PHYSICS 2A: GENERAL PHYSICS I

COURSE AND INSTRUCTOR INFORMATION:

Semester: Fall 2023 (52062)
Title: General Physics I
Units: 4.00 CEUs
Hours: 3 lecture, 3 lab hours
Time: Lecture Asynchronous, Lab Wednesday 9:00 AM – 11:50 AM
Location: Lecture Hybrid and Online, Lab PHY 70
Instructor: Kylee Ford
Email: kylee.ford@reedleycollege.edu (Please give me 24 – 48 hours to reply)
Office Hours: Virtual and by appointment/email/Zoom only

COURSE DESCRIPTION:

The topics covered in this course include mechanics, properties of matter, heat, sound and waves.

PREREQUISITES:

Math 4A. Advisories: English 1A or English 1AH.

STUDENT LEARNING OUTCOMES:

- ✓ Learn fundamental laboratory techniques.
- ✓ Experience the interaction between theory and experiment in scientific investigation.
- ✓ Learn to solve basic problems in classical mechanics.
- ✓ Study the laws of fluid mechanics.
- ✓ Learn the basic concepts of mechanical waves.
- ✓ Study the laws of thermodynamics.

CSLOs:

PHYS-2A SLO1: Apply algebra and trigonometry to solve physical problems in topics such as:
PHYS-2A SLO1a: Kinematics
PHYS-2A SLO1b: Vector quantities
PHYS-2A SLO1c: Newton's Laws
PHYS-2A SLO1d: Conservation of energy and momentum
PHYS-2A SLO1e: Mechanical waves
PHYS-2A SLO1f: Thermodynamics
PHYS-2B SLO 2: Apply knowledge in the areas of mechanics, properties of matter, heat, sound and waves in other science related courses.

REQUIRED COURSE MATERIALS:

Textbook: College Physics available here: College Physics (https://openstax.org/details/books/college-physics)

OTHER MATERIALS:

- iPad or Tablet: Lots of students these days are using iPads and tablets, which are great because your work can be written digitally and uploaded immediately instead of having to take pictures or scan your work, expensive though.
- Traditional pencil and paper: You definitely need to write out your notes and your work (I also recommend making a notebook of your homework solutions) so if you don't have access to a

tablet, pencil and paper are great! I personally use blank white paper, but graph paper, engineering paper, or lined paper are just fine.

- Scientific Calculator: A calculator is a nice tool to have and to be comfortable with. But there are other programs you can use when doing your homework such as:
  - Wolfram Alpha
  - Math is Fun
  - You can't use these other programs on the exam though, so practice using a calculator!

ATTENDANCE:

It is important to watch videos uploaded, as this will be the lecture portion. I will be taking attendance through Canvas. **Lab attendance is mandatory.** You will not be allowed to make up labs without reasonable notification and credible supporting documentation of legitimate reasons (doctor's note, obituary, etc.). A missed lab can greatly affect your grade. ***Three missed labs = failing the course.***

PROGRESS QUIZZES/PARTICIPATION:

Each week there will be a Progress Quiz due (unless otherwise stated on the schedule). These quizzes are based on the lecture and/or Crash Course Physics videos for the week.

HOMEWORK:

Homework should be done by the **due date set on Canvas**, unless otherwise noted. You must do the homework on paper with **pencil**. You will need to upload the homework on Canvas as either PDF or WORD document. Any other format will not be accepted.

The homework assignments will be posted on Canvas and may require you to watch a video (ex. Crash Course Physics) and answering some questions on the material. There will also be reading guides and homework questions based on the required reading for each module. This reading will typically consist of sections of the textbook, but other sources may be used. No late homework will be accepted.

LABORATORY REPORTS:

Lab is mandatory and will be done in class. Each lab is due **at the end of the class period**, unless otherwise stated. Complete all lab assignments neatly in **pencil** so that you can cleanly erase any mistakes. Show all your work, where relevant. Further instruction for each lab will be given in the modules and in class.

EXAMS:

There will be three exams and one cumulative final. They will be based on lecture, quizzes, homework, and labs. More detailed information on exams will be provided as the exams get close.

COURSE POLICIES:

Communication:

If you ever need to reach me, consider one of the following options to do so. Please give me 24 – 48 hours to respond and I will respond as soon as I am able. When messaging me, please identify yourself with your full name and the course which you are enrolled (ex. "Kylee Ford, PHYS 2A").

- Message me using the "Inbox" tab on Canvas.

- Email me directly.
- Office Hours are virtual (through Zoom) and will be determined through a poll.

Attendance and Drop Policy:

- Module 0 (Introduction to the course) must be done by the due date to keep enrollment in the course. If you do not complete this module by the due date, you will be dropped you from the course.
- Attendance will be taken through the participation. Remember, **attendance is mandatory**, so if you do not participate in class and quizzes, it is as if you did not attend class.
- You must do all lab activities assigned. Attendance in lab is mandatory. Remember, **three missed labs = failing the course**.

Late Work Policy:

- Late work will only be accepted unless the student has a compelling reason AND has reached out to the instructor beforehand. Late work may be accepted with a documented and compelling reason.
- A 2-day late period will be accepted for Homework assignments, but at a reduced 10% per day it is late.
- There will be no late exams.
- Missing the final exam may result in a failing grade for the course.

STUDENT SUCCESS:

- Technology Support: https://www.reedleycollege.edu/campus-life/technology-help.html
- Tutoring Services: https://www.reedleycollege.edu/academics/tutoring-services/index.html
- COVID-19 information is uploaded to the Reedley College site: https://www.reedleycollege.edu/covid-19/index.html
- DSPS contact information:
  - Hours: Monday – Friday 8:00 am – 5:00 pm
  - Phone: 559-638-0332
  - See more DSPS information here: https://www.reedleycollege.edu/student-services/disabled-student-programs-and-services/index.html

GRADING:

Weighted Grades:

Object	Weighted Grades
Progress Quizzes/Participation	10%
Homework	5%
Laboratory	20%
Exams	40%
Final Exam	25%
Total	100%

Grading Scale:

Grade	Percentage
A	90.0 – 100.0%
B	80.0 – 89.99%
C	70.0 – 79.99%
D	60.0 – 69.99%
F	<60.0%

GENERAL COURSE OUTLINE:

Each module is one week, unless otherwise stated. In each module, there will be one to a few chapters that will be covered within the week.

Week	Dates	Reading	Lecture	Lab - Wednesdays in PHY 70
Week 1	8/7 – 8/13	Ch. 1	Introduction, Nature of Physics, Math Review	Lab 1 - Measurements
Week 2	8/14 – 8/20	Ch. 2	Kinematics: Motion in 1-Dimension	Lab 2 - Graph Matching
Week 3	8/21 – 8/27	Ch. 3	Kinematics: Motion in 2-D	Lab 3 - Projectile Motion
Week 4	8/28 – 9/3	Ch. 4	Dynamics / Newton's Laws	Study Session
Week 5	9/4 – 9/10		Exam 1 Review	**Exam #1 (Ch. 1 – 3)**
Week 6	9/11 – 9/17	Ch. 5	Newton's Laws: Friction, Drag, and Elasticity	Lab 4 - Vector Addition
Week 7	9/18 – 9/24	Ch. 6	Uniform Circular Motion and Gravitation	Lab 5 - Measuring Frictional Forces
Week 8	9/25 – 10/1	Ch. 7	Work, Energy, and Energy Resources	Study Session
Week 9	10/2 – 10/8		Exam 2 Review	**Exam #2 (Ch. 4 – 6)**
Week 10	10/9 – 10/15	Ch. 8	Linear Momentum and Collisions	Lab 6 - Determining g on inclined plane
Week 11	10/16 – 10/22	Ch. 9	Statics and Torque	Lab 7 - Ballistic Pendulum
Week 12	10/23 – 10/29	Ch. 10	Rotational Motion and Angular Momentum	Study Session
Week 13	10/30 – 11/5		Exam 3 Review	**Exam #3 (Ch. 7 – 10)**
Week 14	11/6 – 11/12	Ch. 16	Oscillatory Motion and Waves; ***Veteran's Day (11/11) Observed 11/10 Campus Closed***	Lab 8 - Center of Mass
Week 15	11/13 – 11/19	Ch. 11	Fluid Statics	Lab 9 - Simple Harmonic Motion
Week 16	11/20 – 11/26	Ch. 13	Temperature, Kinetic Theory, and Gas Laws; ***Thanksgiving (11/23 - 11/24)***	Lab 10 - Calorimetry
Week 17	11/27 – 12/3		Final Exam Review	Study Session
Week 18	12/4 – 12/8		Finals Week	**Final Exam (Cumulative)**

*Note: This syllabus, including the course outline, is subject to change.