PHYS 104: College Physics **Syllabus** **Spring 2016**

Instructor: Prof. Hui Zhang
Office: 708D Elvey Building; Reichardt 108 (during office hours)
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Time: Lectures: Mondays, Wednesdays, and Fridays, 9:15am-10:15am

Place: Lectures: REIC 201; Labs: REIC 258

Office Hours: Mondays, Wednesdays, and Fridays 10:15am-11:15am, or by appointment. Additionally, a help room (REIC 122) will be staffed at various times (the schedule is posted on REIC 122 door) to answer homework related questions.

Credits: 4 credits, 3 hours/week of lecture and 3 hours/week of lab

Required Text Book and Material:

- *Physics: Principles with Applications*, Douglas C. Giancoli, 7th Edition, 2013, ISBN 9780321625922
- MyLab & Mastering access (www.pearsonmylabandmastering.com) (Course ID: zhang87758)
- TopHat access (https://app.tophat.com/e/803257) (Join code: 803257)

Course Description

We will begin with the basics of electricity and magnetism (including electrostatics, DC circuits, magnetism, and electromagnetic waves). We will then introduce physical and geometrical optics. Finally we will move on to the strange and wonderful world of modern physics (including relativity, quantum mechanics, nuclear physics, elementary particles, and cosmology).

Grading

Attendance and In-class Exercise	10%
Pre-Lecture and Homework Assignments	22%
Quizzes (closed book)	9%
Two Mid-term Exams (closed book)	24%
Cumulative Final Exam (8-10am on May 5, Thursday, closed book)	20%
Labs	15%
Total	100%

> 97 %	A+
93 % -- 97 %	A
90 % -- 93 %	A-
87 % -- 90 %	B+
83 % -- 87 %	B
80 % -- 83 %	B-
77 % -- 80 %	C+
73 % -- 77 %	C
70 % -- 73 %	C-
67 % -- 70 %	D+
63 % -- 67 %	D
60 % -- 63 %	D-
< 60 %	F

Course Policies

- Pre-Lecture and homework assignments will be given online (http://www.pearsonmylabandmastering.com). Go to the website, login as a student and follow the instructions. The **course ID is zhang87758** and the course title is UAF PHYS 104 College Physics. Make sure the name you give the website matches your name of record. You will be allowed to 10 attempts per question. Each homework problem has randomly generated input values so each student will have a unique answer. Make sure that you use your own input values when solving each problem. Handwritten homework will NOT be accepted. Late homework submissions will NOT be accepted.

- NO MAKE-UP QUIZZES OR EXAMS WILL BE GIVEN.

  If the student must miss a quiz or an exam, under rare circumstances where the student has a legitimate reason, the student must notify the instructor that the exam will be missed and present written verifiable proof of the reason for missing the exam, e.g., a doctors 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 assigned 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.

- Labs: A PASSING GRADE IN THE LAB IS NECESSARY TO PASS THE COURSE.

  There is a lab associated with this course. ALL labs and reports must be completed to get a passing grade for the lab. Please plan on attending all lab sessions; missing lab is strongly discouraged. Please contact the Lab Supervisor or your TA immediately if you intend to be or have been absent. If your absence is not documented you will not be allowed a make-up lab. *Missed labs that are not made up result in an automatic failing grade of both the laboratory and the course.* Make-up labs are offered April 19th-25th. Questions about the lab should be directed to your TA.

- High ethical standards are essential for maintaining credibility. Plagiarism is defined as appropriating passages or ideas from another person's work and using them as one's own. You may work with your classmates on homework assignments, however, you should submit your own work, not a copy from another source. Keep in mind that you will be required to do similar problems on your own during an exam. Plagiarism on homework or on an exam will result in a failing grade.

Students with Disabilities Notice

The University of Alaska Fairbanks is committed to equal opportunity for students with disabilities. Students with disabilities are encouraged to contact the coordinator of Disability Services (Mary Matthews) at the Center for health & Counseling (x7043). See section on "Disability Services" of the UAF Class Schedule (http://www.uaf.edu/schedule/).

Tentative Weekly Schedule

Week	Date	Lecture Subject	Homework
0	F Jan 15	Syllabus/Electric Charge (Ch16: sec 1-4)	
1	M Jan 18	**Alaska Civil Rights Day (no classes)**	
	W Jan 20	Coulomb's Law, Electric Field (Ch16: sec 5-7)	Homework 1
	F Jan 22	(Ch16: sec 8-9, 12)	
2	M Jan 25	Electric Potential (Ch17: sec 1-4)	
	W Jan 27	(Ch17: sec 5-8)	Homework 1 is Due
	F Jan 29	(Ch17: sec 9-10)	
3	M Feb 1	Electric Currents, Ohm's Law (Ch18: sec 1-3)	
	W Feb 3	electric power, alternating current (Ch18: sec 4-7)	Homework 2 is Due
	F Feb 5	DC Circuits (Ch19: sec 1-3)	
4	M Feb 8	(Ch19: sec 4-6)	
	W Feb 10	(Ch19: sec 7-8) Quiz 1	Homework 3 is Due
	F Feb 12	Magnetism (Ch20: sec 1-3)	
5	M Feb 15	(Ch20: sec 4-6)	
	W Feb 17	(Ch20: sec 7-10)	Homework 4 is Due
	F Feb 19	Electromagnetic Induction (Ch21: sec 1-4)	
6	M Feb 22	Faraday's Law (Ch21: sec 5-7)	
	W Feb 24	Mid-term Exam 1	Homework 5 is Due
	F Feb 26	Electromagnetic Waves (Ch22: sec 1-3)	
7	M Feb 29	(Ch22: sec 4-7)	
	W Mar 2	Geometric Optics (Ch23: sec 1-3)	Homework 6 is Due
	F Mar 4	(Ch23: sec 4-6)	
8	M Mar 7	(Ch23: sec 7-8)	
	W Mar 9	The Wave Nature of Light (Ch24: sec 1-5)	Homework 7 is Due
	F Mar 11	(Ch24: sec 6-10)	
X	M Mar 14	**Spring Break**	
	W Mar 16		
	F Mar 18		
9	M Mar 21	Optical Instruments (Ch25: sec 1-4)	
	W Mar 23	(Ch25: sec 5-8) Quiz 2	Homework 8 is Due
	F Mar 25	(Ch25: sec 9-11)	
10	M Mar 28	The Special Theory of Relativity (Ch26: sec 1-4)	
	W Mar 30	(Ch26: sec 5-8)	Homework 9 is Due
	F Apr 1	(Ch26: sec 9-11)	
11	M Apr 4	Early Quantum Theory (Ch27: sec 1-4)	
	W Apr 6	Mid-term Exam 2	Homework 10 is Due
	F Apr 8	(Ch27: sec 6-9)	
12	M Apr 11	(Ch27: sec 10-13)	
	W Apr 13	Quantum Mechanics of Atoms (Ch28: sec 1-4)	Homework 11 is Due
	F Apr 15	(Ch28: sec 5-8, 11)	
13	M Apr 18	Nuclear Physics (Ch30: sec 1-6)	
	W Apr 20	Radioactivity (Ch30: sec 7-13) Quiz 3	Homework 12 is Due
	F Apr 22	**UAF Spring Fest (no classes)**	
14	M Apr 25	Nuclear Energy (Ch31)	
	W Apr 27	Elementary Particles (Ch32)	Homework 13 is Due

	F Apr 29	Astrophysics and Cosmology (Ch33)	
15	M May 2	Review	
	T May 5	8-10am, Final Exam	