Worcester Polytechnic Institute

GENERAL PHYSICS: MECHANICS PH 1110
(Hybrid delivery in-person and/or online)
PHYSICS DEPARTMENT
TERM E1 2026

COURSE INSTRUCTOR:

Name: Prof. Izabela Stroe
Pronouns: she/her/hers
Email: izabela@wpi.edu
Office Hours:

On-Zoom (Class Zoom Link) Monday 6-7 pm and Wednesday 11-12 pm

LABORATORY MANAGER:

Name: Dr. Veneta Tountcheva, Lab Manager
Email: vtountcheva@wpi.edu

PEER LEARNING/TEACHING ASSISTANTS:

Name: TBD
Email:
Office Hours: TBD

COURSE TIME AND LOCATION:

May 21 – June 26, 2026
M /W/Th, 9:00 am-10:50 am on Zoom/Synchronously/Ashynchronously

TEXTBOOK (AND/OR OTHER REQUIRED MATERIALS):

Textbook:

University Physics with Modern Physics by Young and Freedman 15th Edition (ISBN-13: 978-0135216118).
A hard copy of the textbook is not required.

MasteringPhysics:

The class will use the active learning platform Mastering Physics (https://www.pearsonmylabandmastering.com/northamerica/) for Homeworks, Pre-lecture Readings, Class Problems Solving Sessions, and in-class Exam taking. If you have not used Mastering Physics before you can purchase it from the bookstore or online the MasteringPhysics access with eText.

ZOOM App:

If you attend online, you will need ZOOM app installed on your computer or other mobile device to access the online lectures(synchronously/asynchronously).

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COURSE DESCRIPTION:

Introductory course in Newtonian mechanics. Topics include kinematics of motion, vectors, Newton's laws, friction, work-energy, impulse-momentum, for both translational and rotational motion. Students may not receive credit for both PH 1110 and PH 1111.

PREREQUISITE COURSES:

Recommended background: MA 1020 or 1021 or concurrent study of MA 1020 or 1021. (Please see description of these courses here: https://www.wpi.edu/academics/calendar-courses/course-descriptions/17881/mathematical-sciences)

LEARNING OUTCOMES:

By the completion of this course, learners will be able to:

- Explain the basic concepts and laws in mechanics.
- Apply basic mathematical tools, including algebra and vectors, to solve physics problems and use the equations of physics to determine the motion of physical bodies.
- Convert a physical situation articulated in English to a mathematical formulation.
- Exercise the use of physical intuition, including the ability to guess an approximate or conceptual answer to a physics problem and recognize whether or not the result of a calculation makes physical sense.
- Apply physics knowledge to other disciplines, including our everyday lives.

COMMUNICATION:

If you have questions regarding the lecture, Homeworks, exams, grades, please contact Prof. Stroe via email (izabela@wpi.edu).
If you have questions regarding the lab schedule, labs procedure/data/reports and grades please contact the lab TAs via email. The graduate students Tas email will be posted on Canvas. Email response will be within 48 hours.
Office hours for questions regarding the lecture and homework will be posted online and will be held via zoom sessions. A link to the zoom sessions will be sent to you via Canvas.
Office hours for questions regarding the lab are 2 hours per week and will be held via zoom sessions. The schedule of the office hours and the link to the zoom sessions will be sent to you via Canvas by your TAs.

COURSE APPROACH:

- The course begins on Thursday May 21st, 2025. The course will run online asynchronously and/or synchronously if you prefer. The materials required to be covered each week will be posted on Canvas each Monday at 8am.
- The course will run for 5 weeks. The last day of the course is June 26th, 2026.
- The course content includes Lectures, Lecture Reading Questions, Homeworks, Lab material and necessary resources to carry out the labs.

- The **Course Material** (PowerPoint Lectures and Video Lectures) will be uploaded on Canvas in Modules. The questions related to the concepts presented in each Lecture and Video lectures will be posted on Mastering Physics and due twice a week as posted in the Couse Calendar.
- **Homework Assignments**: Online homework will be uploaded via Mastering Physics for each topic with appropriate due dates. Mastering Physics access documents will be uploaded as an independent file on Canvas.
- **Labs:** Laboratory instructions will be available via Canvas. Each week a new lab will be assigned. **Information regarding the Labs will be posted on the Lab site on Canvas by our Lab Manager.**

COURSE REQUIREMENTS:

1. **Grade Determination Breakdown**
2. Grading will be determined based on students' efforts in 4 different categories:

Category	Grade Distribution (Percent/Points)
Exams (2)	**50% (25 points each exam)**
Homework	**20% (20 points)**
Labs	**20% (20 points)**
Lecture Questions (videos and lecture questions assigned in Mastering Physics)	**Correctness 5% (5 points)** **Participation 5% (5 points)**

3. **Assignments**

   Homework Assignments via Mastering Physics: Practicing problem solving is an important component of learning and understanding theoretical concepts. Physics problems will be assigned via the online system Mastering Physics. The deadlines for each of the Homeworks will be available on Mastering Physics.

   Lecture Reading Questions via Mastering Physics: For each lecture a series of lecture reading questions will be posted on Mastering Physics. These questions are meant to test your understanding of the concepts presented in the lectures.

   Exams via Mastering Physics: There will be two exams assigned on Mastering Physics. **The exams will be in person or online synchronous** (and you will need to be online on zoom in order to take the exams if you attend the class online). More information will be provided on Canvas.

   Lab Reports: Labs instructions will be available via Canvas. Each week a new lab will be assigned. **Instructions regarding the Labs will be posted on Canvas Lab site**. The lab reports should be submitted via Assignments in the Canvas Lab site.
4. **Late Work Policy**

   Late work is not encouraged in this class. However, if you have strenuous conditions, please communicate with your Professor or Lab TA.

TECHNICAL REQUIREMENTS:

Given that this class is delivered online, we will adopt a synchronous/asynchronous delivery of lectures. If we have a large body of students that prefer synchronous delivery, the synchronous lectures will be held on Zoom each M/W/R, according to the online schedule. In either case, decent internet access is required for accessing the materials and complete the Assignments.

LIBRARY ACCESS:

All Gordon Library services are open fully online. All the library staff will be available online and working to support students in whatever way they can. They will continue to provide services including online library instruction, support for obtaining and linking to digital course materials, interlibrary borrowing of digital materials, virtual research consultations for students, and more. Please visit the library web site and choose the link "Remote Resources," directly below the search box, for one-stop access to information about all our online services.

POLICIES

ACADEMIC INTEGRITY:

You are expected to be familiar with the *Student Guide to Academic Integrity at WPI* that is downloadable from here. Consequences for violating the Academic Honest Policy range from earning a zero on the assignment, failing the course, or being suspended or expelled from WPI. Common examples of violations include:

- Copying and pasting text directly from a source without providing appropriately cited credit
- Paraphrasing, summarizing, or rephrasing from a source without providing appropriate citations
- While working in groups for the labs and solving homework problems is strongly encouraged in this class, collaborating on exams is considered cheating.
- Turning in work where a good portion of the work is someone else's, even if properly cited.

ACADEMIC ACCOMMODATIONS:

We at WPI strive to create an inclusive environment where all students are valued members of the class community. If you need course adaptations or accommodation because of a disability, or if you have medical information to share with us that may impact your performance or participation in this course, please make an appointment with us as soon as possible. If you have approved accommodation, please request your accommodation letters online through the Office of Disability Services student portal. If you have not already done so, students with disabilities who need to utilize accommodation for this course are encouraged to contact the Office of Disability Services as soon as possible to ensure that such accommodation is provided in a timely fashion.

- Email – AccessibilityServices@wpi.edu
- Phone – (508) 831-4908
- On Campus – 5th floor of Unity Hall

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RESPECT FOR DIVERSITY:

It is my intent that students from all backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be utilized as a resource, strength and benefit. It is my intent to present materials and activities that are respectful of diversity: gender, sexuality, ability, age, socioeconomic status, ethnicity, race, and culture. Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups. In addition, if any of our class meetings conflict with your religious events, please let me know so that we can make arrangements for you.

AI USAGE POLICY FOR THIS COURSE

Artificial Intelligence (AI) tools, such as the AI course tool in Mastering Physics, ChatGPT, and others, are becoming increasingly integrated into education. In this course, students are allowed to use AI under the following guidelines:

1. **Ethical and Responsible Use:** AI should be used as a learning aid, not a substitute for critical thinking, problem-solving, or original work.
2. **Permitted Uses:**
    - Clarifying concepts and explanations.
    - Assisting with specific concepts and mathematical gaps.
    - Checking work for errors and improving clarity.
3. **Prohibited Uses:**
    - Submitting AI-generated work as your own without critical engagement.
    - Using AI to complete assignments without personal effort or understanding.
    - Copying AI responses verbatim without proper attribution or modification.
4. **Disclosure Requirement:**
    - If AI is used, students must include a brief statement describing how AI was utilized in the assignment.
    - Failure to disclose AI use may impact grading and academic standing.
5. **AI Reflection Assignments:**
    - Some assignments will require students to compare work completed with and without AI. These reflections will assess AI's impact on learning and problem-solving.

This policy is designed to encourage responsible AI use while fostering deeper learning and academic integrity. Misuse of AI may be considered academic misconduct. Examples of how to acknowledge your use of AI can be found here.

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GRADING POLICY:

Provide WPI's up-to-date grading policy (use statement below or a similar variation).
Final course grades are based on a student's performance as follows:

Letter Grade	Percentage
A	90 - 100
B	80 - 89
C	70 - 79

Course incomplete may be granted if the major part of the course is completed. In addition, in the case of an incomplete, the student is responsible for handing in the final work within the WPI required timeframe of one (1) year. After this time, an incomplete grade changes to a failing (F) grade.