

## SYLLABUS

PHS 1440                      COLLEGE PHYSICS II                      4 HOURS

Semester:                      SPRING 2012

INSTRUCTOR:                      Dr. George Saum

Office:                      Room 16                      A & S Bldg.                      HOURS                      12:00 – 1:00 MTWR 10:00 F  
 Lab:                      Room 112  
 Phone:                      573-518-2174  
 Email                      GSAUM@mineralarea.edu

SCIENCE DEPT CHAIR:                      Dr. Gamble                      AS 212B                      573-518-2195

An introduction to the nature of physical science in which the areas of physics of electricity and magnetism, optics, atomic physics, and nuclear physics are studied.

Course Schedule:

Lecture	M W F	11:00 - 11:50
Lab	F	12:00 - 1:50

Reference Materials:

Text:                      Physics Principles with Applications  
 By D. C. Giancoli, 6th edition                      Prentice Hall 2005  
 ISBN                      0-13-060620-0

Lab Manual:                      Handouts will be provided for the lab experiments

Other Materials: Scientific Calculator

Course Content:

Week	Chapter	Content
1	16	Electric Charge and Electric Field
2	17	Electric Potential, Electric Energy, Capacitance
3	18	Electric Currents
4	19	DC Circuits
5	19	DC Circuits
6	20	Magnetism
7	21	Electromagnetic Induction, Faraday's Law, AC Circuits
8	22	Electromagnetic Waves
9		SPRING BREAK
10	23	Light , Geometric Optics
11	24	Wave Nature of Light
12	25	Optical Instruments
13	25	Optical Instruments
14	27	Quantum Theory and Model of the Atom
15	28	Quantum Mechanics of the Atom
16	30	Nuclear Physics and Radioactivity
17	31	Nuclear Energy, Effects of Radiation

Evaluation:

Homework	10 %
Lab	20 %
Tests	70%

## **SCHOOL POLICIES:**

### **Attendance:**

Disciplined attendance is strongly encouraged.  
School policy requires dropping students with excessive absences.  
Poor attendance will severely impact your classroom performance.

### **American Disabilities Act**

If you have special needs as addresses by the American Disabilities Act and you need any test or course materials provided in alternative format, notify your instructor immediately. Reasonable efforts will be made to accommodate your special needs.

**Cell Phones** are **not allowed** in the **classrooms**, nor the **computer lab**. When you are in a classroom or the computer lab, please turn your cell phone off or put it on vibrate. Getting a phone call in the middle of class or in a room full of students who are trying to study or take a test can be very disruptive. If you need to take a call or make a call, please take it outside.

### **MAC's Policy for Disciplinary Action**

“...College discipline shall be exercised when student misconduct adversely affects the college’s pursuit of its educational objectives. Misconduct for which students are subject is defined as follows: Dishonesty, such as cheating, plagiarism, or knowingly furnishing false information to the college” (Mineral Area College Board Policy Manual, section 5.72, IA., p. 99).

SCHEDULE FOR : COLLEGE PHYSICS II PHYS 1440 SPRING 2012

WEEK	DAY	CHAPTER	SECTION	PROBLEMS			
1	JAN 11	16 Electric Charge/Field	16	1-6	2,3,5,10	$8.2 \times 10^{-8}$ N	$3.6 \times 10^{-47}$ N
	13	16		7-8	27,31		
2	16	<b>MLK DAY</b>					
	18	16		10	58,59		
	20	17 Electric Pot, Energy, Cap	17	1-4	3,9,11,13,17,19		
3	23	17		6-8	33,37,39,43		
	25	17		9-10	47,49		
	27	18 Electric Currents	18	1-4	1,3,7,11,13,19		
4	30	18		5-7	27,29,33		
	FEB 1	NO PHYSICS CLASS					
	3	18		8-10	43,45,47,53,55		
	6	19 DC Circuits	19	1-2	1,5,9,13,17		
5	8	Review					
	10	<b>TEST 16-17-18</b>					
6	13	19		3-6	27,29,37,39		
	15	19		7-11	49,53,55,57		
	17	20 Magnetism	20	1-4	3,9		
7	29	<b>PRESIDENT'S DAY</b>					
	22	20		5-15	21,23,33		
	24	21 EM Ind., AC Circuits	21	1-3	1,2,5	ccw	
8	27	21		4-7	19,33,35,37		
	29	21		9-14	39,41,43		
	MAR 2	22 EM Waves	22	1-5	7,8	$4.6 \times 10^{14}$ hz	red
9	5	Review					
	7	<b>TEST 19-20-21</b>					
	9	22 EM Waves		6-8	22,23,27,28	$1.41 \times 10^3$ v/m	$4.7 \times 10^{-6}$ T
	12-16	<b>SPRING BREAK</b>					
10	19	23 Light, Geometric Optics	23	1-3	1,9,11,21		
	21	23		4-7	27,31,37,39		
	23	23		8-9	45,49,67,69,71		
11	26	24 Wave Nature of Light	24	1-4	3,5,11,15		
	28			5-7	19,21,27,31		
	30	24		8-11	39,41,53,55,57		
12	Apr 2	25 Optical Instruments	25	1-3	1,5,19,21,23		
	4	25		4-5	29,33,39,41		
	6	<b>SPRING BREAK</b>					
	9	25		7-9	51,53		
13	11	Review					
	13	<b>TEST 22-23-24-25</b>					
	16	27 Quantum Theory of Atom	27	1-4	1,3,11,16,18	3 photons	401 nm
14	18	27		5-7	38,39,41	$6.12 \times 10^{-12}$ m	
	20	27		9-10	47,49,52		435 nm
	23	28 Quantum Mechanics	28	1-7	1,3,5,13, 15,17		
15	25	28		8-12	31,33		
	27	30 Nuclear Physics, Decay	30	1-8	1,3,9,11,19,21		
	30	30		9-11	37,39,41		
16	May 2	31 Radiation Effects	31	1-4	1,5,21,25		
	4	31		1-4	26,28		
	7	Review					
	MAY 11 10:00	<b>FINAL EXAM</b>	CH 27-28-20-31				