

AMCH17 MATERIAL SCIENCE

UNIT-1 SCIENCE OF METALS

- 1.1 Introduction,
- 1.2 Structure of Atoms,
- 1.3 Crystal Structure,
- 1.4 Bonds in Solids,
- 1.5 Electron theory of Metals.

UNIT-2 MECHANICAL BEHAVIOR OF METALS

- 2.1 Mechanical Properties of Metals,
- 2.2 Mechanical Tests Of metals,
- 2.3 Deformation of Metals,
- 2.4 Fracture of Metals.

UNIT-3 ENGINEERING METALLURGY

- 4.1 Iron- Carbon Alloy System,
- 4.2 Heat Treatment,
- 4.3 Corrosion of Metals.

UNIT-4 ENGINEERING MATERIALS

- 4.1 Ferrous And Non-Ferrous Alloys,
- 4.2 Organic Materials,
- 4.3 Composite Materials and Ceramics,
- 4.4 Semiconductors,
- 4.5 Insulating Materials,
- 4.6 Magnetic Materials

Reference books:

1. Introduction to Material Science for Engineers by J F Shackelford
2. Materials Science and Engineering: An Introduction by William D Callister