**Course Number and Name**
BPH101 - ENGINEERING PHYSICS I

**Credits and Contact Hours**
3 & 45

**Course Coordinator's Name**
Dr. Sree Latha

**Text Books and References**

**TEXT BOOKS**

**REFERENCES**
2. Sears., Zemansky.,, Young.;‘College Physics; Addison Wesley Publishing Company.

**Course Description**
To impart a sound knowledge on the basic concepts of modern sciences like engineering applications of ultrasonic's, lasers, fundamentals of crystal physics and utility of solar energy.

**Prerequisites**
+2 level Physics

**Course Outcomes (COs)**
CO1: Understand the principles and laws of physics
CO2: To understand the impact of crystal physics.
CO3: Learn the properties of elasticity & heat transfer.
CO4: Acquire knowledge on quantum physics.
CO5: To understand the concepts on laser and ultrasonics & its applications.
CO6: Understand the principle of laser and its applications in engineering & medicine.

**Student Outcomes (SOs) from Criterion 3 covered by this Course**
List of Topics Covered

UNIT I  CRYSTAL PHYSICS
Lattice – Unit cell – Bravais lattice – Lattice planes – Miller indices – d spacing in cubic lattice – Calculation of number of atoms per unit cell – Atomic radius – Coordination number – Packing factor for SC, BCC, FCC and HCP structures – Diamond and graphite structures (qualitative treatment) – Crystal growth techniques – solution, melt (Bridgman and Czochralski) and vapour growth techniques (qualitative)

UNIT II  PROPERTIES OF MATTER AND THERMAL PHYSICS

UNIT III  QUANTUM PHYSICS

UNIT IV  ACOUSTICS AND ULTRASONICS

UNIT V  PHOTONICS AND FIBRE OPTICS