

PHYS 202 College Physics Spring 2019 MWF 10:20

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 2 – 3 p.m., W 1 - 2 p.m. **Phone:** 458-7908

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:

February 7 (Chs 17-19), February 28 (Chs 20-22), April 4 (Chs 23-26), and April 25 (Chs 28-30)

Access Mastering Physics in eCampus

There are tutorial problems 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 16 is the last day to Q-drop. Final Exam is Monday, May 6, 8:00-10:00 a.m.

Syllabus: (MC denotes multiple-choice problems)

Wk	Date	Topic	Sections in Text	Homework problems
1	Jan. 14	Coulomb's law	17: 1--4	MC17: 3,5,6,7,11
	Jan. 16	electric field	17: 5--6	17: 10,12,14,19,21,32,33,34,40,41,42
	Jan. 18	Gauss's law	17: 7-9	17: 54,56,57,62,63,69,70
2	Jan. 21	No Classes		
	Jan. 23	potential	18: 1-3	MC18: 2,3,9,11; 18: 1,4,10,13,15,18
	Jan. 25	capacitors	18: 4-5	18: 19,21,30,36,41,45,46,68,71,72
3	Jan. 28	dielectrics	18: 6-7	18: 53,55,56, 60,61,63
	Jan. 30	dc circuits	19: 1-3	MC19: 2,4,7,10,11,12
	Feb. 1	resistor networks	19: 4-5	19: 5,17,27,28,29,31,38,44 19: 45,46,47,65,68,76
4	Feb. 4	multiloop, RC circuits	19: 6-8	19: 50,52,53,59,60,79,80,82
	Feb. 6	examples; review		
	Feb. 8	Discussion of Exam 1		
5	Feb. 11	magnetic force	20: 1-4	MC20: 1,3,5,6,7,8,9
	Feb. 13	magnetic force and torque	20: 5-6	20: 4,8,10,14,18,23,28,30,33,48,49
	Feb. 15	fields of wires	20: 7-10	20: 51,57,62,73,74,78

6	Feb. 18	induced emf	21: 1-5	MC21: 2,5,8,11,12
	Feb. 20	inductance	21: 6-9	21: 2,4,7,10,12,13,15,16,20,24,27,28
	Feb. 22	<i>RL</i> and <i>LC</i> circuits; ac circuits	21: 10-12 22: 1-2	21: 31,35,42,43,47,52,53,54,59
7	Feb. 25	ac circuits	22: 3-5	MC22: 4,5,6,12; 22: 11,14,16,18
	Feb. 27	power; series resonance		22: 24,25,26,28,36,37,38
	Mar. 1	Discussion of Exam 2		
8	Mar. 4	em waves	23: 1-6	MC23: 2,3,6,9,10; 23: 13,14,16,20,21
	Mar. 6	reflection, refraction	23: 7-10	23: 39,44,52,54,61,67,68,71,76
	Mar. 8	images by mirrors	24: 1-3	MC24: 6,12; 24: 8,11,14,15,17,55
		Spring Break		
9	Mar.18	images by refraction	24: 4	MC24: 2,3; 24: 20,21,25,26,27
	Mar.20	thin lenses	24: 5-6	24: 30,37,41,43,47,48
	Mar.22	optical instruments	25: 1-5	MC25: 7,8; 25: 9,15,17,25,29,35
10	Mar.25	interference	26: 1-2	MC26: 2,4,5,7,8,9,11,12
	Mar.27	thin films	26: 3	26: 3,7,9,19,22,26,28,49,51,55
	Mar.29	diffraction	26: 4-5	
11	Apr. 1	diffraction	26: 6-8	26: 33,40,41,43
	Apr. 3	examples; review		
	Apr. 5	Discussion of Exam 3		
12	Apr. 8	photoelectric; spectra	28: 1-2	MC28: 1,7,10
	Apr.10	Bohr model	28: 3-4	28: 6,9,11,17,23,24,26,33,35,38,40,42,46
	Apr.12	Compton; matter waves	28: 5-8	
13	Apr.15	atomic structure	29: 1-2	MC29: 1,9,10; 29: 2,8,14,37
	Apr.17	nuclei; radioactivity	30: 1-3	MC30: 3,4,11; 30:4,8,10,12,18,20,60
	Apr.19	Reading Day		
14	Apr.22	nuclear reactions	30: 5-7	30: 34,38
	Apr.24	examples; review		
	Apr.26	Discussion of Exam 4		
15	Apr.29	review		
	Apr.30	review		

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