

SEMESTER - VI

THEORY	
Electromagnetic Theory (CC-13)	SR, SC
Unit 1: Maxwell Equations	SC
Unit 2: EM wave propagation in unbounded media	SC
Unit 3: EM wave in bounded media	SC
Unit 4: Polarisation of Electromagnetic Wave	SR
Unit 5: Wave guide	SR
Unit 6: Optical fibres	SR
Statistical mechanics (CC-14)	SS, AB
Unit 1: Classical Statistical Mechanics	SS
Unit 2: Classical Theory of Radiation	SS
Unit 3: Quantum Theory of Radiation	AB
Unit 4: Bose-Einstein Statistics	SS
Unit 5: Fermi-Dirac Statistics	AB
Communication electronics (DSE-3)	BM, AB
Unit1: Electronic Communication	BM
Unit 2: Analog Modulation	BM
Unit 3: Analog Pulse Modulation	BM
Unit 4: Digital Pulse Modulation	AB
Unit 5: Satellite Communication	AB
Unit 6: Mobile Telephony System	AB
Experimental Techniques (DSE-4)	PKS, AR
Unit 1: Measurements	PKS
Unit 2: Signals and System	PKS
Unit 3: Shielding and Grounding	AR
Unit 4: Transducers & industrial instrumentation	AR
Unit 5: Digital Multi-meter	PKS
Unit 6: Impedance Bridges and Q-meter	PKS
Unit 7: Vacuum Systems	AR
Digital and Analog Circuits and Instrumentation (DSE-2)	RS, PKS, AR
Unit 1: Digital Circuits	RS
Unit 2A: Semiconductor Diodes	RS
Unit 2B: Amplifiers	PKS
Unit 3: Operational Amplifiers	PKS
Unit-4: Instrumentations	AR

SEMESTER - VI

PRACTICALS	
Electromagnetic Theory (C13P)	SS
1. Polarimeter.	SS
2. Babinet's compensator	SS
3. Stefan's constant	SS
4. Boltzmann constant	SS
Statistical mechanics (C14P)	SC
Python programming	SC
Communication electronics (DSE3P)	BM
1. Analog Pulse Modulation and demodulation	BM
2. Pulse amplitude modulation and demodulation	BM
3. Pulse position modulation and demodulation	BM
4. Pulse width modulation and demodulation	BM
Experimental Techniques (DSE4P)	PKS
1. Design and analyze the Clippers and Clampers Circuits	PKS
Digital and Analog Circuits and Instrumentation (DSE2P)	SS, BM
1. CRO	SS
2. PN diode, Zener and LED	SS
3. Transistor characteristics in CE configuration	SS
4. AND, OR, NOT, XOR gates	BM
5. To minimize a given logic circuit.	BM
6. Half adder, Full adder	BM
7. Adder-Subtractor using Full adder IC	BM
8. A stable multi-vibrator	BM
9. Mono-stable multi-vibrator	BM
10. AND, OR, NOT, XOR gates	BM

SEMESTER - IV

THEORY	
CC-8: Mathematical Physics III	SS, AR
Unit 1: Complex Analysis	SS
Unit 2: Integrals Transforms	SS
Unit 3: Matrices	AR
Unit 4: Eigen-Values and Eigen vectors	AR
CC9: Elements of Modern Physics	SC, PKS, BM
Unit 1: Radiation, Wave particle duality etc.	SC
Unit 2: Quantum theory-I	PKS
Unit 3A: Quantum theory-II	PKS + SC
Unit 3B: Basic Nuclear Structure	BM
Unit 4A: Radio Activity	BM
Unit 4B: Conservation, Fission, Fusion, Lasers	BM
CC10: Analog Systems and Applications	SR, RS
Unit 1: Semiconductor diode	SR
Unit 2: Two terminal devices & applications	SR
Unit 3: Bipolar junction transistors	SR
Unit 4: Field effect transistors	SR
Unit 5: Amplifiers	RS
GE-4: Electricity and Magnetism {GENERIC}	PKS, SS, AB, AR
Unit 1: Vector Analysis	PKS
Unit 2: Electrostatics	SS
Unit 3: Magnetism	AB
Unit 4: Electromagnetic Induction	AB
Unit 5: Maxwell's equations and Electromagnetic wave propagation	AR
SEC-2: Renewable Energy & Energy Harvesting	AB
Unit 1: Fossil fuels	AB
Unit 2: Solar energy	AB
Unit 3: Wind energy	AB
Unit 4: Ocean energy	AB
Unit 5: Geothermal energy	AB
Unit 6: Hydro-energy	AB
Unit 7: Piezoelectric energy	AB
Unit 8: Electromagnetic energy	AB
Waves and Optics (DSC-1D) {GENERAL}	SC, RS, SS, AR
Unit 1: Superposition of collinear harmonic oscillations	RS
Unit 2: Superposition of two perpendicular Harmonic Oscillations	RS
Unit 3: Wave motion	RS
Unit 4: Fluids	AR
Unit 5: Sounds	AR
Unit 6: Wave optics	SS
Unit 7: Michelson's Interferometer	SS
Unit 8: Diffraction	SC
Unit 9: Polarization	SC

SEMESTER – IV

PRACTICALS	
C8P: Mathematical Physics III	SC
Python programming	SC
C9P: Elements of Modern Physics	SR, PKS
1. Photoelectric effect	SR + PKS
2. Plank's constant using LEDs	SR + PKS
3. Tunnelling effect in tunnel diode using I-V characteristics	SR + PKS
4. Wavelength of a Laser source using single slit	SR + PKS
5. Wavelength of a Laser source using double slit	SR + PKS
C10P: Analog Systems and Applications	RS, SC
1. V-I Ch. Of PN junction diode, LED	RS + SC
2. V-I Ch. Of Zener Diode, Voltage Regulator	RS + SC
3. BJT in CE mode	RS + SC
4. OP-AMP as Inverting amplifier	RS + SC
5. OP-Amp as non-inverting amplifier	RS + SC
6. OP-AMP as Differentiator	RS + SC
7. OP-AMP as Integrator	RS + SC
8. Frequency Response of inverting amplifier	RS + SC
9. Frequency response of non-inverting amplifier	RS + SC
10. Wien bridge oscillator	RS + SC
11. Phase shift oscillator	RS + SC
12. Zero crossing detector, Comparator	RS + SC
GE4P: Electricity and Magnetism {GENERIC}	BM, SC
1. RC circuit	BM + SC
2. LRC series	BM + SC
3. Multimeter	BM + SC
3. LRC parallel	BM + SC
4. Thevenin and Norton's theorem	BM + SC
5. Superposition, max. power transfer	BM + SC
7. Carey Foster	BM + SC
SEC2P: Renewable Energy & Energy Harvesting	AB
1. Solar cell module	AB
2: Thermoelectric module	AB
Waves and Optics (DSC1D-P) {GENERAL}	SS, AB
1.Schuster's focusing; angle of prism	SS
2. Dispersive power	SS
3. Resolving power of prism	SS
4. Single slit diffraction	SS
5. Lissajous Figures	AB
6. Refractive index of prism	AB
7. Cauchy constants	AB
8. Newton's rings	AB
9. Coefficient of Viscosity (Poiseuille's method).	AB
10. Dispersive power & resolving power of plane grating	SS

SEMESTER - II

THEORY	
CC-3: Electricity and Magnetism	RS, SS, SC
Unit 1: Electric Field and Electric Potential	RS
Unit 2: Dielectric Properties of Matter	RS
Unit 3: Magnetic Field	SS
Unit 4: Magnetic Properties of Matter	SS
Unit 5: Electromagnetic Induction	SC
Unit 6: Electrical Circuits	SC
Unit 7: Network theorems	SC
CC-4 Waves and Optics	AB, SR, PKS
Unit 1: Superposition of collinear harmonic oscillations	AB
Unit 2: Superposition of two perpendicular Harmonic Oscillations	AB
Unit 3: Wave motion	AB
Unit 4: Velocity of Waves	AB
Unit 5: Strings	AB
Unit 6: Wave Optics	SR
Unit 7: Interference	SR
Unit 8: Interferometer	SR
Unit 9: Diffraction and Holography	PKS
GE2 T - Thermal Physics and Statistical Mechanics	
Not offered so far	
Electricity and magnetism (DSC-1B)	AR, AB, SR
Unit 1: Vector Analysis	AR
Unit 2: Electrostatics	AB
Unit 3: Magnetism	AB
Unit 4: Induction	SR
Unit 5: EM wave	SR

PRACTICALS	
C3P: Electricity and Magnetism	AB
1. RC circuit	AB
2. LRC series	AB
3. LRC parallel	AB
4. Thevenin and Norton's theorem	AB
5. Superposition, max. power transfer	AB
6. Carey Foster	AB
7. Multimeter	AB
C4P Waves and Optics	SR
1. Schuster's focusing: Determine the angle of prism	SR
2. Refractive index of prism	SR
3. Dispersive power and Cauchy constant	SR
4. Newton's ring	SR
5. Cauchy constants	SR
6. Dispersive power & resolving power of plane grating	SR
7. Lissajous Figures	SR
Electricity and Magnetism (DSC-1B) (General)	RS
1. CR circuit	RS
2. LCR series	RS
3. Measurement using Multimeter	RS
4. Thevenin and Norton's theorem	RS
5. Superposition, max. power transfer	RS
6. Anderson bridge	RS
7. Carey Foster's Method	RS