MONTGOMERY COLLEGE
Rockville Campus

<u>CS204</u>

Instructor: **Semester:**
Office: **Lecture:**
Phone:
Instructor E-mail: Through Blackboard   **Room:**
   ** Please be advised that I check my Blackboard mail at least once a day Monday through Thursday and Sunday evenings.
Office Hours:

Course Description

Course Title: Computer Science II   Credit Hours: 4
Assessment Levels/Prerequisites: A grade of C or better in CS103.
Pre- or corequisite: MA182
Montgomery College Catalog Course Description:
Continues ideas introduced in CS103, 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.

Outcomes

Course Objectives

Upon completion of this course, students should be able to:

- Apply the principles of networking, exceptions, and error-handling in a Java environment
- Contrast basic concepts of procedural and object–oriented programming
- Demonstrate basic principles of program development and design
- Demonstrate the implementation of abstract data types, such as list, stack, queue, priority queue, binary search tree, graph, and heap
- Describe the design and time complexity of algorithms.

- Utilize fundamental features of a higher level language, including event-driven programming, graphical user interface, and multi-threading.

__Content Outline__
- Software Engineering Principles (Design and Verification)
- Data Design and Implementation (Built-In, Abstract Data Types, Classes)
- Encapsulation, Inheritance and Polymorphism
- Collections
  - List ADT (Sorted and Unsorted)
  - Vectors
  - Stack and Queue ADTs
  - Linked Structures
  - Recursion
  - Binary Search Tree ADT
  - Heap and Priority Queue ADTs
  - Graph ADTs
- Sorting and Searching Algorithms
- Java networking using sockets
- Multithreading

Textbooks

Big Java, 4th edition, by Horstmann, Wiley (ISBN 978-0-470-50948-7)

Software & Supplies

Java IDE and SDK
You will need a Java IDE (Integrated Development Environment) with a Java SDK (Software Development Kit). I would suggest Eclipse, because that is what is available at Montgomery College and it can be downloaded for free. www.eclipse.org The Javadoc and JUnit test tools are included with Eclipse. If you choose to use an IDE other than Eclipse, you will still be required to turn in Javadoc and JUnit. Run your program on Eclipse before turning in your programming assignment. I will be using Eclipse to grade your programming assignments. If the program doesn't run correctly using Eclipse, the assignment will be returned ungraded.

Computer Lab Usage/Privileges

Computer labs are available for course related work.

Course Location	Lab Location	Overflow Lab	Office Location/Phone

HU building	H314	H312	H307/ 567-5187
CS building	CS25/26 & CS21A	H314	CS19 / 567-5156

Labs are open Monday through Friday 8:30 am - 10:00 pm, Saturday 8:30 am - 4:00 pm, and Sunday 8:30 am - 2:00 pm. Labs open on the first day of the semester and close on the last day of finals and all College holidays. Any changes in hours will be posted. Rules and guidelines governing the use of labs are published by the Computer Lab Offices.

Grading

There will be four exams and a final exam. I drop the lowest exam grade of the first four exams. You are required to take the final exam. There will be eight programming assignments/projects. There will be several worksheets/labs. There will be several writing assignments which will include a 3-5 paragraph summary of a current event. All exams will be taken online, all programming assignments/worksheets/labs/writing assignments, etc. will be submitted online.

Course Grade	% of Grade
Exams (1-4)/Chapter Exams	30
Final Exam	20
Assignments/Projects/Worksheets/Labs	45
Current Event/Writing Assignments	5

A $>= 90$ %
B $>= 80$ %
C $>= 70$ %
D $>= 60$ %
F   Below 60%

A. Standards

In the real world, the design, documentation, coding and testing of a program is done by a team. For the first assignment, you may work in a group of 2 to do the design and documentation, however you will implement (code) the program individually. All other assignments will be designed, documented and implemented individually. Documentation for each assignment will include the following:
Javadoc
JUnit Tests
UML Diagram

For some assignments, additional documentation may be required.

Internal documentation (within the source code using Javadoc) is required as follows:

> For each class:
>> Description of what the class does
>> Author's Name
>> For each method within the class:
>>> Description
>>> Parameter descriptions
>>> Return description

You will also be graded on whether the program compiles, runs accurately and is in good programming form.

Students are responsible for the assigned reading for each lesson **prior to coming to class** and for making up any material covered during missed classes.

There is no extra credit available for this class.

B.   Exams

Exams are taken in class through the class WEBCT website. You will not be allowed to leave the room during the test. You will be asked to leave your backpacks at the front of the room on test day. You are not allowed to keep your phone or any other electronic device with you during the exam. Scrap paper will be available. It will be numbered and returned to the instructor at the end of the testing period.

C.   Current Events Writing Assignment

You will research a topic of current interest that is related to computer science and write a 3-5 paragraph report on this topic. Your bibliography must have at least two references with at least one article from a trade journal. The article must be less than six months old.

Late & Make-up Policies

A. Programming Assignments

NO PROGRAMMING ASSIGNMENTS WILL BE ACCEPTED MORE THAN 48 HOURS LATE. Each project must be on Blackboard before class on the day it is due, in the correct project submission site, to receive full credit. All project files must reside on Blackbaord. **IF ANY FILES ARE LATE, YOUR ASSIGNMENT IS LATE! Lateness is determined by the time indicated on**

Blackboard. One point will be deducted for each two-hour interval (or part thereof) that your time stamp indicates.

B. Late Sheet

You will have access to **one** Late Sheet during the semester which will allow you to turn in one assignment up to 48 hours late without a penalty. Late points will be used in calculating grades until I receive your signed sheet.

C. Worksheets/Labs

You will be given several worksheets/labs during the course of the semester. We usually go over the worksheets/labs in class on the day they are due. **I do not accept late worksheets/labs.**

D. Make-up Policy

Missed Exams: There are no makeup exams. If you miss an exam (except for the final exam), you may choose it to be the exam grade that is dropped.

E. Late/Tardiness Policy

Tardiness: Class begins promptly at the scheduled time. Students are expected to be ON TIME. If a student is tardy two times, it will constitute one unexcused absence.

Other Policies

A. Electronic Devices in Class Policy
Cellular phones, pagers, CD players, radios, Ipods, and similar devices are to be TURNED OFF in the classroom. Calculators are prohibited during examinations and quizzes, unless specified. Laptop computers may be used in lecture for the purpose of taking notes. If at anytime the use of a laptop is considered distracting, you will be asked to turn if off.

B. Blackboard
You will have access to a Blackboard website for materials and web links for this course through MyMC. Programming assignments/labs/worksheets/writing assignments, etc. will be submitted online through this website. Exams will be taken online through this website. Any correspondence (e-mail) pertaining to this

course will be submitted through this website. If you have any trouble with
Blackboard, call 240-567-7222.

Student Code of Conduct

Standards of College Behavior

All students are expected to comply with the Student Code of Conduct. All such polices will be strictly enforced in the classroom. For a complete statement of Academic Regulations and the Student Code of Conduct visit Collegewide Policies and Procedures at http://cms.montgomerycollege.edu/pnp/#Chapter_4 (see section 42001 Student Code of Conduct). Montgomery College seeks to provide an environment where discussion and expression of all views relevant to the subject matter of the class are recognized and necessary to the educational process. However, students do not have the right to interfere with the faculty member's right to teach or the other students' rights to learn.

Academic Honesty

Academic dishonesty in college is a very serious offense. Each student is expected to do his/her own work on all quizzes and tests and class and homework exercises. Events of academic dishonesty will receive an automatic zero and/or will result in failure of the course. For a complete statement of Academic Regulations and the Student Code of Conduct visit Collegewide Policies and Procedures at http://cms.montgomerycollege.edu/pnp/#Chapter_4 (see Section VIII Academic Dishonesty of the Student Code of Conduct).

> **Assignments:** All students are expected to do their own work. You may receive insights, editing and debugging help from tutors, fellow students, and acquaintances, but you cannot share code. **You are expected to do all homework assignments by yourself – DO NOT GIVE YOUR CODE TO YOUR FRIENDS!** You are responsible for completing the assignments yourself. (Your fingers are the only ones that should touch the keyboard). If you turn in the same assignment or uncommonly similar assignment to another student (past or present), you will be asked to defend your work. Academic dishonesty such as this will **not** be tolerated. You will receive a grade of "F" for the course and will be reported to the Dean of Student Development.

Collegewide Policies

Class Attendance

Students are expected to attend all class sessions. In cases involving excessive absences from class, the instructor may drop the student from the class. An excessive absence 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.

It is important that you attend every class. You will be responsible for all work assigned whether you are present or absent.

In the event that you do miss a class, it is **your responsibility to obtain the missed information from a fellow classmate**. Therefore, I highly recommend that you find **a colleague** in this class to confer with when class information is missed. Please make every effort to be on time for class.

Withdrawl Policies
It is the student's responsibility to drop a course. Non-attendance of classes or failure to pay does not constitute an official withdrawal. To view specific drop deadlines, log into your MyMC account:
1) Click on "My Class Schedule" under Student Quick Links
2) Select the current term
3) Click on "View Drop Deadline Dates" at the bottom of the page

Audit Policy
All students registered for audit are required to consult with the instructor before or during the first class session in which they are in audit status, and students are required to participate in all course activities unless otherwise agreed upon by the student and instructor at the time of consultation. Failure to consult with the instructor or to so participate may result in the grade of "W" being awarded.

Disability Support Services
Any student who may need an accommodation due to a disability, please see me either after class or during my office hours. A letter from Disability Support Services (122CB) authorizing your accommodation will be needed. For more information, the DSS website can be found at http://www.montgomerycollege.edu/dss.

Any student who may need assistance in the event of an emergency evacuation must identify themselves to the Disability Support Services Office. Guidelines for emergency evacuations for individuals with disabilities are found at
http://www.montgomerycollege.edu/Departments/dispsvc/evacprocedures.htm

Veteran Services
If you are a veteran or on active or reserve status and you are interested in information regarding opportunities, programs and/or services, please visit the Combat2College website at www.montgomerycollege.edu/combat2college.

Weather Alerts
On occasion, Montgomery College may announce a **late opening, early closing, or temporary closure** of a specific campus or the entire college because of weather conditions or other emergencies. Since classes begin at various times throughout the day, a late opening or early closing will occur during a scheduled class period. Note: *If a*

class can meet for 50% or more of its regularly scheduled meeting time OR if the class can meet for 50 minutes or more, it will meet.

Montgomery College will always operate on its regular schedule unless otherwise announced. For the most up-to-date information regarding College openings, closings, or emergencies all students are encouraged to sign up for email and text alerts via Montgomery College ALERT. ALERT registration information is available at www.montgomerycollege.edu/emergency. The College's operational status will be also be communicated through its website homepage at http://montgomerycollege.edu

Communication

College Email
Please check your College email account routinely for official College information. Some items you may find are: invoices, important admission/registration information, waitlist status. To check your email, log into your MyMC online account and locate the email icon in the upper right hand corner of the page.

Additional Information

Class Cancellation
In the event that class must be cancelled, see the class discussion board for information regarding alternate assignments.

New!
MC IT Goes FB! **R U on Facebook?** Join our CSIIT Department Facebook page for all the latest information...including scholarships, internships, conferences, new programs and courses, plus more! https://www.facebook.com/groups/mcitstudents/