Phys104 (General Phys. 2)

COURSE SYLLABUS

Text book

Physics for Scientists and Engineers

(6th edition)- R. A. Serway& Jewett

Chapter & Sections	Sections Contents	Examples	problems
23 **Electric Field** **3, 4, 6, 7**	Coulomb's Law, The Electric Field, Electric Field Lines, and Motion of Charged Particles in a Uniform Electric Field.	1,2, 3, 5, 8, 10, 11	4, 7, 10, 14, 20, 21, 42, 45, 46
24 **Gauss's Law** **1,2, 3, 4**	Electric Flux, Gauss's Law, and Application of Gauss's Law to Various Charge Distributions (Examples: 4,5,6,7,8) and Conductors in Electrostatic Equilibrium.	2, 3, 4, 5, 6, 7, 8	3,4,9,11, 21, 24, 31, 35, 37, 40,42,
25 **Electric Potential** **1, 2, 3**	Potential Difference and Electric Potential, Potential Diff. in a Uniform Electric Field, Electric Potential and Potential Energy Due to point Charges.	1,2, 3	2,3, 6,16,17,20
26 **Capacitance and Dielectrics** **1, 2, 3, 4, 5**	Definition & Calculating of Capacitance, Combinations of Capacitors, Energy Stored in a Charged Capacitor, Dielectrics.	1, 4, 6, 7	1, 7, 9, 18,21, 31,36, 47, 54
27 **Current and Resistance** **1, 2, 4, 6**	Electric Current, Resistance, Resistance and Temperature, Electric Power.	1, 2, 3, 6, 7, 8	1, 11, 12, 15, 16, 22, 32,33, 36, 49, 56

28 **Direct Current Circuits** **1, 2 ,3**	Electromotive Force, Resistors in Series and Parallel, Kirchhoff's Rules, RC Circuits.	1, 4, 6, 8, ,10	2, 6, 8, 9, 15, 20,21, 36, 40
29 **Magnetic Field** **1, 2, 4, 5**	Magnetic Fields and Forces, Magnetic Force Acting on a Current-Carrying Conductor(Up to equation 29.3), Motion of a Charged Particle in a Uniform Magnetic Field and its Applications (velocity selector)	1, 6, 7	7, 9, 12,14, 30, 37, 41
30 **Sources of the Magnetic Field** **1, 2, 3, 4,5, 6**	The Biot -Savart Law(Eq.30.5 only and without proof), Magnetic Force Between Two Parallel Conductors, Ampère's Law, Mag. Field of a Solenoid, Magnetic Flux, Gauss's Law in Magnetism.	4, 8	4, 16,17, 31, 35, 63
31 **Faraday's Law** **1, 2**	Faraday's Law of Induction, Motional emf.	1, 5	2, 5, 13, 20
32 **Inductance** **1, 3**	Self-Inductance, Energy in a Mag. field .	1, 2	6,7, 9, 16, 29, 30, 31, 37
33 **Alternating Current Circuits AC** **1, 2, 3, 4, 5, 6, 7**	AC Sources, Resistors – Inductors - Capacitors in an AC circuit, The RLC Series Circuit, Power in an AC Circuit, Resonance in a Series RLC Circuit.	1, 5, 6, 7	3, 10, 17,21,22 26, 32, 33, 37

Course Evaluation

Exam	*Marks*	*Date*	*Notes*
1st Midterm			
2nd Midterm			
Lab Exp. Report & Exam			
Final	**40**		
TOTAL	**100**		