Course outline for PHYS-104 [General Physics]

Textbook:
Physics for Scientists and Engineers, 6th Edition
Raymond A. Serway and John W. Jewett, Jr.

No. of Weeks	No. of Lecures	List of Topics	Chapters	Sections	Examples	Problems
Part I: Electricity						
1-2	3	Coulomb's law, electric fields,	23: Electric fields	23.3 23.4 23.6 23.7	(1,2, 3, 5, 8, 10, 11)	(4, 7, 10, 14, 20, 21, 42, 45, 46)
2-3	4	Gauss' Law	24: Gauss's Law	24.1 24.2 24.3 24.4	(2, 3, 4, 5, 6, 7, 8)	(3,4,9,11, 21, 24, 31, 35, 37, 40,42,)
4	3	electric potential, potential energy	25: Electric Potential	25.1 25.2 25.3	(1,2, 3)	(2,3, 6,16,17,20)
5-6	5	capacitance and dielectric	26: Capacitance and Dielectrics	26.1 26.2 26.3 26.4 26.5	(1, 4, 6, 7)	(1, 7, 9, 18,21, 31,36, 47, 54)
6-7	4	currents and resistance, Ohm's law, electrical energy and power	27: Current and Resistance	27.1 27.2 27.4 27.6	(1, 2, 3, 6, 7, 8)	(1, 11, 12, 15, 16, 22, 32,33, 36, 49, 56)
8	3	direct current circuits, Kirchhoff's rules	28: Direct Current Circuits	28.1 28.2 28.3	(1, 4, 6, 8, ,10)	(2, 6, 8, 9, 15, 20,21, 36, 40)
Part II: Magnetism						
9-10	4	magnetic fields, motion of charged particle in a magnetic field,	29: Magnetic Field	29.1 29.2 29.4 29.5	(1, 6, 7)	(7, 9, 12,14, 30, 37, 41)
10-11	6	sources of the magnetic field, Ampere's law	30: Sources of the Magnetic Field	30.1 30.2 30.3 30.4 30.5 30.6	(4, 8)	(4, 16,17, 31, 35, 63)
12	2	Faraday's law of induction,	31: Faraday's Law	31.1 31.2	(1, 5)	(2, 5, 13, 20)
12	2	self inductance, energy in a magnetic field, mutual inductance	32: Inductance	32.1 32.2	(1, 2)	(6,7, 9, 16, 29, 30, 31, 37)
13-15	6	alternating current circuits, the RLC series circuit, power,impedance and rms values in an A.C. circuit, resonance in RLC series circuit.	33: Alternating Current Circuits AC	33.1 33.2 33.4 33.5 33.6 33.7	(1, 5, 6, 7)	(3, 10, 17,21,22 26, 32, 33, 37)

Credit hours distribution:

4 (3+0+2)

3 hours of lectures a week (14 weeks in the semester).
2 hours a week for 10 laboratory experiments.

Marks distribution:

1) **First Midterm Exam ------M1---------------------- = 15 marks**
2) **Second Midterm Exam ---M2---------------------- = 15 marks**
3) **Practical Work (Lab.)-----L----------------------- = 30 marks**
4) **Final Exam------------------F---------------------- = 40 marks**
$\qquad\qquad\qquad\qquad\qquad$ **Total----------- = 100 marks**

Chapters Distribution for the Exams:

        M1: Part I: Electricity …………………...
        M2: Part II: Magnetism …………….…..
        F: All Parts……………………………….

Absence Policy:

  I.   **Attendance percentage:**
- **Student should attend the course lectures during the 15 weeks of the semester.**
- **Students with absence hours more than 25% of the total course hours will be banned from the Final Exam.**

  II.   **Absence from Examinations:**
- **If you are unable to attend an examination (first or second midterm) owing to illness or other unavoidable circumstances, you should provide an acceptable evidence of 'good cause' for such absence to the competent commission. If the absence is regarded as authorized, student will grant a Makeup Exam only once.**
- **All Makeup Exams will be scheduled at the same time one week before the Final Exam.**
- **No other Makeup Exam will be done in the same semester. If you miss the Makeup Exam, you will have a mark of zero.**

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