

PHYS 202 College Physics Spring 2018 TR 12:45

Course Description: Fundamentals of electricity, magnetism, optics and modern physics.

Prerequisites: High school algebra and trigonometry or the equivalent. PHYS 201.

Learning Outcomes: Upon completion of PHYS 202 a student will understand the basic laws and concepts of physics in the following areas and will be able to apply them in problems relating to physical situations: electricity, magnetism, optics and modern physics .

Instructor: Lewis Ford **Web page:** faculty.physics.tamu.edu/ford **email :** ford@physics.tamu.edu

Office: MPHY 315 **Office Hours:** M noon - 1 p.m., T 11 am - noon, W 1-2 p.m. **Phone:** 324-2971

Text: Physics 10th ed Volume 2 by Young, Adams and Chastain and with Modified Mastering Physics

The mid-term exams are at 7:00 pm, room to be announced, on the following Thursdays:

Feb. 8 (Chs 17-19), March 1 (Chs 20-22), April 5 (Chs 23-26), and April 26 (Chs 28-30)

Access Mastering Physics in eCampus

There are tutorial problems and prelecture videos assigned in Mastering Physics (for grade) in addition to the problems from the textbook that are listed on the syllabus.

Grading: 4 exams 60%; Final (comprehensive) 20%; Lab7%; Recitation 5%; Homework (Mastering Phys) 8%
Scale: 90-100 A, 80-89 B, 60-79 C, 45-59 D, <45 F. Grades may be curved upward. Follow university policy on making up missed work.

You must achieve 70% or better in the laboratory in order to pass the course.

If your grade on the Final Exam is higher than your lowest grade on one of the four exams during the semester, that lowest grade will be replaced by its average with the Final in computing the course grade.

April 17 is the last day to Q-drop. Final Exam is Tuesday, May 8, 8:00-10:00 a.m.

Syllabus: (MC denotes multiple-choice problems)

Wk	Date	Topic	Sections in Text	Homework problems
1	Jan 16	electric force and field	17: 1--5	MC17: 3,5,6; 17: 10,12,14,19,21,32,33
	Jan 18	electric field; Gauss's law	17: 6--9	17: 34,40,41,42,63,69,70
2	Jan 23	potential; capacitors	18: 1--4	MC17: 7,11; 17: 54,56,57,62
	Jan 25	networks; dielectrics	18: 5--7	MC18: 2,3,9,11; 18: 1,4,10,13,15,18
				18: 19,21,30,36,41,45,46,68,71,72
3	Jan 30	dc circuits	19: 1--4	18: 53,55,56, 60,61,63
	Feb 1	Resistor networks	19: 5	MC19: 2,4,7,10,11,12; 19: 5,7,27,28,29, 31,38,44,45,46,47,65,68,76
4	Feb 6	multiloop, RC circuits	19: 6, 8	19: 50,52,53,59,60,79,80,82
	Feb 8	Review for Exam 1		
5	Feb 13	magnetic force and torque	20: 1--6	MC20: 1,3,5,6,7,8,9; 20: 4,8,10,14,18
	Feb 15	fields of wires	20: 7--10	20: 23,28,30,33,48,49,51,57,62,73,74,78

6	Feb 20	induced emf	21: 1--6	MC21: 2,5,8,11,12
	Feb 22	inductance; RL and LC	21: 7--12	21: 2,4,7,10,12,13,15,16,20,24,27,28
				21: 31,35,42,43,47,52,53,54,59
7	Feb 27	ac circuits	22: 1--5	MC22: 4,5,6,12; 22: 11,14,16,18
				22: 24,25,26,28,36,37,38
	Mar 1	Review for Exam 2		
8	Mar 6	em waves	23: 1--10	MC23: 2,3,6,9,10; 23: 13,14,16,20,21
	Mar 8	images	24: 1--4	23: 39,44,52,54,61,67,68,71,76
				MC24: 6,12; 24: 8,11,14,15,17,55
		Spring Break		
9	Mar 20	thin lenses	24: 5--6	MC24: 2,3,6; 24: 20,21,25,26,27
	Mar 22	optical instruments	25: 1--5	24: 30,37,41,43,47,48
				MC25: 7,8; 25: 9,15,17,25,29,35
10	Mar 27	interference	26: 1--2	MC26: 2,5,8,9,11
	Mar 29	thin films	26: 3	26: 3,7,9,19,22,49,51,55
11	Apr 3	diffraction	26: 4--8	MC26: 4,7,12 26: 26,28,33,40,41,43
	Apr 5	Review for Exam 3		
12	Apr 10	photoelectric effect; Bohr	28: 1--4	MC28: 1,7,10
	Apr 12	Compton; de Broglie	28: 5--8	28: 6,9,11,17,23,24,26,33,35,38,40,42,46
13	Apr 17	atoms; nuclei	29: 1--2; 30: 1--2	MC29: 1,9,10; 29: 2,8,13,37
	Apr 19	radioactivity	30: 3	MC30: 3,4,11; 30:5,8,10,12,18,20,60
14	Apr 24	nuclear reactions	30: 5--7	30: 33,38
	Apr 26	review for Exam 4		

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