南京航空航天大学
Nanjing University of Aeronautics and Astronautics

Syllabus

Course No.	1900837W	**College**	Science	**Dept.**	Applied Physics
Teacher	Fengming Pan				
Time	2022.12.19—2023.01.06				
Course Name	**English**	General Physics Ⅱ			
	Chinese	大学物理Ⅱ			
Course hours	**Total**	**Theory**	**Office Hour or Practice**	**Credits**	
	70	60	10	12.0	

Course description： Describe the nature, academic status, and aims of the course (theory, ability and technique)

This is an introductory course on the principles and methods of physics for students who have good preparation in physics and mathematics. This course covers electricity, magnetism, optics and quantum mechanics. Topics include: electrostatics, capacitors, charges in motion, insulators, semiconductors, conductors, superconductors, voltage and current measurements, magnetism, electromagnetic induction, magnetic materials, quantum dots, magnetic resonance phenomenon,etc.

Requirements for courses; ability and knowledge in advance

General Physics I

Course structure explanation:

Make clear the necessary parts, optional parts, distribution of hours. Courses with experiments or practice are expected to explain credit hours needed, content, scheme and functions.

Unit One

Ch.21. 1- 6 Electric Forces and Electric Fields, Coulomb's Law.

Ch.22. 1- 5 Concepts of electric field and flux,Gauss' Law and its applications

Assignment

Ch.21 – 28,31,41,44

Ch.21 – 48,66,70,74,78

Unit Two

Ch.23. 1- 6 Electric potential and electric potential energy: Discrete and continuous charge distributions

Ch.24. 1- 5 Capacitance, series and parallel combinations, energy stored in a capacitor, dielectric-filled

Assignment

Ch.22-20,41,43,50,62,67,72
Ch.23-19,21,23,29,37,46

Mid-Term Exam

Unit Three

Ch.25. 1- 5 Electric current, Ohm's law, electric,energy and power.
Ch.25. 1- 5 Sources of emf, Kirchhoff''s rules and
Ch.26. 1- 3 Magnetic field and its interaction with moving charges and currents.
Assignment
Ch.24-29,30,33,34,77,84
Ch.25-35,46,66,75,79,90,97,103

Unit Four

Ch.27. 1- 5 The Bio-Savart law, interaction between two current carrying wires, the Ampere's law, magnetic field produced by simple current carrying shapes- loops, solenoids and toroids
Ch.28. 1- 5 Faraday's and Lenz's laws of induction, induced emf, self inductance and mutual inductance.
Ch.29 Maxwell's Equation and Electromagnetic Waves
Assignment
Ch.26-27,32,36,51,57,74
Ch.27-16,21,27,37,38,49
Ch.28 –20,26,33,38,40,45
Ch. 29 20,31,32,33,36

Unit Five

Ch. 31 The property of Lights Mirrors and Lenses
Ch. 34 Wave- Particle Duality and Quantum Physics
Ch. 39 Relativity
Ch. 40 Nuclear Physics and Energy
Assignment
Ch.31 31,34, 40, 45, 47
Ch.34 15,25,27,31,35
Ch.34 15,25,27,31,35
Ch. 40 15,20,22,29,31

Final Exam

Teaching methods (Lectures, practice, etc)

Lectures and self-study

Forms of evaluation and requirements **Structure of the final grade(including presence, class performance,), focus of exam, forms of exam(test, interview, final report, etc)**
Presentation & Class Participation 10% Labs 20% Homework 15% Tests & Midterm-Exams 25% Final Exam 30% Students are expected to maintain high standards of academic honesty. Specifically, unless otherwise directed by the professor, students may not consult other students, books, notes, electronic devices or any other source, on examinations. Failure to abide by this may result in a zero on the examination, or even failure in the course.

Textbook	**Name**	**Publisher**	**Author**	**Year**	**Price**
	Physics for Scientists and Engineers		Tipler and Mosca	6th Edition	
References	**Name**	**Publisher**	**Author**	**Year**	**Price**
					1
Website					
Course members					
College					