semester hours

POLI - Political Science

POLI 101 American Government (BSSD,GEEL)
Structure, powers, and processes of the American political system: executive, legislative, and judicial branches; civil liberties, federalism, democratic patterns and backgrounds, public opinion, pressure group politics, political parties, constitutional mechanisms, and administrative establishment; foreign and domestic policy. Emphasis on national level. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

POLI 105 Introduction to Political Science (BSSD, GEEL, GCP)
Basic principles and concepts of political science. Scope and methods of political science, nature and purposes of the state; government, its organization and functions; politics, elections, parties, pressure groups, international relations, and political thought. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

POLI 201 Fundamentals of Public Policy
Introduces the discipline of public policy. The role of key institutions, processes, and public policy actors such as Congress, the presidency, the bureaucracy, the courts, interest groups, and the media will be explored. Students learn basic analytic strategies for assessing public policies. Various policy areas will be examined such as inequality, education, health care, economic and budgetary, immigration, environmental, and/or homeland security policies. This course can help students understand, evaluate, and affect public policies throughout their lives. PREREQUISITE(S): *ENGL 101/ENGL 101A. Three hours each week.*

3 semester hours

POLI 203 International Relations (BSSD, GEEL, GCP)
Critical analysis of international problems. A survey of the concepts and problems of sovereignty and nationalism as well as the successes and failures of international institutions and organizations. Special attention given to the role of the United Nations in today's world and to contemporary situations that affect world politics. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

POLI 205 Introduction to Human Rights
A survey of the field of human rights, from the local to the international level. The idea of humane treatment will be traced from the ancient societies down to the present "global village." Perspectives on human rights from a wide variety of academic disciplines will be considered, including cultural expressions and sustainable development. A significant part of the classroom time will be spent on an activity related to community service. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

POLI 206 Political Ideologies (BSSD, GEEL, GCP)
A survey and analysis of leading ideologies of the modern world such as anarchism, nationalism, fascism and national socialism, classical liberalism and conservatism, Fabian socialism, Marxism-Leninism, and liberal democracy. Some consideration of current extremist ideologies of both left and right. Examination of the nature and function of ideologies in political movements and in governance. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

POLI 211 Comparative Politics and Governments (BSSD, GEEL, GCP)
This course introduces students to the comparative study of politics and governments. Topics include political culture, participation, government structures, and public policies. The course compares historical processes and current issues facing countries domestically and internationally. Selected countries from both the developed and developing worlds illustrate broader concepts and provide practice in comparative political analysis. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

POLI 221 Western Political Thought
Surveys Western political thought from Plato to Foucault. The course critically examines the contributions of political theorists both ancient and modern, especially major ideas that have shaped modern democratic societies. The course also explores challenges posed by Marxist, feminist, and postmodern theorists and focuses on values and concepts that underlie political discourse: power, legitimacy, change, freedom, equality, and justice. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

POLI 230 Introduction to International Conflict Resolution
Introduction to the design, management, theory, and analysis of international conflict. The course explores the nature of international conflict and the combination of psychological, social, anthropological, political, and legal strategies that can be used to resolve such conflict. *Assessment Level(s): ENGL 101/ENGL 011.*

3 semester hours

POLI 242 State and Local Government
Powers, organization, and functions of state and local governments; case studies. Emphasis on the governments of the state of Maryland and of Montgomery County. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

POLI 252 Race and Ethnicity in U.S. Politics
Examines the role of race/ethnicity in the American political system. Themes discussed include the social construction of race; the concept of racial hierarchy; racial/ethnic origins of political institutions (e.g., the Constitution); minority representation; the relationship among race, racism, and public/foreign policy; immigration and citizenship; and the role of race in campaigns. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

POLI 256 Politics of the Developing World (R only) (BSSD, GEEL, GCP)
Explores the domestic, regional, and international politics of the developing world. The course covers political institutions; processes; challenges common to many states in Africa, Asia, Latin America, and the Middle East; and regional differences. Topics include colonialism, the environment, development, nationalism, democratization, and globalization. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

POLI 270 Politics in Action
A fieldwork course in politics. Approximately one-half of the semester is devoted to an activity such as preparing a legislative proposal, monitoring the progress of a bill, lobbying, or campaigning; the other half of the semester is spent in research, report writing, and seminar-style presentation and discussion of individual fieldwork projects. *Assessment Level(s): ENGL 101/ENGL 011. Hours per week vary.*

3 semester hours

PSCI - Physical Science

PSCI 101 Physical Science I (NSLD, GEEL) CE-R and TP/SS
A general course in the physical sciences to help the student understand the physical aspects of the environment. Development of a broad general understanding of basic scientific concepts for nonscience majors and some familiarity with scientific materials, equipment, laboratory techniques, and procedures. Emphasizes the principles of physics, chemistry, geology, meteorology, and astronomy. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Two hours lecture, two hours laboratory, two hours discussion each week.*

4 semester hours

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PSCI 102 Physical Science II (NSLD, GEEL) CE-R and TP/SS

A general course in the physical sciences to help the student understand the physical aspects of the environment. Development of a broad general understanding of basic scientific concepts for nonscience majors and some familiarity with scientific materials, equipment, laboratory techniques, and procedures. Emphasizes the principles of physics, chemistry, geology, meteorology, and astronomy. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Two hours lecture, two hours laboratory, two hours discussion each week.*

4 semester hours

PSYC - Psychology

PSYC 100 General Psychology (BSSD, GEEL)

Introduction to the fields and research methods of psychology, including such topics as biological bases of behavior, human development, perception, learning, mental disorder, and social behavior. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

PSYC 202 The Science and Profession of Psychology

Introduces the conceptual and methodological skills necessary for success in the Psychology major, including an understanding of the scientific basis of the discipline, critical reasoning skills, information literacy, quantitative reasoning, ethical and social awareness, and basic writing skills in the discipline. In addition, PSYC 202 enhances students' understanding of careers in psychology and awareness of opportunities for research experience, service learning, and internship training. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of the department. Three hours each week.*

3 semester hours

PSYC 203 Human Growth and Development During the Life Span

Studies the life span; data, concepts, theories, and methods of contemporary psychology by focusing on the physical, intellectual, and social development of human behavior from conception through late adulthood. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of department. Three hours each week.*

3 semester hours

PSYC 204 Introduction to the Psychology of Personality

An introduction to the psychology of human personality including topics such as personality theories, adjustment, personality description, and assessment. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of department. Three hours each week.*

3 semester hours

PSYC 206 Psychology of Human Sexuality

An introduction to the study of the psychology of human sexuality including the study of human sexual behavior, sexual attitudes, sexual motivation, sex roles, relation between sexual behavior and attitudes and personality characteristics, sexual variance, sexual problems, etc. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of department. Three hours each week.*

3 semester hours

PSYC 207 Psychology of Women

An introduction to the issues and research in the psychology of women. Topics include biological and social factors, gender roles, sex differences and similarities, mental health, pregnancy, menstruation, menopause, work, women of color, love relationships, and sexuality. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of department. Three hours each week.*

3 semester hours

PSYC 211 Social Psychology

An introduction to the field of social psychology emphasizing the experimental and the experiential approach. Various theoretical orientations and relevant research are considered covering such topics as group structures and group processes, formation, measurement and changing of attitudes (including prejudice), communication and persuasion, leadership, interpersonal relations, and social influence. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of department. Three hours each week.*

3 semester hours

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PSYC 213 Criminal and Legal Psychology
Aspects of psychology that specifically relate to police work. Applications of current research about law enforcement, juvenile behavior, and witness credibility. Special police problems, including the relation of mental illness and mental retardation to crime. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of department. Three hours each week.*

3 semester hours

PSYC 215 Child Psychology
Emotional, intellectual, social, physiological, and cognitive growth of the child based on pertinent psychological principles, research findings, and methodology. Critical periods in maturation and learning. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of department. Three hours each week.*

3 semester hours

PSYC 216 Adolescent Psychology
The interaction of physical, intellectual, emotional, and environmental forces as they influence the psychological functioning of the adolescent. Theories and research findings as they relate to adolescent adjustment. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of department. Three hours each week.*

3 semester hours

PSYC 221 Introduction to Psychopathology
Provides an introduction to and understanding of behavior disorders and insight into the personality of the disturbed person. Symptoms, contributing factors, treatment, diagnosis, and classification of the mentally ill and the mental defective, as well as the maladjusted person, will be studied. Roles of various members of the mental health team in the prevention, analysis, and rehabilitation of disturbed individuals will be discussed. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of department. Three hours each week.*

3 semester hours

PSYC 224 Cultural Psychology
Study of psychological principles, theory, and research through exploration of cultural differences and similarities, both within and across cultures. Topics include the interplay between culture and developmental processes, cognition, emotion, communication, gender, personality development, psychopathology, and social behavior. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of department. Three hours each week.*

3 semester hours

PSYC 227 Educational Psychology
Studies the principles of psychology that relate to the teaching-learning process. Topics include theories of learning and cognitive development, motivation, methods and media of instruction, individual differences, measurement, and evaluation. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of department. Three hours lecture/ discussion each week.*

3 semester hours

PSYC 228 The Psychology of Learning
An introduction to the theory and research of learning and behavior. Students will acquire knowledge of the procedures used to study learning, the various ways that learned behaviors are expressed, and theories that have been proposed to explain how learning is represented, while also being provided with opportunities to apply what they are learning. PREREQUISITE(S): *A grade of C or better in PSYC 100, or consent of the department. Three hours each week.*

3 semester hours

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RADT - Radiologic (X-Ray) Technology

RADT 101 Radiologic Technology I (TP/SS only)
An introductory course to the science of medical radiographic exposure techniques. A correlated laboratory will aid the student in synthesizing the material presented in class. Topics include X-ray formation from its discovery to present day, X-ray interaction with matter, radiation protection, and digital imaging acquisition. Mathematical formulas to calculate technical exposure and occupational exposures are presented. In addition, basic atomic structure and fundamental physics will be presented as a foundational support to objectives of this course. PREREQUISITE(S): *RADT 119 or consent of program coordinator.* PRE- or COREQUISITE(S): *Mathematics foundation. Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture, two hours laboratory each week.*

4 semester hours

RADT 102 Radiologic Technology II (TP/SS only)
A continuation of RADT 101 with more complex imaging theories. Course objectives include image quality, conventional and digital fluoroscopy, X-ray machinery circuitry and design, pre and post processing image acquisition through digital capture, equipment quality control, and federally regulated radiation safety room design for radiation protection. Mathematical formulas for basic circuitry problems, greater density problems, and magnification calculations are presented. Basic concepts of MRI and CT are introduced with more complex theories to further the knowledge of the student. Artificial Intelligence as it pertains to imaging will be discussed. A correlated laboratory will aid the student in synthesizing the material presented in class. PREREQUISITE(S): *A grade of C or better in mathematics foundation and RADT 101, or consent of program coordinator. Three hours lecture, two hours laboratory each week.*

4 semester hours

RADT 111 Radiographic Positioning I (TP/SS only)
Covers knowledge and skills necessary to position quality radiographs. Students relate theoretical concepts to actual hands on laboratory demonstration for the respiratory system, abdomen, and upper and lower extremities. Students demonstrate appropriate positioning, technical, radiation safety, and communication principles. Supplemental radiographic positioning skills and adjustments necessary to compensate for patient and pathological limitations are introduced. PREREQUISITE(S): *RADT 119 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*

3 semester hours

RADT 112 Radiographic Positioning II (TP/SS only)
Covers knowledge and skills necessary to position quality radiographs. Students relate theoretical concepts to actual hands-on laboratory demonstration for the femur, pelvis, complete spine, and contrast studies of the urinary and digestive tracts. Students demonstrate appropriate positioning, technical, radiation safety, and communication principles. The essentials of contrast media, contrast reactions and venipuncture are studied, and skills specific to these objectives are performed in a simulated environment. Supplemental radiographic positioning skills and adjustments necessary to compensate for patient and pathological limitations are introduced. PREREQUISITE(S): *RADT 101, RADT 111, RADT 120, or consent of program coordinator. One hour lecture, three hours laboratory each week.*

2 semester hours

RADT 119 Clinical Radiology I (TP/SS only)
Provides the radiology student with the critical instruction essential to the actual practice of radiography. As an introduction to the medical profession, this course explores radiology's role in health care. Patient care, vital signs, sterile and aseptic technique, transportation and transfer skills, radiation protection concepts, legal and ethical responsibilities, and critical thinking skills appropriate for the radiology department are covered. Interpersonal, communication, customer service and diversity skills necessary to interact with patients, peers, and other professionals are addressed. General anatomy, terminology and positioning principles related to the chest are covered. Concepts of surgical radiography are introduced. PREREQUISITE(S): *Admission into the program or consent of program coordinator. Assessment Level(s): ENGL 101/ENGL 011, MATH 117 or higher. Two hours lecture, two hours laboratory each week.*

3 semester hours

RADT 120 Clinical Radiology II (TP/SS only)
Provides the inexperienced first year radiologic technology student with the introductory clinical instruction essential to the actual practice of radiography. Students attend an assigned clinical affiliate to observe and participate in the completion of radiographic exams on actual patients under the direct/indirect supervision of a professional radiographer. In this competency-based program, students are assessed in their compliance with radiation safety and their performance of radiographic examinations in the areas of general radiography, fluoroscopy, and portable radiography. Specialized rotations introduce students to the surgical suite (operating room). The student must complete 240 clinical hours to successfully complete this course. PREREQUISITE(S): *RADT 119 or consent of program coordinator. 240 Hours.*

2 semester hours

RADT 124 Clinical Radiology III (TP/SS only)
Continues clinical instruction essential to the applied practice of radiography. Students attend an assigned clinical affiliate to observe and participate in the completion of radiographic exams on actual patients under the direct/ indirect supervision of a professional radiographer. In this competency-based program students are assessed in their compliance with radiation safety and their performance of radiographic examinations in the areas of general radiography, fluoroscopy, portable radiography, and the surgical suite. The student must complete 240 hours to successfully complete this course. PREREQUISITE(S): *RADT 101, RADT 111, RADT 120 or consent of program coordinator. 240 Hours.*

2 semester hours

RADT 125 Clinical Radiology IV (TP/SS only)
Continues clinical instruction essential to the applied practice of radiography. Students are assigned to a new clinical affiliate to observe and participate in the completion of radiographic exams on actual patients under the direct/ indirect supervision of a professional radiographer. In this competency-based program students are assessed in their compliance with radiation safety and their performance of radiographic examinations in the areas of general radiography, fluoroscopy, and portable radiography. Specialized rotations offer the student an opportunity to develop competence in the areas of the operating room and pediatrics. The student must complete 360 hours to successfully complete this course. PREREQUISITE(S): *RADT 102, RADT 112, RADT 124 or consent of program coordinator. 360 Hours.*

3 semester hours

RADT 200 Independent Study in Radiologic Technology (TP/SS only)
Provides an opportunity to conduct research in cutting edge Radiologic Technology procedures, professional advancements, and/or case studies. Students will be assigned to Radiologic Technology Faculty for guidance and supervision. For those students where intensive review to prepare for the National Registry is required, students will be assigned to Radiologic Technology Faculty for guidance and supervision. Letter designators in the schedule of classes will distinguish the 1, 2, 3, and 4-credit versions of RADT 200 . *Minimum 45 hours of work for each credit hour.*

1-4 semester hours

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RADT 206 Radiologic Technology III (TP/SS only)
Introduction to radiobiology and pathology. The effect of radiation on human biology, the history of human and experimental exposures to radiation and the calculations of effects of radiation are presented. Review of Radiation Safety Practices are reviewed as part of the objectives in radiobiology. Radiation therapy as it relates to radiobiology is introduced. Quality assurance and quality control are reviewed. Identification of pathologies impacting the body systems and commonly diagnosed via routine radiography are discussed. Students participate in completing simulated Mock registries exam. PREREQUISITE(S): *RADT 102 or consent of program coordinator. Two hours each week.*

2 semester hours

RADT 207 Radiologic Technology IV (TP/SS only)
Advanced radiographic modalities, procedures and equipment. Advanced contrast studies including angiography, interventional studies, arthrography, myelography, genitourinary system studies, and biliary system studies are covered. Identification of pathologies commonly diagnosed by various imaging modalities (computed tomography, MRI, mammography, sonography, nuclear medicine, PET CT, DEXA) is presented. Instruction in cross sectional anatomy and the components of computed tomography imaging are presented. Basic pharmacology concepts as required by ASRT are discussed. Review of the anatomical structures of the major body systems is included. Review of medicolegal considerations for imaging. PREREQUISITE(S): *RADT 206 or consent of program coordinator. Two hours each week.*

2 semester hours

RADT 211 Radiographic Positioning III (TP/SS only)
Covers knowledge and skills necessary to produce quality radiographs. Students relate theoretical concepts to actual laboratory demonstration for the bony thorax, skull and facial bones. Students continue to develop and demonstrate appropriate positioning, technical and communication principles. Supplemental radiographic views and adjustments necessary to compensate for patient and pathological limitations are discussed. PREREQUISITE(S): *RADT 112 or consent of program coordinator. One hour lecture, two hours laboratory each week.*

2 semester hours

RADT 224 Clinical Radiology V (TP/SS only)
Continues clinical instruction essential to the mastery of actual practice of radiography. Students observe and participate in the completion of more complex radiographic exams on actual patients under the direct/indirect supervision of a professional radiographer. In this competency-based program students are assessed in their compliance with radiation safety and their performance of radiographic examinations in the areas of general radiography, fluoroscopy, and portable radiography. Specialized rotations offer the student an opportunity to develop competency in the areas of the operating room and pediatrics. Students participate in trauma workshop to support advanced training in trauma radiography. Students must complete 360 hours to successfully complete this course. PREREQUISITE(S): *RADT 125 or consent of program coordinator. 360 Hours.*

3 semester hours

RADT 225 Clinical Radiology VI (TP/SS only)
Strengthens clinical instruction essential to the mastery of the actual practice of radiography. Students attend a variety of assigned clinical affiliates to participate in the completion of radiographic exams on actual patients under the direct/indirect supervision of a professional radiographer. In this competency-based program students are assessed in their compliance with radiation safety and their performance of radiographic examinations in the areas of general radiography, fluoroscopy, and portable radiography, operating room, pediatrics, and outpatients. Students observe advanced modalities, including computed tomography and Interventional Radiography. The student must complete 360 hours to successfully complete this course. PREREQUISITE(S): *RADT 206, RADT 211, RADT 224 or consent of program coordinator. 360 Hours.*

3 semester hours

RADT 240 Radiologic Technology V (TP/SS only)
Professional entry into the diagnostic medical imaging career. Resume writing and job interviewing skills, certification examination preparation, test-taking strategies, and comprehensive review of content specifications of the certifying exam are presented to the student for successful entry into the diagnostic imaging profession as a graduate radiographer. PREREQUISITE(S): *RADT 206 and RADT 224. Two hours each week.*

2 semester hours

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READ - Reading

READ 238 Literacy in the Content Area Part I
Designed for current and prospective secondary educators, covers the essentials of the reading processes necessary for secondary students to become proficient readers. Students will investigate five areas: types of reading, assessment, reading skills, reading instruction, and motivation for reading. This course meets the Maryland State Department of Education's reading requirement for secondary educators. PREREQUISITE(S): *Successful completion of one year of college-level English, or consent of department.*

3 semester hours

READ 239 Literacy in the Content Area Part II
Designed for current and prospective secondary educators, focuses on teaching secondary students to learn from text. Students will apply theories, strategies, and practices in classroom lessons. The course introduces three areas: types of reading, reading skills, and instruction that integrates content with reading goals. This course meets the Maryland State Department of Education's reading requirement for secondary educators. PREREQUISITE(S): *READ 238 or consent of department.*

3 semester hours

RUSS - Russian

RUSS 101 Elementary Russian I (HUMD, GEIR, GEEL, GCP)
A beginning language course focusing on the study of Russian language and culture. Students begin to develop the ability to communicate in Russian through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Russian is required. In-class work is supplemented by 20 hours of online homework. *Three hours each week.*

3 semester hours

RUSS 102 Elementary Russian II (HUMD, GEIR, GEEL, GCP)
A continuation of RUSS 101. Students continue their study of written language, conversation, and composition as they consider cultural themes, language functions, and authentic situations. In-class work is supplemented by 20 hours of online homework. PREREQUISITE(S): *RUSS 101 or consent of department. Three hours each week.*

3 semester hours

RUSS 201 Intermediate Russian I
Focuses on the study of Russian language and culture at the intermediate level. Students further their ability to communicate in Russian through an advanced consideration of cultural themes and a review of Russian grammar to support an increased focus on reading and composition. In-class work is supplemented by 10 hours of online homework. PREREQUISITE(S): *RUSS 102 or consent of department. Three hours each week.*

3 semester hours

RUSS 202 Intermediate Russian II
A continuation of RUSS 201. Students further their ability to communicate in Russian through an advanced consideration of cultural themes and a review of Russian grammar to support an increased focus on reading and composition. In-class work is supplemented by 10 hours of online homework. PREREQUISITE(S): *RUSS 201 or consent of department. Three hours each week.*

3 semester hours

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SCIR - Scientific Research

SCIR 297 Fundamentals of Scientific Research I
Designed for the promising science, engineering, or mathematics (SEM) student who would like to build upon general SEM skills learned from general courses in order to generate competency in scientific critical thinking and research. This course enables SEM students to pursue research topics of their own choosing with the guidance and supervision of an assigned faculty member. Students should have a strong interest in SEM and be committed toward completion of a multi-semester and interdisciplinary-spanning research project. Projects will not duplicate curriculum content, but will expand on that content. PREREQUISITE(S): *A minimum GPA of 3.0; BIOL 150, CHEM 131, MATH 165, and approval of instructor. One hour discussion, three hours laboratory each week.*

2 semester hours

SOCY - Sociology

SOCY 100 Introduction to Sociology (BSSD, GEEL, GCP)
An exploration of fundamental sociological concepts, methods, and theories used to interpret the patterns of human society. Emphasis is placed on the connection between theory and practice in examining social interaction, cultural diversity, social structure, and global issues. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

SOCY 105 Social Problems and Issues (BSSD, GEEL, GCP)
An analysis of social problems such as social inequality, urbanization, crime, demographic change, terrorism, and environmental issues. Sociological theory and research are used to examine the impact of globalization, culture, institutions, ideology, social policy, and social movements on various societal issues. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

SOCY 208 Sociology of Gender (BSSD, GEEL, GCP)
Examines the social production and reproduction of gender relations in social institutions such as family, education, law, work, and media using comparisons with other cultures. The intersectionality of gender, race, social class, and global inequality will be critically analyzed. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

SOCY 214 Sociology of the Family
Examines patterns and trends in family structures and family dynamics. Partner selection, marital/partner roles, family interaction, and parenting patterns will be identified. Social and cultural variables that diversify families, as well as societal and global forces which impact families, will be analyzed. PREREQUISITE(S): *ANTH 201, SOCY 100 or consent of department. Three hours each week.*

3 semester hours

SOCY 230 Sociology of Personality
A social psychological study of the development of human nature and personality, mind, and self as products of social interaction. The role of language as fundamental in the symbolic process is stressed as this relates to personality development and behavior motivation. PREREQUISITE(S): *PSYC 100, SOCY 100, or consent of department. Three hours each week.*

3 semester hours

SOCY 233 Race and Ethnic Relations
An analysis patterns of intergroup relations in contemporary society. Theories and concepts of racial/ethnic hierarchies, the intersection of race/ethnicity with class and gender, and the place of race/ethnicity in the global systems of stratification are critically considered. PREREQUISITE(S): *ANTH 201, SOCY 100 or consent of department. Three hours each week.*

3 semester hours

SOCY 240 Sociology of Age and Aging (BSSD, GEEL, GCP)
An introduction of aging studies focused on social aspects. Demographic, social, and economic changes with the aging population will be examined using comparisons with different societies. Theories of aging and their applications are introduced. Relevant social policies on aging will be critically evaluated. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

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SOCY 243 The Sociology of Sport (R only) (BSSD, GEEL, GCP)
The application of basic sociological concepts, theories, and research to the analysis of contemporary sport. Emphasis will be placed on how sport influences and is influenced by social groups, culture, institutions, social inequalities, and global expansion. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

SOCY 246 Sociology of Religion
An analysis of structures and functions of world religions in societal and global settings. This course examines religion in relationship to fundamentalism, globalization, nationalism, multiculturalism and religiously grounded violence. It considers the impact of religious trends on individuals, groups and societies. PREREQUISITE(S): *ANTH 201 or SOCY 100 or consent of instructor. Three hours each week.*

3 semester hours

SOCY 250 Globalization Issues
An exploration of social forces contributing to global inequalities and the dynamics of global patterns (immigration, refugees, displaced persons, social conflict, health/environmental issues, and social movements). Students examine consequences of global forces and their effects on institutions and individuals. PREREQUISITE(S): *ANTH 201 or SOCY 100 or consent of department. Three hours lecture/discussion each week.*

3 semester hours

SONO - Diagnostic Medical Sonography

SONO 101 Orientation to Diagnostic Medical Sonography (TP/SS only)
An orientation to the field of diagnostic medical sonography followed by techniques for assisting and monitoring patients. Professional ethics, legal issues, and patient care procedures pertinent to sonography will be covered. Chart reading and recordkeeping relative to ultrasound will be presented. PREREQUISITE(S): *Admission to the diagnostic medical sonography program or consent of program coordinator; CPR Certification-Class C. Assessment Level(s): MATH 117 or higher. Laboratory experience required on and off campus. Two hours lecture, two hours laboratory each week.*

3 semester hours

SONO 105 Acoustical Physics I
Fundamental principles of acoustical physics including wave propagation, biological effects, acoustical impedance properties, and transducer characteristics will be presented. Basic types of equipment, instrumentation, quality control, and safety are discussed. Laboratory experience required on and off campus. PREREQUISITE(S): *Mathematics foundation and PHYS 103 or higher and admission to the diagnostic medical sonography program or consent of program coordinator. One-and-a-half hours lecture, one hour laboratory each week.*

2 semester hours

SONO 112 Abdominal Sonography I (TP/SS only)
A study of the fundamentals of abdominal sonography, including the case study reviews of normal anatomy, physiology, and pathological conditions of the abdominal and superficial structures. PREREQUISITE(S): *BIOL 212, BIOL 213 and SONO 204 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*

3 semester hours

SONO 123 Obstetric/Gynecology Sonography I (TP/SS only)
A study of fundamentals of obstetrics/gynecology scans of normal and abnormal anatomy. Fetal development, including abnormal etiology and diagnostic techniques, is presented. The detection of abnormalities, pathologies, and deviation from normal is stressed. Body planes, which must be scanned for an accurate diagnosis, are emphasized. PREREQUISITE(S): *SONO 204 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*

3 semester hours

SONO 200 Independent Study in Diagnostic Medical Sonography (TP/SS only)
Through independent study, sonography students will conduct research in cutting-edge diagnostic medical sonography technology, professional advancements and/or case studies. Students will be assigned to diagnostic medical sonography faculty for guidance and supervision. Letter designators in the schedule of classes will distinguish the 1-, 2,- 3-, and 4-credit versions of SONO 200 . PREREQUISITE(S): *Admission to the diagnostic medical sonography program or consent of program coordinator. Minimum 45 hours of work for each credit hour.*

1-4 semester hours

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SONO 204 Introduction to Sectional Anatomy (TP/SS only)
An introduction to ultrasound sectional anatomy. Anatomy will be presented in the transverse, sagittal, and coronal planes. Laboratory experience required on and off campus. PREREQUISITE(S): *BIOL 212 or consent of program coordinator.* PRE- or COREQUISITE(S): *BIOL 213. Two hours lecture, two hours laboratory each week.*
3 semester hours

SONO 205 Acoustical Physics and Instrumentation II (TP/SS only)
A continuation of SONO 105. Fundamental principles of acoustical physics, including speed of sound, reflection, refraction, and attenuation through soft tissue; principles of pulse echo imaging and scanning speed limitation. PREREQUISITE(S): *SONO 105. One-and-a-half hours lecture, one hour laboratory each week.*
2 semester hours

SONO 210 Breast Sonography (TP/SS only)
A study of the fundamentals of breast sonography, including the case study review of normal anatomy, physiology, and pathological conditions of the breast tissue and its visualization with real-time 2-D and 3-D imaging, and Doppler. PREREQUISITE(S): *SONO 204 or consent of program coordinator. One hour lecture, one hour laboratory each week..*
1 semester hour

SONO 224 Seminar-Diagnostic Medical Sonography (TP/SS only)
On-campus seminar addresses issues that will facilitate the graduates' entry into the career of sonography. Topics include registry examination preparation, resume writing, and test-taking strategies. Students are required to register for the National Board Examination. PREREQUISITE(S): *Admission to the diagnostic medical sonography program or consent of program coordinator. One hour each week.*
1 semester hour

SONO 229 Pediatric Echocardiography (TP/SS only)
A study of the fundamentals of pediatric echocardiography, including the case study review of normal anatomy, physiology, and pathological conditions of the pediatric heart and its visualization with real-time 2-D and 3-D imaging, Doppler, and M-mode echocardiography. PREREQUISITE(S): *SONO 204 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*
3 semester hours

SONO 232 Abdominal Sonography II (TP/SS only)
A continuation of the study of abdominal sonography including interpretation of clinical tests, related clinical signs and symptoms, and normal and abnormal sonographic patterns. This course includes laboratory experience on basic scanning techniques and protocol relative to the abdominal structures and physiology. PREREQUISITE(S): *SONO 112 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*
3 semester hours

SONO 243 Obstetric/Gynecology Sonography II (TP/SS only)
A continuation of obstetrics/gynecology scanning of normal and abnormal anatomy. Fetal development, including abnormal etiology and diagnostic techniques, is presented. The detection of abnormalities, pathologies, and deviation from normal is stressed. Body planes that must be scanned for an accurate diagnosis will be emphasized. PREREQUISITE(S): *SONO 123 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*
3 semester hours

SONO 245 Adult Echocardiography I (TP/SS only)
A study of the fundamentals of adult echocardiography, including the case study review of normal anatomy, physiology, and pathological conditions of the adult heart and its visualization with real-time 2-D imaging, 3-D and 4-D imaging, Doppler, and M-mode echocardiography. PREREQUISITE(S): *SONO 204 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*
3 semester hours

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SONO 246 Vascular Sonography I (TP/SS only)
A broad overview of the fundamental theory and skills that are utilized to evaluate vascular disease using noninvasive techniques. Instrumentation, vascular anatomy, physiology, pathology, and physical principles and therapy are emphasized. Testing procedures in areas of cerebrovascular, peripheral arterial, and venous testing are included in this course. PREREQUISITE(S): *SONO 204 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*

3 semester hours

SONO 248 Adult Echocardiography II (TP/SS only)
Case study reviews of normal anatomy, physiology, and pathological conditions of the adult heart. PREREQUISITE(S): *SONO 245 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*

3 semester hours

SONO 256 Vascular Sonography II (TP/SS only)
Case study reviews of normal anatomy, physiology, and pathological conditions of the cerebrovascular, peripheral arterial and venous systems. PREREQUISITE(S): *SONO 246 or consent of program coordinator. Two hours lecture, two hours laboratory each week.*

3 semester hours

SONO 261 Sonography Practicum I (TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography. Continuous development of ultrasound scanning skills and techniques. Students' knowledge and skills will build on their clinical experiences. PREREQUISITE(S): *SONO 101 or consent of program coordinator. One hundred and twenty clinical hours.*

1 semester hour

SONO 262 Sonography Practicum II (TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography occurs in hospitals, clinics, and private physician offices. Students will complete a rotation through multiple clinical sites in which the students will be introduced to equipment operation, multiple sonographic examinations, and related clinical correlation. PREREQUISITE(S): *SONO 204 or consent of program coordinator. One hundred and twenty clinical hours.*

1 semester hour

SONO 263 Sonography Practicum III (TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography. Continuous development of ultrasound scanning skills and techniques. Students will continue to build on their previous clinical experiences. PREREQUISITE(S): *SONO 262 or consent of program coordinator. Two hundred and forty clinical hours.*

2 semester hours

SONO 264 Sonography Practicum IV (TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography. Continuous development of ultrasound scanning skills and techniques. Students will build on their previous clinical experiences. PREREQUISITE(S): *SONO 263 or consent of program coordinator. Four hundred and eighty clinical hours.*

4 semester hours

SONO 265 Sonography Practicum V (TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography. Continuous development of ultrasound scanning skills and techniques. Student's knowledge and skills will build on their clinical experiences. PREREQUISITE(S): *SONO 264 or consent of program coordinator. One hundred and twenty clinical hours.*

1 semester hour

SONO 266 Sonography Practicum VI (TP/SS only)
Supervised off-campus experience and practice in the multidisciplinary areas of diagnostic medical sonography to develop the optimal skills necessary to become competent in performing sonographic examinations. All procedures covered in the curriculum will be evaluated for competency during this last clinical course. PREREQUISITE(S): *SONO 265 or consent of program coordinator. Four hundred and eighty clinical hours.*

4 semester hours

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SPAN - Spanish

SPAN 101 Elementary Spanish I (HUMD, GEIR, GEEL, GCP)

A beginning language course focusing on the study of Spanish language and culture. Students begin to develop the ability to communicate in Spanish through the consideration of cultural themes, language functions, and authentic situations as they acquire the structures and lexicon to work with written language, conversation, and composition. No prior knowledge of Spanish is required. In-class work is supplemented by 20 hours of online homework. *Three hours each week.*

3 semester hours

SPAN 102 Elementary Spanish II (HUMD, GEIR, GEEL, GCP)

A continuation of SPAN 101. Students continue their study of written language, conversation, and composition as they consider cultural themes, language functions, and authentic situations. In-class work is supplemented by 20 hours of online homework. PREREQUISITE(S): *SPAN 101 or consent of department. Three hours each week.*

3 semester hours

SPAN 103 Intensive Elementary Spanish (HUMD, GEIR, GEEL, GCP)

An intensive language course comparable to SPAN 101 and SPAN 102 designed for students who have previously studied Spanish but do not place at the level of SPAN 102 and SPAN 201. The class is communicatively based, focusing on the further development of reading, writing, speaking, and listening skills through the consideration of cultural themes, language functions, and authentic situations. Students should expect the language of the classroom to be Spanish. As part of the curriculum, students explore the many cultures that make up the Spanish-speaking world and present a cultural project. Students who have successfully completed SPAN 102 are not eligible to take SPAN 103 for credit. Not open to native speakers of Spanish. In-class work is supplemented by 20 hours of online homework. PREREQUISITE(S): *Appropriate placement on the Spanish placement test, a minimum of two years of high school Spanish or equivalent, or consent of department. First day in-class placement assessments will be made. Four hours each week.*

4 semester hours

SPAN 106 Spanish for Heritage Speakers (HUMD, GEIR, GEEL, GCP)

A course designed for heritage Spanish or native speakers who can express themselves orally and in writing in Spanish, but have not received formal education in the language. Emphasis on orthographic and grammatical concepts geared to improve spelling, writing and oral abilities, focusing on the exploration of contextualized cultural and social topics addressing Hispanic/Latino communities inside and outside of the United States. Students may not receive credit for both SPAN 106 and SPAN 101/SPAN 102. In-class work is supplemented by 10 hours of online homework. *Four hours each week.*

4 semester hours

SPAN 201 Intermediate Spanish I (HUMD, GEIR, GEEL, GCP)

Focuses on the study of Spanish language and culture at the intermediate level. Students further their ability to communicate in Spanish through an advanced consideration of cultural themes and a thorough review of Spanish grammar to support increased focus on reading and composition. In-class work is supplemented by 10 hours of online homework. PREREQUISITE(S): *SPAN 102, SPAN 103, SPAN 106 or consent of department. Three hours each week.*

3 semester hours

SPAN 202 Intermediate Spanish II (HUMD, GEIR, GEEL, GCP)

A continuation of SPAN 201. Students further their ability to communicate in Spanish through an advanced consideration of cultural themes and a review of Spanish grammar to support an increased focus on reading and composition. In-class work is supplemented by 10 hours of online homework. PREREQUISITE(S): *SPAN 201 or consent of department. Three hours each week.*

3 semester hours

SPAN 215 Advanced Spanish Conversation and Composition (HUMD, GEIR, GEEL, GCP)

Emphasis on fluency in speaking and writing Spanish. Readings in texts and assigned outside sources serve as basis for classroom discussion in Spanish as well as for advanced composition. Includes readings in Spanish and/or Latin-American literature. PREREQUISITE(S): *SPAN 202 or appropriate placement on the placement test or consent of department. Three hours each week.*

3 semester hours

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SPAN 216 Advanced Readings in Spanish: Introduction to Latin American Literature (HUMD, GEIR, GEEL, GCP)
A survey of representative works in Latin American literature from pre-colonial times to the present. Students consider various genres as they analyze a variety of texts. The course provides an introduction to literary criticism and textual analysis and examines the key biographical, literary, social, cultural, and political influences on the works under consideration while developing students' proficiency in Spanish. The language of instruction is Spanish. PREREQUISITE(S): *SPAN 202 or appropriate placement on the placement test or consent of department. Three hours each week.*

3 semester hours

STBR - Study Abroad

STBR 200 Foreign Study Program
An orientation and goal-setting course for students who will be studying abroad and earning credits at accredited non-U.S. institutions. Working with the study abroad coordinator prior to their semester abroad, students will establish goals, select courses abroad in conjunction with their discipline of study, and determine transferability of credits to Montgomery College upon course completion, according to transcript evaluator guidelines. A post-program conference will determine completed objectives. PREREQUISITE(S): *Consent of college-wide study abroad coordinator. Three hours each week.*

No credit/No quality points

STSU - Student Success

STSU 100 First Year Seminar
Designed to assist the student in adjusting to college. Includes academic and student services available, study habit techniques, career and educational planning, and adjustment concerns. Especially intended for students during their initial semester of enrollment. *One hour lecture/discussion each week.*

1 semester hour

STSU 101 Seminar for International Students
Orientation course for international students. Includes study skills, academic regulations, the American educational system, individual educational and vocational goals, communication skills, and American customs. Especially intended for students during their initial semester of enrollment in conjunction with American language developmental course offerings. *Two hours lecture/ discussion each week.*

2 semester hours

STSU 102 Mindfulness and Resilience in College
Designed for students interested in exploring the basic core principles of mindfulness (non-judgmental awareness) as it relates to coping with the unique challenges that come with being a college student. This course introduces students to mindfulness-based practices and activities effective in helping to be non-judgmentally present, to improve focus and academic performance, to build resiliency, and to boost social and emotional wellbeing. Students will also examine research on the effectiveness of mindfulness-based practices in building resiliency and improving academic performance. *One hour lecture/discussion each week.*

1 semester hour

STSU 110 Study Habits Development
Stresses development of positive attitudes and improvement of basic learning habits. Includes value assessment and educational goal setting. Stresses strategies in understanding and responding to textbooks, lectures, and other methods and materials encountered in the academic environment. Emphasis on organization of materials, utilization of time, and preparing for and taking examinations. *One hour lecture/ discussion each week.*

1 semester hour

STSU 112 Building Math Confidence
Designed for those who want to improve their attitude toward mathematics. Explores feelings and develops strategies to overcome math phobia. Emphasis will be placed on problem-solving approaches to diagrammed, descriptive, and symbolic number problems. This course is open to students at all levels of mathematical skills, whether preparing for a job, college courses, a test, or living in a world where numbers matter. *One hour lecture/discussion each week.*

1 semester hour

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STSU 114 Memory Development
Designed to assist the student in developing memory through simple systems of association. Topics include development of memory for author organization, course organization, course relationships, and practical application to everyday life situations. *One hour lecture/discussion each week.*
1 semester hour

STSU 120 Career Development: Dynamics and Application
Designed for students interested in developing career goals and creating a plan of action. The course provides students with an opportunity to learn and develop skills for a lifetime of career-related decision making. Emphasis will be placed on personal academic and occupational exploration, resume writing, interviewing, and effective job search strategies. *Two hours lecture/discussion each week.*
2 semester hours

STSU 122 Principles of Academic Success
Designed specifically for students who want to improve their academic performance and achievement in college courses, this course explores the development of the qualities, attitudes, and behaviors of successful students. Topics include accepting personal responsibility, discovering self-motivation, setting and achieving academic and personal goals, mastering self-management, and gaining self-awareness. *Two hours lecture/discussion each week.*
2 semester hours

STSU 124 Happiness and Well-Being
A course that explores the roots of a happy and meaningful life. Students will engage in practical lessons from the science of positive psychology, neurobiology, and social and behavioral sciences. The course will offer students practical strategies for tapping into and nurturing their own happiness, including activities that foster social and emotional well-being and that enable students to observe a measure of their own happiness. *Two hours lecture/discussion each week.*
2 credit hours

STSU 200 Introduction to Student Leadership
A highly experiential course that provides an overview of leadership fundamentals and theory. Students will explore a variety of leadership models and concepts to discover their own personal leadership style. With an emphasis on peer leadership, students will learn how to effectively work with first year students. This course prepares students to assume leadership roles in a variety of academic, social, and professional contexts. PREREQUISITE(S): *A grade of B or better in STSU 100 or STSU 101 and consent of the department. Assessment Level(s): ENGL 101/ENGL 011. Two hours experiential learning each week.*
2 semester hours

SURG - Surgical Technology

SURG 100 Introduction Surgical Technology (TP/SS only) CE
Introduces the foundation, history, and principles related to Surgical Technology including the skills and techniques needed to perform as a surgical technologist in the operating room. Surgical instrumentation and basic principles of aseptic technique for the surgical technologist are included. PREREQUISITE(S): *Admission to the surgical technology program or consent of program coordinator, ENGL 101/ENGL 011, MATH 117 or higher, and BIOL 212.* PRE- or COREQUISITE(S): *BIOL 213. Two hours lecture, four hours laboratory each week.*
4 semester hours

SURG 101 Surgical Technology I (TP/SS only) CE
A continued study of the principles and practice needed for preparing the operating room for surgical procedures. Legal, ethical, and moral aspects are covered in addition to perioperative case management. The course will also include medical terminology with focus on combine prefixes, word roots, abbreviations, and suffixes to create medical terms related to surgery with additional components by systems. PREREQUISITE(S): *Consent of program coordinator, SURG 100.* PRE- or COREQUISITE(S): *BIOL 213. Four hours lecture, four hours laboratory each week.*
6 semester hours

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SURG 102 Surgical Technology II (TP/SS only) CE
A continued study of the principles and practice of surgical case management including the technological sciences and disaster of public health emergency management. Microbiology for the surgical technologist, methods of disinfection and sterilization of the OR, supplies, and equipment are included. PREREQUISITE(S): *A grade of C or better in SURG 101 or consent of program coordinator. Four hours lecture, four hours laboratory each week.*

6 semester hours

SURG 103 Pharmacology and Anesthesia (TP/SS only) CE
Covers action and usage of commonly used drugs, the computation of drug dosages, solutions and the methods by which they are administered. PREREQUISITE(S): *Admission to the surgical technology program or consent of program coordinator, and a grade of C or better in both BIOL 212 and MATH 117 or higher. Two hours each week.*

2 semester hours

SURG 201 Surgical Technology III (TP/SS only)
The study of actual surgical procedures and intraoperative performance. It combines pathology, anatomy, and physiology and a step-by-step process of specific surgical procedures to provide the student with a broad knowledge base and the skills needed to perform as a surgical technologist and Assistant Circulator. Students will gain an understanding of the roles and responsibilities of the surgical technologist and reflect the dynamic professional process that is needed in operating room endeavors. Correlates intraoperative procedures with postoperative care. PREREQUISITE(S): *A grade of C or better in SURG 101 or consent of program coordinator. Four hours lecture, four hours laboratory each week.*

6 semester hours

SURG 205 Clinical Practicum I (TP/SS only)
Provides the student with opportunities to apply those theories learned in SURG 101 to the actual practice of surgical procedures. PRE- or COREQUISITE(S): *A grade of C or better in SURG 101 and SURG 201 or consent of program coordinator. Three hundred sixty (360) hours of clinical practice.*

3 semester hours

SURG 211 Surgical Technology IV (TP/SS only)
Focuses on the role transition to beginning surgical technologist practitioner. This course combines pharmacology, pathology, anatomy, and physiology, and continues a step-by-step process of surgical procedures. Students are required to apply and pay for the national certification exam for surgical technologist given by the National Board of Surgical Technology and Surgical Assisting (NBSTSA). This course will provide the student with the necessary review in preparation for the National Certification Exam. Materials covered will include a comprehensive review of all body systems, instrumentation, procedural methods, supplies, medications, as well as test-taking techniques. The exam will be proctored in the MC Testing Center. Notification of the date and time to take the exam will be provided. Resume development and employment preparation are included. PREREQUISITE(S): *A grade of C or better in SURG 201 and SURG 205, or consent of program coordinator. Four hours lecture, four hours laboratory each week.*

6 semester hours

SURG 215 Clinical Practicum II (TP/SS only)
This course emphasizes a common systematic approach to all surgeries and introduces the surgical technologist's role on specialty teams, as second circulator and second assistant. PREREQUISITE(S): *A grade of C or better in SURG 201 and SURG 205, or consent of program coordinator. Three hundred sixty (360) hours of clinical practice.*

3 semester hours

TECH - Interactive Technologies

TECH 190 Introduction to Game and Simulation Development
Covers the gaming industry, careers, and the basic terminology. Topics include history of gaming; an industry overview; career paths, the state of the job market, and skills needed for success in various jobs; genres and platforms; societal issues; the study of games and "play;" the future of gaming; development of design, teamwork, business, and production skills. PREREQUISITE(S): *None, but previous computer experience strongly recommended. Assessment Level(s): ENGL 101/ENGL 011. Four hours each week.*

4 semester hours

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TECH 225 Game Programming
A study of introductory programming techniques for visual interactivity and computer game development, using Flash/ActionScript, Unity, or other current industry standard software applications. Students will focus on practical code exercises to build interactive game mechanics. PREREQUISITE(S): *GDES 140 or consent of department. Assessment Level(s): MATH 050. Four hours each week.*

4 semester hours

TECH 272 Website Development CE
Provides instruction for creating, uploading, and maintaining professional-quality websites containing graphics, style sheets, mulitmedia, and other basic enhancements using hand-coded HTML as well as Adobe Dreamweaver's fundamental tools. Topics include website development and emerging Internet technologies and trends. PRE- or COREQUISITE(S): *Any CMAP, CMSC, GDES, or TECH course that is two credits or more or consent of department. Assessment Level(s): ENGL 101/ENGL 011. Four hours lecture/discussion each week.*

4 semester hours

TECH 273 Advanced Website Development CE
Explores latest advanced Web technologies and development skills with HTML, Cascading Style Sheets, Web standards, basic server-side programming, usability and accessibility, JavaScript, and Integrated Development Environment (IDE). Students make web-sites attractive, dynamic, accessible, and easy to maintain. PREREQUISITE(S): *TECH 272, department consent, or successful completion of the departmental skills assessment. Three hours lecture/ discussion each week.*

3 semester hours

TECH 274 Web Content Management Systems and Strategy
An introduction to Content Management Systems (CMS) for the web with a focus on content strategy. Course topics include strategy, types of CMS, the use and customization of plug-ins and add-ons, as well as building themes and dynamic content for cross-platform delivery. Students will learn how to audit content for a website, choose an appropriate CMS, and convert a static design into a dynamic CMS-powered site. No programming experience is required, although knowledge of a modern web programming language is helpful. Knowledge of HTML and CSS is assumed. PREREQUISITE(S): *TECH 272 or consent of department. Three hours each week.*

3 semester hours

TECH 276 JavaScript Fundamentals
A study of JavaScript language used to create dynamic and interactive web content. In this introductory course, students will learn the fundamentals of working with the behavior layer of web development using JavaScript. Students will learn scripting basics. the principles of unobtrusive and cross browser scripting, how to navigate and manipulate the Document Object Model (DOM), and how to use JavaScript libraries to improve web development. PREREQUISITE(S): *TECH 272 or consent of department. Three hours each week.*

3 semester hours

TECH 277 Advanced JavaScript
Continues with JavaScript features introduced in TECH 276 , emphasizing web development utilizing open source libraries. In this advanced course, students will learn how to build highly interactive web interfaces and applications, known as Rich Internet Applications (RIAs), using advanced JavaScript techniques. Upon completion of this course students will learn how to design and develop RIAs with jQuery Core, jQuery UI, and Ajax as well as explore XML versus JSON (JavaScript Object Notation). PREREQUISITE(S): *TECH 276 or consent of department. Three hours lecture/discussion each week.*

3 semester hours

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TECH 278 Web Application Development Using ColdFusion

A hands-on introduction to Web database applications using ColdFusion. Topics include creating a simple database, connecting a server-side database to a Web page viewing, sorting, updating, and searching a database through the client-side interface, creating and customizing reusable code, integrating an e-mail facility, and maintaining site security through user logins and limiting site access. PREREQUISITE(S): *TECH 272 or consent of department. Four hours lecture/discussion each week.*

4 semester hours

TECH 282 Web Application Development Using PHP and MySQL

An introduction to the creation and maintenance of data-driven websites using PHP and MySQL. Create a MySQL database and maintain the database dynamically using the programming language PHP. PREREQUISITE(S): *TECH 272 or consent of department. Three hours lecture/discussion each week.*

3 semester hours

TECH 288 Advanced Web Application Development Using ColdFusion

A hands-on exploration of advanced Web application design and construction using ColdFusion. Students learn the basics of creating an e-commerce site by building a fully operational storefront, shopping cart, and sales reporting system. Topics include creating and using complex variables, maintaining state, reusing code, creating user-defined and full-text search facilities, building interactive data-driven graphs, and integrating an automatic e-mail facility. PREREQUISITE(S): *TECH 278 or consent of department. Three hours lecture/ discussion each week.*

3 semester hours

TECH 290 Building Game Worlds: Level Design, Mods, and Quality Assurance

Topics include level design, game modifications ("mods"), quality assurance and testing. Provides an overview of level design and testing, two of the most common entry-level positions in the game industry. Mods, based on existing game engines, vary from individual hobby activities to AAA-published titles like Counterstrike (originally created by college students) and are a powerful tool in an aspiring game developer's portfolio. PREREQUISITE(S): *TECH 190, or successful completion of the departmental skills assessment. TECH 225 is recommended but not required. Assessment Level(s): ENGL 101/ENGL 011. Four hours each week.*

4 semester hours

TECH 295 Board Game Design

Learn about the non-digital, tabletop game industry, including board games, card games, and other "analog" games. Topics include history of non-digital games; industry overview; development of design, teamwork, business, and production skills. Design and develop your own board games. PREREQUISITE(S): *NONE, but TECH 190 and a computer graphics course are strongly recommended. Assessment Level(s): ENGL 101/ENGL 011. Four hours each week.*

4 semester hours

TECH 299 Web Certificate/Degree Portfolio

This Capstone course for the Web Careers certificate/degree provides an opportunity to produce a professional print and/or Web-based portfolio and resume. Students work on Web development team to design and implement a prototype Web site for a local small business or nonprofit organization. Topics include content development, universal Website design, project management, usability practices, resume and portfolio preparation, and effective writing for the Web. PREREQUISITE(S): *Consent of department. Three hours lecture/discussion each week.*

3 semester hours

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THET - Theatre

THET 100 Introduction to the Theatre (ARTD, GEIR, GEEL, GCP)
This is an entry-level course which offers a broad overview of the theatre arts for the theatre major or nonmajor. The work of the various artists who create the theatre arts will be investigated and analyzed along with the analysis of script structure and form through historical and modern perspectives. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

THET 110 Fundamentals of Acting (R and TP/SS only) (ARTD, GEIR, GEEL)
An introduction to basic acting skills, including exercises in speech, movement, and imagination. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

THET 114 Stagecraft I (R only)
The principles and practice of drama production, with emphasis on planning, constructing, and shifting scenery, and on the management of backstage operations. Additional laboratory hours and actual work on College productions. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours lecture, two hours laboratory each week.*

3 semester hours

THET 118 Theatrical Makeup Techniques (R only)
A study of theories and techniques of theatrical makeup. This course is designed to familiarize students with the materials and their application, with each student experiencing the techniques involved in corrective, character, and special effects makeup. *Assessment Level(s): ENGL 101/ENGL 011. Two hours lecture/demonstration, two hours laboratory each week.*

3 semester hours

THET 122 Performance Production (R and TP/SS only)
Practical experience in the production aspects of the performing arts. Students are assigned tasks in the areas of acting, dancing, choreography, costuming, lighting, scene construction and painting, and house and stage management for College productions. Acting and/or dancing in a production is by audition only. *Assessment Level(s): ENGL 101/ENGL 011. Students will spend a minimum of 70 hours per semester in production and 30 hours per semester in a laboratory, in addition to a one-hour lecture each week.*

1 semester hour

THET 125 Script Analysis
Examines plays from the point of view of the director, the actor, the designers, and the audience. Students will study form, structure, genre, character, language, theme, and action as components of a text that provide the theatre artist with the tools for the creation a theatrical production. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

THET 188 Performing Arts Production
An exploration, development, and creation of all devices necessary to present a performing arts offering such as a play, dance concert, or musical theatre production. Lectures include all phases of drama, music, dance, and business production. Open to all students. MUSC 188 and THET 188 may be repeated for a total of 6 semester hours. *A minimum of 15 contact hours per credit.*

1-3 semester hours

THET 201 Intermediate Acting (R and TP/SS only)
Practice in textual analysis, scene study, and the process of developing characterization for performance in the theatre. PREREQUISITE(S): *THET 110 or consent of department. Three hours each week.*

3 semester hours

THET 205 Movement for the Performer (R only)
The introduction of self-use techniques as applied to the development of a theatrical character. These techniques include discussion and application of relaxation, Alexander, LeCoq, and Laban theory. Improvisation technique is also explored and practiced. *Assessment Level(s): ENGL 101/ ENGL 011. Three hours each week.*

3 semester hours

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THET 208 Drafting/Painting for the Performing Arts (R only)
Study of the graphic processes utilized by the scene designer in transferring concepts and ideas to the stage. The students develop basic skills in theatrical drafting and scene painting techniques through their work on assigned projects. PREREQUISITE(S): *THET 114 or consent of department. Three hours lecture, two hours practical laboratory each week.*

3 semester hours

THET 216 Stage Lighting for the Performing Arts (R only)
An exploration of the theory of and theatrical practice in the use of basic elements of electricity, lighting equipment and design in the production of theatre, television, and dance. Students will be involved in the exploration of the theory and practice of basic fundamentals of lighting techniques, electricity, equipment and standards, and the use of light in the production of theatre, dance, and television. Students will be required to work additional hours on lighting for productions. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

THET 225 Acting for Film and Television (TP/SS only)
An approach to the art and craft of performance before a camera in both the motion picture and television studio. The student begins work with narrative film and TV materials that require artistic and technical involvement peculiar to film and electronic entertainment media. A small film fee may be required. *Assessment Level(s): ENGL 101/ENGL 011. Two hours lecture, two hours laboratory each week.*

3 semester hours

THET 230 Costuming Crafts for the Performing Arts (R only)
An introduction to sewing techniques, patterning, fabrics, and costume shop equipment, with a survey of costume crafts and shop organization. Students will participate in costuming for productions. *Assessment Level(s): ENGL 101/ENGL 011, MATH 050. Three hours each week.*

3 semester hours

THET 237 Fundamentals of Play Directing (R only)
An introduction to the basic techniques, principles, and disciplines of directing for the theatre. The director's role, composition, script analysis, movement and rhythm, production preparation and procedures will be covered. At the conclusion of the course, the student will prepare a one-half hour production for performance. Additional time outside of class for rehearsals will be required. PREREQUISITE(S): *THET 100 or consent of department. Three hours each week.*

3 semester hours

THET 288 Performing Arts Production
An exploration, development, and creation of all devices necessary to present a performing arts offering such as a play, dance concert, or musical theatre production. Lectures include all phases of drama, music, dance, and business production. Open to all students. MUSC 188 and THET 188 may be repeated for a total of 6 semester hours. *A minimum of 15 contact hours per credit.*

1-3 semester hours

THET 295 Theatre Internship (R and TP/SS only)
Students work for College credit in a theatre or other professional performing arts organization or venue. Students may propose an internship for one of the limited number available in theatre each year. Typically, the internships are awarded during the last year of study at Montgomery College. PREREQUISITE(S): *Open to theatre majors who have completed 24 theatre-related credits. A 3.2 GPA and consent of departmental theatre internship coordinator and the Arts Institute internship coordinator are required. Fifteen hours each week per semester.*

3 semester hours

TVRA 280B Special Broadcast Media Production Assignments (R only)
Offered on an individual basis to communication and broadcasting technology majors with advanced standing. Students may extend their studies or specialization within the curriculum. PREREQUISITE(S): *Consent of curriculum coordinator and department chairperson. Minimum of 30 hours work per semester hour credit.*

2 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

TVRA - Television/Radio

TVRA 100 Introduction to New Media (R only)
An introduction to the technical and marketing power of emerging social media platforms. Students will learn to become effective co-creators of social media content while working in a multimedia environment. Projects will incorporate sound and visual image production as a means of branding and communication. *Three hours each week.*

3 semester hours

TVRA 120 Video Production I (R only)
Introduction to the theory and practice of television studio production. Principles of picture composition, camera movement, lighting, and audio and control room operation are demonstrated and experienced in actual studio productions. The student will participate in laboratory exercises and be able to demonstrate proficiency in these exercises. Each student will produce programs using available studio resources. *Assessment Level(s): ENGL 101/ENGL 011. Two hours lecture, four hours laboratory each week.*

4 semester hours

TVRA 125 Audio Production Techniques (R only)
Basic theory, equipment, and procedures used in audio production for radio, television, film and new media. Hands-on projects allow students to learn the operation and application of digital and analog sound recording equipment and editing software common to all fields of communication. *Assessment Level(s): ENGL 101/ENGL 011. Three hours lecture, three hours laboratory each week.*

4 semester hours

TVRA 129 Concept and Story
Introduction to concept development and storytelling methods through a variety of writing assignments. This course emphasizes the creation of engaging narratives for engaging media content. PREREQUISITE(S): *A grade of C or better in ENGL 101 or ENGL 101A. Three hours each week.*

3 semester hours

TVRA 134 Media Appreciation (ARTD, GEIR, GEEL)
A survey course designed to introduce and discuss various strategic communication forms both aesthetically and economically and to analyze examples of the messaging delivered by major mass media outlets. Present day digital programming methods are analyzed to offer students the perspective of a media professional. Students discover how media is used as a powerful tool for information and social impact. *Assessment Level(s): ENGL 101/ENGL 011. Three hours each week.*

3 semester hours

TVRA 140 Video Editing
An introduction to the equipment and workflow used to create dynamic and engaging videos using professional nonlinear editing software. Hands-on projects allow students to edit video, along with still images, animations and sounds into presentations suitable for visual arts, web, educational, and corporate use. *Assessment Level(s): ENGL 101/ ENGL 011. Two hours lecture, three hours laboratory each week.*

3 semester hours

TVRA 210 Audio and Video Podcasting (R only)
The art of storytelling using research, professional audio techniques and in some cases video technology. Students in this course develop interviewing skills and advanced sound recording techniques to create a series of short-form podcasts for distribution on a podcast hosting site. Content creation includes qualitative methods of documenting an event or investigating an issue. PREREQUISITE(S): *A grade of C or better in TVRA 125 or consent of department. Three hours each week.*

3 semester hours

TVRA 220 Radio Production (R only)
Study in the techniques of production of radio programs, radio program logs, special types of audio productions, and advanced techniques of control room operations. The student will be required to demonstrate competencies through a series of laboratory exercises and will be required to produce radio programs of specific design. PREREQUISITE(S): *A grade of C or better in TVRA 125. Three hours lecture, three hours laboratory each week.*

4 semester hours

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TVRA 227 Broadcast Journalism
Further exploration of writing and reporting news and current events material for various forms of publication. Designed for practical application in producing audio or video news programs for broadcast or web outlets PREREQUISITE(S): *A grade of C or better in TVRA 129 and either TVRA 120 or TVRA 125. Three hours each week.*

3 semester hours

TVRA 230 Video Production II (R only)
Advanced theory and practice of video production skills acquired through practical applications in challenging studio and field production formats. In addition to further developing basic skills of lighting, camera operation, audio design and control room functions, students will demonstrate the ability to work effectively in both pre-production and production as television producers and effective crew members in a professional setting. PREREQUISITE(S): *A grade of C or better in TVRA 120 and TVRA 140. Two hours lecture, four hours laboratory each week.*

4 semester hours

TVRA 234 Television Directing (R only)
An Introduction to television directing with an emphasis on planning, rehearsing, set design, lighting, and directing a variety of complex production situations. The objective is to accumulate techniques and best practices, as applied to the media production industry, social media, and the Internet. PREREQUISITE(S): *A grade of C or better in TVRA 230. Six hours each week.*

3 semester hours

TVRA 236 Video Production Portfolio
Advanced video projects selected and completed by students in consultation with the instructor, departmental faculty, or working professionals. Students develop a professional portfolio designed to convey their technical and aesthetic skills. To further enhance job readiness, students work to complete one or more video production industry certifications. PREREQUISITE(S): *A grade of C or better in TVRA 120 and TVRA 140 or consent of department. One hour lecture, three hours laboratory each week.*

2 semester hours

TVRA 239 Broadcast Management
The combined study of television and radio broadcast management in the areas of station structure, personnel, promotion, programming, sales, engineering and legal requirements, audiences and fiscal structures, as well as personnel functions and responsibilities. Basic management skills are included to prepare students for a career in the broadcasting and mass media production industry. PREREQUISITE(S): *A grade of C or better in either TVRA 120 or TVRA 125. Three hours each week.*

3 semester hours

TVRA 260 Radio Station Operation (R only)
Advanced radio students participate in daily operation of a campus-wide radio station. Students will function in the areas of production, engineering, performance, and management and create an online portfolio representing their best work. PREREQUISITE(S): *A grade of C or better in TVRA 220. One hour lecture, five hours laboratory each week.*

3 semester hours

TVRA 275 Digital Media Professional Internship (R only)
An opportunity for students to work for college credit in a professional broadcast station or media production organization. Typically, the internships are awarded during the last year of study at Montgomery College. PREREQUISITE(S): *Television, radio, or audiovisual majors with advanced standing and consent of internship coordinator. One hour seminar per semester and a minimum of 20 hours supervised training each week.*

4 semester hours

TVRA 280 Digital Media Special Assignment (R only)
Offered on an individual basis to Digital Media Production majors with consent of the department. Students may extend their studies or specialization within the curriculum. PREREQUISITE(S): *Consent of curriculum coordinator and department chairperson. Hours to be assigned by the chairperson. Minimum of 30 hours work per semester hour credit.*

1-4 semester hours

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WMST - Women's Studies

WMST 101 Introduction to Women's Studies (BSSD, GEEL, GCP)

Interdisciplinary approach to the field of women's studies. Examines the status, roles, contributions, personal and public experiences of women in society, using sources from literature, psychology, history, sociology, biology, political science, philosophy, anthropology, and the arts. PRE- or COREQUISITE(S): *ENGL 101 or consent of women's studies program coordinator. Three hours each week.*

3 semester hours

Courses designated with a GCP after the name fulfill the General Education global and cultural perspectives requirement. Common course outcomes for most courses can be found online at: https://catalog.montgomerycollege.edu.

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- Director of Student Affairs - Ja'Bette L. Lozupone

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- Dean of Instruction, Visual, Performing, and Media Arts - Frank Trezza
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- Dean of Instruction, ELAP, Linguistics & Communication Studies - Fiona Glade

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- Acting Dean of Instruction, Science, Engineering and Technology - Nawal Benmouna
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- Director of i-STEM - Richard Cerkovnik

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MLS, University of Maryland

RANDY HERTZLER, MA, MLS (2009)
Librarian for Business and Social Sciences, Rockville
BA, Goshen College;
MA, MLS, University of Washington

SHELLY JABLONSKI, MLS (2000)
Librarian for Health Sciences, Communications, and Special Program, Rockville
BA, Pennsylvania State University;
MLS, Shippensburg University

METTA LASH, MLS (1999)
Head Librarian for Business and Social Sciences, Germantown
BA, MLS, University of Maryland

JULIE LOY, MLS (2021)
Librarian for Health Sciences, Communications, and Special Programs, Takoma Park/Silver Spring and Germantown
BA, Hood College
MLS, University of Maryland

NIYATI P. PANDYA, MA, MS, MLS (2009)
Librarian for Arts and Humanities, Rockville
BA, MA, MS, University of Baroda (India);
MLS, University of Maryland

ROBERT REEVES, MLS (2014)

e-Resource Management & Discovery Services Librarian, Rockville
BA, Dickinson College;
MLS, University of Maryland, College Park

ELIZABETH SCHLACKMAN, MSc ILM (2015)
Librarian for Health Sciences, Communications, and Special Programs, Germantown
BA, Randolph-Macon Woman's College
MSc ILM, University of the West of England, Bristol

KARI SCHMIDT, MLS (2013)
Resources and Collections Associate Director, Rockville
BS, State University of New York,
College at Plattsburgh;
MLS, University of Maryland

ABI SOGUNRO, MSLIS (1991)
Librarian for STEM, Germantown
BA, University of Ife (Nigeria);
MSLIS, Atlanta University

SUZETTE SPENCER, MSLIS (2020)
Director of Library and Information Services, Rockville
BS, Temple University;
MSLIS, Pratt Institute

ELIZABETH G. THOMS, MLS (1994)
Collection Development Librarian, Rockville
BS, Bucknell University;
MLS, University of Maryland

AMY TROST, MLIS (2022)
Librarian for STEM, Takoma Park/Silver Spring
BSE, MAT, Duke University
MLIS, University of Washington

CHRISTOPHER VERDAK, MSLIS (2016)
Head Librarian for STEM, Rockville
BA, University of Mary Washington
MSLIS, Florida State University

Germantown Campus Administrators

Interim Vice President and Provost - Muhammad Kehnemouyi

Dean of Instruction, Mathematics, Statistics, and Data Science - Milton Nash

Dean of Instruction, ELAP, Linguistics & Communication Studies - Fiona Glade

Acting Associate Dean of Student Affairs - Katie Mount

Interim Dean of Student Affairs - Marcus Peanort

Director of i-STEM - Richard Cerkovnik

Germantown Campus (Faculty)

Full-Time Faculty

KAY E. AHMAD, EdD (2009)
Professor, ELAP
BA, MA, American University
EdD, Morgan State University

MUNTHER F. ALRABAN, PhD (1998)
Professor, Mathematics
BS, Baghdad University (Iraq)
MS, PhD, George Washington University

SHARON A. ANTHONY, MA (2000)
Professor, English
AA, Catonsville Community College
BA, MA, University of Maryland

JOANNE BAGSHAW, MA (2010)
Professor, Psychology
BA, Long Island University, Southampton College
MA, John Jay College

TIFFANY D. BANKS, PhD (2015)
Assistant Professor, Communications
BA, California State University
MA, University of Colorado
PhD, University of Denver

ABDULAI BARRIE, MD (2005)
Professor, Biology
BS, University of Sierra Leone
MS, Texas Southern University
MD, St. George's University

SAM A. BERGMANN, PhD (2011)
Assistant Professor, Psychology
BA, University of Texas at Austin
MA, PhD, University of Chicago

PALLAVI BHALE, MS (2014)
Assistant Professor, Mathematics
BS, Girls Degree College
MS, SGS, Institute of Technology

MARGARET A. BIRNEY, PhD (2006)
Professor, Biology
BA, Amherst College
PhD, St. Louis University

SUSAN BONTEMS, MS (2003)
Professor, Chemistry
BA, Bryn Mawr College
MS, Arizona State University

KURT J. BORKMAN, PhD (1990)

Administrative Officers And Faculty

Professor, History
AA, Montgomery College
BA, George Washington University
MA, PhD, University of Michigan

DENISE BOSSARD, MBA (2022)
Associate Professor, Accounting
BS, Bloomsburg University of Pennsylvania
MBA, Saint Joseph's University

JENNIFER CAPPARELLA, MS (2011)
Associate Professor, Biology
BS, Syracuse University
MS, Emory University

IRAIDA CABRERA CARNERO, PhD (2015)
Associate Professor, Physics
BS, University of Havana, Cuba
PhD, State University of Sao Paulo, Brazil

DAVID CARTER, MFA (2001)
Professor, Art
BGA, James Madison University
MFA, American University

THOMAS K. CHEN, PhD (2013)
Professor, Chemistry
BS, College of William and Mary
MS, University of North Carolina at Chapel Hill
PhD, North Carolina State University

CHIYUN-KWEI CHIANG, PhD (2001)
Professor, Networking
BA, Tamkang University (Taiwan)
MS, PhD, Old Dominion University

GARY COLEY, MS (1989)
Professor, Speech
BA, Iona College
MS, State University College at Brockport

THERON COLEMAN, MA (2020)
Professor, English
BS, Coppin State College
MA, Morgan State University

AMANDA DARR (2018)
Assistant Professor, Counseling and Advising
BA, University Of Maryland
MA, Boston College

BRYANT K. DAVIS, MA (1992)
Professor, English
BA, MA, North Carolina State University

COMFORT DAVIS MINGOT, MA (2023)
Associate Professor, English
BA, Quisqueya University
MA, Concordia University

DENISE T. DEWHURST, PhD (1992)
Professor, Psychology
BA, Newton College of the Sacred Heart
MA, PhD, Boston College

JENNIFER JONES DOBBINS, EdD (1996)
Professor, Counseling and Advising
BS, Howard University
MS, Drexel University
EdD, Morgan State University

ZHOU DONG, PhD (2010)
Associate Professor, Mathematics
BS, Carnegie Mellon University
MS, PhD, University of Illinois

STEPHANIE M. DRAIN, (2010)
Assistant Professor, Counseling and Advising
BS, University of Maryland
MA, Trinity College

KIMBERLY DRIVER, MS (2015)
Professor, Health Education
BS, Frostburg University
MS, George Mason University

STEPHEN P. DUBIK, MS (1988)
Professor, Environmental Horticulture and Sustainable Agribusiness
BS, MS, University of Maryland

ZENOBIA GARRISON, EdD (2000)
Professor, Counseling and Advising
BA, James Madison University
MA, New York University
EdD, Drexel University

KIMBERLY GEORGE, PhD (2020)
Professor, Biology
BS, University of Connecticut
MS, PhD, University of Maryland at Baltimore

STEPHEN (CHIP) GLADSON, MFA (2008)
Professor, English
BA, Dickinson College
MFA, Columbia University

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BFA, Virginia Commonwealth University
MFA, George Mason University

Administrative Officers And Faculty

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BA, Western New England College
MA, Bowie State University

ARTHUR C. GRINATH III, PhD (2007)
Professor, Economics
BS, Randolph-Macon College
PhD, University of Maryland

SATISH K. GUPTA, PhD (1993)
Professor, Biology
BS, Panjab University (India)
MS, Kurukshetra University (India)
PhD, University of Calcutta (India)

KEDAR HARDIKAR, PhD (2023)
Professor, Engineering Science
BE, University of Bombay
MS, Syracuse University
PhD, Brown University

MICHAEL HARDING, PhD (2013)
Professor, Philosophy
BA, University of North Texas
MA, PhD, University of Dallas

JENNIFER P. HAYDEL, MA (2008)
Professor, Political Science
BA, Knox College
MA, University of Minnesota

ANDREW N. HERST, MS (2008)
Professor, Psychology
BS, MS, University of Maryland

AARON D. JOHNSON, PhD (2010)
Professor, Speech
BS, University of Wisconsin
MA, PhD, West Virginia University

COLLINS R. JONES, PhD (1997)
Professor, Biotechnology
BS, Albright College
MSc, PhD, University of Maryland

LORI KELMAN, PhD (2001)
Professor, Biotechnology
AB, Mount Holyoke College
MS, St. John's University
MBA, Iona College
PhD, Cornell University

JOANNA KILBY, PharmD (2020)
Associate Professor, Health
MEd, University of Maryland, University College
MHS, University of Central Arkansas
PharmD, Shenandoah University, Bernard J. Dunn School of Pharmacy

BRIAN KOTZ, MEd (2006)
Associate Professor, Mathematics
AB, Harvard University
MEd, Rutgers, The State University of New Jersey

JOSEPH KOUSSA, PhD (2022)
Associate Professor, Biological Sciences
BS, University of Ottawa, Ontario, Canada
MS, Lebanese American University, Byblos, Lebanon
PhD, New York University

JILL M. KRONSTADT, MA (2007)
Professor, English
BA, Cornell University
MA, University of Washington

BARBARA LAPILUSA, MA
Assistant Professor, Counseling and Advising
BA, MA, Marist College

LUCY ELLEN LAUFE, PhD (1993)
Professor, Anthropology; Director, College wide Honors Program
BA, Grinnell College
MA, Northwestern University
PhD, University of Pittsburgh

ANGIE LAWVER, MS (2013)
Associate Professor, Reading
BS, Susquehanna University
MS, Hood College

KATEEMA LEE, MFA (2012)
Assistant Professor, English
BA, MFA, University of Maryland

JULIA LEMICH, MS (2019)
Assistant Professor, Cybersecurity
BS, University of Baltimore
MS, University of Maryland University College

ALEJANDRO G. LEOPARDI, MA (2015)
Associate Professor, English
BA, University of Maryland
MA, National University

TERESA LEW, MA (2022)
Associate Professor, English
BA, Wheaton College
MA, Azusa Pacific University

MARK LEVINE, MA (2019)

Associate Professor, Counseling and Advising
BS, University of California, Irvine
MA, University of Maryland College Park

JAMES LIPCHOCK, PhD (2022)
Professor, Chemistry
BA, McDaniel College
MS, PhD, Yale University

HILLARY MacKINLAY, MA (2024)
Assistant Professor, History
BA, University of King's College
MA, Dalhousie University

TERRI A. MARADEI, MEd (1997)
Professor, Computer Applications
AAS, Broome Community College
BS, State University of New York
MEd, Bloomsburg University of Pennsylvania

ERIN E. MARCINEK, MEd (2010)
Associate Professor, Counseling and Advising
BA, Wright State University
MEd, Ohio University

CARLOS MARROQUIN, MA (2023)
Assistant Professor, Education
BA, Towson University
MA, The George Washington University

BARBARA S. MARSHALL, MA (2011)
Associate Professor, Education
BA, Williams Woods University
MA, George Mason University

MELISSA McCENEY, PhD (2005)
Professor, Psychology
BA, University of Central Oklahoma
MA, PhD, Uniformed Services of the Health Sciences

STEPHEN McGOWAN, MBA (2023)
Professor, Computer Science/Networking
BS, MS, MBA University of Maryland University College

KEITH L. McKELPHIN, EdD (2014)
Professor, Physical Education
BS, University of Southern Mississippi
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EdD, Liberty University

MONICA MELLINI, MES (2012)
Professor, Engineering/Physics
AAS, Automotive Technology and Automotive Emissions Technology
BS, Texas A&M University
MES, Lamar University

AMANDA MILLER, MA (2013)
Professor, Art
BFA, MA, Syracuse University

SHAHRZAD (SHERRY) MIRBOD, PhD, CPA (2004)
Professor, Accounting
BS, University of Tehran (Iran)
MA, Jackson State University
PhD, Nova Southeastern University

YEVE MONTGOMERY, PhD (2019)
Professor, English
BA, University of Baltimore
MA, Towson University
PhD, Morgan State University

KATIE C. MOUNT, MEd (2008)
Assistant Professor, Counseling and Advising
BA, Elon University
MEd, University of Maryland

JOAN M. NAAKE, MA (1992)
Professor of English; Director, Renaissance Scholars Program
BA, Emmanuel College
MA, Boston College

CARLA I. NARANJO, MS (2007)
Professor, Spanish
BA, College of Notre Dame of Maryland
MS, Georgetown University

KIERSTEN N. NEWTOFF, MS (2017)
Associate Professor, Biology
BS, Radford University
MS, University of North Carolina

BENEDICT NGALA, PhD (2005)
Associate Professor, Sociology
BA, Urbanian University
MA, PhD, Howard University

TYRA R. PEANORT, MS (2005)
Professor, Counseling and Advising
BA, Oswego State University
MS, Buffalo State College

BRETT PELHAM, PhD (1989)
Professor, Psychology
BS, Berry College
PhD, University of Austin

STACEY A. PETERSON, PhD (2015)
Professor, Communication
BS, Syracuse University

MS, PhD, Rutgers the State University of New Jersey

RESHMA PHILLIPS, PhD (2023)
Associate Professor, Nutrition
BS, MS, Mahatma Gandhi University
MPH, Johns Hopkins Bloomberg School of Public Health
PhD, University of Maryland

RICHARD M. PIRES, PhD (2006)
Professor, Chemistry
BS, Worcester Polytechnic Institute
PhD, Brown University

CHESTER E. PRYOR, MA (1992)
Professor, English
BS, Pennsylvania State University
MA, Lehigh University

TAMESHA ROBINSON, MEd (2008)
Associate Professor, Counseling and Advising
BA, Rutgers University
MEd, Howard University

JOHN ROUSE, MS (2018)
Professor, Counseling and Advising
BA, MS, McDaniel College

DARREN SMITH, MS, (2010)
Associate Professor, Mathematics
AS, Prince George's Community College
BS, Howard University
MS, Hood College

KATHERINE SMITH, MFA (2001)
Professor, English
BA, University of Tennessee
MFA, University of Virginia

ANTHONY G. SOLANO, MA (2004)
Professor, Counseling and Advising
BS, St. Lawrence University
MA, Boston College

BARRY SPIELER, PhD (2012)
Professor, Mathematics
BA, Tufts University
MS, PhD, Ohio State University, Columbus

RAM SUBEDI, MS (2003)
Professor, Mathematics
BA, Middlebury College
MS, Ball State University

RACHEL E. SULLIVAN, PhD (2012)
Professor, Sociology
BA, University of Detroit Mercy
MA, Bowling Green State University
PhD, University of Connecticut

JOSEPH THOMPSON, PhD (2000)
Professor, History
BA, East Stroudsburg University
MA, Kent State University
PhD, University of Florida

DAVID TORAIN, PhD (2016)
Professor, Mathematics
AS, Louisburg College
BS, MS, North Carolina State University
PhD, Clark Atlanta University

HUI MEI MARGARET TSENG, MS (2001)
Professor, Computer Science and Technologies
BA, National Chengchi University (Taiwan)
MS, Old Dominion University

JORINDE M. VAN DEN BERG, PhD (2002)
Professor, English
BA, Hogeschool Katholiêke Leergangen Tilburg (Netherlands)
MA, Catholic University of Nijmegen (Netherlands)
PhD, Union Institute

DAVID A. VARGAS, MS (2005)
Professor, Networking
BS, The George Washington University
MS, The Johns Hopkins University

MARY A. WALL, MS (2015)
Assistant Professor, Mathematics
AA, Montgomery College
BS, University of Maryland
MS, George Mason University

JOHN W. WANG, PhD (2013)
Professor, English and Reading
BA, University of California
MA, University of Southern Mississippi
PhD, Florida State University

STEPHEN N. WHEATLEY, PhD (2008)
Associate Professor, Mathematics
BBA, Roanoke College
MA, American University
PhD, George Mason University

PAGE L. WHITTENBURG, MA (1997)
Professor, ELAP
BA, MA, University of Maryland

NORMA WINFFEL, Med (2018)
Assistant Professor, Counseling and Advising

BBA, University of Puerto Rico
Med, University of Maryland College Park

WILLIAM T. WITTE, MS (1992)
Professor, Mathematics
BS, University of Maryland
MS, The Johns Hopkins University

HIS-MIEN (BEN) B. WU, MS (1987)
Associate Professor, Networking
MS, Stevens Institute of Technology

HAROLD N. ZARIN, MS (1993)
Professor, Counseling and Advising
BA, MS, West Virginia University

Rockville Campus Administrators

Interim Vice President and Provost - Eric Benjamin

Dean of Instruction, Education and Social Sciences - Vacant

Dean of Instruction, English and Reading - Elizabeth Benton

Dean of Instruction, Business, Economics, Accounting, Computer Applications, Hospitality Management, and Paralegal Studies (BEACAHMPS) - Alton Henley

Acting Dean of Instruction, Science, Engineering & Technology - Nawal Benmouna

Dean of Instruction, Visual, Performing & Media Arts - Frank Trezza

Dean of Student Affairs - Tonya Mason

Associate Dean of Student Affairs - Sue Haddad

Rockville Campus (Faculty)

Full-Time Faculty

MARIA ABASI, MSW (2019)
Assistant Professor,Counseling and Advising
BS, Xavier University of Louisiana
MSW, University of Maryland, Baltimore

COLLEEN ACKERMAN, PhD (2018)
Assistant Professor, Mathematics
BS, Virginia Tech
MS, PhD, University of Illinois

SUE ADLER, MEd (1990)
Professor, Counseling and Advising
BA, MEd, American University

M. RASHIDUL ALAM, PhD (2001)
Professor, Biology
BS, MS, Dhaka University (Bangladesh)
PhD, Kyushu University (Japan)

SEYEDALI ALAVI, MBA (2015)
Professor, Business
BS, MBA, University of Southern Maine

IRENE ALBY, MFA (2023)
Professor, Theatre
BFA, Concordia University
MFA, Columbia University

LEAH ALLEN, PhD (2012)
Professor, Biology
BS, PhD, University of Kentucky

TANYA J. ALLISON, MA (1990)
Professor and Coordinator, Geography
BS, Oklahoma State University
MA, Memphis State University

PETULA ALVARADOUS-PHILLANDER, EdD (2018)
Associate Professor, Health/PE
BS, Herbert H. Lehman College
MPH, Brooklyn College (CUNY)
EdD, Baylor University

MARK J. ALVES, PhD (2004)
Professor, English as a Second Language
BA, University of Maryland
PhD, University of Hawaii, Manoa

JANA ANDERSON, MPS (2018)
Assistant Professor, Hospitality
BS, The Pennsylvania State University
MPS, The Pennsylvania State University

DEBRA ANDERSON, RBA (1997)
Professor and Program Director, Automotive Technology
AAS, Montgomery College
RBA, Shepherd University

LAURA ANNA, PhD (2011)
Professor, Chemistry
BS, Indiana University of Pennsylvania
PhD, University of Michigan

JAMES LEE ANNIS, PhD (1986)
Professor, History
BA, Hanover College
MA, PhD, Ball State University

MARIA A. ARONNE, MS (2003)
Professor, Mathematics
BA, Instituto de Profesorado del Carmen (Argentina)
MS, University of Connecticut

DAWN AVERY, PhD (2014)
Professor, Music

Administrative Officers And Faculty

BM, Manhattan School of Music
MFA, PhD, New York University

ISAIAH M. AYAFOR, PhD (2008)
Professor, English
BA, MA, PhD, University of Yaounde (Cameroon)

HUSEYIN AYGUN, PhD (2023)
Professor, Computer Science Technologies
BS, Naval Academy, Turkey
MS, Naval Postgraduate School, California
PhD, Istanbul Technical University

TRACIE BABB, PhD (2015)
Professor, Communications
BA, MA, Fordham University
PhD, Howard University

BRIAN BAICK, MS, CPA (2005)
Professor, Accounting
BS, University of Maryland
MS, George Washington University

DANA L. BAKER, MA (1992)
Professor, Counseling and Advising
BA, College of Wooster
MA, Trinity College

SANAZ BANDEGI, PhD (2022)
Associate Professor, Chemistry
BS, Ferdowsi University
MS, Azad University
PhD, Temple University

KAREN BASUEL, MA (2018)
Professor, English
BA, MA, Ateneo de Manilla University

ALEXANDER BATHULA, MS (1983)
Professor, Mathematics
BA, MA, Osmania University (India)
MS, Emporia State University

ANNE E. BENOLKEN, MFA (2000)
Associate Professor, Graphic Design
BA, University of Chicago
MFA, Maryland Institute College of Art

CRAIG BENSON, PhD (2013)
Professor, Chemistry
BA, Brandeis University
PhD, The George Washington University

MICHAEL C. BERMAN, MA, (1999)
Associate Professor, ELAP
BA, University of Wisconsin-Madison
MA, University of Illinois at Urbana

STEPHEN BESS, MA (2013)
Professor, English
BA, Savannah State University
MA, Trinity College

ANDREE BETANCOURT, PhD (2015)
Professor, Communications
BA, Smith College
MA, University College, Dublin, Ireland
PhD, Louisiana State University

RONALD BEVERLY, MFA (2016)
Professor, Photography
BFA, Howard University
MFA, George Washington University

ZINEDDINE BOUDHRAA, PhD (1998)
Professor, Mathematics
BS, Riyadh University (Saudi Arabia)
MA, University of Maryland
PhD, Kent State University

JUSTIN M. BOYER, MM (2007)
Associate Professor, Music
BM, MM, Peabody Conservatory of Music

ANDRAE BROWN, PhD (2019)
Professor, Psychology
BS, Elizabeth City State University
M.Ed, University of Maryland, Eastern Shore
PhD, Seton Hall University

INGRID BROWN-SCOTT, MS (1998)
Professor, Mathematics
BA, Hampton University
MS, Howard University

IVONNE BRUNEAU-BOTELLO, MA (2011)
Associate Professor, World Languages
BA, University of Panama
MA, University of Maryland, College Park

MARIA R. BRUNETT, PhD (1994)
Professor, Mathematics
BS, Fairmont State College
MS, West Virginia University
PhD, American University

CRISTINA J. BUTLER, MA (2008)
Professor, Spanish
BA, MA, University of Maryland

HENRY N. CABALLERO, MS (2003)
Professor, ELAP

BA, MS, Texas A&M University

SARAH C. CAMPBELL, PhD (2008)
Professor, Spanish
BA, MA, PhD, University of Virginia

FRANCESCA C. CARETTO, MS (2004)
Associate Professor, Counseling and Advising
BA, Barnard College
MS, The Johns Hopkins University

GENEVIEVE CARMINATI, MA (1999)
Professor, English; Coordinator, Women's Studies Program
BA, Vermont College of Norwich University
MA, West Chester University of Pennsylvania

JOHN CARR, MFA (1998)
Professor, Art
BFA, Shepherd College
MFA, West Virginia University

MICHAEL P. CARRETTA (2008)
Professor, Automotive Technology
AA, Montgomery College

CAROLYN D. CASTRO, PhD (2008)
Professor, English as a Second Language
BA, University of the Philippines
MA, National University of Singapore
PhD, Georgetown University

PALMA CATRAVAS, PhD (2018)
Professor, Engineering
BS, University of Maryland
MS, PhD, MIT

CATALINA CETINA, PhD (2013)
Professor, Physics
MS, University of Bucharest
PhD, The George Washington University

NADER H. CHAABAN, PhD (1995)
Professor, Speech
BS, MA, George Mason University
PhD, Howard University

MICHAEL CHASE, PhD (2007)
Professor, Biology
BS, The Citadel Military College
MS, University of Connecticut
PhD, University of Maryland, Baltimore

SHALAWN R. CHILDS, MA (2011)
Professor, Disability Support Services
AAS, Seattle Central Community College
BS, Washington State University
MA, Gallaudet University

OKKYUNG CHO, PhD (2009)
Professor, Mathematics
BS, MS, Chonbuk National University (South Korea)
PhD, University of Georgia

MICHAEL CLARK, MS (2018)
Assistant Professor, Exercise Science
AA, Montgomery College
BS, Salisbury University
MS, CA University Of Penn

JOHN COLITON, DCD (1998)
Professor, Business
BA, Rollins College
MBA, MA, DCD, University of Baltimore

CHRISTOPHER S. COLLINS, MA (2004)
Professor, Philosophy
BA, Salisbury State University
MA, West Chester University

VALERIE V. COLLINS, MS (2000)
Professor, Counseling and Advising
BA, College of Teresa
MS, Cardinal Stritch College

TIFFANY THAMES COPELAND, PhD (2015)
Professor, Speech
BA, Millikin University
MA, Temple University
PhD, Howard University

LEWIS (MARK) CORFMAN, MBA (2009)
Professor, Architectural and Construction Technology
BS, MBA, University of Maryland

JAMILA CORRIA, MEd (2024)
Associate Professor, Counseling and Advising
BS, Southern Illinois University
MEd, George Mason University
MEd, EdS, Liberty University

JAMES COSGROVE, PhD (2003)
Professor, Biology
BS, Drexel University
PhD, University of Rochester School of Medicine

EILEEN M. COTTER, MEd (1996)
Professor, ELAP
BA, Catholic University
MEd, Boston University

JARRELL B. CROWDER, DMA (1999)
Professor, Music

BM, Ouachita Baptist University
MM, Northwestern University
DMA, University of Maryland

STEVEN CROWE, MS (2019)
Professor, Automotive Technology
AA, Frederick Community College
BS, University of Maryland, University College

ALAN H. CUTLER, PhD, (2010)
Professor, Geology
BA, Carleton College
MS, University of Rochester
PhD, The University of Arizona

KATHLEEN M. DAYTON, MA (2005)
Professor and Coordinator, Fire Science, Emergency Services, and Emergency Preparedness Management
BS, University of Maryland
MA, Trinity College

ANNA V. DEADRICK, MA (2006)
Professor, English
BS, MA, Kurgan State University (Russia)
MA, University of North Carolina at Wilmington

LEVENA DE LA ROSA, MS (2012)
Associate Professor, Psychology
BA, University of California
MS, Howard University

ANTONIO DEL CASTILLO-OLIVARES, PhD (2009)
Professor, Biology
BS, MS, PhD, Universidad de Malaga (Spain)

KATELY DEMOUGEOT, MA (1986)
Professor, French
BS, College Ecole Superieure de Biologie (France)
MA, George Washington University

LUCY DERICKSON, MA (2015)
Instructor, Metal Arts
BA, University of Wisconsin, Milwaukee
MA, Virginia Commonwealth University

LUC E. DESIR, MA (1999)
Associate Professor, Mathematics
BS, York College
MA, University of Maryland

PATRICK DEVLIN, BS (1987)
Professor, Automotive Technology
AAS, Northern Virginia Community College
AAS, Tidewater Community College
BS, Virginia Polytechnic Institute and State University

SWIFT DICKISON, PhD (2001)
Professor, English
BA, University of California, Berkeley
MA, Sonoma State University
PhD, Washington State University

MOLLY DONNELLY, DMA (1997)
Professor, Music
BM, University of Colorado
MM, University of Cincinnati Conservatory of Music
DMA, University of Maryland

DAWN C. DOWNEY, MA (2006)
Associate Professor, English
BA, MA, Furman University

FABIAN DRAIN, MS (2005)
Professor, Counseling and Advising
BA, State University of New York at Fredonia
MS, University of Rochester

SARA BACHMAN DUCEY, MS (1984)
Professor, Foods and Nutrition; Director, Paul Peck Humanities Institute
BS, University of Massachusetts
MS, Michigan State University

PAUL DUTY, PhD (2005)
Professor, Mathematics
BS, Frostburg State University
MS, The Johns Hopkins University
PhD, University of Missouri

MAUREEN EDWARDS, PhD, MCHES (1995)
Professor, Health Education
BA, Holy Family University
MA, Arcadia University
PhD, University of Maryland

REBECCA EGGENSCHWILER, MA (2011)
Professor, English
BA, Hope College
MA, University of Illinois

DORELLE ENGEL, DHS (2013)
Professor, Nutrition
AS, Rochester Institute of Technology
BS, Fairleigh Dickinson University
MS, The Johns Hopkins University
DHS, Eastern Virginia Medical School

ALBERT ENNULAT, BA (1994)
Professor, Automotive Technology
AA, Montgomery College
BA, University of Maryland

Administrative Officers And Faculty

EDDY ENRIQUEZ-ARANA, MA (2017)
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BA, Ripon College
MA, Bowling Green State University

CELIA EVANS, PhD (2018)
Professor, Mathematics
BA, University of California, Berkeley
MA, PhD, University of Maryland College Park

DAVID K. FALLICK, MA, MEd (2001)
Professor, ELAP
BA, University of Delaware
MA, Iowa State University
MEd, University of Maryland

CONSTANCE L. FARLEY, MED, MS (1996)
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MARIANNE WYSONG, MS (2022)
Assistant Professor, Nursing
AA, Montgomery College
BS, Grand Canyon University
MS, University of Maryland-Baltimore

JUAN XIE, MS (2015)
Associate Professor, Nursing
BS, Binghamton University
MS, Walden University

LINDA M. ZANIN, EdD (1992)
Professor and Coordinator, Diagnostic Medical Sonography Program
BS, Virginia Polytechnic Institute and State University
BS, Thomas Jefferson University
MA, EdD, George Washington University

MAZEN ZARROUK, PhD (2011)
Professor, Mathematics
BS, North Park University
PhD, University of Wisconsin-Milwaukee

Part-Time Faculty

Approximately, 1,000 part-time faculty teach in the day, evening, distance, and weekend credit programs at all Montgomery College campuses annually.

Clinical Facilities and Clinical Associate Faculty

Clinical facilities are institutions, agencies, or clinics to which students in various health sciences curricula are assigned for clinical experience. Clinical associate faculty are those part-time instructors who are furnished by and teach courses at various clinical facilities contractually associated with the health sciences curriculum offered by Montgomery College.

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Appendices

Appendix A

Determination of Residence for Tuition Purposes

Note: The information in this appendix was current at the time the catalog was prepared, but the student should visit the Policies and Procedures webpage (www.montgomerycollege.edu/pnp) for additional information and for changes that may have been made since then.

To qualify, for tuition purposes, as a resident of Montgomery County or the state of Maryland, legal domicile must have been maintained for a period not less than three months prior to the first regularly scheduled class for the semester. Furthermore, the student must possess the legal capacity under state and federal law to establish Maryland domicile. In establishing the domicile of a person enrolling in a credit course at Montgomery College, the following procedures shall prevail:

- Domicile shall be considered as a person's permanent place of abode, where physical presence and possessions are maintained and where he or she intends to remain indefinitely. The domicile of a person who received more than one-half of his or her financial support from others in the most recently completed year is the domicile of the person contributing the greatest proportion of support, without regard to whether the parties are related by blood or marriage.
- At the time of admission to or initial enrollment in any credit course at Montgomery College, each student shall sign a statement affirming domicile and the factual basis for the claim of domicile.
- At the time of each subsequent enrollment, each student shall indicate whether his or her domicile is the same as or different from that affirmed for the last semester in attendance. If facts indicate the domicile has changed, the student shall complete a new statement.
- In determining the adequacy of the factual basis for domicile provided by the student, the College will consider any of the following factors and request evidence for substantiation:
    - ownership or rental of local living quarters
    - substantially uninterrupted physical presence, including the months when the student is not in attendance at the College
    - maintenance in Maryland and in the county of all, or substantially all, of the student's possessions
    - payment of Maryland state and local piggyback income taxes on all taxable income earned, including all taxable income earned outside the state
    - registration to vote in the state and county
    - registration of a motor vehicle in the state, with a local address specified, if the student owns or uses such a vehicle
    - possession of a valid Maryland driver's license, with a local address specified, if the student is licensed anywhere to drive a motor vehicle

A domicile in Montgomery County or the state of Maryland is lost when a new domicile is established for a period of three months at a location outside the county or state.

In addition to the general requirements, the following provisions apply to the specific categories of students indicated:

- Military personnel and their dependents who were domiciliaries of Maryland at the time of entrance into the armed forces and who are stationed outside the state may retain Maryland domicile as long as they do not establish domicile elsewhere.
- Military personnel and their dependents who are on active duty for a period of more than 30 days and whose domicile or permanent duty station is in the State may retain Maryland domicile as long as they are continuously enrolled.
- An individual's immigration status shall not preclude award of Maryland residency under this policy if the individual has the legal capacity to establish domicile in Maryland.
- A student enrolled in a program designated as statewide or regional by the state Board for Community Colleges may be considered a resident for tuition purposes if domiciled in the approved region for the program.
- A student from outside the state who enrolls as part of a reciprocity agreement negotiated between Maryland and another state may be considered a resident for tuition purposes.
- A "covered individual" using benefits under the Post 9/11 GI Bill® or Montgomery GI Bill® as provided for by Section 702 of the Veterans Access, Choice and Accountability Act or Section 301 of the Veterans Affairs Expiring Authorities Act of 2018. A "covered individual" is defined by the Act as:
    - A veteran who lives in Montgomery County or Maryland (regardless of his or her formal state of residence) and enrolls at Montgomery College within 3 years of discharge from a period of active duty service of 90 days or more;
    - Anyone using transferred benefits who lives in Montgomery County or Maryland (regardless of his or her formal state of residence) and enrolls at Montgomery College within 3 years of the transferor's discharge from a period of active duty service of 90 days or more;
    - A spouse or child using benefits under the Marine Gunnery Sergeant John David Fry Scholarship veteran who lives Montgomery County or Maryland (regardless of his or her formal state of residence);
    - Anyone using transferred Post-9/11 G.I. Bill (38 U.S.C. § 3319) benefits who lives in Montgomery County or Maryland (regardless of his or her formal state of residence) and the transferor is a member of the uniform service who is serving on active duty;
    - An individual using educational assistance under chapter 31, Vocational Rehabilitation and Employment, who lives in Montgomery County or Maryland, while attending Montgomery College (regardless of the individual's formal state of residence), effective for courses, semesters or terms beginning after March 1, 2019. f. Anyone described above while the individual remains continuously enrolled (other than during regularly scheduled breaks between courses, semesters, or terms) at the same school. The person so described must have enrolled in the school prior to the expiration of the three-year period following discharge or release as described above and must be using educational benefits under either Chapter 30, Chapter 31 (Vocational Rehabilitation and Employment), or Chapter 33 of Title 38, United States Code.

Students may request a change in residency classification or appeal current classification within a reasonable time of a decision by Montgomery College. Appeals for changes of residency classification must be accompanied by evidence justifying such changes and must be processed prior to the end of the third week of classes or its equivalent in a winter or summer session (20%). Any changes processed after the deadline will be effective the following semester. Appeals shall be submitted in writing to the campus registrar.

GI Bill® is a registered trademark of the U.S. Department of Veterans Affairs (VA). More information about education benefits offered by VA is available at the official U.S. government Web site at ***U.S. Department of Veterans Affairs*** .

Appendix B

Payment Procedures

One-party checks, money orders, bank treasurer/cashier checks, credit cards, debit cards, and cash are accepted in payment of tuition and fees. All personal checks and money orders must be made payable to Montgomery College and must be in the exact amount of tuition and fees.

Full payments for tuition and fees (or payment arrangements) are due at the time of registration. Payment arrangements include enrolling in an available tuition installment plan (TIP Plan). Payments and TIP plans can be made online through the student's MyMC account.

All personal checks must have the account owner's name, account owner's address, and bank account number preprinted on the check. The College does not accept starter checks.

Financial aid awards are posted directly to student accounts. These awards will first be applied toward institutional tuition and fee charges due to the College unless the College is prohibited pursuant to guidelines established by the U.S. Department of Education. Awards in excess of tuition and fee charges due are normally available within the timelines established each semester for an appropriate refund issued through regular College refund procedures.

In the event that an invalid check charge has been posted to and remains on the student's account, all future payments of tuition and fees must be made by cash, bank money order, bank treasurer's check, bank certified check, debit card, or credit card. This restriction may be removed if a letter is received from the bank on which the invalid check was drawn indicating that an error on the part of the bank caused the invalid check.

For information on payment procedures and options and contact information, please refer to www.montgomerycollege.edu/paying-for-college/payments/index.html

Appendix C

Refund Procedures

A. General

1. Students wishing to withdraw officially from a course or courses should consult with the Office of Records & Registration on their campus to ensure that required procedures are followed.
2. Students who receive financial aid must inform the Student Financial Aid Office if their withdrawal or change of schedule changes the number of credit hours in which they are enrolled. If they have paid their tuition using financial aid funds, they normally will receive no refund since the amount of the refund will be returned to the appropriate financial aid account.
3. The effective date for the calculation of a refund will be the date that the student successfully drops the class via the web or the date that notification is received in the respective campus Office of Records & Registration. Except in cases where courses are administratively cancelled, no refund will be made unless the student officially withdraws by the posted deadline.

B. Administrative Cancellation

1. When a course is administratively cancelled by the College, students who do not replace the cancelled courses are eligible for a refund of 100 percent of the total tuition and fees that they have paid for the course.
2. Students enrolled in courses that are cancelled by the College are not required to withdraw officially from the courses, as they are required to do in the case of student-initiated withdrawals, either voluntary or involuntary. Appropriate adjustments, including refunds, will be made to their accounts.

C. Involuntary Withdrawal

1. A refund resulting from an involuntary withdrawal will, in most circumstances, be prorated based on the total number of scheduled class meetings and the total number of expired class meetings. The refund is based on tuition only and will not include fees. All fees must be paid prior to receiving a tuition refund. However, in the case of military personnel who are called to active duty or are being transferred because of related troop movement, a 100 percent refund of tuition and fees for the semester within which the effective date of withdrawal falls will be provided upon presentation of appropriate documentation. Please contact the Office of Records & Registration for more information. To be eligible for a refund under the conditions listed below, the student must submit to the Office of Records & Registration the required notification of withdrawal form and the appropriate substantiating data to support such a withdrawal.
2. A withdrawal is considered involuntary if it results from one of the following:
    1. Entering active duty into the armed services-The request for withdrawal must be substantiated with copies of military orders signed by the individual's commanding officer or another appropriate official to show proof of date of entry.
    2. Illness of the student or in the immediate family of the student (immediate family includes a child, parent, spouse, or other regular member of the individual's household)-A physician's certification must be provided stating that the student's or family member's illness requires the student's withdrawal.
    3. Death of the student or in the immediate family of the student (as defined in item 2b above)-Appropriate substantiation must accompany the request for withdrawal.
    4. Involuntary transfer/change in work hours by the student's employer which precludes continued attendance (military branches of service are considered employers under this section)-The request for withdrawal must be substantiated by appropriate documentation.

D. Voluntary Withdrawal

Voluntary withdrawal is one that results from causes other than those defined above as involuntary. Applicable tuition is refundable only after the student has paid all fees. The College must meet its responsibilities and commitments for faculty, staff, equipment, and supplies based on original registration data. However, the Board of Trustees recognizes that there may be occasions when students have made commitments by registering but, for some personal reason, must of their own volition withdraw during the semester.

Students who officially withdraw by the published deadline date of a course (or courses) are eligible to receive a refund of 100 percent of tuition and fees for the course(s) from which they are withdrawing. The deadline for eligibility for a refund is shown for each course section on the student schedule/invoice.

Students who withdraw from a course (or courses) after the published deadline date of the course(s) are not eligible to receive a refund for that course or courses.

E. Appeals of Refund Decisions

Appeals for exception to the established refund policy, as detailed above, may be made to the director of records & registration/ college registrar or designee by completing a refund appeal form. This form is available in the Office of Records & Registration located on each campus. **Note: Appeals will not be considered if entered more than 45 days after the close of the semester for which the student is claiming a refund. Campus academic appeals committees hear appeals on academic matters and have no authority to authorize refunds.**

Appendix D

Title 13B Maryland Higher Education Commission
Subtitle 06 General Education and Transfer