

Syllabus College Physics II (Physics 2145) Spring 2025 (last updated 1/14/25)

Time and place: MWF 8-8:50 104 Physics

Instructor: Dr. Agnes Vojta, 216 Physics, vojtaa@mst.edu

Required materials: “College Physics” by Knight, Jones, and Field, 1st or 2nd edition, Chapters 17-25; Lab manual. Computer with internet access, scanner or scanning app

Goals: The main goals of this course are to develop an understanding of the basic principles of electrodynamics (including optics) and to acquire the proper techniques for the solution of physical problems. For topics covered see schedule of assignments

Prerequisites: Physics 1145

Course format: Alternating lectures and recitation-and-discussion sessions. The lectures will review and clarify important concepts of the reading material and present examples for physical principles and problem-solving methods. **You are expected to have read the reading assignment prior to the lecture.** The recitations will be used to discuss conceptual questions and practice problem solving. You are encouraged to ask questions at any time during lectures.

Office hours/Learning assistance: Thursday, 2-4:30pm, 6-7:30pm, 202 Physics

Sources of course points:

Tests: Three tests will be given during class time on the following days: Fri, February 21; Wed, March 19; Wed April 23. Each test counts 120 points.

Final exam (Monday, May 6, 12:30-2 pm): 120 points

End Material Quiz will be given during the last class period, May 6. 40 points

Quizzes (multiple choice or problem similar to homework) will be given unannounced. 10 pts each.

Homework is due Friday 8am via Canvas. 10 points each set.

The three test-preparation homeworks as well as the assignment in the last week of class will **not** be graded; they serve solely as preparation for the tests and the end material quiz.

Lab: 6 lab exercises, lowest score will be dropped. 20 pts each.

Points available:

In order to make up for missed assignments or having a bad day:

- the lowest score of the four tests (three test + final) will be dropped
- you can earn at least 220 points for quizzes/homework/worksheets, but grade cuts are based on 200 points.
- the lowest lab score of six will be dropped

If you are sick on an exam day, do not come to class. Contact me to arrange a makeup.

If you must participate in a conflicting major university or intercollegiate event during a test, you need to contact me a week prior to the exam to arrange a makeup. I will need a letter or email from the event's Missouri S&T Faculty Sponsor.

3 tests + final, each 120 points, highest 3	360
End Material Quiz	40
Quizzes, homework, in-class problems, each 10 pts, at least 20 assignments	200
Lab	<u>100</u>
	<u>700</u> total

Grading Scale:

A for 90% of 700	≥	630	D for 59.50% of 700	≥	420
B for 80% of 700	≥	560	F for less than 59.50%	<	420
C for 70% of 700	≥	490			

Regrades and spreadsheet corrections

Requests for regrades must be made in writing no later than the class following the class in which the assignment or test was returned. If a score has been entered incorrectly in the grade spreadsheet, you must bring me the assignment in question. Requests for corrections must be made before the beginning of the last class in the semester. No changes will be made after the end material quiz has been given.

Attendance: Do not come to class if you feel sick or have tested positive for COVID-19. Let me know, and we'll find a solution.

If you have a disability and anticipate needing accommodations in this course, you are strongly encouraged to meet with me early in the semester. You will need Student Accessibility and Testing (<http://saat.mst.edu>, 203 Norwood Hall, 341-6655, dss@mst.edu) verifying your disability and specifying the accommodation you will need before I can arrange your accommodation.

Academic Dishonesty will not be tolerated. See <http://registrar.mst.edu/academicregs>.

Title IX policies, resources and reporting options are available at <http://titleix.mst.edu>.

Emergency exit: classroom egress maps are posted at <http://designconstruction.mst.edu/floorplan/>. Please take a moment to identify the emergency exit.

Unresolved complaints: It is hoped that any problems can be resolved through discussions between student and instructor. If there are any complaints that cannot be resolved you may contact Dr. Klaus Woelk, Associate Dean for Academic Affairs (woelk@mst.edu).

Unresolved complaints about laboratory instructors: Please contact the professor in charge of the lab portion of the course, Mr. Joel Peacher (peach@mst.edu).

Physics 2145 – Spring 2025 Schedule of assignments

You are expected to have done the assigned reading **before** coming to class.
HW is due Friday 8am.

Date	Topic	Reading	Homework	Lab
Jan 20	Martin Luther King Day-no class			No Labs
22	Ch. 20: Coulomb's law	20.1-3		
24	Coulomb's law		Homework #1	
27	Electric field	20.4-5		301, 303
29	Conductors; Forces on charges	20.6-7		Lab 1
31	Ch. 20 review		Homework #2	
Feb 3	Ch 21: Electric potential	21.1-2		302, 304
5	Electric potential	21.3-5		Lab 1
7	Electric potential		Homework #3	
10	Capacitors	21.6-9		301, 303
12	Capacitor networks	23.6		Lab 2
14	Capacitors		Homework #4	
17	Review			302, 304
19	Review		Test PrepHW #1	Lab 2
21	Test 1 Ch. 20-21, 23.6			
24	Ch. 22: Current and Resistance	22.1-4		301, 303
26	Ohm's Law and power	22.5-6		Lab 3
28	Ohm's Law		Homework #6	
Mar 3	Ch. 23 Circuits	23.1-3		302, 304
5	Circuits	23.4-5		Lab 3
7	RC Circuits	23.7	Homework #7	
10	RC Circuits			No Labs
12	Circuits		Homework #8	
14	St. Pat's Break – No Class			
17	Review		Test PrepHW #2	301, 303
19	Test 2 Ch.22-23			Lab 4
21	Magnetism			

Mar 24- 30 Spring Break. No classes.				
Mar 31	Ch. 24 Magnetic Fields	24.1-4		302, 304
Apr 2	Magnetic fields	24.3-4		Lab 4
4	Magnetic fields	24.5-6	<i>Homework #10</i>	
Apr 7	Magnetic fields	24.7-8		301, 303
9	Ch. 25 Electromagnetic Induction	25.1-3		Lab 5
11	Faraday's Law	25.4	<i>Homework #11</i>	
14	Electromagnetic Induction			302, 304
16	Electromagnetic waves	25.5-8		Lab 5
18	Review		<i>Homework #12</i>	
21	Review			301, 303
23	Test 3 Ch. 24-25		<i>Test Prep HW #3</i>	Lab 6
25	Electromagnetic waves			
28	Ch. 17: Wave Optics	17.1-3		302, 304
30	Ch. 18 Ray Optics	18.1-4		Lab 6
May 2	Lenses and Mirrors	18.5-7	<i>Homework #14</i>	
5	Lenses and Mirrors			No labs
7	Ch. 19 Optical Instruments	19.1-7		
9	End Material Quiz Ch.17, 18, 25		<i>Homework #15</i>	

Final Exam: Thursday, May 15, 10:00 am – 11:30 am (90 minutes)