Phys 211X: General Physics I Syllabus

Fall 2021

Instructor Information

Instructor	Email	Office Location & Hours
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General Information

Course Description

Welcome to Physics 211, a four-credit course. At the beginning of this course, you will learn the basic language of physics, including measurements and quantification of motion. Afterward, we will calculate the motion of bodies with Newton's three laws of motion. You will apply these laws to various problems such as fair rides, space ships, skidding cars, and even hanging signs. Next, the course will explore energy and momentum, two of the most important concepts in the physics of motion. This will be followed by an introduction to Gravitation followed by fluid mechanics. Finally, the course will wrap up with a discussion of waves; for example, sound waves and their concrete application in noise cancellation headphones.

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	Lab	Quiz	Midterm 1	Midterm 2	Final	Total
25%	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	Concepts of Motion	Ch1:1-4, Ch1:5-8, Quiz 1	08/23,08/25,*08/27*	09/03
Week 2	Kinematics in One Dimension	Ch2:1-4, Ch2:5-7, Quiz 2	08/30,09/01,*09/03*	09/10

Week	Topic	Reading	Dates	HWK Due Date
Week 3	Vectors and Coordinate Systems/ Kinematics in Two Dimension	Holiday,Ch3:1-4, Ch4:1-6	~~09/06~~,09/08,*09/10*	09/17
Week 4	Force and Motion	Ch5:1-4, 5-7, Quiz 3	09/13,09/15,*09/17*	09/24
Week 5	Dynamics I: Motion Along a Line	Ch6:1-4, 5-6, Quiz 4	09/20,09/22,*09/24*	10/01
Week 6	Newton's Third Law	**Mid-term 1**, Ch7:1-3, 4-5	***09/27***,09/30,*10/01*	10/08
Week 7	Dynamics II: Motion in a Plane	Ch8:1-3, 4-5, Quiz 5	10/04,10/06,*10/08*	10/15
Week 8	Work and Kinetic Energy	Ch9:1-3, 4-6, Quiz 6	10/11,10/13,*10/15*	10/22
Week 9	Interactions and Potential Energy	Ch10:1-4, 4-7, Quiz 7	10/18,10/20,*10/22*	10/29
Week 10	Impulse and Momentum	Ch11:1-4, 4-7, Quiz 8	10/25,10/27,*10/29*	11/05
Week 11	Rotation of a Rigid Body	**Mid-term 2**, Ch12:1-3, 3-5	***11/01***,11/03,*11/05*	11/12
Week 12	Newton's Theory of Gravity	Ch13:1-5, 5-9, Quiz 9	11/08,11/10,*11/12*	11/19
Week 13	Fluid and Elasticity	Ch14:1-5, 5-10, Quiz 10	11/15,11/17,*11/19*	11/29
Week 14	Oscillations	Ch15:1-10, Holiday, Holiday	*11/22*,~~11/24~~,~~11/26~~	12/03
Week 15	Superposition/ Traveling Waves	Ch16:1-9,Ch17:1-8 Quiz 11	11/29,12/01,*12/03*	12/10
Week 16	Reviews	------, **Final**, ------	~~12/06~~, ***12/08***,~~12/10~~	

Exam Schedule

Date	Subject
09/27	Mid-term 1
11/01	Mid-term 2
12/08	Final Exam

Additional Requirements & Policy

Homework:

On average, 8-12 problems will be assigned each week on **Friday**. The homework will be due by 10:30 am the following **Friday** and you need to submit it on the blackboard. **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 of 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 formulas needed 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 5 weeks, and the second test will cover the material in weeks 6-10. The final will include material covered from the beginning of the semester, with more weight on the material covered after the second midterm (weeks 13-15). **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, and each student must register for and attend the lab section. All labs and reports must be completed on time. Every effort must be made to make up a lab during the same week if possible. 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).