

## PHYS 202 College Physics Spring 2018 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 .

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

**Text:** Physics 10<sup>th</sup> 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 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 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 Monday, May 7, 8:00-10:00 a.m.

Syllabus: (MC denotes multiple-choice problems)

Wk	Date	Topic	Sections in Text	Homework problems
1	Jan. 15	No Classes		
	Jan. 17	Coulomb's law	17: 1--4	MC17: 3,5,6; 17: 10,12,14,19,21,32,33
	Jan. 19	electric field	17: 5--6	17: 34,40,41,42,63,69,70
2	Jan. 22	Gauss's law	17: 7-9	MC17: 7,11; 17: 54,56,57,62
	Jan. 24	potential	18: 1-3	MC18: 2,3,9,11; 18: 1,4,10,13,15,18
	Jan. 26	capacitors	18: 4-5	18: 19,21,30,36,41,45,46,68,71,72
3	Jan. 29	dielectrics	18: 6-7	18: 53,55,56, 60,61,63
	Jan. 31	dc circuits	19: 1-3	MC19: 2,4,7,10,11,12
	Feb. 2	resistor networks	19: 4-5	19: 5,17,27,28,29,31,38,44 19: 45,46,47,65,68,76
4	Feb. 5	multiloop, RC circuits	19: 6-8	19: 50,52,53,59,60,79,80,82
	Feb. 7	examples; review		
	Feb. 9	Discussion of Exam 1		
5	Feb. 12	magnetic force	20: 1-4	MC20: 1,3,5,6,7,8,9
	Feb. 14	magnetic force and torque	20: 5-6	20: 4,8,10,14,18,23,28,30,33,48,49
	Feb. 16	fields of wires	20: 7-10	20: 51,57,62,73,74,78

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

**Americans with Disabilities Act (ADA) Policy Statement:** The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. **If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu>.**

**Academic Integrity Statement:** “An Aggie does not lie, cheat, or steal or tolerate those who do.”

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