	Engineering Physics	L	T	Р	С				
		3	0	0	3				
Pre-requisite	12 th of equivalent	Syllab	us v	ersi	on				
			1.0						
Course Objective	/es								
 To explain th 	ne dual nature of radiation and matter.								
2. To apply Scl	nrödinger's equation to solve finite and infinite potential pro	blems	and	app	ly				
quantum ideas at the nanoscale.									
	nd the Maxwell's equations for electromagnetic waves and	l apply	the						
concepts to semiconductors for engineering applications.									
Course Outcom									
	course the student will be able to								
	d the phenomenon of waves and electromagnetic waves.								
	the principles of quantum mechanics.								
	um mechanical ideas to subatomic domain.								
	he fundamental principles of a laser and its types.	nia day	iooo						
	pical optical fiber communication system using optoelectro eduction to waves	nic dev							
		,,,,,,		hou					
Waves on a string - Wave equation on a string (derivation) - Harmonic waves- reflection and									
transmission of waves at a boundary - Standing waves and their eigenfrequencies - waves with dispersion - Superposition of waves and Fourier method (qualitative) - Wave packet -									
	indigroup velocity.) - vva	ve p	ackt	J l -				
	tromagnetic waves		7	ho	urc				
		Maxwo							
Physics of divergence - gradient and curl - surface and volume integral - Maxwell Equations (Qualitative) - Continuity equation for current densities - Displacement current -									
Electromagnetic wave equation in free space - Plane electromagnetic waves in free space -									
Hertz's experime		700 111 1	.00	puc	,,				
	nents of quantum mechanics		7	hou	urs				
	m Mechanics: Idea of Quantization (Planck and Einstein) - Con							
		(Qualitative) – de Broglie hypothesis - justification of Bohr postulate - Davisson-Germer							
experiment - Wa	ve function and probability interpretation - Heisenberg und				ner				
	ve function and probability interpretation - Heisenberg und riment (Heisenberg's microscope) - Schrödinger wav	ertaint	y prii	ncip	ner Ie -				
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Total Lecture hours:

45 hours

Text Book(s)

- 1. H. D. Young and R. A. Freedman, University Physics with Modern Physics, 2020, 15th Edition, Pearson, USA.
- 2. D. K. Mynbaev and Lowell L. Scheiner, Fiber Optic Communication Technology, 2011, Pearson, USA

Reference Books

- 1. H. J. Pain, The Physics of vibrations and waves, 2013, 6th Edition, Wiley Publications,
- 2. India.
 - R. A. Serway, J. W. Jewett, Jr, Physics for Scientists and Engineers with Modern
- 3. Physics, 2019, 10th Edition, Cengage Learning, USA.
- 4. K. Krane, Modern Physics, 2020, 4th Edition, Wiley Edition, India.
- 5. M.N.O. Sadiku, Principles of Electromagnetics, 2015, 6th Edition, Oxford University Press, India.
 - W. Silfvast, Laser Fundamentals, 2012, 2nd Edition, Cambridge University Press, India.

W. Silivast, Laser Fundamentals, 2012, 2 Edition, Cambridge University Fress, India.								
Mode of Evaluation: Written assignment, Quiz, CAT and FAT								
Recommended by Board of Studies 26.06.2021								
Approved by Academic Council	No. 63	Date	23.09.2021					