

Syllabus

Physics 4A: Physics for Scientists and Engineers Reedley College – Spring 2023

Schedule #51073

Lecture: Mondays 1:00 – 3:50 PM in PHY 70

Lab: Wednesdays 1:00 – 3:50 PM in PHY 70

Contact Information:

Instructor Name: Kurt Shults

Email: kurt.shults@reedleycollege.edu

Office Telephone: (559) 494 - 3000 ext. 3664

Office Hours:

Tuesdays 1:00 – 3:00pm in PHY 71

Thursdays 1:00 – 3:00pm in PHY 71

Fridays 9:00 – 10:00am via Zoom <https://scccd.zoom.us/j/86599414811>

Required Course Materials:

- TEXTBOOK: Giancoli, Douglas C., Physics for Scientists & Engineers Volumes 1-3 (4th Edition) ISBN-13: 978-0131495081
 - **THIS TEXTBOOK IS AVAILABLE TO RENT FROM THE LIBRARY!**
- Calculator (graphing or non-graphing)

Course Description:

This physics course covers classical mechanics, properties of matter, gravitation, fluid mechanics, oscillatory motion, and mechanical waves.

Corequisites: Mathematics 5B

Advisories: English 1A or 1AH

Student Learning Outcomes:

In this course, students will -

- Apply algebra, trigonometry, and first-year calculus to solve physical problems such as
 - Kinematic equations
 - Vector quantities
 - Newton's laws
 - Conservation of energy and momentum
 - Rotating bodies
 - Gravity
 - Oscillatory motion
 - Mechanical waves
- Apply dimensional analysis to determine the units for an unknown quantity or to check the validity of equations
- Identify the complementary roles of experimental investigation and theoretical explanation in science

Calendar:

- January 16th – Martin Luther King, Jr. Day, no classes held
- January 20th - Last day to drop a Fall 2022 full-term class for full refund
- January 27th - Last day to drop a Fall 2022 full-term class in person to avoid a "W"
- February 17th – Lincoln Day, no classes held
- February 20th – Washington Day
- March 10th – Last day to drop a full-term class
- April 3rd – 7th – Spring recess, no classes held
- May 15th - 19th – Finals week

Exams:

There will be three midterm exams (each worth 10% of the overall grade) and one final exam (worth 20% of the overall grade). The exams will be held during lab hours. The exams contribute **50%** of your semester grade, they are very important to prepare for.

Makeup exams will be given with preapproval only. Further details will be given during the semester.

Homework:

Homework is **20%** of your semester grade. Homework assignments with due dates will be handed out during lecture and posted on Canvas, completed assignments will be turned in at the end of lab on their due dates.

Late homework will be accepted with a 30% reduction in score.

Laboratory:

This class has a lab that is **mandatory**. The lab scores make up **20%** of your grade.

If you miss more than three labs, you will automatically fail the course!

I will drop your lowest lab score. There will also be one online make-up lab available at the end of the semester.

Students must arrive to lab within the first 15 minutes of the beginning of lab, if a student arrives later than 15 minutes after the start of lab, they will not be allowed to participate in the lab and will receive a zero for that lab.

Make plans to attend every lab session on time!

Participation/Quizzes:

There will be weekly quizzes given at the start of each lab related to topics covered in the previous week. Quizzes make up **10%** of your grade.

Grading Policy:

% Grade for the Class	Letter Grade for the Class
90.0% -100%	A
80.0%-89.9%	B
70.0%-79.9%	C
60.0%-69.9%	D
0%-59.9%	F

Category of Classwork	% of Class Grade
Midterm Exams	30% (10% each)
Homework	20%
Labs	20%
Participation/Quizzes	10%
Final Exam	20%

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>

Academic Dishonesty

Students at Reedley College are entitled to the best education that the college can make available to them, and they, their instructors, and their fellow students share the responsibility to ensure that this education is honestly attained. Because cheating, plagiarism, and collusion in dishonest activities erode the integrity of the college, each student is expected to exert an entirely honest effort in all academic endeavors. Academic dishonesty in any form is a very serious offense and will incur serious consequences.

CHEATING

Cheating is the act or attempted act of taking an examination or performing an assigned, evaluated task in a fraudulent or deceptive manner, such as having improper access to answers, in an attempt to gain an unearned academic advantage. Cheating may include, but is not limited to, copying from another's work, supplying one's work to another, giving or receiving copies of examinations without an instructor's permission, using or displaying notes or devices inappropriate to the conditions of the examination, allowing someone other than the officially enrolled student to represent the student, or failing to disclose research results completely. 48 Administrative Policies 2022-2023 Reedley College Catalog

PLAGIARISM

Plagiarism is a specific form of cheating: the use of another's words or ideas without identifying them as such or giving credit to the source. Plagiarism may include, but is not limited to, failing to provide complete citations and references for all work that draws on the ideas, words, or work of others, failing to identify the contributors to work done in collaboration, submitting duplicate work to be evaluated in different courses without the knowledge and consent of the instructors involved, or failing to observe computer security systems and software copyrights. Incidents of cheating and plagiarism may result in any of a variety of sanctions and penalties, which may range from a failing grade on the particular examination, paper, project, or assignment in question to a failing grade in the course, at the discretion of the instructor and depending on the severity and frequency of the incidents

Important Notes:

- **All first week assignments need to be completed and submitted by the due date to avoid possibly being dropped from the class.**
- Students who may need accommodations for this class are encouraged to notify the instructor and contact DSPS early in the semester so that reasonable accommodations may be implemented as soon as possible. All information will remain confidential.

Course Schedule:

Spring 2023 PHYS 4A Schedule				
	Dates	Lecture - Mondays (1:00 - 3:50 PM)	Lab - Wednesdays (1:00 - 3:50 PM)	Important Dates
Week 1	1/9 - 1/15	Chapter 1 - Introduction, Measurement, Estimating	No Lab	
Week 2	1/16 - 1/22	No Class (Martin Luther King Jr. holiday)	Lab 1 - Measurements	1/16 - Monday Holiday (Martin Luther King, Jr. Day)
Week 3	1/23 - 1/29	Chapter 2 - Describing Motion: Kinematics in One Dimension	Lab 2 - Graph Matching	
Week 4	1/30 - 2/5	Chapter 3 - Kinematics in Two or Three Dimensions; Vectors	Lab 3 - Projectile Motion	
Week 5	2/6 - 2/12	Chapter 4 - Dynamics: Newton's Laws of Motion	Homework Session; Homework Set #1 Due	2/8 - Homework Set #1 Due (HWs #1, #2, #3)
Week 6	2/13 - 2/19	Midterm Exam #1 Review	Exam #1 (Ch. 1-3)	2/17 - Friday Holiday (Lincoln's Day)
Week 7	2/20 - 2/26	No Class (Washington's Holiday)	No Lab	2/20 - Monday Holiday (Washington's Day)
Week 8	2/27 - 3/5	Chapter 5 - Using Newton's Laws: Friction, Circular Motion, Drag Forces	Lab 4 - Vector Addition	
Week 9	3/6 - 3/12	Chapter 6 - Gravitation and Newton's Synthesis	Lab 5 - Measuring Frictional Forces	
Week 10	3/13 - 3/19	Chapter 7 - Work and Energy	Lab 6 - Determining g on inclined plane	
Week 11	3/20 - 3/26	Chapter 8 - Conservation of Energy	Homework Session; Homework Set #2 Due	3/22 - Homework Set #2 Due (HWs #4, #5, #6, #7)
Week 12	3/27 - 4/2	Midterm Exam #2 Review	Exam #2 (Ch. 4-7);	
Spring Recess	4/3 - 4/9	No Class	No Class	
Week 13	4/10 - 4/16	Chapter 9 - Linear Momentum	Lab 7 - Ballistic Pendulum	
Week 14	4/17 - 4/23	Chapter 10/11 - Rotational Momentum/Angular Momentum; General Momentum	Lab 8 - Center of Mass	
Week 15	4/24 - 4/30	Chapter 12 - Static Equilibrium; Elasticity and Fracture	Homework Session; Homework Set #3 Due	4/26 - Homework Set #3 Due (HWs #8, #9, #10, #11)
Week 16	5/1 - 5/7	Midterm Exam #3 Review	Exam #3 (Ch. 9-12)	
Week 17	5/8 - 5/14	Chapter 13 - Fluids	Final Exam Review	
Week 18	5/15 - 5/19	Final Exam will be held on Monday, May 15 at 3:00 PM in PHY 70		