Montgomery College

DEPARTMENT OF ENGINEERING, PHYSICAL AND COMPUTER SCIENCE

Physical Science I, (PSCI 101 - 401)

Spring 2019

PSCI-101-401:
CRN: 31642 (Lecture)
CRN: 31644 (Discussion)
CRN: 31645 (Laboratory)

Instructor: ***Professor Behzad Maghami***
Phone: *Office: (240) 567 – 4990*
Cell Phone: (240) 994 - 6666
E-Mail: behzad.maghami@montgomerycollege.edu

Location: Lecture: Science Center -404…..…. Mondays and Wednesdays 6:00 pm. – 6:50 pm.
Discussion Science Center-404…..... Mondays 7:00 pm. - 8:40 pm.
Lab Science Center- 404……..…..... Wednesdays 7:00 pm. - 8:40 pm.

Office Location / Hours: *Science Center, Room: 454 T*
Mondays & Wednesdays: 5:00 pm – 5:50 pm
(Otherwise by appointment)

Textbook: *Physical Science, by*: *Shipman, Wilson, Higgins, and Torres, fourteenth edition*
Publisher: Cengage Learning Center
ISBN: 13 - 978 – 1 – 305 – 07913 - 7
ISBN: 10 – 1 – 305 – 07913 - 2

Catalog Description:

One of two related courses (with PSCI 102), which may be taken in either order. 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 non-science majors and some familiarity with scientific materials, equipment, laboratory techniques, and procedures. Emphasizes the principles of physics, and astronomy.

Course Objectives:

The objectives of this course are to introduce and explain the basic concepts and physical laws on which classical physics and astronomy are based. Topics will include force and motion, work and energy, heat and temperature, light, electricity, the atomic nucleus and nuclear reactions the universe, the solar system, and earth and space. The student will be introduced to the concepts and applications of the scientific method and the principles of critical thinking, and will require to analyze and to synthesize activities directed towards exploring and understanding natural phenomena. The student will learn the characteristics and the use of basic test equipment in the measurement of physical parameters during the performance of laboratory activities. In addition, the student, the student will be introduced to scientific research including reference acquisition, analysis and evaluation, paper presentation, and presenting of results

Course Outcomes:

By the end of the semester, you will be able to:

- Analyze, interpret, and use scientific data to evaluate hypotheses in physics and astronomy.
- Collect, evaluate, and interpret primary data using appropriate measurements, and to appropriately report associated measurement and experimental errors.
- Identify the major branches of physics and describe the seminal concepts within each.
- Evaluate and solve problems in mechanics by applying the basic principles of motion and Newton's Laws.
- Explain the scientific concept of energy, including the different forms of energy, how it moves and the laws that govern it, as well as its importance to human society and our future.
- Describe the size and scale of objects in the universe.

Course Structure:

The course will consist of class lectures, weekly homework assignments, group activities, laboratory reports, research paper, and tests. Discussion activities and laboratory experiments will require written reports. A brief research paper on a topic related to the course is required of all students. The topic will be chosen by the student and approved by the professor in a timely manner as indicated in the course outline. Students will be required to give a brief oral presentation of their research paper to the class.

Grading Policy:

The Student's final grade will be determined by the quality and timeliness of the work performed. A point system will be used for this measurement. The following shows the points for each aspect of the course. However, the student must have a test average of greater than 60 in order to pass the course.

3 Exams: (15 points each) …… 45 points Final Exams: ……... 20 points Homework: ……..…. 10 points Lab work and reports : ……... 15 points Paper presentation…..……..…. 10 points Total …….…….…….. 100 points	Grading system: 90 to 100 ……..…… A 80 to 89 …… B 70 to 79 ….…… C 60 to 69 ….…… D Less than 60 ……..…. F

Make-up Policy:

There are **NO MAKE-UP Labs.** and **EXAMS** given in this course. If you miss an exam due to an illness or some other emergency, then the (15/20) of grade you receive on the final exam will also be the grade for the exam you missed. If you are absent from an exam, I expect you to contact me immediately by phone or e-mail to explain the reason for your absence.

Without a valid excuse, late assignments will be marked down as much as 20%.

Accommodations:

Any student who may need an accommodation due to a disability, please make an appointment to see me during my office hour. In order to receive accommodations, a letter from Disability Support Services, (R-CB122; G-SA175; or TP-ST120) will be needed. Any student who may need assistance in the event of an emergency evacuation must identify to the Disability Support Services Office; guidelines for emergency evacuations are at: www.montgomerycollege.edu/dss/evacprocedures.htm.

Academic Behavior:

Academic integrity is of paramount importance. Laboratory exercises are collaborative activities, but laboratory and lecture exams are NOT. Infractions may result in and "F" for the exam or even for the course, depending on the severity. Please read the section on "Academic Dishonesty and Misconduct" published in the student handbook

Any Academic dishonest or misconduct will be dealt with in accordance with the procedure specified in the Student Handbook, i.e., failing the course. Read carefully and understand thoroughly the ***Student Code of Conduct, Section IV: Academic Dishonesty and Misconduct***.

Note:

Cell phones, smart phones, or similar devices are not to be used in the classroom without approval. No texting, e-mail checking, web-surfing, game-playing and so forth. If you are expecting an emergency call, let me know before class. Otherwise, as a courtesy to your professor and to your fellow students, silence your devices and put them away!

Email and Blackboard:

Email is the best way to contact me and to receive important information and announcements regarding the course. Use your official MC student email, not G-mail or other personal accounts because these are not considered to be secure. Also, ***do not*** send messages via Blackboard, as I rarely check Blackboard messages. Please check Blackboard often, however, because I will regularly lab handouts and other helpful information.

Academic Regulations & Student Code of Conduct:

All MC students are expected to follow "Academic Regulations" & "Student Code of Conduct" as described in the MC Student Handbook. These regulations and guidelines can be found at the website http://www.montgomerycollege.edu/departments/academicevp/Student_PandP.htm.

Inclement Weather:

If inclement weather forces the College or any campus or College facility to suspend classes or close, public service announcements will be provided to local radio and television stations as early as possible. You may also call MC at (240)567-5000 or check the college website http://www.montgomerycollege.edu to verify MC school closings. Any exams planned on days' classes are suspended will be administered at the first class meeting once classes resume. Note that the Montgomery County Public Schools (MCPS) and Montgomery College do not follow the same school closing procedures.

For Veterans:

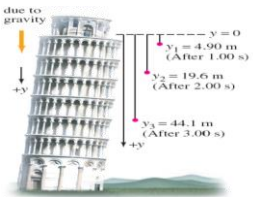
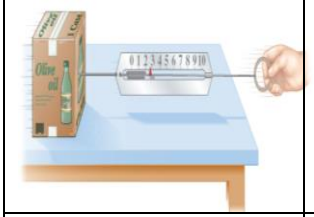
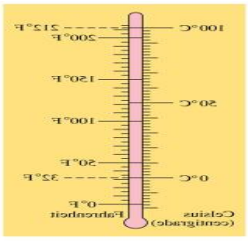
If you are a veteran or on active or reserve status and you are interested in information regarding opportunities, programs and/or services, please visit the Combat2College website at www.montgomerycollege.edu/combat2college/ and/or contact Joanna Starling 240-567-7103/SV103 or Joanna.starling@montgomerycollege.edu

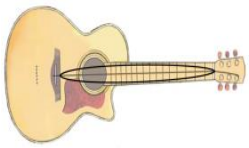
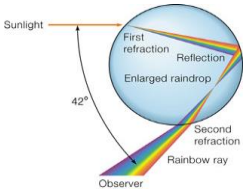
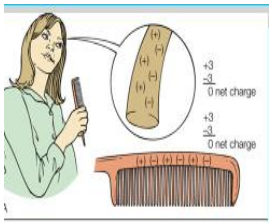
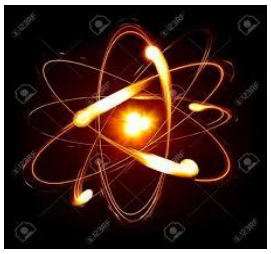
Montgomery College

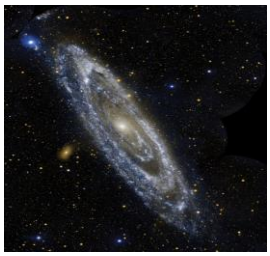
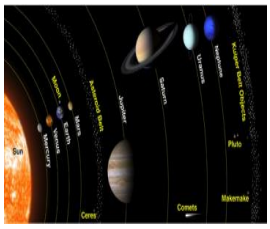
Department of Physics, Engineering, & Physical Science

PSCI-101 PHYSICAL SCIENCE: TENTATIVE SCHEDULE

Spring 2019

Week	Date Lecture Laboratory	Material to be Cover	Homework Assignment* (due one week after chapter is Covered)
1 	1/23	Ch. 1: Measurement Ch. 2: Motion ***Meeting with Lab. Technician (Lab. Rules)***	Ch. 1, Page 25: Exercises Prob. 1 to 22 (Even number probs.) Ch. 2. Page 49: Exercises Prob. 1 to 22 (Even number probs.)
2 	1/28 ***1/30***	Ch. 3: Force and Motion ***Lab 1: Quantitative Data***	Ch.3, Page 79: Exercises Prob. 1 to 24 (Even number probs.)
3 	2/4 ***2/6***	Ch. 4: Work and Energy ***Lab 2: Measurement***	Ch4, Page 106: Exercises Prob. 1 to 26 (Even numbers only)
4 	2/11 ***2/13***	Ch. 5: Temperature and Heat ***Lab 3: Gravitational Acceleration***	Ch. 5, Page 139: Exercises Prob. 1 to 24 (Even numbers only)
5 	**2/18** ***2/20***	**Exam 1. Ch. 1, 2, 3 & 4** ***Lab 4: Power***	

6 	2/25 ***2/27***	Ch. 6: Wave and Sound ***Lab 5: Specific Heat***	Ch. 6, Page 164: Exercises Prob. 1 to 18 (Odd numbers only)
7 	3/4 ***3/6***	Ch. 7: Optics and Wave Effects ***Lab 6: Sound***	Ch. 7, Page 198: Exercises Prob. 1 to 18 (Even numbers only)
8 	**3/11 to 3/13**	***Spring break***	***College closed***
9 	3/18 ***3/20***	Ch. 8: Electricity and Magnetism ***Lab 7: Reflection/Refraction***	Ch. 8, Page 234: Exercises Prob. 1 to 28 (Odd numbers only)
10 	**3/25** ***3/27***	**Exam 2 Ch. 5, 6, & 7** ***Lab 8: Static Electricity***	
11 	4/1 ***4/3***	Ch. 10: Nuclear Physics ***Lab 9: Electrical Circuits***	Ch. 10: page 303: Exercises Prob. 1 to 28 (Even number probs.)

12 	4/8 ***4/10***	Ch. 15: Space and Time Ch. 16: The Solar System ***Lab 10: Radioactivity***	Ch. 15: Page 450: Exercises Prob. 1to 28 (Even numbers only) Ch. 16: Page 481: Exercises Prob. 1 to 12 (Even number probs.)
13 	**4/15** ***4/17***	**Test 3 Ch. 8, 9, & 10** ***Lab11: Intro to Astronomy***	
14 	4/22 ***4/24***	Ch. 17: Moons & Small Solar System Bodies ***Lab. 12: Solar System***	Ch. 17: Page 510: Exercises Prob. 1 to 14 (Odd numbers only)
15 	4/29 ***5/1***	Ch. 18: The Universe ***Lab. Research Paper Presentations***	Ch. 18: Page 544: Exercises Prob. 1 to 12 (Even numbers only)
16 	5/6 **5/8**	Review for Final Exam **Final Exam** **(7:15 pm to 9:15 pm)**	

*Notes:

1- *Assignments are due at the beginning of the class. You have one week time to do the homeworks.*

2. *Students should be aware of any exceptions to following "TENTATIVE COURSE SCHEDULE and HOMEWORK plan.*