

PHYS 201: General Physics

COURSE INFORMATION

INSTRUCTOR:

Yuriy Pershin
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Phone: (803) 777-5073
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OFFICE HOURS:

Wednesday 2:00 to 4:00 or by appointment

CLASS MEETINGS:

Lectures: T TH 7:00 to 8:15PM (PSC201)
CAPA/Recitation: M 7:00 to 7:50 PM (PSC201)

TEXTBOOK:

Physics, Cutnell & Johnson, 7th Edition (2007)

GOALS, OBJECTIVES AND PURPOSES

This course is an important and hopefully enriching major university course developing a broad base of technical knowledge and insights, coupled with new methods of thinking. Specifically we seek:

1. To learn the fundamental laws of nature that underlie majority of scientific fields.
2. To learn specifically fundamental concepts, their experimental and theoretical relationships, fundamental values, units and constants.
3. To become experienced in estimation, numerical uncertainty, and problem solving.
4. To learn how science operates: link between theoretical model and reality.
5. To experience mathematics as a tool for theoretical modeling and predictions.
6. To promote your ability to think analytically.

GRADING:

Your overall score will be an average of all grades you have accumulated during the course, weighted as follows:

Quizzes: 10%
CAPA: 10%
Exams #1, #2 and #3, each: 16%
Final Examination: 32%

You will be provided with a list of basic constants during each examination. You may use a non-programmable calculator. You can not use notes, textbook or any other materials. Exams will be based on the material discussed in CAPA assignments, quizzes, and textbook.

GRADING SCALE:

The final grade will be based on the following scale:

Percent	Grade
89-100	4.0 (A)
85-88	3.5 (B+)
76-84	3.0 (B)
72-75	2.5 (C+)

Percent	Grade
63-71	2.0 (C)
50-62	1.0 (D)
<50	0 (F)

ACADEMIC RESPONSIBILITY:

All work you submit must be your own and must comply with the rules stated on this sheet. Please refer to *Carolina Community* for further information concerning the Code of Student Academic Responsibility. Cell phones, PDA's and graphic calculators are not allowed in class.

GUIDELINES AND RECOMMENDATIONS:

1. There are 29 total class lectures and 3 of these are exams.
2. Lecture attendance is required and all exams must be taken.
3. Makeup exams will be provided at the instructor's discretion. Only illness, personal or family emergencies, or religious holidays will justify rescheduling of a makeup exam. For approved makeup exams, it will be student responsibility to reschedule the exam, which must be taken within 3 days of the regularly scheduled exam if at all possible.
4. Preview material prior to each class using the text: we will follow the text and the syllabus. This gives an overview of the material to be covered and makes it far easier to rapidly assimilate the lecture and to take notes that complement the text.
5. Create a set of notes the same day after the class: with your class notes in front of you, your text open to the class material, with your memory of your pre-class reading of the text, and the knowledge learned in class, then make a set of clear neat notes that condenses the class lecture and the text.
6. Practice as much as possible. In addition to the assigned problems, it is highly desirable to pass Self-Assessment Tests located at <http://www.wiley.com/college/cutnell>. It is always best to study with other students and share information and to explain concepts to others. It is a fact that if you explain something and teach someone else, you will learn more in the process than they do, so never hesitate to help others. In the process of teaching, you will formulate the concepts and relationships more clearly.
7. After each test, classify your errors into types such as (a) arithmetic or algebraic mistake in calculation, (b) forgot formula, (c) could not convert the word explanation or setting into a mathematical setting, (d) carelessness.

PHYS 201: Description

The course is intended to cover Mechanics, Thermal Physics and Wave Motion contained in Chapters 1-17 of *Physics*, Cutnell & Johnson, 7th Edition.

Course outline*

Date	Day	Topic	Text Reading	Notes
Aug 21	Thu	Course overview, units	Ch. 1	First Day of Class
Aug 26	Tue	Mathematical concepts	Ch. 1	
Aug 28	Thu	Kinematics in 1D	Ch. 2	
Sep 2	Tue	Kinematics in 1D and 2D	Ch. 2-3	
Sep 4	Thu	Kinematics in 2D	Ch. 3	
Sep 9	Tue	Newton's Laws	Ch. 4	
Sep 11	Thu	Newton's Laws	Ch. 4	
Sep 16	Tue	Dynamics of Circular Motion	Ch. 5	
Sep 18	Thu			Exam 1
Sep 23	Tue	Work and Energy	Ch. 6	
Sep 25	Thu	Work and Energy	Ch. 6	
Sep 30	Tue	Impulse and Momentum	Ch. 7	
Oct 2	Thu	Rotational Kinematics	Ch. 8	
Oct 7	Tue	Rotational Kinematics	Ch. 8	
Oct 9	Thu			Fall Break, no Class
Oct 14	Tue	Rotational Dynamics	Ch. 9	
Oct 16	Thu	Harmonic Motion	Ch. 10	
Oct 21	Tue	Elasticity	Ch. 10	
Oct 23	Thu			Exam 2
Oct 28	Tue	Fluids	Ch. 11	
Oct 30	Thu	Temperature and Heat	Ch. 12	
Nov 4	Tue	Temperature and Heat	Ch. 12	
Nov 6	Thu	Transfer of Heat	Ch. 13	
Nov 11	Tue	Ideal Gas	Ch. 14	
Nov 13	Thu	Thermodynamics	Ch. 15	
Nov 18	Tue			Exam 3
Nov 20	Thu	Waves and Sound	Ch. 16	
Nov 25	Tue	Waves and Sound	Ch. 16	
Nov 27	Thu			Thanksgiving, no Class
Dec 2	Tue	Principle of Superposition	Ch. 17	
Dec 4	Thu	Interference	Ch. 17	Last Day of Class
TBA				Final Exam

*This is a tentative schedule. Adjustments that need to be made during the semester will be announced in the class.