

## PHYSICS 203 COLLEGE PHYSICS I (GEP: NSC GDR: NS)

Spring 2023

**Lecture:** A113 SCI, Mon., Tues., Thurs., 4:00-4:50

**Lab:** B112 SCI, Wed., 14:00 – 16:50

**Discussion:** A112 SCI Tues., 13:00 – 13:50

**Professor:** Chris Verzani

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**Office:** SCI B103

**Office Hours:** Mon 1:00-1:50, Tue. 10:00 – 10:50, Thurs. 10:00- 10:50,  
Fri. 10:00 10:50, other times by appointment

### **Course Overview:**

This semester you will be presented with a variety of physics topics including; motion in one and two dimensions, vector formalism, Newton’s laws, energy, momentum oscillations, waves, and fluids. Ideas will be presented both mathematically and conceptually in lecture, discussion and the laboratory. Physics is a way of thinking as much as (maybe even more so) it is a body of knowledge. “Doing physics” is more than just memorizing “facts”. Becoming proficient at thinking like a physicist entails applying your knowledge to new situations in order to solve a multitude of unique problems. In fact, in many problems, very little actual knowledge is needed, but certain concepts can be very powerful when skill is gained at applying these concepts in problem solving. With a lot of practice, one can gain expertise in problem solving!

This course satisfies the learning outcomes for the Natural Science component of the General Education Program. Upon completing this course students should be able to:

- 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.

**Tentative Course Outline (subject to change):** The material of this course will mostly follow that of the text, covering about one chapter per week, but we will do some jumping between chapters as shown below.

### Tentative Schedule

Week	Date	Lecture Subjects	Chapters	Lab Number
1	1/23/23	Syllabus, motion in 1-D	2	1
2	1/30/23	Motion in 2-D, Vectors	3, 4	2
3	2/6/23	Forces	5	No Lab (Exam: 2/9)
4	2/13/23	Newton's Laws, Circular motion	5, 6	3
5	2/20/23	Newton's Laws, Vectors	6, 3	4
6	2/27/23	Work and kinetic energy	7	No Lab (Exam: 3/2)
7	3/6/23	Potential energy, power	8	5
8	3/13/23	Momentum	9	6
N/A	3/20/23	<b>Spring Break</b>	N/A	N/A
9	3/27/23	Torque and equilibrium	8, 9	No Lab (Exam: 3/30)
10	4/3/23	Buoyancy	15	7
11	4/10/23	Fluid motion	15	8
12	4/17/23	Oscillations	13	No Lab (Exam : 4/20)
13	4/24/23	Oscillations, waves	13, 14	9
14	5/1/23	Waves	14	10
15	5/8/23	Sound	14	No Lab (Last week of classes)

**Text:** Physics, Walker, 5<sup>th</sup> edition

**Calculator:** You will need a basic scientific calculator that is portable for use both in and out of class sessions. The calculator need not be a fancy graphing calculator, but it must be capable of calculating basic trig, exponential, and logarithmic functions. Since cell phone use is not allowed during class (see below) a cell phone cannot serve as your in-class calculator.

**Cell phone Use:** The use of cell phones is not allowed during class sessions. Cell phones must be turned off and put away during all class sessions.

**Homework:** At each lecture, I will assign roughly three practice problems and three conceptual questions. These will not be collected, but they will be chosen to prepare you for the exams. Solutions will be provided.

**Laboratory:** There is no laboratory manual. **We will have a lab the first week of class!** Each week, a new lab will be posted on Canvas, and it is recommended that you read over the lab prior to coming to the laboratory. Laboratory handouts can be printed at the beginning of each laboratory session. There will be ten graded laboratory sessions during the semester. Each session will be of equal weight, and labs will contribute to **22%** of your semester grade. **Be warned:** Since this course satisfies a lab requirement, it is necessary to pass the lab portion alone in order to pass the course. In other words, if your lab average is below 60% you fail the course regardless of your exam averages. (Note: Labs are not scheduled near midterm exams. See schedule.)

**Examinations:** Five examinations will be given during the semester. Four 50-minute mid-terms exams will be given during the scheduled lecture time. The fifth exam will be administered during the scheduled final examination period. The final exam will have two parts. One part will be similar in format to the previous four exams, testing you on material since Exam 4. There will also be a second part that is cumulative for the semester. It too will be in the same format as previous exams.

**Exam Schedule:**

Exam 1 ..... **Thurs. Feb. 9<sup>th</sup>**, during lecture  
 Exam 2 ..... **Thurs. March 2<sup>nd</sup>**, during lecture  
 Exam 3 ..... **Thurs. March 30<sup>th</sup>**, during lecture  
 Exam 4 ..... **Thurs. April 20<sup>th</sup>**, during lecture  
 Exam 5 (final) ..... **Thurs. May 18<sup>th</sup>**, 5:00-7:00 pm

**Semester Grade Calculation:**

Labs	22 %
Midterm Exams (4 @ 13% each)	52 %
Final Exam (13% for each part)	26%
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Total	100 %

Final grades will be determined from your overall percentage as follows:

A	A-	B+	B	B-	C+	C	C-	D+	D	F
93.%-100%	90.%-92.99%	87.%-89.99%	83.%-86.99%	80.%-82.99%	77.%-79.99%	73.%-76.99%	70.%-72.99%	67.%-69.99%	60.%-66.99%	Below 60%

Your grades on labs and exams will be posted periodically on Canvas. If you have any questions on the grades posted, please contact me immediately so any errors can be corrected.

**Attendance:** Attendance will not be kept for discussion sessions or lectures. *Attendance to labs and exams is mandatory and students are responsible for all material discussed and announcements made during any scheduled class meeting.* Make-up work will only be accepted in the case of excused absences. Excused absences include death in the immediate family, illness with a note from the appropriate health care professional, religious observance, an event in which you officially represent the University of Wisconsin – Stevens Point and the event directly conflicts with an exam or lab. **Excused absences must be approved with documenting materials prior to the date of absence.** Unexcused absences from a lab or exam will result in a grade of zero.

In the case of a potential conflict between class and religious observances, University of Wisconsin policy requires the student to notify the instructor within the first two weeks of class in order to expect that accommodations be made. If there is any possibility that you will miss a lab or exam due to religious observances, please notify me of the specific dates that will be missed within the first two weeks of class.

**E-mail and Canvas:** In addition to grades, announcements, such as deviations from the course calendar, solutions to homework, exams, some lecture notes, ... etc., may be found on Canvas. Occasionally it will be necessary to make class-related announcements outside of class. This will be done primarily through e-mail. If you're not already in the habit of frequently checking your e-mail, it will be useful to develop that habit.