PURDUE UNIVERSITY FORT WAYNE

PHYS 220: Dual Enrollment 2025-2026

Course Title: General Physics

Course Code: PHYS 22000

Instructor Name:

Instructor Email:

Office Hours:

Last Updated: August 2025

Course Description: This introductory physics course for students not specializing in physics includes mechanics, heat and sound.

Course Prerequisites: Algebra II

Course Access: All assignments will be posted daily on Schoology. Keys to test reviews and laboratory handouts may also be found on Schoology. Students are expected to view Schoology regularly.

Course Goal: Physics 22000 is part of PFW's general education program. The course is designed to meet the following competencies:

Category A:3 Quantitative Reasoning Competency
3.1 Interpret information that has been presented in mathematical form (e.g. with functions, equations, graphs, diagrams, tables, words, geometric figures).
3.4 Analyze mathematical arguments, determining whether stated conclusions can be inferred.
3.5 Communicate which assumptions have been made in the solution process.
3.6 Analyze mathematical results in order to determine the reasonableness of the solution.

Category B:4 Scientific Ways of Knowing Competency
4.1 Explain how scientific explanations are formulated, tested, and modified or validated.
4.2 Distinguish between scientific and non-scientific evidence and explanations.
4.3 Apply foundational knowledge and discipline-specific concepts to address or solve problems.
4.4 Apply basic observational, quantitative, or technological methods to gather data and generate evidence-based conclusions.
4.5 Use current models and theories to describe, explain, or predict natural phenomena.
4.6 Locate reliable sources of scientific evidence to construct arguments related to real-world issues.

Learning Objectives: I expect you to…

- Properly analyze physical circumstances according to Newton's Laws of Motion
- Apply basic conservation laws and recognize the circumstances under which they apply
- Properly use physical terms such as energy, acceleration, force, work, velocity, etc.
- Become competent in representing and interpreting physical systems through graphical analysis
- Develop data acquisition and analysis skills through exploration in lab

Learning Resources & Texts:
Textbook: 2014 Pearson Physics by James S. Walker, ISBN-13: 9780131371156

Hard copies of the textbook are available for use in class.

Scientific Calculator: Scientific calculators are available for all students in class. You are strongly encouraged to buy your own calculator (ask the instructor for recommendations).

Assignments: Students will receive daily assignments that will primarily be completed during class time. Homework assignments are checked for completion and then discussed. Homework is worth 20% of the grade. Tests and Quizzes account for the remaining 80% of the grade. Quizzes may be retaken. Students may only take tests once. Labs may be counted as homework grades or test grades depending on the situation.

Grading Scale:
Grades are 80% summative (tests, quizzes, laboratory reports) and 20% formative (homework, informal labs and activities)
Grades will be determined using the FWCS grading scale:
96-100 A+, 93-95.9 A, 90-92.9 A-
87-89.9 B+, 84-86.9 B, 80-83.9 B-
77-79.9 C+, 73-76.9 C, 70-72.9 C-
67-69.9 D+, 63-66.9 D, 60-62.9 D-
59.9-0 F

Course Evaluation: Near the end of the course, students will be provided with a link to a course evaluation. Students should be honest and specific when evaluating the course and the instructor. All data is collected anonymously and will be shared with instructors during the summer after the course is completed.

Academic Misconduct/ Plagiarism / AI:
Academic Misconduct, including plagiarism (using other people's ideas/words and not giving them credit thus implying the work is your own original work) or using your own work from a previous course without the express permission of the instructor, is taken very seriously at any learning institution. It is taken very seriously in this class. Please be aware of what behaviors constitute academic misconduct (See Bulletin, Code of Students Rights, Responsibilities and Conduct Part II. A.) If caught cheating or plagiarizing, a student may receive no credit on the assignment and may result in an F for the course. Any instances of academic dishonesty will be reported to the Office of Student Conduct and Care and your Department Chair and may result in expulsion from the University. Additional potential consequences can be found under: potential consequences (See Bulletin, Code of Students Rights, Responsibilities and Conduct, Part III. A.: i.e., failure of the assignment, failure of the course and/or dismissal from the university) of such behavior.

The use of AI tools, including ChatGPT, is permitted in this course for students who wish to use them as a study aid (e.g., brainstorming ideas, grammar and spelling checking). Students should indicate how AI tools informed their process and the final product, including how they checked the validity/accuracy of all AI-generated content. For example, students should include the source (AI tool used), the date of the query, content validation and editing summary, and any other relevant information. Assignment guidelines will provide additional guidance as to how these tools might be part of your process for each assessment this semester and how to provide transparency about the usage. If students are unclear whether an AI use is acceptable or not, assume that it is not and please contact me for a discussion.

Student Support Services:
Purdue University Fort Wayne is committed to your academic and personal success. Visit the Student Support Services page for a list of student support services, including academic services, technology services, health and wellness, and support from administrative offices. For help with technology, including Brightspace, visit the IT Services Student Technology Support page.

If you observe and/or are made aware of student behavior that leaves you feeling concerned, worried, and/or alarmed, trust your instincts and say something. The CARE Team can assist with the student of concern, whether that's you or someone you are referring. Report the concern through the online CARE referral form. Please note that this form is not for emergencies. If you know of a student who is injured, is injuring themselves or others, or is threatening injuries to themselves or others, please call 911 immediately.

Your emotional wellness and mental health are important. If you have a mental health disorder, are struggling with your mental health, your stress overwhelms your ability to cope with it, or you find yourself needing emotional support, please talk to someone. If you or someone you know is in a mental health crisis situation, call 911 or go to the local emergency room. Otherwise, please reach out to our Center for Student Counseling (CSC). All currently enrolled PFW and IUFW students have access to free counseling at the center. To make an appointment to talk with a counselor call 260-481-6200 or email csc@pfw.edu.

Course Schedule:

Dates	Topics	Textbook Correlation
8/7 - 8/15	Introduction, Units, Mathematics and PreTest	Chapter 1
8/18 - 8/29	Speed, velocity, p-t graphs	Chapter 2
9/2 - 9/19	Acceleration, v-t graphs, kinematic equations	Chapter 3
9/23 - 10/9	Vectors, projectile motion	Chapter 4
10/14 - 10/24	Newton's Laws, Forces, Free-Body Diagrams Friction	Chapter 5
10/27 - 11/14	Work, Energy Types, Energy Conservation, Power	Chapter 6
11/17 - 12/5	Momentum, Conservation of Momentum, Impulse, Collisions	Chapter 7
12/8 - 12/19	Catapults Project	Final
1/6 - 1/16	Oscillations, Waves, Simple Harmonic Motion	Chapter 13
1/20 - 2/3	Sound Waves, Doppler Effect	Chapter 14
2/4 - 2/20	Thermal Energy, 1st Law of Thermodynamics	Chapters 10 & 11
2/23 - 3/6	Buoyancy, Pressure, Pascal's Principle, Bernoulli Flow	Chapter 12
3/9 - 4/ 10	Circular Motion, Angular velocity & acceleration, moment of inertia, torque	Chapters 8 and 9
4/13 - 5/1	Static Electricity, Circuits	Chapters 19 & 21
5/4 - 5/20	Egg Racer Project; Post Test	Final