Personalized Learning Plan

Create Study Schedule

STUDY PLAN

Week 1 - 2:

- Introduction to B.Tech. Information Technology Regulations 2021 Curriculum
- Overview of Materials Science for Engineering course objectives
- Begin MODULE I: CLASSIFICATION OF MATERIALS
  - Understand the concept of amorphous, single crystals and polycrystalline materials
  - Study the crystallinity and its effect on physical properties
  - Learn about metal, ceramic, polymers and classification of polymers

Week 3 - 4:

- Continue MODULE I: CLASSIFICATION OF MATERIALS
  - Study structure and properties of materials
  - Learn about additives for polymer products and effect of environment on materials
  - Understand composites

Week 5 - 8:

- Begin MODULE II: PROPERTIES OF MATERIALS
  - Analyze Mechanical Properties: Stress -strain response of metallic, ceramic and polymer materials, yield strength, tensile strength, and modulus of elasticity
  - Understand toughness, plastic deformation, fatigue, creep and fracture
  - Learn about Electronic Properties: Free electron theory, Fermi energy, density of states, band theory of solids, semiconductors, Hall effect, dielectric behaviour

Week 9 - 12:

- Continue MODULE II: PROPERTIES OF MATERIALS
  - Learn about piezo, ferro, pyroelectric materials
  - Study Magnetic Properties: Origin of magnetism in metallic and ceramic materials, types of magnetism
  - Understand Thermal Properties: Specific heat, thermal conductivity and thermal expansion, thermoelectricity
  - Learn about Optical Properties: Refractive index, absorption and transmission of electromagnetic radiation in solids, electro-optic and magneto-optic materials

Week 13 - 15:

- Begin MODULE III: CRYSTALLOGRAPHIC STRUCTURES AND IMPERFECTIONS
  - Understand Crystal symmetry, point groups, space groups, indices of planes, close packing in solids
  - Learn about bonding in materials, coordination and radius ratio concepts

Week 16 - 18:

- Continue MODULE III: CRYSTALLOGRAPHIC STRUCTURES AND IMPERFECTIONS
  - Study point defects, dislocations, grain boundaries, surface energy and equilibrium shapes of crystals
  - Review and summarize all modules
  - Prepare for final assessment

This study plan ensures that the student has adequate time to understand, apply, and revise each module and its subtopics. It also provides time for exam preparation and understanding practical

applications of the knowledge acquired.

End of Plan

Thank you for using Aura's Learning Plan Generator!