

Lecture: TTH 11:00 am - 12:45 pm

Room: 301 CH Office: 308 CH

Instructor: Dr. Harrison

Off Hrs: MWF 10:00 - 11:00

Textbook: Fundamentals of Physics (6<sup>th</sup> Ed.) by Halliday, Resnick, & WalkerCourse webpage: <http://homework.phy.uab.edu/~harrison/phys222>email: [jgharrison@uab.edu](mailto:jgharrison@uab.edu)Composition of Final Course Grade

Exam I	15%	(60 min)	} <i>The 1-hour exams will be given during the <u>last hour of the period.</u></i>
Exam II	20%	(60 min)	
Exam III	20%	(60 min)	
Laboratory	15%	<u>(transfer of an old lab grade is your responsibility)</u>	
Quizzes	5%	(unannounced, open-book, open notes, at end of period)	
Final Exam	25%	<u>(comprehensive</u> 2.5 hours Thur., April. 29, 10:45 - 1:15 pm)	
Homework	5 %	(i.e. up to 5 points <i>extra credit</i> added to course grade)	

Withdrawing From This Course

The last day to withdraw from a course with a grade of "W" is March 9, 2004. See the 2003-04 Undergraduate Catalog (<http://main.uab.edu/show.asp?durki=58266>) for the full policy.

Use of reference material during exams

You may bring to each exam one 5" x 8" card on which you may write anything you feel may be useful (formulas, examples, etc.). The card must have your name printed at the top and must be turned in with the examination paper.

Problem Assignments

You will be given a set of individualized homework problems to be collected and graded by the CAPA system. The grade assigned by CAPA can be used to increase your final course grade by up to 5 points. An extra set of problems, listed in the table below, will *not* be graded, but solutions will be posted on the course web page after the "post date." You should work through the problems on your own before going through the posted solutions. *Do not fall into the trap of thinking that you can adequately prepare for the exams by just reading through the solutions. Success on the exams depends on your ability to solve problems not just your ability to follow solutions.*

Major Topics/Objectives

The principal topics this semester will be the subjects of 1) electrostatics, the study of the properties of electric charges at rest; 2) electric circuit analysis which is the basis of more advanced study and which will allow us to understand some applications in everyday life; 3) magnetism, the study of magnetic forces and their origins; 4) electromagnetism, the study of the fundamental connection between electric and magnetic fields; 5) elements of geometrical and physical optics. We will use trigonometry, vectors, differential and integral calculus as tools to quantify our study. Especially in the highly condensed semester schedule, it is *essential that you keep up with the material covered* and not try to catch up after a lapse of several lectures.

## Syllabus

The following syllabus is tentative; all changes will be announced in class. You are responsible for any changes, such as exam dates or chapters to be included on an exam

<b>Syllabus</b>		
<b>Week of</b>	<b>Tue.</b>	<b>Thu.</b>
<b>Jan. 4</b>	22.1 - 22.6	23.1 - 23.6
<b>Jan. 11</b>	23.6- 23.8; 24.1 - 24.3	24.3 - 24.8
<b>Jan. 18</b>	24.9; 25.1 - 25.5	25.6 - 25.10; 26.1 - 26.2
<b>Jan. 25</b>	26.2 - 26.8	<b>Exam I (Ch. 22 - 25)</b>
<b>Feb. 1</b>	27.1 - 27.5	27.5 - 27.7; 28.1 - 28.3
<b>Feb. 8</b>	28.4 - 28.8	28.8; 29.1 - 29.6
<b>Feb. 15</b>	29.6 - 29.9; 30.1 - 30.3	30.3 - 30.5
<b>Feb. 22</b>	31.1 - 31.4	<b>Exam II (Ch. 26 - 29)</b>
<b>Feb. 29</b>	31.5 - 31.9	31.10 - 31.11; 32.1 - 32.3
<b>Mar. 7</b>	(skip 32.4 - 32.8) 32.9 - 32.11	(skip 33.1 - 33.4) 33.5 - 33.9
<b>Mar. 14</b>	33.10 - 33.11; 34.1 – 34.3	34.3 - 34.8
<b>Mar. 21</b>	<b>SPRING BREAK</b>	
<b>Mar. 28</b>	34.8 - 34.9; 35.1 – 35.2	35.2 - 35.7
<b>Apr. 4</b>	35.7; 36.1 - 36.4	<b>Exam III (Ch. 30 - 34)</b>
<b>Apr. 11</b>	36.4 - 36.7	36.7; 37.1 – 37.3
<b>Apr. 18</b>	37.4 – 37.6	37.6 – 37.8 (skip 37.9)
<b>Apr. 25</b>		<b>Final Exam [10:45 - 1:15 pm]</b>

Problem Assignments					
#	CAPA Problems	Extra Problems	Ch#	Pgs	Post *
1	3, 7, 15, 20, 25	2, 5, 6, 12, 26	22	518-519	Jan. 13
2	7, 15, 21, 23, 35	8, 12, 13, 16, 19, 24, 25, 27, 39, 40, 43	23	539-542	Jan. 15
3	9, 13, 29	7, 10, 12, 15, 19, 20, 25, 26, 31, 43, 45	24	559-563	Jan. 22
4	3, 13, 17, 43, 53	5, 8, 15, 21, 26, 29, 31, 33, 39, 44, 52	25	584-587	Jan. 26
5	3, 7, 13, 27, 41	1, 8, 9, 16, 18, 21, 24, 29, 36, 38, 46	26	608-610	Jan. 29
6	3, 15, 25, 37, 41	6, 10, 17, 27, 29, 33, 38, 39, 42	27	630-632	Feb.10
7	7, 13, 27, 35, 45	5, 9, 10, 12, 14, 20, 28, 31, 33, 37, 49, 55	28	654-657	Feb.16
8	3, 11, 24, 35, 51	4, 10, 12, 14, 23, 25, 30, 32, 37, 45, 53	29	682-685	Feb.19
9	1, 19, 25, 29, 46	6, 8, 12, 15, 23, 28, 32, 36, 38, 43, 50, 58	30	705-709	Feb.24
10	20, 32, 46, 50, 59	3, 4, 7, 11, 18, 24, 27, 29, 39, 40, 42, 43, 44, 53, 63	31	738-743	Mar. 9
11	2, 27, 35, 37	3, 28, 30, 34, 38	32	765-767	Mar.11
12	1, 2, 12, 13, 19	31, 32, 35, 40, 41, 48, 56, 58, 62, 65	33	797-800	Mar.18
13	1, 6, 46, 52, 55	34, 36, 43, 45, 47, 49, 53, 54	34	829-832	Apr. 1
14	1, 2, 17, 19, 33	5, 9, 10, 21, 23, 26, 28, 34, 37	35	857-860	Apr. 8
15	3, 5, 8, 12, 19	6, 9, 11, 13, 16, 21	36	884-889	Apr. 20
16	1, 5, 6, 33, 34	4, 7, 16, 20, 37, 47	37	913-917	Apr. 23

\* Solutions for *Extra Set* will be posted after this date