Marshall University

College of Science

Department of Physics

PHY 211
University Physics I
Spring 2018

Instructor: Dr. André Wehner, Science 255, wehnera@marshall.edu, 304.696.2755
                Office Hours: TTh 11:00-12:30, 4-6, W 6:30-7:30, or by appointment.

Class: MF 8:00-9:50, Kanac 203.

Text: *University Physics with Modern Physics*, by Young and Freeman.
                Mastering Physics online course management system (Course ID:
                PHY211S18)

Catalog Description:

PHY 211 University Physics I. 4 hrs.
First half of an introduction to physics for students of physical science or engineering, using
calculus and vectors by components: force, energy, particle dynamics, rotation, fluids, waves,
thermodynamics. Concurrent PR: (MTH229 , or MTH229H), and PHY202

Course Description

Physics is the most fundamental science. Its laws and theories describe the workings of the
universe at the most basic level. Physics deals with the structure of matter, the forces acting on
matter, as well as the origin and fate of the universe.

PHY 211 is the first part of a two-semester calculus-based introductory physics sequence for
engineering majors. We will focus on one cornerstone of classical physics: **mechanics** – the
science of motion. We will cover the traditional parts of mechanics: kinematics (description of
motion), dynamics (reasons for motion), and statics (absence of motion), as applied to **solids** and
fluids. We will then cover oscillations, waves, sound, and thermodynamics. Should you continue

with PHY 213, you will then be exposed to other branches of classical physics, such as electromagnetism and optics.

The lab corresponding to this course, PHY 202, is a *corequisite*. You will receive a separate grade for the lab.

Grading

Your grade will be determined as follows:

3 exams @ 20% each = 60%
Final 20%
Online Homework 15%
In-class participation 5%

No extra credit assignments will be given and the lowest score will not be dropped.

The grading scale will be as follows:

A: ≥ 90%   B: ≥ 80%   C: ≥ 70%   D: ≥ 60%

Expectations

I expect you to be on time, prepared for class and to actively participate in the class discussion every day – being prepared means at the very least doing your homework, reading the sections, and looking over notes from previous classes.

Attendance will be recorded, but will not be counted explicitly in the grade. **Four unexcused absences will result in a lowering of the grade. If you miss more than ten classes (excused and unexcused), you will receive a failing grade.**

Homework is an essential part of this course. You are expected to spend several hours each week on homework. Homework will be assigned through the online course system *MasteringPhysics* (MP) (www.masteringphysics.com). You will need an access code for MP. Our course ID is **PHY211S18** and will be required to register for MP. The access code is included in the textbook at the Marshall bookstore. Otherwise, it can be purchased online. You should use your Marshall email address for MP registration.

You will need a scientific (or graphing) calculator for this class, and *you will need to know how to operate it*. You are not allowed to use anything but a calculator on a test. You are encouraged to bring a ruler and graph paper to class.

There will be three tests during the course of the term, plus a comprehensive final. The questions on these will remotely resemble the questions, exercises, and problems covered in class and homework. Since every problem is different, it will do you no good to memorize specific problems. The solutions you present must be complete, coherent, and well-organized. You must show all work for full credit. Points will be taken off for missing or incorrect units in the answer as well as incorrect numbers of significant digits. After every test, I will post updated scores on Blackboard.

You are encouraged to seek help from me during my office hours. Additionally, there are free university tutors available for this course. See current tutoring schedule available at: http://www.marshall.edu/uc/tutoring-services/ .

By enrolling in this course, you agree to the University Policies listed below. The full text of each policy is at http://www.marshall.edu/academic-affairs/policies .

Academic Dishonesty/ Excused Absence Policy / Computing Services Acceptable Use/ Dead Week/ Inclement Weather/ Students with Disabilities/ Academic Forgiveness/ Academic Probation and Suspension/ Academic Rights and Responsibilities/ Affirmative Action/ Sexual Harassment

If you have to miss a test for a valid reason (proof required!), you will be allowed to make it up. If you know in advance you will have to miss a test, you should make arrangements to take it early.

The expectation at MU is that the principles of truth and honesty will be rigorously followed in all academic endeavors. This assumes that all work will be done by the person who purports to do the work without unauthorized aids. In addition, when making use of language and some idea not his or her own, whether quoting them directly or paraphrasing them into his or her own words, the student must attribute the source of the material in some standard form, such as naming the source in the text or offering a footnote. University policies are described in detail at: http://www.marshall.edu/academic-affairs/?page_id=802.

Marshall University is committed to equal opportunity in education for all students, including those with physical, learning and psychological disabilities. University policy states that it is the responsibility of students with disabilities to contact the Office of Disabled Student Services (DSS) in Prichard Hall 117, phone 304 696-2271 to provide documentation of their disability. Following this, the DSS Coordinator will send a letter to each of the student's instructors outlining the academic accommodation he/she will need to ensure equality in classroom experiences, outside assignment, testing and grading. The instructor and student will meet to discuss how the accommodation(s) requested will be provided. For more information, please visit http://www.marshall.edu/disabled or contact Disabled Student Services Office at Prichard Hall 11, phone 304-696-2271.

Schedule (tentative)

Week	Day	Material covered (chapter)
1	1/8	Introduction, PreTest, Units
	1/12	Ch. 1: vectors
2	1/19	Ch. 2: 1-dim kinematics
3	1/22	Ch. 3: 2-dim kinematics
	1/26	Ch. 4: Forces
4	1/29	Ch. 4
	2/2	Ch. 5: Applications of Forces
5	2/5	Ch. 5
	2/9	**Test 1**
6	2/12	Ch. 6: Work, power, KE
	2/16	Ch. 6
7	2/19	Ch. 7: PE, energy conservation
	2/23	Ch. 7
8	2/26	Ch. 8: Momentum, impulse
	3/2	Ch. 8
9	3/5	**Test 2**
	3/9	Ch. 9: angular kinematics
10	3/12	Ch. 10: angular dynamics
	3/16	Ch. 10
11	3/26	Ch. 14: oscillations
	3/30	Ch. 14
12	4/2	Ch. 15: waves
	4/6	Ch. 15
13	4/9	Ch. 16: sound waves
	4/13	**Test 3**
14	4/16	Ch. 17: thermodynamics
	4/20	Ch. 17
15	4/23	Ch. 12: fluids
	4/27	Ch. 12, Post-Test
	4/30	Final

Disclaimer: The above schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances, by mutual agreement, and/or to ensure better student learning.