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PHYS 111
General Physics I

Course Guide

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Physics 111
General Physics I

University of Idaho
3 Semester-Hour Credits

Prepared by:
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University of Idaho

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PHYSICS 111 General Physics I ***3 Semester-Hour Credits: U of I***

Welcome!

Whether you are a new or returning student, welcome to the Independent Study in Idaho (ISI) program. Below, you will find information pertinent to your course including the course description, course materials, course objectives, as well as information about assignments, exams, and grading. If you have any questions or concerns, please contact the ISI office for clarification before beginning your course.

Policies and Procedures

Refer to the ISI website at **www.uidaho.edu/isi** for the most current policies and procedures, including information on setting up accounts, student confidentiality, exams, proctors, transcripts, course exchanges, refunds, academic integrity, library resources, and disability support and other services.

Course Syllabus

Instructor Information

Instructor Name: Dr. Peter M. Wojcik

Email Address: peterw@uidaho.edu

Personal Website: peterwojcik.comLinks to an external site.

- You can contact me via the Canvas interface or the email address above.
- Expect to receive a response in 24-48 hours, Monday-Friday.
- I can meet with you via a virtual meeting (Zoom) and assist you with homework problems, understanding course material and concepts, and any other help you may need with the course. Send me an email to request a meeting.

Textbook

The textbook you will use for the course is *College Physics 2e*Links to an external site. from OpenStax.

The online and pdf versions of the textbook are **free!**

You have several options to access this book:

- View online
- Download a PDF
- Order a print copy

Use whichever format you want. Web view is recommended – the responsive design works seamlessly on any device, and it is updated more frequently than print versions of the textbook.

Course Description

PHYS 111 is the first part of a year-long algebra-based introductory physics sequence. PHYS 111 and 112, together, provide a broad survey of classical and modern physics.

Students will be evaluated based on various assessments, including post-section questions, homework assignments, and exams.

Some of the topics covered in the course:

- One- and Two-Dimensional Kinematics
- Forces
- Newton's Laws of Motion
- Friction, Drag, Elasticity
- Uniform Circular Motion and Gravitation
- Work and Energy
- Linear Momentum and Collisions
- Statics and Torque
- Rotational Motion
- Fluid Statics and Dynamics
- Temperature, Kinetic Theory, and Gas Laws
- Heat and Heat Transfer Methods
- Thermodynamics
- Oscillatory Motion and Waves
- Sound and Hearing

Student Learning Outcomes

Upon successful completion of the course, students will be able to:

- Demonstrate a basic understanding of the physical phenomena outlined in the Course Description.
- Approach and solve a variety of physics problems.
- Understand the scientific method.
- Apply scientific reasoning and use critical thinking to evaluate arguments.
- Apply foundational knowledge and models of a natural or physical science to analyze and/or predict physical phenomena.

Requisite Tools

Computer (Webcam and Microphone Recommended)

- A webcam and microphone are recommended if you plan on meeting with or seeking help from the instructor.

Non-Programmable Scientific Calculator

- A handheld, non-programmable, non-graphing scientific calculator with trigonometric functions is preferred.

- Approved and Recommended Calculators:
    - Texas Instruments: TI-30Xa; TI-30XIIS; TI-36X Pro
    - Casio: Any model on this page: https://edu.casio.com/products/scientific/Links to an external site.
    - Any brand/model is acceptable as long as it is non-programmable and non-graphing.
- You should practice using your calculator when working through post-section questions and homework problems, as you will be using this calculator while taking exams.

Method to Scan Your Written Homework to PDF

- Homework assignments must be in PDF format to upload via the Canvas interface.
- Your smartphone can be used as a PDF scanner. Search Google Play (Android) or the App Store (iPhone) for "pdf scanner." There are many free PDF conversion apps available.

Force Concept Inventory Test

Your first and last assignment is to complete the Force Concept Inventory (FCI) test. Your instructor will email you a link to the FCI test shortly after you sign up for the course.

This test **does not** count toward your final grade but is **required** to receive a final grade for the course.

The FCI test has 30 multiple-choice questions, a 30 min time limit, and tests your knowledge of basic concepts in Newtonian physics.

Please read each question carefully and do not choose an answer at random; always make an "educated guess" when you don't know the answer to the question.

The FCI test is taken at the beginning and end of the course and gives instructors a method for measuring the effectiveness of how the material is presented in the course, among other things.

Grading

Your final grade for the course will be based on the following assessments:

- Post-Section Questions (15%)
- Homework (35%)
- Exams (50%)

Homework assignments and exams will include numerical, algebraic, and multiple-choice problems.

A numerical grade for your solutions on homework assignments and exams will be based on the following criteria:

- Clarity, neatness, and completeness of solution.
- Evidence of understanding and development in understanding.
- Application of physical principles.
- Mathematical approaches.

In summary, show all of your work in your solutions. It is possible to have a correct answer and receive minimal credit, while an incorrect answer that exhibits most of the above grading criteria can receive nearly full credit.

Grade Distribution			Grading Scale	
Post-Section Questions	15.0%		A	85 – 100%
Homework	35.0%		B	70 – 84%
Exam 1	12.5%		C	55 – 69%
Exam 2	12.5%		D	40 – 54%
Exam 3	12.5%		F	< 40%
Exam 4	12.5%			

Post-Section Questions

Each chapter in the *College Physics 2e* textbook is presented as a module in Canvas.

Individual sections in the module contain a reading assignment from the textbook, videos to assist you with your understanding of the textbook material, and links to additional resources pertaining to that section.

After completing most sections in the modules, you will be given a multiple-choice question to test your knowledge of the previous section; these are the Post-Section Questions and are worth 15% of your final grade.

Homework

You will be given a homework assignment after completing each chapter in OpenStax *College Physics 2e*.

- Graded Homework Assignments: 14 (count towards your final grade)
- Ungraded Homework Assignments: 3 (do not count towards your final grade but are required)

Homework Tips

- **Show all your work** in your solutions (including multiple-choice questions, when applicable).
- Don't skip algebra or other physics-related steps in your solution.
- Do any necessary algebra **first** and insert numerical values in the **last** step.
- Write neatly and leave plenty of space between problems and in your solutions.
- Work from the top of the page - down, not from left to right.

Homework Solutions

- You will be given the solutions to the homework after your instructor has graded your work.
- **Do not share the homework solutions** with anyone. If you share the homework solutions, you will **fail** the course!

Exams

Four exams will be given throughout the course and comprise 50% of your total grade.

You will not receive your graded exam.

Exam Format

Each exam is worth 100 pts and is designed to be completed in 60 minutes, with up to 120 minutes allowed.

- Questions 1 - 4 (4 pts each)
    - Multiple-Choice
- Questions 5 - 10 (6 pts each)
    - Short-answer questions consisting of short, one- or two-stage calculations.
- Questions 11 - 13 (16 pts each)
    - Structured questions consisting of two or more parts with subsequent questions that may be dependent on the previous question(s).

Exam Proctor

PHYS 111 exams require a proctor. When you are ready to take an exam, please review the Proctor/Exam Request Form for proctor selection information and the responsibilities of students and proctors.

Review the Exams and Proctors section on the Independent Study in Idaho website before selecting a proctor. If you have difficulty finding a suitable proctor in your area, please check the Approved Proctors page on the ISI website or contact the Independent Study in Idaho program directly (indepsts@uidaho.edu).

Exam Materials

- All exams are closed notes and closed book.
- An equation sheet is provided to you with each exam.
    - Note: The equation sheet provided to you with each exam is the same as the one given to you in the Equation Sheet section of the Getting Started in PHYS 111 module. For that reason, it is recommended you become familiar with it by downloading and having available a copy of the equation sheet while working on post-section questions and homework assignments.
- Bring the following with you to each exam:
    - A non-programmable, non-graphing scientific calculator (smartphones cannot be used as calculators).

- Pencil/Pen/Eraser (pencil with eraser suggested).

Study Guides

Review and complete the Study Guides in preparation for each exam. The Study Guides will be available when you unlock each exam module.

You are not required to complete the study guides; they are designed to give students a foundation for exam preparation and to offer insights into what to expect on the day of the exam, such as the exam format, the topics covered in each question, and the types of questions that may appear on the exam. Note that there is no guarantee that you will see the practice problems from the study guide on the exam!

For each question on the exam, the study guide provides:

- A list of the relevant topic(s) covered in the question: Review the appropriate Canvas pages, including but not limited to the textbook reading, videos, and additional resources.
- Practice problems and additional information relevant to the question: Practice the listed problems and review and understand any additional listed information.
- A notes section to write equations, notes, or other problems relevant to the section(s) covered in the exam question.

Assignment Submission Guidelines

You may submit up to **four** assignments in one seven-day period.

For example, you can submit four homework assignments or three homework assignments and one exam in one seven-day period.

Academic Integrity

Cheating will not be tolerated, and any instance of cheating will promptly be reported to the University of Idaho and/or the student's University.

Please review the University of Idaho's Student Code of Conduct for more information regarding academic dishonesty (Article II, Section A-1): https://www.uidaho.edu/governance/policy/policies/fsh/2/2300

Accommodations

Students with disabilities needing accommodations to participate in this class fully should contact the instructor for the course and the Center for Disability Access and Resources (CDAR).

To learn more about the accommodation process, visit CDAR's website at https://www.uidaho.edu/current-students/cdar or call 208-885-6307.