Course Code	PHYSICS FOR ELECTRICAL AND ELECTRONICS ENGINEERING
24PH101	Theory Course with Laboratory Component (Common to B.E.-ECE AND EE(VLSI)

OBJECTIVES:

The course will enable the learners to:

- Understand the classical free electron theory and Fermi distribution function
- Differentiate the types of semiconductors and derive their carrier concentration
- Relate the theory of laser with its applications in optical devices.
- Solve the Schrodinger's wave equation in one dimensional and three dimensional box
- Comprehend the behavior of semiconductor diodes in various electron devices and nano electronic devices.

COURSE OUTCOMES:

Upon completion of the course, the students will be able to:

CO1: Derive electrical and thermal conductivities using classical free electron theory

CO2: Use Fermi Dirac distribution function to determine the density of energy states

CO3: Distinguish between the types of semiconductors using the hall effect experiment

CO4: Associate the basic principles of working of laser and their applications in opto-electronic devices

CO5: Calculate the energy eigen value and eigen function for a particle in a one- dimensional and three dimensional box using Schrodinger wave equations

CO6: Relate the quantum properties of nanoscale materials with their applications

LIST OF EQUIPMENTS FOR A BATCH OF 30 STUDENTS

S. No.	Description of Equipment	Quantity
1.	Semiconductor Laser Apparatus	6 Nos.
2.	Determination of optical fiber parameters	6 Nos.
3.	Lee's disc apparatus	6 Nos.
4.	Emissivity Determination Apparatus	6 Nos.
5.	Bandgap determination set up	6 Nos.
6.	Sol-gel synthesis of nano powders	6 Nos.
7.	Planck's constant apparatus	6 Nos.
8.	Hall effect set-up	2 Nos.

Area of Physics Laboratory (in Sq.m): 167.84 Sq.m.

Name of the Laboratory In-charge: T. SUNDARESWARAN

Course Code	PHYSICS FOR INFORMATION SCIENCE
24PH201	Theory Course with Laboratory Component [Common to B.E. CSE ,AI&DS,CSE(CS)]

OBJECTIVES:

The course will enable the learners to:

- Understand the classical free electron theory and Fermi distribution function
- Relate the theory of laser with its applications in optical fibres
- Solve the Schrodinger's wave equation in one dimensional and three dimensional box
- Gain the basic knowledge in quantum operators and quantum gates
- Comprehend the behavior of semiconductor diodes in various electron devices and nano electronic devices

COURSE OUTCOMES:

Upon completion of the course, the students will be able to:

CO1: Derive electrical and thermal conductivities using classical free electron theory

CO2: Calculate the electrical conductivity and bandgap in Intrinsic semiconductors

CO3: Associate the basic principles of working of laser and their applications in fiber optics

CO4: Calculate the energy eigen value and eigen function for a particle in a one- dimensional and three dimensional box using Schrodinger wave equations

CO5: Use quantum operators to frame equations for logic gates in Quantum computing

CO6: Relate the quantum properties of nanoscale materials with their applications

LIST OF EQUIPMENT FOR A BATCH OF 30 STUDENTS

S. No.	Description of Equipment	Quantity
1.	Semiconductor Laser Apparatus	6 Nos.
2.	Determination of optical fiber parameters	6 Nos.
3.	Lee's disc apparatus	6 Nos.
4.	Bandgap determination set-up	6 Nos.
5.	Sol-gel synthesis of Nano-powders	6 Nos.
6.	Planck's constant apparatus	6 Nos.
7.	Emissivity Determination Apparatus	6 Nos.

Area of Physics Laboratory: 167.84 Sq.m.

Name of the Laboratory In-charge: T. SUNDARESWARAN