

CHAMINADE UNIVERSITY
PHY-252: UNIVERSITY PHYSICS II
COURSE SYLLABUS – SPRING 2014

Instructor: Matthew Cochran
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Office: Henry Hall room 7
Office Phone: 739-8361
Office Hours: After class (specific times will be announced) or by appointment
Course Time: Monday, Wednesday, and Friday from 10:30 to 11:20
and Thursday from 5:30 to 6:50
Course Room: Ching Hall 254
Prerequisites: MA-211 and PHY-251. Concurrent enrollment in PHY-252L is assumed.
Required Text: R. Knight, *Physics for Scientists and Engineers*, 3rd ed., Pearson, New York, 2013.
Other Materials: Scientific Calculator

COURSE DESCRIPTION:

This course is the second part of a two-semester introductory physics sequence focusing on the application of physical principles, logical reasoning, and mathematical analysis needed to understand a broad range of natural phenomena. Topics include classical electricity and magnetism, waves and optics, and modern physics.

EVALUATIONS AND GRADING SCALE:

Exam 1	20%
Exam 2	20%
Exam 3	20%
Final	20%
Homework and Quizzes	20%
90% – 100%	A
80% – 90%	B
70% – 80%	C
60% – 70%	D
0% – 60%	F

Incomplete grades (I) will be given in accordance with college regulations as outlined in the college catalog. Withdrawals (W) from the class are the responsibility of the student and deadlines are set by the college.

EXAMS:

There will be four examinations as part of the requirements for the course. The exams will be, by necessity, cumulative. Physics is sequential and its concepts must be learned in order. Material for exams will be drawn primarily from homework problems. Hence, the best way to review for an exam is to review previous homework assignments. Makeup exams will only be given under extenuating circumstances beyond the student's control.

QUIZZES AND HOMEWORK:

A ten minute quiz will be given most week. Quizzes may be given at the beginning of class, so arrive on time. Makeup quizzes are not given.

To be successful in this course, it is essential that you complete all homework assignments. Be prepared to spend three hours or more on homework every week. If you are having trouble, get help from the instructor, the tutor, or your classmates. Do not fall behind. Homework is due at the beginning of class. Late homework is not accepted. In particular, homework over a week late is never accepted.

During the semester, there will be around twenty-five homework assignments and quizzes. Of these, the twenty highest scores will be used to calculate your grade. Lower scores will be dropped.

ATTENDANCE:

Regular attendance is expected of all students. Read material prior to lecture. If a topic is still not clear after it has been discussed in class, ask questions. Time will be spent working through homework problems and reviewing for exams in addition to lecturing. You will work with partners in class. It is important that partners engage in discussion of their work and avoid working as isolated individuals.

STUDENT LEARNING OUTCOMES:

Upon successful completion of the course, the student will be able to:

- Solve given problems involving electricity and magnetism using algebra and trigonometry.
- Solve given problems involving light and optics using algebra and trigonometry.
- Solve given problems involving relativity and quantum physics using algebra and trigonometry.

MUSIC DEVICES AND CELLPHONES:

Unless specifically permitted by your instructor, use of music devices or cell phones is prohibited during all Natural Science and Mathematics classes at Chaminade, as it is discourteous and may lead to suspicion of academic misconduct. Students unable to comply will be asked to leave class.

ADA ACCOMODATIONS:

Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from CUH Counseling Center (Dr. June Yasuhara, 735-4845) by the end of the third week of classes. Failure to provide written documentation will prevent your instructor from making necessary accommodations. Please refer any questions to the Dean of Students and review procedures at:

www.chaminade.edu/student_life/sss/counseling_services.php

TENTATIVE SCHEDULE

Week	Date	L#	Lecture Topic	Reading	Due
1	Jan 13	1	Intro; Charge		
	Jan 15	2	Coulomb's Law	25.1 to 25.4	
	Jan 17	3	The Field Model	25.5	
2	Jan 20	H1	Martin Luther King Day		
	Jan 22	4	Electric Fields; Q 1	26.1 & 26.2	HW 1
	Jan 24	5	Continuous Charge Distributions	26.3 to 26.5	
3	Jan 27	6	Electric Fields and Forces; Q 2	26.6	HW 2
	Jan 29	7	Flux	27.1 to 27.3	
	Jan 31	8	Gauss's Law	27.4 & 27.5	
4	Feb 03	9	Energy and Potential Energy; Q 3	28.1 & 28.2	HW 3
	Feb 05	10	Electric Potential	28.4 to 28.6	
	Feb 07	11	Review		
5	Feb 10	E1	EXAM1 – Chapters 25 to 28		
	Feb 12	12	Relating Potential and Field	29.1 to 29.3	
	Feb 14	13	Capacitors	29.4 & 29.5	
6	Feb 17	H2	Presidents' Day		
	Feb 19	14	Current and Resistance; Q 4	30.3 to 30.5	HW 4
	Feb 21	15	Circuits; Kirchhoff's Rules	31.1 to 31.4	
7	Feb 24	16	Circuits; Resistors Circuits; Q5	31.6 & 31.7	HW 5
	Feb 26	17	RC Circuits	31.9	
	Feb 28	18	Magnetism	32.1 & 32.2	
8	Mar 03	19	Fields from Current; Q 6	32.4 & 32.6	HW 6
	Mar 05	20	Force on a Moving Charge or Wire	32.7 & 32.8	
	Mar 07	21	Review		
9	Mar 10	E2	EXAM2 – Chapters 29 to 32		
	Mar 12	22	Lenz's Law	33.1 & 33.3	
	Mar 14	23	Faraday's Law	33.4	
10	Mar 17	24	Waves; Sin Waves; Q 7	20.1 to 20.4	HW 7
	Mar 19	25	Sound and Light; Intensity	20.5 & 20.6	
	Mar 21	26	Doppler Effect	20.7	
-			Spring Break		
11	Mar 31	27	Superposition and Standing Waves; Q 8	21.1 to 21.4	HW 8
	Apr 02	28	Interference in 1D	21.5 & 21.6	
	Apr 04	29	Interference in 2D	21.7	
12	Apr 07	30	Interference; Q 9	22.1 to 22.3	HW 9
	Apr 09	31	Diffraction	22.4 & 22.5	
	Apr 11	32	Review		
13	Apr 14	E3	EXAM3 – Chapters 33, 20 to 22		
	Apr 16	33	Reflection and Refraction	23.1 to 23.5	
	Apr 18	H3	Good Friday		
14	Apr 21	34	Ray Tracing; Lenses; Q 10	23.6 to 23.7	HW 10
	Apr 23	35	Mirrors	23.8	
	Apr 25	36	Modern Physics	37.1 to 37.3	
15	Apr 28	37	Modern Physics; Q 11	37.4 to 37.8	HW 11
	Apr 30	38	Photoelectric Effect	38.1 to 38.3	
	May 02	39	Bohr Atom	38.4 to 38.7	
Thurs	May 08	FE	11:00 to 1:00 – FINAL – Cumulative		