MERCER COUNTY COMMUNITY COLLEGE

Math Science and Health Professions

College Physics II

PHY 102 Fall 2017

Course Description

This is the second part of a two-semester sequence of algebra-based physics. Topics include electricity, magnetism, circuits, electromagnetic wave, optics, and modern physics. Algebra and trigonometry are applied throughout the course. Lecture 3 hours/lab 3 hours.

Prerequisites/Co-requisites

Pre-requisite: PHY 101

Student Learning Outcomes

1. Students will be able to gain knowledge of a broad introduction to physics at the beginning college level and develop physical intuition and problem-solving skills.
2. Students will learn to handle a variety of instruments and development critical thinking skills through hands-on laboratory experience.
3. Students learn to design and carry out simple experiments applying theory learnt in the class.

Course Materials: PLEASE BRING TEXTBOOKS AND CALCULATOR TO FIRST CLASS!

1. Required textbook:
   Serway and Vuille
   College Physics, volume II
   10th Edition
   Cengage
2. Required Laboratory Manual:
   Huang & Morozova
   PHY 102 Laboratory
   MCCC
3. A note book and three pens are needed.
4. A scientific calculator is required for lecture, laboratory and tests. No cell phone, 89, 92, Voyage, or Nspire can be used in a test.

Class Attendance Policy

Students are required to attend all classes and should sign attendance sheet each day. In case of transportation, medical or other emergencies, relevant documentation is required to be submitted to instructor within a week. Such documents include car repair invoice, doctor's note, court note, etc. Undocumented tardiness and absence will result in lowered grade.

Student Dress Policy

Students are required to dress appropriately. Please keep in mind that the class will share limited space and you'll need to sit, stand, stretch, bend over, and crawl sometimes. Please also take into consideration that clothes may shrink and shrink again.

Supporting Services

Our faculty provides office hours to help students with questions. The best way to take advantage of the time is to go prepared with specific questions to ask. Record the instructor's information here:

Name	Email or Phone	Office Hours

Course website includes course information. http://www.mccc.edu/~huangj/

Mercer email is used to enhance the communication for the course. Please set up the email and check it or have it forwarded to an email that is checked regularly. Our library holds the text book for in-library use. Our tutoring center provides tutors for Physics. It is located behind the bookstore. Please check out the schedule.

Mercer County Community College is committed to ensuring the full participation of all students in all activities and programs. If you have a documented differing ability or think that you may have a differing ability that is protected under the ADA or Section 504 of the Rehabilitation Act, please contact Arlene Stinson in LB216 {stinsona@mccc.edu} for information regarding academic accommodations and additional support services.

Campus Security

Emergency number for campus security is (609) 570-2222. The non-emergency number for campus security is (609) 570-3503. Please store these numbers in your cell phone.

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Schedule of Lecture and Experiments

Week	Dates	Experiment	Lecture	Homework Assignments
1	8/29, 31	Introduction & Math Overview	15.1, 15.2, 15.3 Coulomb's Law	M: 1, 2, 3, 7 C: 1, 2, 3, 8, 9, 11 P: 4, 5, 10, 19, 30, 31
		Circuit Diagram and Circuit Construction Meters	15.4, 15.5 The Electric Field	
2	9/5, 7	The Electric Field & Equipotential surface	16.1, 16.2, 16.4 Equipotential Surface	M: 1, 2, 3, 4, 7, 11, 12 C: 1, 4, 5, 8, 11, P: 1, 3, 4, 12, 26, 28, 33, 34, 35, 45, 48
		Capacitance	16.6, 16.8, 16.7, 16.9 Capacitance	
3	9/12, 14	Current & Voltage Ohm's Law	17.1, 17.2, 17.3 Current & Voltage	M: 6, 7, 9, 10, 11, 12, 13 C 1, 6, 7, 8, 10 P: 11, 15a, 25, 33, 35, 37, 39, 43, 45, 47
			17.4, 17.5, 17.6 Ohm's Law	
4	9/19, 21	Review Class Evaluation	Review Class Evaluation	
		GLX	Test 1 (chap. 15-17)	
5	9/26, 28	Wheatstone Bridge Or RC Circuit	18.1 - 18.3	M: 1, 2, 3, 4, 5, 6, 8, 9,10 C: 2, 4, 6, P: 1, 3, 5, 7, 9, 11, 13, 31, 33
			18.5, 18.6, 18.7	
6	10/3, 5	Earth's Magnetic Field	19.2, 19.3, 19.4 Magnetic Force	M: 1, 2, 4, 5 C: 2, 3, 5, 12 P: 1, 3, 13, 15, 17, 43, 47, 55
			19.5, 19.9 Magnetic Field	
7	10/10, 12	Induced Voltage Magnetic Field of A Solenoid	20.1, 20.2, 20.5 Induced Voltage	M: 1, 2, 4, 6, 7 C: 1, 2, 3, 5, 7 P: 1, 8, 33, 45, 46, 53
			20.6, 20.7, 20.8 Energy in Magnetic Field	
8	10/17, 19	RC Circuits	Review	
			Test 2 (chap. 18-20)	

3	10/24, 26	AC circuits (R, L, C)	21.1, 21.2, 21.3, 21.4 AC circuits	M: 1, 2, 3, 4 C: 10 P: 1, 2, 4, 8, 9, 13, 14, 37, 38, 59, 60
			21.6, 21.11, 21.12 Electromagnetic wave	
4	10/31 11/2	Refraction Reflection	22.1, 22.2, 22.3 Reflection & refraction	M: 1, 2, 3, 4, 5, 6, 7, 8, 9 C: 2, 4, 5, 8 P: 5, 7, 9, 15, 37
			22.4, 22.5, 22.7 Total Internal Reflection	
4	11/7, 9	Mirrors	23.1, 23.2, 23.3 Mirrors	M: 1, 2,3,4, 5, 7, 8, 9, 10 C: 5, 7, 11, 13 P: 1, 6, 7, 9, 21, 31, 36, 38
		Lenses	23.4, 23.6 Lenses	
4	11/14, 16		Review	
		Field Measurements (if weather permits)	Test 3 (chap. 21-23) Class Evaluation	
5	11/21 11/28	Double Slit Interference	24.1, 24.2 Interference	M: 1, 2, 4; C: 2, 8, 12 P: 1, 4, 8, 16, 17, 39, 52
		Diffraction Grating	24.4, 24.8, 24.9 Grating	
5	11/30 12/5	Hydrogen Spectrum	Atom Spectrum 28.1, 28.2, 28.3	M: 1, 3, 4, 5, 6, 7 C: 1, 2, 8, 11 P: 1, 2, 13, 15, 27, 28, 30, 32
			29.1, 29,2, 29.3	M: 1, 3, 4, 5, 6, 7, 8, 9, 10, 11 C: 1, 3, 6 P: 1, 4, 10, 13, 19, 20, 25, 33
5	12/7, 12	Radioactivity	29.4, 29.5 Nuclear Physics	
			Test 4 (Cumulative)	
6	12/14-19	Final Exam		

Class Survey of Student Opinion 1. What do you like about this class? 2. What do you dislike about this class? 3. What do you think can be done differently to make this class better?	Class Survey of Student Opinion 1. What do you like about this class? 2. What do you dislike about this class? What do you think can be done differently to make this class better?

Preclass Survey Name _____ Date _____

1. What's your major?

2. What's your experience with the last physics class you took?

3. One the scale of 1 to 10, how much effort do you put in studying physics? Please explain.

4. Is there anything else you would like the instructor to know about you?