

**University of Wisconsin – Stevens Point**  
**Department of Physics and Astronomy**  
**Applied Principles of Physics I– PHYS 201**  
**Fall 2021**

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**Course Information**

- **Course title:** Applied Principles of Physics I
- **Course number:** PHYS 201
- **Textbook:** *Physics*, James S. Walker, 5<sup>th</sup> edition, Addison Wesley (Available at Text Rental).
- **Instructor:** Maryam Farzaneh
- **Contact:** B105-Science Building, [mfarzane@uwsp.edu](mailto:mfarzane@uwsp.edu)
- **Office hours:** TWRf: 11:00 am – 12:00 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. If you wish, we can also hold office hours on Zoom by appointment. The link to my Zoom Personal Room is <https://wisconsin-edu.zoom.us/j/5309966920>, and is also posted on Canvas.

- **Class time:**
  - **Lecture (SCI-A113):** Tuesday & Thursday 8:00 – 8:50 am
  - **Discussion (SCI- A112):** Monday 11:00 – 11:50 am
  - **Laboratory (SCI-B104):** Monday 2:00 – 4:50 pm

**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, work, and energy. We will also explore fluids at rest and in flow. 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 and practice some conceptual questions with you. I will then distribute a problem set which also includes 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. Homework problems are the extension of your discussion problem set (see above) and are handed out in the discussion class. You typically have one week to work on your homework. **You should submit your solutions on Canvas as a single pdf or docx file. I will not accept submission of multiple jpg files.**

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 the date the assignment is due. Therefore, no late assignments are accepted. *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 (usually one per each group) 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 period**. The final exam is non-cumulative and is scheduled for **Monday, December 13, 8:00 am**. *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. Discussing concepts and practicing problems together clarifies and solidifies knowledge, and the tutors are eager to study with you. If you have questions about the schedules or would like to make an appointment, please visit the TLC in ALB 018 (library basement), email ([tlctutor@uwsp.edu](mailto:tlctutor@uwsp.edu)), or call (715) 346-3568.

Tutoring Option	Location	Schedule	Cost
STEM Drop-In Tutoring	CBB 190	No appointment needed – stop by when tutors are available: <a href="https://www.uwsp.edu/tlc/Pages/dropInTutoring.aspx">https://www.uwsp.edu/tlc/Pages/dropInTutoring.aspx</a> .	Free
STEM One-on-One Tutoring	ALB 018	By appointment. Visit ALB 018 (library basement) to make a request or complete online request form here: <a href="https://www.uwsp.edu/tlc/Pages/request-math-science-tutoring.aspx">https://www.uwsp.edu/tlc/Pages/request-math-science-tutoring.aspx</a> .	Free

## 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

- **Face Coverings:**

At all UW-Stevens Point campus locations, the wearing of face coverings is mandatory in all buildings, including classrooms, laboratories, studios, and other instructional spaces. Any student with a condition that impacts their use of a face covering should contact the Disability and Assistive Technology Center (see below) to discuss accommodations in classes. Please note that unless everyone is wearing a face covering, in-person classes cannot take place. This is university policy and not up to the discretion of individual instructors. Failure to adhere to this requirement could result in formal withdrawal from the course.

- **Other COVID-19 Related Guidance:**

- Please monitor your own health each day using this [screening tool](#). If you are not feeling well or believe you have been exposed to COVID-19, do not come to class; email your instructor and contact Student Health Service (715-346-4646).
- As with any type of absence, students are expected to communicate their need to be absent due to isolation or quarantine and complete the course requirements after discussing the available options with the instructor.
- Maintain a minimum of 6 feet of physical distance from others whenever possible.
- Do not congregate in groups before or after class; stagger your arrival and departure from the classroom, lab, or meeting room.
- Wash your hands or use appropriate hand sanitizer regularly and avoid touching your face.
- Please maintain these same healthy practices outside the classroom.

- **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 and Assistive Technology Center on the 6<sup>th</sup> floor of Albertson Hall (library) as soon as possible. DATC can be reached at 715-346-3365 or [DATC@uwsp.edu](mailto:DATC@uwsp.edu).

- **Academic misconduct**

I expect you to be familiar with the UWSP policies regarding student conduct. You can find the relevant documents here: <https://www.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 University policy.

- The schedule for the final exam is set by the University. I will not schedule an early final exam for whatever reason.
- **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	<b>No Lab</b>
(2)	(2) Motion with constant acceleration	<b>No Lab</b>
(3)	(2) Free fall	Lab 1
(4)	(3) Vector addition: Graphical method, Components method	Lab 2
(5)	(5) Force, Net force, Newton's 1 <sup>st</sup> law, Newton's 2nd law	<b>Exam 1 (no lab)</b>
(6)	(5) Mass, Weight, Free body diagrams, Normal force, Apparent weight	Lab3
(7)	(6) Inclined plane, Kinetic friction, Static friction	Lab 4
(8)	(6) Static friction (contd.), Circular motion	Lab 5
(9)	(7,5) Circular motion (contd.), Newton's 3 <sup>rd</sup> law, Work, Kinetic energy	Lab 6
(10)	(7,8) Kinetic energy examples, Power, Gravitational potential energy	<b>Exam 2 (no lab)</b>
(11)	(8) Potential energy, Conservation of mechanical energy	Lab 7
(12)	(15) Fluids: density, Pressure, Change of pressure with height	Lab 8
(13)	(15) Archimedes' principle, Buoyancy	Lab 9
(14)	(14) Waves and Sound	Lab 10
(15)	(14) Waves, contd.	Lab 11
(16)	<b>Final Exam: Monday, December 13, 8:00 – 10:00 am</b>	