

Physics 214 Lecture with Lab Included (4 Credit Hours)

Physics 217 Recitation (1 Credit Hour)

Instructor: Mr. Michael Smith

Contact Information:

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Text: Sears and Zemansky's University Physics with Modern Physics by Hugh D. Young and Roger A. Freedman with Mastering Physics online access

Course Objectives:

This is the second of a two-semester introductory, engineering physics sequence.

Topics include: Electric Charges, Forces and Fields, Gauss's law, Electric Potential, Potential and Field, Current and Resistance, Fundamental Circuits, Magnetic Fields, Electromagnetic Induction, Ray Optics, Wave Optics, Modern Optics and Matter Waves, A Macroscopic Description of Matter, Work, Heat, and the 1st Law of Thermodynamics, The Micro/Macro Connection, Heat Engines and Refrigerators. The course has both a lecture and a required laboratory component.

Aim: To build a good foundation in the principles of Optics, Electricity and Magnetism and Thermodynamics in order to understand how these principles are applied in the world around us.

Course Policies:

- Violations of academic integrity will not be tolerated and will be dealt with according to college policy.
- Any student who requires accommodations under the Americans with Disabilities Act should contact the College Coordinator for ADA in the office of the Registrar.
- You are expected to attend all classes and labs.
- If you choose to stop attending this class, it is your responsibility to make sure you go through the drop procedure. **No one else can accomplish this for you.** If you stop attending class and fail to go through the drop procedure, you will receive zeros on all missed work.
- You are responsible for all material that you miss due to an absence, excused or unexcused. It is your responsibility to address this matter.
- No make-up test will be given during class time. If a test is missed for an excused absence, it may be made up at a time and date set by the instructor.
- Tests will be worth 100 points each and the final exam will be comprehensive and worth 150 points.
- The instructor reserves the right to make changes throughout the course.

➤ PHY 214 Course Grades:

Tests and Final Exam	75%
Labs	25%

➤ PHY 217 Recitation Grades:

Homework/Quizzes	100 %
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- If you have a problem, please talk with your instructor about it immediately. All problems have solutions.

This is a fast paced course and will require considerable study time for most students.

Lab:

The labs required for Physics 214 are an integral part of the course. The primary purpose for the lab component of your physics course is to provide you with the opportunity to learn, reinforce, and practice physics in a small class, hands on, user friendly environment. The emphasis in the lab is on physics concepts and problem solving. Most of the concepts you will work with in lab are concepts which you will also work with in lecture (see above list of topics). Your approach to each week's lab should be as follows:

1. Determine which physics concepts are involved.
2. Study and/or review these concepts before class.
3. Establish how the lab is going to help you become more knowledgeable regarding these concepts.
4. Use the lab experience as an opportunity to learn, reinforce, and practice these concepts.

ATTENDANCE IS MANDATORY FOR ALL LABS! A grade of zero will be assigned for any missed experiment. Tardiness will not be tolerated. Students who are more than 5 minutes late to lab can expect deductions from their grades. A student who is more than 15 minutes late may be requested to work by himself if equipment is available or be denied access to the lab.

Laboratory Safety and Policies: Students must observe proper safety precautions in the laboratory. Any student who refuses to follow laboratory safety regulations will be asked to leave.

- a) No Smoking: Smoking is not allowed on campus.

- b) No food is allowed in the lab or recitation. Drinks are permitted only if they are in a re-sealable container (i.e. a bottle with a screw on top, a water bottle with a pull out spout). Cups with a straw and lid and open cans are not considered to be re-sealable.
- c) Broken or missing equipment must be reported to the instructor. Do not borrow equipment from another station without the permission of the instructor. Students will be held accountable for broken and missing equipment if it is determined that the equipment was lost or damaged due to negligence or abuse.
- d) Closed shoes must be worn at all times. Open toed shoes, clogs, sandals, etc. are not permitted to be worn in the laboratory. Absolutely no bare feet allowed in the lab.
- e) Horseplay, pranks, or other acts of mischief can be extremely dangerous and are prohibited in lab.
- f) Report any accident, however minor, to the instructor at once.
- g) Proper electrical safety must be observed in all labs involving electricity.
- h) Any chemicals used during lab must be returned to the containers they were obtained from immediately after they are finished being used. Chemicals should not be poured down the sink unless instructed to do so by your instructor.
- i) Students **MUST** clean their benches and neatly return all lab equipment to its proper place before leaving the laboratory. Failure to properly clean up after lab may result in a reduction of the grade for the lab.
- j) Cell phones should be turned off or set to a single beep and/or vibrate mode while in class.

Lab Reports: Each student shall hand in a lab report at the end of the lab period. The graded lab reports will be returned for review during the next lab

Recitations:

Students are required to bring their Textbook, Calculator, Homework, and general supplies such as pencils and paper to every Recitation. In the event that quizzes are given, students will not be allowed to share Textbooks or Calculators.