

PHYSICS 195
Physics I
Syllabus, Spring 2017
Section 1

Dr. Eduardo Sánchez Velasco

OFFICE

Magruder Hall 3170

☎ Phone: 785-4603

✉ e-mail: velasco@truman.edu

www: <http://velasco.sites.truman.edu>

📞 Note: Do **not** use the phone or e-mail for grade related questions.

OFFICE HOURS

Monday: 10:30 a.m. - 11:30 a.m.

Wednesday and Friday: 10:30 a.m. - 11:30 a.m. and 12:30 p.m. - 1:30 p.m.

CLASS HOURS

Monday, Tuesday, Wednesday, Thursday, Friday: 1:30 p.m. - 2:20 p.m. in Magruder Hall 1096.

Lab: Tuesday from 11:30 a.m. - 1:20 p.m. in Magruder Hall 1002.

CATALOG DESCRIPTION

This course begins a survey of basic physics including Newtonian mechanics and conservation laws, fluid behavior and thermodynamics. Students learn the concepts and develop the skills needed for advanced coursework in science and engineering. Some of the history of physics, its technological, and philosophical aspects, and its place in the history of ideas are explored. This course includes a laboratory component. *Credit: 5 hours.* Prerequisite: MATH 198 - Analytic Geometry and Calculus I with a “C” or better.

NOTE: Honors Scholar Course. This course fulfills the Scientific Physical Science Mode of Inquiry of the Liberal Studies Program. This course counts toward the 63-credit Liberal Arts and Sciences (LAS) graduation requirement.

COURSE OBJECTIVES and LAS Physical Mode of Inquiry

This is the first course of the introductory physics sequence, and it serves as the foundation for more advanced courses. It covers the basic concepts of Newtonian mechanics and some of its applications, as well as a brief introduction to thermodynamics. It is a calculus based course, and in addition to presenting some of the most basic concepts of physics, one of its major objectives is to familiarize the student with a more abstract and mathematical way of thinking when describing the physical world. In the classes and in the regular exams, abstract symbolic reasoning and functional descriptions will be emphasized over number crunching.

📞 The main emphasis of the course is theoretical; therefore proofs and derivations, not just problem solving, are of fundamental importance. **Knowing and understanding them will be expected from the students.**

The course has an essential laboratory component. The laboratory includes experiments that emphasize quantitative measurements, analysis of data, and interpretation of results. They require using mathematical and graphical techniques, and directly handling experimental apparatus. In the lab, correct numerical answers are expected; just to know how to get the result is not good enough. **This course fulfills the requirements for the LAS Physical Science Mode of Inquiry.**

TEXTBOOKS AND CLASS MATERIALS

- *University Physics Volume One (Chs. 1-20)* 14th edition, by H. D. Young and R. A. Freedman. Pearson (2016). You should also get registered in the *Mastering Physics* system for this course.
- ☞ In addition every student **MUST** bring to every lab a working **scientific calculator**, and to be familiar with its use.

ACADEMIC DISHONESTY

Academic dishonesty of any form will not be tolerated in this class. Anyone caught cheating on a test, homework, quiz or any other assignment will automatically receive a grade of zero on that test, homework, quiz, or assignment. Further disciplinary action consistent with University policy will be considered, including failing the course. Exams, homework, quizzes and assignments must be done individually without any outside help. For more information about the University policy on academic dishonesty, consult the appropriate sections of the Student Conduct Code (see the code and related information at <http://conduct.truman.edu>).

STUDENTS WITH DISABILITIES

If you have a disability for which you are or may be requesting an accommodation, you are encouraged to contact both your instructor and the [Disability Services](#) office (x4478) as soon as possible.

EXAMS AND QUIZZES

There will be four closed book exams. The tentative exam dates are listed at the end of this syllabus. All exams, **including the final** (exam #4), will be on the material covered since the preceding test. That is, **they are not “comprehensive.”** However, you may have to use as background for one exam some material covered in previous exams. In addition to these exams, there will be quizzes, usually on assigned readings or problems from the book or other materials. These quizzes will count as homework. In exams and quizzes, a deep knowledge of the material will be expected. Having only a general understanding of the material without a knowledge of the relevant details will not be enough. All exams and quizzes, unless instructed otherwise, are without books or notes, and must be done individually. Being late to an exam or quiz may disqualify you from taking that exam or quiz. Quizzes are usually given at the beginning of the class, so **don't be late!**

- ☞ **IMPORTANT:** Under normal situations, once an exam or quiz starts, you will **NOT** be allowed to leave the room until you finish the exam or quiz. Plan accordingly.

HOMEWORK POLICY

There will be homework assignments that you will do online using the **Mastering Physics** system. New copies of the textbook include a registration code for the Mastering Physics system. If you have a used copy of the book, you will have to purchase that code at the time or registering in the system. I will give you separate instructions of how to register in the Mastering Physics system.

IMPORTANT: Homework assignments MUST be done individually without any external help; it will be considered academic dishonesty if you do not do them individually. You are also responsible for having access to the Mastering Physics system, so do not forget your password. Some computers, specially old ones with outdated internet connections, have trouble accessing Mastering Physics. Try a different computer if you experience difficulties with the connection. I will not consider a valid excuse for missing a homework deadline that you had trouble with your computer or that you forgot your password.

Try to familiarize yourself well with the Mastering Physics system. Sometimes the system is a little bit inflexible on the answer it is expecting, and you will be penalized for not following the rules. Make a serious effort to understand the problems and make sure that you give accurate answers without too much rounding errors. In most cases, it is a good idea to work the problem in paper before you type the answers in the computer. Also, remember that under normal circumstances **no late homework will be allowed**, so make sure you do it before the deadline, or you will get zero in the questions that you do not do submit before the deadline.

The homework assignments will get you started practicing the concepts learned in the course, but you are expected to do on your own much more than these homework assignments. This is essential for you to understand well the material, and prepare yourself for the exams. The end of the book contains a huge amount of questions and problems, many of them with solutions at the end of the book. After studying the lectures and the textbook, you should do as many problems and questions as you can, to make sure you understand the material, and to develop the high degree of proficiency that will be expected in the exams.

MISSING A TEST, QUIZ OR CLASS

Students are expected to attend all class sessions and labs. If you have a valid conflict that does not allow you to take an exam or quiz, or to handle your homework, you must **contact me as soon as possible, preferably before the event takes place**. In any case you should see me **in person** as soon as possible. Missing a test, quiz, lab or homework requires a valid excuse, otherwise a grade of zero will be assigned. I reserve the right to determine what is, and is not, a valid excuse. As a rule only extreme situations, such as serious medical problems, will be considered valid excuses. Field trips and sport events are not usually considered valid excuses unless previously arranged personally with me. In general, having other exams in the same day is not a valid excuse. Adjustments to make up missed exams, homework, or quizzes, if any, will be made at my discretion, and only in extreme situations.

It is your responsibility to be on time for all classes, labs, quizzes and exams. Alarm clock malfunctions and similar events are NOT considered valid excuses for being late or absent. Being late to an exam or quiz may disqualify you from taking that exam or quiz. Being late to a lab for more than a few minutes may disqualify you from getting full credit in that lab. Therefore, **DO NOT BE LATE!** You should also know the dates and content of the exams and quizzes. “I did not know there was a exam (or quiz) today” is NOT a valid excuse for missing a exam. It is your responsibility to know if there is a changes of date, time or content of an exam, quiz, homework, or any other activity.

In most lab meetings there will be lab activities that will count towards the grade. Of course, you have to be in the lab **on time** to get a grade in that lab. You could be penalized for being late to the lab, and if late for more than a few minutes, you may forfeit all grade points for that lab. In general, lab makeups will not be given. If you miss a lab due to unusual circumstances, please see me **as soon as possible**. Unless other arrangements have been made, any missed lab will

be counted as zero. However, I will throw away the worst lab when computing the final grade. Therefore, you can safely miss one lab for whatever reason without damaging your grade. Use it as a sick leave day, and make sure you do not miss more than one lab. This throwaway policy only applies to labs; it does NOT apply to exams, quizzes or homework.

GRADING POLICY

The grade for this class will be obtained from the four exams, the lab activities, and from homework assignments, including quizzes. Each exam will count 15% towards the final grade, lab activities (with the worst one thrown away) 25%, and the remaining 15% comes from the homework assignments and quizzes. You MUST keep all graded materials, and be able to produce them in case of grade disputes. The following table summarizes how each activity counts towards the final grade.

Exam #1	15%
Exam #2	15%
Exam #3	15%
Exam #4	15%
Lab activities	25%
Homework and quizzes	15%
<hr/>	
Total :	100%

The minimum guaranteed grading scale is as follows:

Final Percentage	Letter Grade
85% to 100%	A
70% to 85%	B
60% to 70%	C
50% to 60%	D
below 50%	F

Final letter grades are normally assigned according to the table above. However, at the end of the semester I may curve grades upward. If this curving is done and, for example, I add 1% to all the final grades, a person with a final percentage of 69% may receive a B as the final letter grade, even though the above table indicates that a C would normally be assigned. However, **curving is not guaranteed, and you should not count on it**. I will never curve downward. As a rule, only the grades in the above table (A, B, C, D or F) will be given. Any other grade, like incomplete (IC), will be given at my discretion, and only under **very unusual and extreme circumstances**, like a serious medical problem. Poor performance will not qualify you for a grade other than A, B, C, D, or F.


TENTATIVE EXAM DATES

Exam #1: Monday, February 13 in class.

Exam #2: Wednesday, March 8 in class.

Exam #3: Monday, April 10 in class.

Exam #4: Tuesday, May 9, 1:30 p.m. - 3:20 p.m. (**finals week**).

 This syllabus may change during the semester.

Updated versions of this syllabus will be posted at <http://velasco.sites.truman.edu/>.