University of Wyoming
PHYS 1210-02, Engineering Physics I, 4 credits, Spring 2026
What you really need to know

Class times and locations

MWF 2:10 PM–3:00 PM, from 21 Jan 2025 to 5 May 2025, Classroom Building Room 314.
Exams on Thursday evenings, 5:10–7:00 PM in Classroom Building 314.

Laboratory

Section 10: M 3:10–5:00 PM, STEM 185. TA: Jeremy LaFollette
Section 11: M 5:10–7:00 PM, STEM 185. TA: James Quenon

Discussion

Section 20: T 2:10–3:00 PM, STEM 155. TA: Srujan Dandu
Section 21: T 3:10–4:00 PM, STEM 155. TA: Adam Tedeschi

Lecturer

Richard Barrans, Ph.D., M.Ed., Assistant Lecturer, Physics and Astronomy
PS 116, no phone in office, rbarrans@uwyo.edu.
Office Hours: M 3:10–4:10 PM, T 1–2 PM; W 7–8 PM; F 10–11 AM. The Wednesday evening office hour is held in PS 234. All other hours are in my office, PS 116.

Required materials

Textbook: Mastering Physics with Pearson eText Access Code (18 weeks) for *University Physics with Modern Physics, 15th Edition*, by Young and Freedman, published by Pearson Addison Wesley. Available via WyoCourses through StartRight+. Chapter readings from the textbook are given in the schedule.

Required examinations, assignments, and activities

Homeworks are assigned after about every lecture; there is a lab on most weeks. There will be one quiz and three midterm exams administered on Thursday evenings, and retests also on Thursday evenings between exams.

Quiz	Thursday, Feb 5	5:10–6:00 PM	CR 314
Exam 1	Thursday, Feb 19	5:10–7:00 PM	CR 314
Exam 2	Thursday, Mar 26	5:10–7:00 PM	CR 314
Exam 3	Thursday, Apr 23	5:10–7:00 PM	CR 314
Exam 4 (Final exam)	Wednesday, May 13	1:15–3:15 PM	TBA

Grading scale and grading

The final grade will be determined from cumulative points attained. Grading will be on a standard scale (90's = A, 80's = B, 70's = C, 60's = D, < 60% = F). Standards comprise 75% of the course grade, and labs comprise 25%.

Standards: Standards are specific skills that I recognize as evidence of mastery of the course content. The list of standards can be viewed from the WyoCourses shell. The midterm exams,

and the final exam, contain questions that probe your understanding of the standards. Your performance on the questions for a standard determines whether you satisfy the standard or not. If you satisfy a standard, great! That contributes to your tally of mastered standards.

If you don't satisfy a standard on an exam, you automatically qualify to try again at the scheduled retest. If you satisfy the standard at the retest, it counts as satisfied with no penalty. If you don't satisfy the standard at the retest, you may retest again, but you must first meet with me or a designee to review the standard. I won't keep a record of which standards we've reviewed together, just that we have done a review. Reviewing the proper content is up to you.

Labs: You must average **at least 60% on the labs** to pass the course. If your lab average is less than 60%, you will receive an F for the course regardless of your scores on the standards.

A note about grades: Your grade in this course reflects your performance over a 15-week period on a limited set of contrived evaluations. It does not reflect your worth as a person or what I think of you. Because of the scope of this course, and because it comprises only a small fraction of your college career, your grade is not a prediction of your future success or an evaluation of your potential as a scientist or engineer.

Attendance and absences

There is no explicit grade for attendance in lecture or discussion. Attendance in a lab is required to receive credit for the lab. If you have an excused absence from lab, you may attend another lab session in the same week, we may arrange a make-up lab for you, or the lab may be pro-rated.

Tentative Schedule

Date	Topic	Reading*
01/21	Quantities, units, position, velocity	1.1–1.4, 2.1–2.4
01/23	Acceleration, graphs of motion	
01/26	Straight-line kinematics	2.5–2.6
01/26	**Lab 1**: Graphs of motion	
01/28	Vectors	1.7–1.10
01/30	Vectors of motion	3.1–3.2
02/02	Projectile trajectories	3.3
02/02	**Lab 2**: Projectile launcher	
02/04	Uniform circular motion, relative motion	3.4–3.5
02/05	**Quiz** 5:10–6:00 PM, CR 314	
02/06	Curved motion practice	
02/09	Newton's first and second laws	4.1–4.4
02/09	**Lab 3**: Force table	
02/11	Free body diagrams, statics	4.6, 5.1
02/13	Force and acceleration	5.2–5.3
02/16	**No class**	
02/16	**No lab**	
02/18	Centripetal forces	5.4
02/19	**Exam 1, Round 1 Retesting** 5:10–7:00 PM, CR 314	
02/20	Work and power	6.1–6.4
02/23	Potential energy	7.1–7.2
02/23	**Lab 4**: Hanging weight	
02/25	Mechanical energy	7.3–7.4
02/27	Energy diagrams	7.5
03/02	Impulse and momentum	8.1–8.3
03/02	**Lab 5**: Friction	
03/04	Collisions	8.4
03/05	**Round 2 Retesting** 5:10–7:00 PM, CR 314	
03/06	Center of mass	8.5
03/09	Rotational kinematics	9.1–9.3
03/09	**Lab 6**: Pendulum challenge	
03/11	Rotational energy	9.4
03/13	Calculating moments of inertia	9.5–9.6

	Spring Break 3/16–3/20	
03/23	Torque, work, and angular momentum	10.1–10.6
03/23	**Lab 7**: Collisions	
03/25	Static torques	11.3
03/26	**Exam 2** 5:10–7:00 PM, CR 314	
03/27	Oscillations	14.1–14.3
03/30	Pendulums, damped and driven oscillations	14.5–14.7
03/30	**Lab 8**: Torque and moment of inertia	
04/01	Describing waves	15.1–15.3
04/03	Wave details	15.4–15.7
04/06	Sound waves	16.1–16.2
04/06	**Lab 9**: Hooke's law	
04/08	Sound intensity	16.3
04/09	**Round 3 Retesting** 5:10–7:00 PM, CR 314	
04/10	Wave interference	16.4–16.7
04/13	Doppler effect	16.8
04/13	**Lab 10**: Standing waves	
04/15	Wave practice	
04/17	**No class**	
04/20	Fluid pressure, Pascal's principle	12.1–12.2
04/20	**Lab 11**: Fluids	
04/22	Buoyancy	12.3
04/23	**Exam 3** 5:10–7:00 PM, CR 314	
04/24	Fluid flow	12.4–12.5
04/27	Newtonian gravity	13.1–13.3
04/27	**Make-up labs**	
04/29	Orbits	13.4–13.5
05/01	Orbital dynamics	
05/04	Gravitational fields	13.6–13.8
05/04	**No lab**	
05/06	Review	
05/07	**Round 4 Retesting** 5:10–7:00 PM, CR 314	
05/08	Review	
05/13	**Final Exam 1:15–3:15 PM**	

*Reading assignments are from the textbook.