PHY 141:Introductory Physics I, Spring 2017

The Mind is not a vessel to be filled, but a fire to be ignited- Plutarch

Text: *Physics* 4th. Edition, James S. Walker
Instructor: Dr. Matt Marone Room 243 Science and Engineering Building
Phone 301-2597, e-mail: marone_mj@mercer.edu
Assistance outside of class: W 3:15-4:15, T 3:00-4:00 SEB243, also check experimental lab SEB 115, outside of these hours please make an appointment. You may email me your questions.
Lecture: Section 4, MWF 11:00-11:50, SEB 144
Lab: W 6:00 PM SEB 219
Prerequisite: MAT 133 or equivalent
General:

This is an algebra based class. Mathematics is the language of Physics and your ability to function in that language will affect your grade in this class. You will be able to solve a wide range of problems using vector analysis. You will also learn how to solve problems using Newton's laws of motion, conservation of momentum, energy conservation and rotational motion. We will also study some special applications of fluid flow and gravitation. Lectures will be in an interactive format. I expect you to ask questions and I will ask questions as I am lecturing. Physics did not just develop in a vacuum. We will also look into the historical context of great discoveries and their application. You are not required to come to lectures, but your lack of attendance will most likely cause you to do poorly in the class. Your grades will be determined based on the factors shown below and not on any other factors or considerations.

This class fulfills requirements in the Natural World Block of Mercer's General Education program. We will pursue our study of physics guided by the overarching principles of the Natural World Block which are as follows:

1. Generate a hypothesis to explain natural phenomena
2. Collect and organize experimental data in a format appropriate to a scientific field;
3. Analyze data through the use of quantitative and/or qualitative scientific reasoning;
4. Interpret a hypothesis in light of experimental evidence;
5. Accurately communicate scientific knowledge, observations, analyses, and/or conclusions.

Some of these principles will be addressed in lecture and some fit more naturally in the laboratory portion of this class.

Grades:
A (90 and above), B+ (85-89), B (80-84), C+ (75-79), C (70-74), D (60-69) F (below 60)

The actual number of tests will be determined by the number of chapters we cover. Your Final class grade will be derived from the following percentages

Average of Tests (50%)

In-class Quiz (5%)
Homework (5%)
Final Exam (20%)
Lab (20%)

You will **not** be graded on a **"curve"**.

Extra Credit will only be available on in class exams, **if** available at all.

Laboratory Reports: Lab reports are usually submitted as a group. If you prefer to submit an individual report, that is also permitted. I will not be you lab instructor. You lab instructor will discuss the format of the reports in lab class. You will take a pre and post assessment tests. The pre-test will not be factored into your grade but you must take it. The post test is required and will be factored into your final grade. Your score on the post-test can earn you additional bonus points added to you lab average. The amount of the bonus you will receive depends on how well you score on the post test and is given by the schedule shown below. These tests will be used by the department to assess learning and we expect you to take them seriously.

Points added to your **lab average** based on the percent correct answers on the post-test
Less than 50%=0, 50-59%=1, 60-69%=2, 70-79%=3, 80-100%=4

Electronic Submission of Assignments: Students bear sole responsibility for ensuring that papers or assignments submitted electronically to a professor are received in a timely manner and in the electronic format(s) specified by the professor. Students are therefore obliged to have their e-mail client issue a receipt verifying that the document has been received. Students are also strongly advised to retain a copy of the dated submission on a separate disk. Faculty members are encouraged, but not required, to acknowledge receipt of the assignment

Tests: Make-up exams will only be given to students with valid excuses as defined by the university handbook (illness, emergency, class trips with prior notification). The make-up exam may be harder or easier than the regular in-class exam. Any disputes concerning a test grade must be resolved within one week from the time the tests are returned or from the time the grades are made known to the class. Partial credit will be awarded depending how many steps were done correctly in a multi-step problem. The amount of credit will be at the discretion of the instructor. ***No equation sheets are permitted***. A list of useful equations and constant will be provided with the test. Expect one homework problem to appear on the test. If you are late to class and arrive while the test is in progress you will have only the remaining time to complete your test. If you come in after the test, you will not have the opportunity to make it up. Do not be late!

Illness: If you are ill and will miss class please contact me. We can make arrangements to make up the missed work and I can inform you what material you need to read. If you

are ill, please do not come to class. Students are advised to call or email the Student Health Center (301-2696 or shcmacon@mercer.edu) to report influenza-like symptoms. Students judged to have influenza-like symptoms will be instructed that they should not attend class, avoid contact with others as much as possible, and return to their normal schedule after they are free of fever (100°F or 37.8°C), or signs of a fever without the use of fever-reducing medications.

Quizzes: There will be a 5-10 minute quiz every week. This quiz will cover any material discussed in class up to that point of time. There may be questions related to an example problem from the text or an assigned homework problem. Make-up quizzes are subject to the same conditions as make-up tests. The Quiz will usually be on Friday. It may be necessary to change the day and the change will be announced. Tests and quizzes will start on time. If you are late to class and arrive while the quiz is in progress you will have only the remaining time to complete your quiz. If you come in after the quiz, you will not have the opportunity to make it up. Do not be late!

Final Exam: The final exam is cumulative and may include **any** material discussed in class. Make-up exams will be subject to the same conditions as make-up tests.

Homework: You will turn in homework electronically via the Expert TA system. You must register and **pay a fee** to use this system. The bookstore has the registration codes for sale. It is your responsibility to self-enroll in Expert TA. These problems are not group work. You must work them out on your own. Feel free to ask me for help. To register go to
https://www.theexpertta.com/registration/

Class Code: USW12GA-F5C511-1GK

Honor code: You are bound by the Mercer honor code. The College's academic misconduct policy will be followed. All work, for which a grade is received, must be the **original** work of the **student** without aid or assistance of another party, or any printed and or electronic data/information. Academic misconduct cases will be referred to the honor council and the student will automatically receive a grade of incomplete (IC) pending a ruling by the honor council.

Cell Phone and Calculator use: Out of courtesy for all those participating in the learning experience, all cell phones and pagers must be turned off before entering any classroom, lab, or formal academic or performance event. Cell phones are not to be used as calculators. You must use a device whose sole function is to be a calculator not a device that runs a calculator app or calculator simulation.

Classroom etiquette: You are expected to conduct yourself as a mature student, respectful of your classmates and instructor. You may be asked to leave the room if your behavior is disturbing the instructor or your fellow students. You may use a laptop to take notes or access the e-book during class. Please do not use a computer for any other purpose such as facebook, twitter, myspace, social networking, email, stock trading and the like.

Documented Disability Statement: Students with a documented disability should inform the instructor at the close of the first class meeting or as soon as possible. If you are not registered with Disability Services, the instructor will refer you to the Student Support Services office for consultation regarding documentation of your disability and eligibility for accommodations under the ADA/504. In order to receive accommodations, eligible students must provide each instructor with a Faculty Accommodation Form from Disability Services. Students must return the completed and signed form to the Disability Services office on the 3rd floor of the Connell Student Center. Students with a documented disability who do not wish to use accommodations are strongly encouraged to register with Disability Services and complete a Faculty Accommodation Form each semester. For further information please contact Disability Services at 301-2778 or visit the website at http://www.mercer.edu/stu_support/swd.htm.

Evaluation forms: In an ongoing effort to improve the quality of instruction, each student enrolled in this course is required to complete an end-of-semester course evaluation.

Material To Be Covered and Test Dates (Tentative)

Ch. 1 Introduction to Physics

Ch. 2 One Dimensional Kinematics

Ch. 3 Vectors in Physics
---------- Test 1 Feb 1 (W) ----------

Ch. 5 Newton's Laws of Motion

Ch. 6 Applications of Newton's Laws

---------- Test 2 Feb 22 (W) ----------
Ch. 7 Work and Kinetic Energy

Ch. 8 Potential Energy and Conservation

Ch. 9 Linear Momentum and Collisions

---------- Test 3 March 15 (W) ----------
Ch. 12 Gravity

Ch. 15 Fluids

---------- Test 4 April 5 (W) ----------

Ch. 16 Temperature and Heat

Ch. 18 The Laws of Thermodynamics

Chapters 16, 18 will only be tested on the Final exam, which is cumulative.

Note: we will not cover every section of each chapter listed above. You will be informed of the relevant sections as we progress.

Important Dates:
January 9 First Day of Class

January 16 Holiday - Martin Luther King, Jr. Day

March 6-10 Spring Break

March 23 **Last Day for Course Withdrawal**

April 14 Holiday - Good Friday

April 28 Last Class Day

**** Final Exam May 4, 9:00-12:00.*****