

THREE RIVERS COMMUNITY COLLEGE
COURSE OUTLINE

Course Number/Title: PHY 222 Calculus-Based Physics II

Meeting: Tuesday (Room B208) Thursday (Room A216) Time: 7-9:45pm

Lecture 3 hrs Laboratory 3 hrs Credit 4 hrs Contact 6 hrs

Course Description: The course is a continuation of PHY221(Calculus Based-Physics I) and will cover fundamental principles of waves and sound, electricity, magnetism, electromagnetic fields and waves, and optics. An introduction to Special Relativity, quantum and Atomic physics will be included.

Text: Physics for Scientists and Engineers with Modern Physics 4th ed. 2009 (Giancoli)
Student study guide to the text is optional.

Reference: College Physics, Serway and Faughn, 2011

Prerequisites: MATH 186 (Precalculus); PHY 221 Co-Requisites: Math 256

COURSE TOPICS/CONTENT

<u>WEEK</u>	<u>TOPIC</u>	<u>LAB</u>
1	waves and sound	speed of sound
2	electrostatics	fields and potentials
3	capacitance	capacitors
4	current and voltage	Ohm's Law
5	DC circuits	series/parallel circuits
6	electromagnetism	oscilloscope/AC measurements
7	electromagnetic induction	inductors
8	AC circuits	RLC circuits
9	EM spectrum/reflection and refraction	reflection and refraction
10	mirrors and lenses	lens systems
11	wave optics	slits and gratings
12	optical instruments	the spectrometer
13	special relativity	photoelectric effect
14	quantum physics	Franck Hertz experiment
15	atomic physics/review	lab exam
finals week	final exam	

Date: August 27, 2019

Instructor: Christopher Martineau

Instructor email: cmartineau@qvcc.commnet.edu

Instructor alternate email: chrismartineau42@gmail.com

Grade Breakdown:

Labs 25%

All other assessments 75% (Quizzes count once. Tests count 3 times)

Assignment expectations:

Labs: There will be regularly performed labs, usually once a week. The lab report will be due one week after performing the lab. Late work is not accepted. While a general lab format should be followed, lab specifics will be different for most labs. These specifications will be made available on Blackboard and/or in class the day of the lab. Missed labs are VERY difficult to make up. Absence for lab must be communicated to the instructor ASAP. The instructor reserves the right to grant or deny the student access to a lab makeup and the decision regarding this are non-negotiable.

Quizzes: There will be regular quizzes, usually weekly. The quiz will be on the material from the class before. It is the student's responsibility to get any missed notes/assignments from students in the class if a class is missed, but if the student is present the day of a quiz, they are required to take the quiz, regardless of previous absences.

Tests: See above. Same as quiz policy.

Homework: Students will be given regular homework assignments. The assignments will be graded for accuracy. The student will receive a point total for each assignment. The total of these earned points will be reported as a percent of the total possible points and this will be averaged into your TEST average by the end of the semester. This is intended to help your homework average.

Miscellaneous Notes

- Keep all graded assignments. They are a record for any grade discrepancies.
- Check your school email often, maybe once a day. This is the only way I can communicate when we are not in class. If class is canceled, I will do this as early in the day as possible.
- Check Blackboard periodically to check your grade.
- Attendance is not part of your grade, however it is the student's responsibility to keep up with all lecture material.
- I will answer emails within 24 hours (if possible). I will help with homework questions as best I can via email, but I am not available 24/7.
- Anything done last minute is never a good idea. I am not very helpful if this is the case
- Of course, academic dishonesty is not tolerated. I suggest you talk to your lab partners if you are having trouble with a lab, but your work must be your own. Quizzes and Tests are taken at tables so looking at other people's assessments will not be tolerated. Any dishonesty will earn no credit for those involved. The instructor reserves the right to make these decisions if the need arises.

Good Luck!!