

University of Wisconsin – Stevens Point

Department of Physics and Astronomy

College Physics I – PHYS 203

Fall 2023

Course Information

- **Course title:** College Physics I (PHYS 203)
- **Instructor:** Maryam Farzaneh
- **Contact:** B105-Science Building, mfarzane@uwsp.edu
- **Office (Student) hours:** MWRF: 1:00 – 2:00 pm
If you cannot make any of the above office hours, **please know that I have an open-door policy. Please stop by as often as you wish or make an appointment by emailing me.**
- **Class time:**
 - **Lecture (SCI-D101):** Monday, Wednesday, Friday 11:00 – 11:50 pm
 - **Discussion (SCI-A112):** Section 1: Tuesday 2:00 – 2:50 pm
Section 2: Tuesday 3:00 – 3:50 pm
 - **Laboratory (SCI-B104):** Section 1: Monday 2:00 – 4:50 pm
Section 2: Wednesday 2:00 – 4:50 pm

Textbook: *Physics*, James S. Walker, 5th edition, Addison Wesley (Available at Text Rental).

Required Material

- **Calculator:** Please have a scientific calculator handy.

Course Description

This course is designed to introduce you to the basic concepts of physics of motion. We will explore topics in kinematics and dynamics and become familiar with the concepts of velocity, acceleration, force, mass, momentum, work and energy. We will also explore static equilibrium and its application in biomechanics, fluids at rest and in flow and oscillations and waves.

Even though you may not pursue physics as a career, the lessons learned from studying physics are numerous --- it will sharpen your reasoning ability; and you will become confident in abstract thought as well as quantitative analysis and critical thinking.

Learning Objectives

1. Understand the fundamental concepts of physics of motion.
2. Apply these concepts to explain everyday phenomena.
3. Use theoretical concepts to make quantitative predictions and verify them by making measurements in the lab.

Lectures

I strongly encourage you to attend *all* the lectures and take detailed notes. Sometimes the lecture covers more material than you might find in your textbook.

Discussion

Discussion class is designed around the material you have learned in lecture. At the beginning of each class, I will briefly review the relevant topics discussed in lecture. I will then distribute a problem set as your homework assignment for the week. You are encouraged to work on the questions and problems in groups of two or three and discuss the problems with each other. Most of the discussion will take place within or between the groups. My role will be to answer any questions and provide any help and guidance you need.

Your discussion grade is based on attendance and participation and counts for 5% of your overall grade.

You will receive a grade of zero on the discussion if you leave in the middle of the class without a legitimate excuse.

Homework

You will have one homework assignment per week (please see above) which is handed out in the discussion class. You have one week to work on your homework. Your homework grade is based on the completion of the assignment and the score from a few (typically four) randomly graded problems. I will post the solutions to the entire homework assignment on Canvas right after all homework assignments are submitted. **If you need an extra day or two to finish your homework, please let me know. I generally grant extensions. However, I do not accept assignments which are unreasonably late, unless you have talked to me about the situation in advance.**

Your homework grade will count for 20% of your overall grade.

Laboratory

Once a week, you will work in groups of three or four and carry out experiments that are designed to enhance your understanding of the concepts and topics learned in class. A write-up/worksheet for each lab will be handed out in the beginning of the lab period. Every student should expect to be **actively** participating in the laboratory. The lab report is due at the end of the lab period. I will drop your lowest lab grade. *Your lab grade will count for 15 % of your overall grade.*

Important note: 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 homework and exam grades.

Exams

There will be *two* midterm exams during the semester, not counting your final exam. These exams will be held **on weeks 5 and 10 (please see the course schedule) during the lab periods**. The final exam is non-cumulative and is scheduled for **Thursday, December 21, 2:45 – 4:45 pm**. *Overall, these three exams count for 60% of your grade (20% each).*

Tutoring

The Tutoring-Learning Center (TLC) offers **FREE** tutoring to support you in your STEM classes. The tutors are UWSP students who have done well in their classes and who are here to share their successful study habits and content knowledge to help others succeed. For more information about the schedules or to make an appointment, please visit the STEM Tutoring webpage at <https://www3.uwsp.edu/tlc/Pages/CA-tutoring.aspx>

Grading and Evaluation

I will calculate your grade based on a weighted percentage of your scores as follows:

Homework	20%
Discussion participation	5%
Laboratory	15%
Exams (2 midterms, 20% each)	40%
Final exam	20%

Your overall letter grades will be determined as follows:

93% and above	A	87--89%	B+	77--79%	C+	67--69%	D+
90--92%	A-	83--86%	B	73--76%	C	60--66%	D
		80--82%	B-	70--72%	C-	below 60%	F

Please note that I do *not* grade on a curve. Grades will be rounded up. For example, 86.6% will become an 87% (B+), but 86.3% will remain a B.

General Course Policies

- **Disability services**

UWSP is committed to providing reasonable and appropriate accommodations to students with disabilities and temporary impairments. If you have a disability or acquire a condition during the semester where you need assistance, please contact the [Disability Resource Center \(DRC\)](#) located at 108 Collins Classroom Center (CCC) as soon as possible. DRC can be reached at 715-346-3365 or at drc@uwsp.edu.

- **Academic misconduct**

As a student at UWSP, I expect you to be familiar with the Chapter 14 of the UWSP policy document on Academic Misconduct (especially Section 14.03) found here: <https://www3.uwsp.edu/dos/Pages/Student-Conduct.aspx>.

Simply put, **do not** copy each other's homework, lab reports and exams and pass them off as your own. Any confirmed incidence of academic misconduct, including plagiarism and other forms of cheating will be treated seriously and in accordance with the University policy.

- **I do not assign work for extra credit. There are no bonus points that you can earn.**
- Once you hand in your final exam, there is nothing more you can do to change your grade.

Tentative Course and Lab Schedule

The tentative course schedule is as follows. This might change, and I will try my best to announce any changes beforehand.

Week	Chapter and Topic	Lab
(1)	(2) Introduction, Basics of Motion, Motion with constant velocity, Motion with constant acceleration	NO LAB
(2)	(2) Free fall (3) Vector addition: Graphical method	Lab 1
(3)	(3) Vector addition: Component method (5) Force, Net force, Newton's 1 st law, Newton's 2nd law, Mass, Weight	Lab 2
(4)	(5) Free body diagrams, Normal force, Apparent weight, Inclined plane	Lab 3
(5)	(6) Kinetic friction, Static friction, Circular motion	Exam 1 (no lab)
(6)	(5) Newton's 3 rd law, Connected objects (11) Torque, Static Equilibrium	Lab 4
(7)	(11) Torque, Static Equilibrium, ctd. (9) Momentum, Impulse, Conservation of momentum	Lab 5
(8)	(9) Collision, Center of Mass (7) Work	Lab 6

(9)	(7) Kinetic energy, Power (8) Gravitational potential energy, Conservation of mechanical energy	Lab 7
(10)	(15) Fluids: density, Pressure, Buoyancy	Exam 2 (no lab)
(11)	(15) Archimedes' principle, Fluid flow, Bernoulli's eqn.	Lab 8
(12)	(13) Oscillation, Mass and Spring, Pendulum	Lab 9
(13)	(14) Waves, Sound (14) Standing Waves	Lab 10
(14)	(12) Gravity	Lab 11
(15)	Exam Review	NO LAB
(16)	Final Exam: Thursday December 21, 2:45-4:45 pm	D101