SUBJECT NO-MT41011, SUBJECT NAME- PHYSICS OF MATERIALS

LTP- 3-0-0,CRD- 3

SYLLABUS :-

Prerequisite - NilGeometrical Crystallography and crystal structure; Basics of Quantum Mechanics and Statistical Mechanics; Quantum States of a Perfect 1-Dimensional Crystalline Solid; Blochâs Theorem; Quantum States of a 3-Dimensional Crystal; Brillouin Zone; Symmetries of Constant Energy Surface; Dynamics of a Bloch Electron: The Crystal Momentum; Metal-Insulator-Semiconductor: Density of States in Reciprocal Space; Electrical, Magnetic, Thermal and Optical Properties of Solid; Superconductivity; Effect of Crystal Imperfections and Impurities on Physical Properties; Properties of Amorphous Materials; Examples of Advanced Materials.Text Books:1.C. Kittel : Introduction to Solid State Physics, 5th ed, Wiley Eastern Ltd, 1990. 2.B. Savopal, C. Hermann: Physics of Semiconductors, Spinger Verlag, New York, 1995.