

101902/PH900B Engineering Physics B

Course Contents and Lecture Schedule

No.	Topic	No. of Lectures
1	Module 1: Oscillations and Waves (10 hours)	
1.1	Harmonic oscillations	1
1.2	Damped harmonic oscillations	2
1.3	Forced harmonic oscillations	2
1.4	Amplitude Resonance	1
1.5	Wave motion	1
1.6	Wave equation and its solution	1.5
1.7	Transverse vibration in a stretched string	1.5
	Module 2: Wave Optics (10 hours)	
2.1	Interference of light	1.5
2.2	Interference in thin film	1.5
2.3	Interference due to wedge shaped films	1.5
2.4	Newton's rings	1.5
2.5	Antireflection coatings	1
2.6	Diffraction of light	1
2.7	Diffraction grating	2
3	Module 3: Quantum Mechanics and Nanotechnology (10 hours)	
3.1	Wave nature of Particles	1

3.2	Uncertainty principle	1
3.3	Schrodinger wave equations & Applications	4
3.4	Introduction to nanoscience and technology	1
3.5	Quantum confinement -1, 2 & 3 Dimensions	1
3.6	Properties of nanomaterials & Applications of nanotechnology	2

4	Module 4: Fluid Dynamics and Ultrasonics (10 hours)	
4.1	Fluid Flow	1
4.2	Equations of fluid dynamics	4
4.3	Ultrasonics	1
4.4	Production of Ultrasonic waves	2
4.5	Detection & Applications of ultrasonic waves	2
5	Module 5: Laser and Fiber Optics (10 hours)	
5.1	LASER characteristics and LASER system	1
5.2	Construction and working of LASER systems & Applications	3
5.3	Holography	1
5.4	Fiber Optics: Propagation	1
5.5	Numerical Aperture	1
5.6	Types of OFC	1
5.7	Fiber optic Communication system	1
5.8	Applications	1

