Phys 212X: General Physics II Syllabus

Spring 2023

Instructor Information

Instructor	Email	Office Location & Hours
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General Information

Course Description

Physics 212 is a 4-credit course. In the first part of the course, you will learn basic thermodynamics, including the three laws of thermodynamics and applications to some problems, such as temperature, the efficiency of engines, and the fate of the universe. Then the course will explore electricity and magnetism. We will start by discussing electrostatics, followed by DC circuits and magnetostatics. Then we will discuss the interactions between electric and magnetic fields leading to AC circuits. We will then end the semester with an introduction to Electromagnetic waves.

Lecture Schedule

Lectures: REIC 201/Mondays, Wednesdays, and Fridays, 10:30 am - 11:30 am

Required Text

Physics for Scientist & Engineers w/Mod Physics 4th Ed., Knight

Grading Policy

Homework	Attendance	Lab	Quiz	Midterm 1	Midterm 2	Final	Total
20%	5%	10%	15%	15%	15%	20%	100%

Your final grade for this course will be based on a curve. The average of the curve will be the breakpoint between letter grades B- and C+. The standard deviation of the grade point distribution will separate subsequent letter grades.

Lecture Schedule

Week	Topic	Reading	Dates	HWK Due Date
Week 1	A Macroscopic Description of Matter	Holiday, Ch18:1-4, 4-7	~~01/16~~,01/18,*01/20*	01/27
Week 2	Work, Heat, and The Frist Law of Thermodynamics	Ch19:1-4, 5-8, Quiz 1	01/23,01/25,*01/27*	02/03

Week	Topic	Reading	Dates	HWK Due Date
Week 3	The Micro/Macro Connection	Ch20:1-3, 3-6, Quiz 2	01/30,02/01,*02/03*	02/10
Week 4	Heat Engines and Refrigerators	Ch21:1-3, 3-6, Quiz 3	02/06,02/08,*02/10*	02/17
Week 5	Electric Charges and Forces	**Mid-term 1**,Ch22:1-3, 3-5	***02/13***,02/15,*02/17*	02/24
Week 6	The Electric Field	Ch23:1-3, 4-7, Quiz 4	02/20,02/22,02/*24*	03/03
Week 7	Gauss's Law	Ch24:1-3, 4-6, Quiz 5	02/27,03/01,*03/03*	03/10
Week 8	The electric Potential	Ch25:1-4, 4-7, Quiz 6	03/06,03/08,*03/10*	03/24
Week 9		Spring Break	~~03/13,03/15,03/17~~	
Week 10	Potential and Field	Ch26:1-4, 4-7, Quiz 7	03/20,03/22,*03/24*	03/31
Week 11	Current and Resistance	Ch27:1-3, 3-5, Quiz 8	03/27,03/29,*03/31*	04/07
Week 12	Fundamentals of Circuits	Ch28:1-5, 5-9, Quiz 9	04/03,04/05,*04/07*	04/14
Week 13	The Magnetic Field	**Mid-term 2**,Ch29:1-5, 5-10	***04/10***,04/12,*04/14*	04/21
Week 14	Electromagnetic Induction The Magnetic Field	Ch30:1-5, Ch30:6-10, Quiz 10	04/17,04/19,04/*21*	04/28
Week 15	Electromagnetic Fields and Waves & AC Circuits	Ch31:1-6, Ch32:1-6, Quiz 11	*04/24*,04/26,04/28	05/05* (optional)
Week 16	Reviews	------, **Final**, ------	~~05/01~~,***05/03***,~~05/05~~	

Exam Schedule

Date	Time	Subject
02/13	10:30 am - 11:30 am	Mid-term 1
04/10	10:30 am - 11:30 am	Mid-term 2
05/03(TBD)	10:30 am - 12:00 pm	Final Exam

Additional Requirements & Policy

Homework:

Attendance Policy:

You are expected to attend classes regularly. **IF YOU ARE ABSENT WITHOUT A PROPER EXCUSE FOR MORE THAN 50% OF LECTURES, YOU WILL AUTOMATICALLY FAIL THE COURSE.** Regular quizzes are not counted as lectures.

On average, 8-12 problems will be assigned each week on **Friday**. The assignments will be due before the class on **the following Friday,** and you need to submit them on canvas. **NO LATE HOMEWORK WILL BE ACCEPTED—NO EXCEPTIONS** (barring emergencies and extreme situations). Group work is encouraged for solving problems. Students are welcome to consult the instructor during office hours or by appointment for additional help with homework. All homework you submit should reflect your own work. Copying homework is absolutely not acceptable and will result in a grade of ZERO for the assignment.

Quizzes:

11 short quizzes will be given in class during the semester. They will be open-book quizzes, and calculators will be allowed. The quiz material given will be similar to the recent homework or topics covered in class. All necessary formulas will be provided.

Exams:

There will be two midterms and a final comprehensive exam. The first midterm will test the material covered in the first four weeks, and the second test will cover the material in weeks 5-11. The final will include material covered from the beginning of the semester, with more weight on the material covered after the second midterm (weeks 12-15). **NO MAKEUP QUIZZES OR EXAMS WILL BE GIVEN.** If the student must miss a quiz or an exam and the student has a legitimate reason, prior to the exam, the student must notify the instructor that the exam will be missed. The student must present written verifiable proof of the reason for missing the exam, e.g., a doctor's note, police report, court notice, etc., clearly stating the date AND time of the mitigating problem. If these conditions are met, the score on the comprehensive final exam will be substituted for the quiz or exam the student missed. Otherwise, a ZERO score will be given for the missed quiz or exam. In the event the Final Exam is not taken, under rare circumstances where the student has a legitimate reason for missing the final exam, a makeup exam will be administered.

Laboratory:

The laboratory is an integral part of this course; each student must register for and attend the lab section. All labs and reports must be completed on time. If possible, every effort must be made to make up a lab during the same week. The last week of the semester will be set aside for makeup labs. **ALL LABS MUST BE COMPLETED IN ORDER TO PASS THE COURSE.** Questions about the lab should be directed to your TA.

Student Code of Conduct:

You are expected to submit work that is your own and properly acknowledge the work of others. You are responsible for understanding and adhering to the Student Code of Conduct that is printed in the UAF Course Catalog. Violations of the Code will be reported to the Dean of Students.

Disabilities Services:

If applicable, it is your responsibility to arrange for these services. The UAF Center for Health and Counseling provides services for UAF students with disabilities to ensure equal access to educational opportunities. The Center's Disability Services Program ensures compliance with §504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) of 1990. If you believe you are eligible for 504 and/or ADA accommodations, please contact them at 474-7043 (WHIT 203).