

**Physics 240**  
**University Physics I**  
**Spring 2022**

**Instructor:** Dr. Chris Verzani

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**Office Hours:** Mon/Wed: 12:00-12:50 pm. Tues/Thr: 11:00-11:50am. Other times by appt.

**Text:** *Physics for Scientists and Engineers*, Serway and Jewett, 10<sup>th</sup> edition, Cengage

**Overview**

This course will cover topics including; one and two dimensional motion, force, energy, work, momentum, waves and oscillations. Translational and rotational systems will be investigated. Studying physics will sharpen your reasoning skills and give you an in-depth understanding and appreciation of the physical world around you.

**Department of Physics Learning Outcomes for Physic's Majors**

- **(Problems Solving)** Integrate conceptual reasoning, critical thinking skills, mathematical skills, and principles from both theoretical and applied physics courses to explain and solve problems related to the physical processes in nature, applied mechanics, applied electronics, and those appropriate for the education setting
- **(Experiments)** Investigate a problem experimentally by identifying the problem, developing an appropriate experiment, collecting reliable data, quantitatively analyzing results, determining uncertainties and probable errors, and drawing justifiable conclusions.
- **(Communication)** Communicate effectively within the profession by writing clearly and concisely and by articulating clearly.

**UWSP Natural Sciences GEP Learning Outcomes**

- Explain major concepts, methods, or theories in the natural sciences to investigate the physical world.
- Interpret information, solve problems, and make decisions by applying natural science concepts, methods, and quantitative techniques.
- Describe the relevance of aspects of the natural sciences to their lives and society.

**Learning Outcomes for Physics 240**

Ideas about the concepts of motion, mechanics and waves will be presented both mathematically, visually, and conceptually in lecture and the laboratory. During the semester there will be three main goals:

1. Become a better a problem solver. This means you will be able to:
  - Describe and analyze problems both qualitatively and quantitatively in various representations (words, diagram, graphs, equations, etc.)
  - Correctly apply appropriate principles and concepts to a problem
  - Construct solutions by solving successive sub-problems.
  - Check solutions for non-sense answers and make an appropriate statement of answer.

2. Make a connection between the conceptual, mathematical, and experimental aspects of physics. This means you will be able to:
  - Interpret concepts in multiple representations (i.e. words, diagrams, graphs, equations, etc.)
  - Solve problems using numbers and variables
  - Explain how and why a concept applies to a specific situation or problem.
  - Design simple experiments and prove they work
  - Analyze and interpret data taken from experiments
3. Explain how physics applies to everyday life. This means you will be able to:
  - Explain how physics applies to the body, scientific instruments, and medical instruments.
  - Describe how the concepts of physics apply to common devices and everyday events.

### **Attendance**

Attendance will be recorded for the lectures, but only for COVID contact tracing reasons. Attendance will not directly influence your grade in the class though it is highly recommended that you attend. Regular attendance will help you learn the material and, thus, lead to better performance on homework, discussion handouts, laboratory exercises and exams. **Attendance is required for all exams, laboratory periods and discussion sessions to receive a grade.**

Make up work will only be accepted for excused absences. Excused absences include a death in the immediate family, an illness with a note from a doctor, PA, NP, or Health Services, a conflict with religious observances, military duties, or an event where you officially represent the University of Wisconsin – Stevens Point (i.e. sporting events, artistic events) and the event directly conflicts with the test or lab. All excused absences must be approved before the day missed with appropriate documenting materials. A

### **Grading**

Your grade will be composed from your work in the following three areas: Examinations, Discussion/Homework, and Laboratory.

### **Examinations**

Four examinations (including the final) will be given during the semester. The first 3 exams will be taken during a lab period. The fourth exam will be given during the final examination period. Missing an exam will earn a grade of 0 (zero).

### **Homework and Discussions**

A set of homework problems from the textbook will be assigned every week or two. The homework sets from the textbook will be graded. Some assigned textbook problems will be covered in detail in the discussion session. Discussion handout will frequently be graded for the discussion part of the course. The discussion handouts will be graded for participation (attendance) only. Discussion handout material will be an excellent reference for preparing for examination questions.

### **Laboratory**

Labs are usually done in groups of two or four. The focus of some of the labs is mostly concept development with a small focus on actual measurements, while other labs are purely

experimental with the goal of measuring a particular parameter. Each lab is graded out of 10 points.

**Grades:**

Grade Distribution	
Tests	4*16% =64%
Discussion/Homework	All = 18%
Laboratory	All = 18%
TOTAL	100%

Final grades will be determined from the total points as follows:

A	A-	B+	B	B-	C+	C	C-	D+	D	F
93.0%- 100%	90.0%- 92.9%	87.0%- 89.9%	83.0%- 86.9%	80.0%- 82.9%	77.0%- 79.9%	73.0%- 76.9%	70.0%- 72.9%	70.0%- 65.9%	60.0%- 65.9%	Below 60%

**Canvas:** A great deal of information about this class will be posted on Canvas. Some of these items are: Scores from homework, exams, and labs, and your final grade.

Announcements: Such as deviations from the course calendar, quiz times, class cancellations, etc.

Solutions to some handouts, homework, exams

Some lecture notes, ... etc.

(Announcements and information will occasionally be emailed in addition to being posted on Canvas.)

**Note:** If you have any condition such as a physical or learning disability, which will make it difficult for you to carry out the work as outlined, or which will require academic accommodations, please notify the instructor and contact the [Office of Disability Services](#) during the first two weeks of the semester in order to request accommodation. A [Reasonable Accommodation Request-Report Form](#) is available online.