



## Syllabus

<b>Course No.</b>	1900837W	<b>College</b>	Science	<b>Dept.</b>	Applied Physics
<b>Teacher</b>	Fengming Pan				
<b>Time</b>	2022.06.28—2022.07.15				
<b>Course Name</b>	<b>English</b>	General Physics II			
	<b>Chinese</b>	大学物理 II			
<b>Course hours</b>	<b>Total</b>	<b>Theory</b>	<b>Office Hour or Practice</b>	<b>Credits</b>	
	70	60	10	12.0	
<b>Course description :</b> Describe the nature, academic status, and aims of the course (theory, ability and technique)					
<p>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.</p>					
<b>Requirements for courses; ability and knowledge in advance</b>					
General Physics I					
<b>Course structure explanation:</b>					
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.					
<b>Unit One</b>					
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					
<b>Unit Two</b>					
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 &amp; Class Participation 10%

Labs 20%

Homework 15%

Tests &amp; 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.

<b>Textbook</b>	<b>Name</b>	<b>Publisher</b>	<b>Author</b>	<b>Year</b>	<b>Price</b>
	Physics for Scientists and Engineers			Tipler and Mosca	6th Edition
<b>References</b>	<b>Name</b>	<b>Publisher</b>	<b>Author</b>	<b>Year</b>	<b>Price</b>
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<b>Website</b>					
<b>Course members</b>					
<b>College</b>					