

University Physics II – PHYS 210

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Office Hours: Wednesday 1:00-4:00, Thursday 1:00-4:00 or by appointment

Class Meetings: TF 8:30 AM – 9:45 AM, McKinley 108 Sections 001,002,003H
TF 9:55 AM – 11:10 AM, McKinley 108 Sections 004,005,006H

Lab Instructors:

Sections 003H and 006H: Bill Parsons

Email: parsonsfamily@starpower.net Phone: (240) 620-3170

Office: McKinley 7 Office Hours: TBA

Sections 001,002,004,005: Soudabeh Nayeri

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Office: McKinley 3 Office Hours: TBA

Supplemental Instruction Leader:

Adam Goler Email: adamgoler@gmail.com

SI Sessions: TBA SI Room: TBA

General Education Faculty Assistance Program (GEFAP) Assistant:

Kiersten Batzli Email: kiersten.batzli@gmail.com

Tutorial Sessions: TBA Tutorial Room: TBA

Course Requirements: The course requires credit for a first semester introductory calculus class, such as MATH-221, and credit for an introductory, (typically calculus-based) introductory physics class, such as PHYS-110.

General Education Information: UP II is one of nine second-level courses in Curricular Area 5-The Natural Sciences, Cluster Two: The Physical World in the University's General Education Program. This course is the second of a two-course sequence and most people will have taken the prerequisite PHYS-110. Additionally, General Education credit will be given only if the prerequisite Foundation course has been taken for this course. Prerequisite Foundation courses are CHEM-100, CHEM 105, PHYS-100, PHYS-105 or PHYS 110.

Course Materials:

Textbook: *Physics for Scientists and Engineers, 2nd Edition* by Randall D. Knight, Published by Pearson, Addison-Wesley.

Supplemental Material: At the bookstore, the textbook comes bundled with the Student Workbook. You should use this—it is very helpful and answers will be available—but it is not required.

MasteringPhysics: We will be using this website for both homework and mini-reviews of class material throughout the semester. To register, follow the link in the Assignments section of Blackboard. To enroll, use the course ID: **MPUSCINSKI98540**. If you bought a new textbook, it came with an insert that has your enrollment code. Otherwise, you will have to purchase enrollment rights. Use your student ID for your enrollment. You should try to enroll today; don't put it off until tomorrow! Contact me or come to my office hours if you need help.

Laboratory manual: On sale at campus bookstore. You will need it for the first lab on 1/22 or 1/23.

Calculator: Scientific calculator that can do trigonometric, exponential, and logarithmic functions; graphing capacity not required; graphing capabilities cannot be used during in class tests.

Course Description and Goals: University Physics (UP) II is the second part of a two-semester introduction to many topics in classical physics. The most important goal of this class then will be to survey some of the topics of waves, optics, electromagnetism, and circuits. This overview will focus both on the conceptual interplay between different physical aspects and on the mathematical language that can be used to describe these relationships. Also, the technological applications of these topics will be explored.

A secondary goal of the class is to encourage critical scientific thinking. To that end, the course will provide many experiences where understanding and progress can only be made by combining theoretical insights with real-world experiments and practical knowledge. The wonder and utility of science is that it fulfills three roles: it predicts, describes and explains. Physics relationship to other sciences and its social and historical context will not be ignored.

Throughout history, scientific discoveries have influenced theories of philosophy, society, government, religion, and every other mode of human self-exploration. Another goal of this class is to present some of the intersections between physics and modern thought.

A final goal of the course is to provide ample experience in problem-solving, one of the most important tools, not just for science, but also for life. Qualitative and quantitative methods of problem solving will be explored and practiced in the context of physics.

Communication: We will be using the Blackboard system at AU for distribution of information outside of class time. All announcements for the course including homework problem sets, due dates, and exams will appear on the course website so please check it regularly.

Grading: Your final grade will be based on the following

Class Participation	5%
Mini Reviews	5%
Homework:	20%
Lab:	20%
Test 1:	15%
Test 2:	15%
Final:	20%

Grading scale: The grading scale below is guaranteed to be the maximum requirements for a grade, but may be adjusted lower to account for class performance.

A	>	93%
A-	>	90%
B+	>	87%
B	>	83%
B-	>	80%
C+	>	77%
C	>	73%
C-	>	70%
D	>	55%

Class Participation: Attending and participating in class activities will contribute to your grade. This class will be mostly lecture based and will include some classroom activities, ranging from group work to reinforce the material to clicker questions. Class time is meant to engage students in active thought about the material and offer a forum where students can share in their learning process. Actively participating and attending class is a requirement for both yours and the other students benefit. You will be required to attend at least 23/26 lectures for this course to be eligible for full class participation credit. Missing further classes without penalty will require special permission from me that you should obtain beforehand.

Mini Reviews: There will be many opportunities to test and develop a deeper understanding of material this semester through homework and exams. However, I find it useful to also have mini reviews of concepts on a more frequent basis. These review questions will be through MasteringPhysics and will be assigned after most every class. These reviews are an opportunity for you as the student to make sure you are keeping pace with the material in class. Additionally, they will provide me with the opportunity to gauge trouble areas and adjust accordingly throughout the semester to make sure everyone can understand as much of the material as possible. The assignment “Intro to MasteringPhysics” will count for one of these mini reviews. Out of the total 14 assignments, the best 12/14 will count towards your grade.

Homework: We will be using the website www.masteringphysics.com for homework assignments. As discussed in the supplemental material section you will be required to have a subscription to this site (it came with your book if you purchased it from the bookstore). The HW assignments will be assigned on Blackboard and will be due each week. Optional Supplemental Instruction tutorial sessions and GEFAP tutorial sessions will be held several times a week with a teaching assistant to help you complete this assignment. Remember, the only way to become a good problem-solver is practice. Students are strongly encouraged to work collaboratively on these assignments, however do not rely on peers to solve everything or you will not develop the skills to do well on tests and in future solo endeavors. The homework assignments will be due at 8:00 AM on the due date for full credit, and each day late reduces the credit by 25%. Your lowest HW assignment grade will not count towards your final grade.

Laboratories: Ten times during the semester you will meet during the laboratory time in McKinley 14 to perform experiments. Your exact lab meeting time is determined by your course section. You are expected to have read the section in the laboratory manual about that week's experiment before you arrive. Each week that the lab meets you will complete a laboratory report for that experiment to be turned in the following week to the lab instructor. If you miss a lab for an unexcused reason it is at the discretion of the laboratory instructor to allow you to make it up on a later date. Occasionally the material covered in the experiment for the week will lead the lecture; this is normal.

Exams and Final Exam: There will be two 'mid-term' exams scheduled during regular class times. Exams will be a combination of multiple choice and problem solving questions. They will test for both qualitative and quantitative understanding. These exams will occur on **2/17** and **3/27**. You are not allowed to consult your classmates for assistance with exam problems. The exams will not be designed to test your ability to memorize, but rather your understanding of key concepts, principles, and techniques. All relevant constants (including units) will be provided to you on a separate sheet with each exam.

The final exam is scheduled by the registrar and cannot be changed. The final exam will be cumulative. You will also be provided with a separate formula sheet for the exam. **The final will be given in our normal classroom on**

5/1 – 8:30 – 11:00 AM for Sections 004,005,006H

5/5 – 8:30 – 11:00 AM for Sections 001,002,003H

Students with disabilities: You should be registered with the University, who will send me a letter describing any special needs. We can accommodate your needs, but occasionally patience will be required. Anything discussed will be kept confidential.

Academic Integrity Code: Standards of academic conduct are set forth in the University's Academic Integrity Code. By registering, you have acknowledged your awareness of the Academic Integrity Code, and you are obliged to become familiar with your rights and responsibilities as defined by the Code. Violations of the Academic Integrity Code will not be treated lightly, and disciplinary actions will be taken should such violations occur. Please see me

if you have any questions about the academic violations described in the Code in general or as they relate to particular requirements for this course. **It is your responsibility to read and follow the Academic Integrity Code!**

NOTE: Details of this syllabus may be changed at the discretion of the instructor. Please check Blackboard announcements to keep up to date, and ask the instructor if you have any questions.