



PHYS 1255: Engineering Physics II (With Lab)

2022 Winter Session	
Total Class Sessions: 25 Class Sessions Per Week: 6 Total Weeks: 4 Class Session Length (Minutes): 145 Credit Hours: 5	Instructor: Staff Classroom: TBA Office Hours: TBA Language: English Total Laboratory Sessions: 10

Course Description:

This course is the continuation of engineering physics I about mechanics and thermodynamics. Topics in this course include electricity and electric circuits, magnetism and electromagnetics, waves, sound and optics. Includes laboratory.

Course Materials:

Physics for Scientists and Engineers, 4th Edition, by Randall Knight, Pearson

Course Assignments:

Quizzes:

There will be 6 quizzes administered through the whole semester and the LOWEST score will be dropped. Quizzes will always be completed in the first fifteen minutes of class. The quiz problems will be similar to problem sets and examples on slides. There will be no make-up quizzes.

Daily Homework Assignment:

Each homework assignment will be assigned the same weight for grading purpose. Homework is due within the first 10 minutes of the start of class on the due date.

Exams:

Midterm Exam

There will be two midterm exams in this course. The midterm exams will be based on concepts covered in class. They will be in-class, close-book and non-cumulative.

Final Exam

The final will be cumulative and close-book. Note that the final will not be taken during the normal class times. Exact time for final will be announced later.

Lab Assignments:

It is expected that all lab reports will be neatly typed (word processed). Each report should include the following sections: The purpose of the experiment, the physical phenomenon observed and the concept or numerical constant to be verified; data collected and graphs of results with clearly labeled axes; an explanation and interpretation of the results and how they compare to the stated objective. Questions related to the experiment should be included and answered completely and clearly.

**Course Assessment:**

Homework Assignment	15%
Quizzes	10%
Midterm Exam 1	15%
Midterm Exam 2	15%
Labs	15%
Final Exam	30%
Total	100%

Grading Scale (percentage):

A+	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	F
98- 100	93- 97	90- 92	88- 89	83- 87	80- 82	78- 79	73- 77	70- 72	68- 69	63- 67	60- 62	<60

Academic Integrity:

Students are encouraged to study together, and to discuss lecture topics with one another, but all other work should be completed independently.

Students are expected to adhere to the standards of academic honesty and integrity that are described in the Chengdu University of Technology's *Academic Conduct Code*. Any work suspected of violating the standards of the *Academic Conduct Code* will be reported to the Dean's Office. Penalties for violating the *Academic Conduct Code* may include dismissal from the program. All students have an individual responsibility to know and understand the provisions of the *Academic Conduct Code*.

Special Needs or Assistance:

Please contact the Administrative Office immediately if you have a learning disability, a medical issue, or any other type of problem that prevents professors from seeing you have learned the course material. Our goal is to help you learn, not to penalize you for issues which mask your learning.

Tentative Course Schedule:

Class	Chapter	Topics	Assignment
1	15	Course Introduction, Course Policy Oscillations and Wave	Homework Assignment
2	16	Traveling waves, Sound and light, the Doppler Effect	Homework Assignment
3	17	Superposition of Waves, Standing Waves, Interference of Waves	Homework Assignment



4	22	Electric Charges and Forces, Coulomb's Law	Quiz 1(Chapter 15-17) Homework Assignment
5	22	Electric Charges and Forces, Coulomb's Law	Homework Assignment
6	23	The Electric Field	Homework Assignment
7	23/24	The Electric Field Gauss's Law and Applications	Quiz 2(Chapter 22-23) Homework Assignment
8	24	Gauss's Law and Applications	Homework Assignment
9	Chapter 15 to 17, Chapter 22- 24	Exam 1	Homework Assignment
10	25	The Electric Potential	Homework Assignment
11	25	The Electric Potential	Homework Assignment
12	26	Potential and Field	Homework Assignment
13	26 /27	Potential and Field Current and Resistance, Ohm's Law	Homework Assignment
14	27	Current and Resistance, Ohm's Law	Quiz 3(Chapter 25-26) Homework Assignment
15	28	Fundamental Circuits	Homework Assignment
16	28	Fundamental Circuits	Homework Assignment
17	29	The Magnetic Field	Quiz 4(Chapter 27-28) Homework Assignment
18	29	The Magnetic Field	Homework Assignment
19	Chapter 25 to 29	Exam 2	Homework Assignment
20	30	Electromagnetic Induction	Homework Assignment
21	31	Electromagnetic Field and Wave	Quiz 5(Chapter 30-31) Homework Assignment
22	32	AC Circuits	Homework Assignment
23	33	Wave Optics, light, the Interference of Light, the Diffraction	Homework Assignment
24	34	Ray Optics, Reflection, Refraction, Image Formation by Refraction	Quiz 6(Chapter 32-34) Homework Assignment
25	All Chapters Covered in this Course	<u>Review for Final Exam</u>	
<u>Final Exam: Cumulative(TBA)</u>			

Lab Schedule:



Lab 1: Vibrating Strings

Lab 2: Standing Waves

Lab 3: Electrostatics

Lab 4: Electric Field

Lab 5: Gauss's Law

Lab 6: Ohm's Law

Lab 7: DC Circuits

Lab 8: RC Circuits

Lab 9: Magnetic Fields

Lab 10: Electromagnetic Induction