

## **AMMR-05: Nature and Properties of Materials**

### **Course Details:**

Atomic structure & bonding in solids, Crystal structures, Imperfection in solids, Linear defects, Slip & plastic deformation, Planar defects, Volume defects, Volume defects, Strengthening mechanisms, Diffusion, Mechanical properties of metals, Phase diagram & phase transformation, Phase equilibria involving solid to solid reactions, Structure & properties of ceramics & polymers Corrosion & degradation of materials, Thermal properties, Magnetic properties, Electrical properties & Optical properties of materials, Material Selection, Synthesis & Design.

### **Text Books and Reference:**

1. Materials Science and Engineering: An Introduction, W. D. Callister, (WILEY)
2. Materials Science and Engineering, V. Raghvan