

PHYSICS 1511 General Physics I, Sections 1
Syllabus
Fall 2026

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- Only use emails to contact me.
- I only respond to emails sent via your uni.edu account.
- Emails are responded to within one business day.
- I will send course-related updates and notifications via the class Google group or Blackboard.
- I will use eLearning to post exam grades, links, and upload materials or videos.

Lectures: Monday, Wednesday & Friday, 9:00-9:50 a.m., Begeman Hall 114

Lab: Tuesday, 9:30-11:20. Begeman Hall 314

In case of emergency, the class will be delivered by Zoom.

Office Hours: Monday 12:30-1:30 pm. You can email me or drop by. You can also email me if you want to see me at a time outside of office hours. We can also meet online via Zoom. If you prefer to meet me online, let me know in advance.

Required Textbook: College Physics: A Strategic Approach with Mastering Phys, Author: Knight, Jones, & Field, Publisher: Pearson, Edition: 4, Year Published: 2018, Notes: This is a UNI Inclusive Access version. ISBN: 9780134703824

This course is an inclusive access course, meaning that you will have access to the required textbook materials automatically through Blackboard.

Course Description: The course covers topics in Newtonian mechanics, including one- and two-dimensional motion, Newton's laws of motion, rotation, momentum and energy conservation, oscillations, and fluids. Instruction will be activity-based, meaning you will learn physics concepts by performing laboratory activities involving related physical phenomena and working together to solve problems. After completing the course, you should: (i) have an excellent working knowledge of the topics listed above; (ii) be able to explain physical phenomena using appropriate concepts (especially about everyday life), and (iii) solve related numerical problems within a quantitative framework.

Prerequisites: [MATH 1130 \(800:044\)](#) or [MATH 1140 \(800:046\)](#) or [MATH 1150 \(800:048\)](#) or [MATH 1420 \(800:060\)](#) or equivalent, or a satisfactory ALEKS score. Essential: **A basic knowledge of algebra and trigonometry is necessary for this course.**

Students should expect to work approximately 2 hours per week outside of class for every course credit hour.

Course Learning Outcomes and Corresponding UNI Learning Outcomes:

<i>Course Learning Outcome</i>	<i>Corresponding UNI Learning Outcomes</i>
Use principles of algebra and trigonometry to set up and solve quantitative mechanics problems.	Critical thinking; Program content knowledge and skills
Demonstrate and apply conceptual understanding of physics ideas being introduced.	Critical thinking; Program content knowledge and skills

Analyze various forms of data to describe and explain relationships between variables.	Critical thinking; Program content knowledge and skills
Work collaboratively to use laboratory equipment to conduct experiments to collect quantitative data.	Critical thinking; Program content knowledge and skills; Communication

Attendance and group activities: Active participation in **all** class activities is **required** at all class meetings and is your responsibility. Statistically, there is a close correlation between active class participation and success in the course. For labs, the instructor **will reassign the team members every few sessions. Also, within a group, the role of the group members should rotate each session. A portion of the group activity grade is based on group activity evaluation and the instructor's observation.**

UNI eLearning: The UNI *eLearning System* is a web-based course delivery system. You will be using the *eLearning* system primarily to administer the course-related materials. To access the *eLearning* system, navigate to the main UNI website, click the “eLearning” link, and log in to the *eLearning* environment after reading the instructions. Extensive help is available within the environment. Do a browser check to ensure that your browser has the required functionality, and make sure that pop-ups are allowed for the *eLearning* site.

MasteringPhysics: *MasteringPhysics* is a web-based assignment delivery system. To access Mastering Physics, sign in to your Blackboard account, click on your course, and then click on one of the Mastering links to launch into the course. You will need to accept the Pearson End-User License Agreement.

Lab Activity and Workbook Activity:

Lab and workbook activities are conducted in groups. *Each student in a group is expected to take part in all the steps.* Each student must bring their own material and answer the required questions. However, each group will hand in one activity as a representation of the group. The activity should contain the author’s name and the names of other group members. ***No make-up lab activities!*** By the instructor's decision, one activity may be divided into sections and performed on separate days. All group members are required to check the leader's lab report before submitting it. Any mistakes in the lab reports are regarded as mistakes of the group. **The instructor may sometimes conduct some activities unannounced. A part of your activity grade comes from the instructor's observations. No free ride is accepted. You should notify me immediately if you observe any unresolvable conflict within your group.**

Practice Exams: I may take a quiz or count a workbook activity as a quiz at random sessions. You will be asked to complete exercises as homework outside of class. Students must be able to do these exercises by themselves to prepare for exams. Practice Problems may be provided. **The instructor will not provide solutions, but** students can meet with the instructor during office hours or arrange to meet outside office hours to discuss after they have completed the practice exams for review. Other exercises may be supplemented during the semester.

Homework: Homework will be assigned through the Mastering Physics online system. It is your responsibility to complete each assignment before the deadline. **The projects will be available several days before they are due. This will allow you to consult the instructor for assistance before**

you submit your work. Homework assignments must be submitted by the due date and time. Submission after this time will result in a 10% deduction per day for your homework. Though students are encouraged to work together, each student must submit their own answers and solutions for an assignment. Plagiarism and cheating are serious offenses and will incur severe penalties (see *Academic Ethics Policies*, 2010-2012 UNI Programs and Courses Catalog). Work missed or submitted late due to absence may be made up or submitted late, as the case may be, if the absence is for good cause, *e.g.*, illness and emergency. However, the student must explain the reason, show evidence to the instructor, and make necessary arrangements. This should be done beforehand and certainly as soon as possible.

Examinations: All exams will be a combination of written problems and multiple-choice questions. There will be two midterms during the semester and a final exam. Tests will consist of *conceptual questions* and detailed quantitative problems similar in type and scope to those *discussed in class* and assigned for homework. You are allowed to use a formula sheet. Writing down your detailed reasoning for the problems (similar to those shown in the homework solutions) is important to get credit for each correct step you take. *All* examination scores will determine a student's final course grade. **The instructor will not post exam solutions. Students should meet with the instructor during office hours or plan to meet outside office hours to discuss their exams or review the keys.**

Internet-enabled electronic devices are not permitted during exams! You must stay in the classroom during the exam for an extended period! If I have reasons to suspect that you received help from someone else or are seeking in-person or online services, I will take action to prove/disprove this beyond a reasonable doubt. For example, if your exam solution needs to be corrected/completed, but your answer is correct, you might be asked to solve a problem of similar difficulty in my office. Failure to do so will result in a zero credit for the entire exam and potential failure of the course.

Make-Up Work, Late Work:

Your work is due on time, except for reasonable *documented* excuses. Late work will be docked 20% per day.

There will be ***no make-up for group activities*** since the lowest score will be dropped. Make-ups for exams are granted in case of documented illness or family emergencies or to permit participation in a school-sponsored activity (a signed document is required as proof). If you are going to miss an exam, **you must notify the instructor in advance** (preferably one week) so alternative arrangements can be made. (Please specify the nature of illness/family emergencies in the notifications: any notification without details will be disregarded.) **If the exam originally has any bonus points, the bonus will not be granted if you do a makeup exam.**

Grade Basis and Calculation: Performance in the various categories of work will count toward your final grade as follows:

Lab & Group Activities	10%	(Lowest score dropped)
Homework	18%	No HW will be dropped
Examination 1	24%	
Examination 2	24%	
Examination 3	24%	

The letter grade corresponding to a given numerical (percentage) score may be found from the following standard scale of percentage *cutoffs* for the grades:

94.0% for A	73.0% for C
90.0% for A-	70.0% for C-
87.0% for B+	67.0% for D+
83.0% for B	63.0% for D
80.0% for B-	60.0% for D-
77.0% for C+	Below 60.0% for F

The median or average score in this class is usually equivalent to a B-.

Opportunities to Change Your Destiny!

- Between the second and third exam, you can change the percentage of your exams by a maximum of $\pm 3\%$. The sum of the three categories should be 72%.
- You can drop any of your low-score homework if you get A's in all your midterm and final exams.

Topical Coverage: Below is a tentative list of topics to be covered and the relevant textbook chapters. The topical coverage may change as the course progresses. Some sections will not be explicitly discussed in class. However, you are still responsible for learning the associated materials.

Week	Chapter	Topic
1	1	Representing Motion
2	2	Motion in One Dimension
3 and 4	3	Vectors and Motion in Two Dimensions
5	4	Forces and Newton's Laws of Motion
6 and 7	5	Applying Newton's Laws
8	6	Circular Motion
9 and 10	7	Rotational Motion
11	8	Equilibrium and Elasticity
12 and 13	9	Momentum
14	10	Energy and Work
15	13	Fluids
16	14	Oscillations

Important Dates:

First exam: Tuesday, October 6th, **after** finishing Chapter 3 assignments

Second exam: Tuesday, November 10th, **after** finishing chapter 6 assignments

Third exam: Wednesday, December 16th, 10:00 - 11:50 a.m.

The Learning Center

The Learning Center @ Rod Library provides free tutoring for various areas (i.e., writing, math, science, business, Spanish, college reading, and learning strategies). The Learning Center @ Rod Library is open for walk-in assistance Monday-Thursday 10 am-10 pm, and is free of charge

for all UNI students. If you are unavailable during normal tutoring hours, online tutoring is also available through Smarthinking. You will need your CATID and passphrase to gain access. To access the Smarthinking platform go to <https://tlc.uni.edu/online>. For more information, go to <https://tlc.uni.edu>, email TheLearningCenter@uni.edu, call 319-273-6023, or visit the TLC desk located on the main floor of Rod Library.

Office of Compliance and Equity Management

“The University of Northern Iowa does not discriminate in employment or education. Visit [13.03 Equal Opportunity & Non-Discrimination Statement \(https://policies.uni.edu/1303\)](https://policies.uni.edu/1303) for additional information.”

Student Accessibility Services

“The University of Northern Iowa (UNI) complies with the Americans with Disabilities Act Amendments Act of 2008 (ADAAA), Section 504 of the Rehabilitation Act of 1973, the Fair Housing Act, and other applicable federal and state laws and regulations that prohibit discrimination on the basis of disability. Students with disabilities experiencing a barrier to access should connect with Student Accessibility Services (SAS) to request accommodations. For more information about the accommodation process, please contact SAS at (319) 273-2677 Relay 711, accessibilityservices@uni.edu, or GIL 118. Additional information is also available at sas.uni.edu.”

Emergency Procedures – Report all Emergencies

You may have noticed the emergency "tip sheet" posted in classrooms and laboratories around UNI buildings. Please read the sheet and learn its contents. Here is a link to it: http://www.uni.edu/resources/sites/default/files/UNI_Emergency_Tip_Sheet.pdf. In an emergency, there are designated shelters in each campus building. The designated shelters in Begeman Hall are on the ground and first floors in or near the restrooms. The shelter locations can be found at: <http://www.vpaf.uni.edu/ehso/evac-diagrams.shtml>. These diagrams also contain the building evacuation routes, which should be used if an evacuation order is given. You'll notice that the shelter areas are small. If there are too many people to fit into the shelters, the hallways on the ground and first floors should be used.

Free Speech

The University of Northern Iowa supports and upholds the First Amendment protection of freedom of speech and the principles of academic and artistic freedom. We encourage the free and responsible exchange of diverse ideas on our campus. The University is committed to open inquiry and the spirited and thoughtful debate of such statements.

Note: The instructor reserves the right to modify this syllabus reasonably and in the class's best interest. Students will be notified by email if there is any change in the syllabus during the semester.