

PHYS 1302/1102: College Physics II with Laboratory

1: Instructor

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Dual-Credit Collaborate Office Hours MTWRF 8:00-9:00am and
by appointment

2: Required materials

Textbook: "College Physics", published by OpenStax. This free textbook may be viewed online or downloaded at <https://openstax.org/details/books/college-physics>

An advanced scientific calculator is needed for this course. It is not necessary to have a graphing calculator.

3: Prerequisites

College Algebra, or High School Algebra II and Geometry

4: Course Description

Study of electricity, magnetism, light, and atomic physics. (This course will not count as the introductory physics course for physics or engineering majors).

5: Student Learning Outcomes

Upon completion of Physics 1302/1102, you should be able to:

1. Apply mathematical reasoning to solve quantitative problems in the study of physics
2. Demonstrate knowledge of the fundamental laws of electricity, magnetism, light, and atomic physics
3. Demonstrate technical skill in the laboratory applications of the principles of electricity, magnetism, light, and atomic physics
4. Apply scientific reasoning in the analysis of data collected in the physics laboratory

6: Graded Material

6.1: *Class Participation and Timeliness*

Weekly homework and laboratory activities will appear regularly in Blackboard, according to the schedule below. These assignments will be due at the time listed in the schedule. All assignments will be turned in via Blackboard. After each assignment is due, there will be a one-day grace period during which the assignment will still be accepted. After the assignment disappears from Blackboard, it will no longer be accepted. Things go fast so **do not fall behind!**

6.2: *Exams*

This course will have four exams, each covering one portion of the material. There is no comprehensive exam. Exams will open in Blackboard according to the schedule below. You will have three days to take each exam, but they must be uploaded before the due date/time. Exams will not be accepted late.

6.3 **Grades: Weighting and Letter Grades**

The weighting system shown in Table 1 will be used in determining final grade for the course

Table 1: Grade Weighting in Physics 1302

Item	Percent
Homework	40%
Exams	60%
Total	100%

The grade for Physics 1102 is entirely determined by the Laboratory average.

The instructor will determine letter grades for the course using his professional judgment, and the following standards as described in the University Catalog:

A = excellent work B = good work C = average work D = poor work F = failing work

7: Classroom and University Policies and Student Support

7.1: General Policies

All students are required to follow the policies and procedures presented in the [Angelo State University Student Handbook](#)¹ and [Angelo State University Catalog](#)².

7.2: Student Disability Services

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA), and subsequent legislation.

The Office of Student Affairs is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability, and it is the student's responsibility to initiate such a request by contacting Ms. Dallas Swafford, Director of Student Disability Services, at 325-942-2047 or Dallas.Swafford@angelo.edu, or visit the [Student Disabilities Services website](#)³.

7.3: Title IX Statement

Angelo State University is committed to the safety and security of all students. If you or someone you know experience sexual harassment, sexual assault, domestic or dating violence, stalking, or discrimination, you may contact ASU's Title IX Coordinator: Ms. Michelle Miller, Director of Title IX Compliance, at 325-942-2022, or Michelle.Miller@Angelo.Edu.

7.4: Observance of Religious Holy Day

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for [Observance of Religious Holy Day](#)⁴ for more information.

7.5: Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 [Grading Procedures](#)⁵ for more information.

7.6: Student Conduct Policies

Academic Integrity

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU. The College of Science and Engineering adheres to the Statement of [Academic Integrity](#)⁶

Plagiarism

Plagiarism is a serious topic covered in ASU's [Academic Integrity policy](#)⁶ in the Student Handbook. Plagiarism is the action or practice of taking someone else's work, idea, etc., and passing it off as one's own. Plagiarism is literary theft. It is expected that you will summarize or paraphrase ideas and give appropriate credit to the source.

Copyright Policy

Students officially enrolled in this course should make only one printed copy of the given articles and/or chapters. You are expressly prohibited from distributing or reproducing any portion of course readings in printed or electronic form without written permission from the copyright holders or publishers.

8: Course Outline

The course outline is presented in **Table 2**.

Table 2: Course Lesson Outline

Week	Dates	Lecture Topics	Assignments
1	Jan. 18-21	Introduction, The History of Electricity, Magnetism, Light, and Atomic Physics. Electric Charge and Electric Forces, Coulomb's Law (Chapter 18)	Homework 1 due January 25
2	Jan. 24-28	Homework 1 due Tuesday, January 25 by 11:59PM Electric Fields and Forces (Chapter 18), Electric Potential and Electric Potential Energy (Chapter 19)	Homework 2 due February 1 Laboratory 1: Coulomb's Law lab due February 2
3	Jan. 31-Feb. 4	Homework 2 due Tuesday, February 1 by 11:59PM Laboratory 1 due Wednesday, February 2 by 11:59PM Electric Potential, Capacitors, Capacitors in Series and Parallel (Chapter 19)	Homework 3 due February 8 Laboratory 2: Capacitor Charging RC Circuit due February 17

Week	Dates	Lecture Topics	Assignments
4	Feb. 7-11	Homework 3 due Tuesday, February 8 by 11:59PM Exam 1 due Wednesday, February 9 by 11:59PM Electric Current, Resistance, Ohm's Law (Chapter 20)	Exam 1 due February 9 Homework 4 due February 16
5	Feb. 14-18	Homework 4 due Wednesday, February 16 by 11:59PM Laboratory 2 due Thursday, February 17 by 11:59PM Resistors in Series and Parallel, DC Circuits and Instruments (Chapter 21)	Homework 5 due February 23 Laboratory 3: Ohm's Law due February 24
6	Feb. 21-25	Homework 5 due Wednesday, February 23 by 11:59PM Laboratory 3 due Thursday, February 24 by 11:59PM Magnetism, Magnetic Fields and Forces (Chapter 22)	Homework 6 due March 1 Laboratory 4: Charge in a Magnetic Field due March 2
7	Feb. 28-Mar.4	Homework 6 due Tuesday, March 1 by 11:59PM Laboratory 4 due Wednesday, March 2 by 11:59PM Magnetic Induction, Generators, AC Circuits (Chapter 23)	Homework 7 due March 8 Laboratory 5: RLC in AC Lab due March 23
8	Mar. 7-11	Homework 7 due Tuesday, March 8 by 11:59PM Exam 2 due Wednesday, March 9 by 11:59PM Electromagnetic Waves, The EM Spectrum (Chapter 24)	Exam 2 due March 9 Homework 8 due March 22
9	Mar. 14-18	Spring Break	No Assignments

Week	Dates	Lecture Topics	Assignments
10	Mar. 21-25	Homework 8 due Tuesday, March 22 by 11:59PM Laboratory 5 due Wednesday, March 23 by 11:59PM Reflection and Refraction, Snell's Law, Geometric Optics (Chapter 25)	Homework 9 due March 29 Laboratory 6: Refraction Lab due March 30
11	Mar. 28-Apr. 1	Homework 9 due Tuesday, March 29 by 11:59PM Laboratory 6 due Wednesday, March 30 by 11:59PM Geometric Optics (Chapter 25), Vision and Optical Instruments (Chapter 26)	Homework 10 due April 5 Laboratory 7: Converging mirrors due April 6
12	Apr. 4-8	Homework 10 due Tuesday, April 5 by 11:59PM Laboratory 7 due Wednesday, April 6 by 11:59PM Wave Optics, Interference and Diffraction (Chapter 27). Introduction to Special Relativity (Chapter 28)	Homework 11 due April 13 Laboratory 8: Diffraction Lab due April 21
13	Apr. 11-15	Homework 11 due Wednesday, April 13 by 11:59PM Exam 3 due Thursday, April 14 by 11:59PM Introduction to Quantum Physics, The Photoelectric Effect (Chapter 29)	Exam 3 due April 14 Homework 12 due April 20
14	Apr. 18-22	Homework 12 due Wednesday, April 20 by 11:59PM Laboratory 8 due Thursday, April 21 by 11:59PM Particle-Wave Duality, The Uncertainty Principle (Chapter 29). Atomic Physics and the Bohr Model, Atomic Line Spectra, The Pauli Exclusion Principle (Chapter 30)	Homework 13 due April 26 Laboratory 9: Emission Spectra Lab due April 27

Week	Dates	Lecture Topics	Assignments
15	Apr. 25-29	Homework 13 due Tuesday, April 26 by 11:59PM Laboratory 9 due Wednesday, April 27 by 11:59PM Radioactivity and Nuclear Physics (Chapter 31)	Homework 14 due May 3 Laboratory 10: Half-Life lab Due May 4
16	May 2-6	Homework 14 due Tuesday, May 3 by 11:59PM Laboratory 10 due Wednesday, May 4 by 11:59PM Nuclear Physics (Chapter 31) and Particle Physics (Chapter 33)	Homework 15 due May 10
17	May 9-13	Homework 15 due Tuesday, May 10 by 11:59PM Exam 4 due Thursday, May 12 by 11:59PM	Exam 4 due May 12

8: End Notes

¹ <http://www.angelo.edu/student-handbook/>

² <http://www.angelo.edu/catalogs/>

³ <http://www.angelo.edu/services/disability-services/>

⁴ <http://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of>

⁵ <http://www.angelo.edu/content/files/14197-op-1011-grading-procedures>

⁶ <http://www.angelo.edu/student-handbook/community-policies/academic-integrity.php>