

MME201 Material Science (2+0+0 2 Units)

- Structure of matter, crystal imperfection, simple phase diagrams of alloys.
- Physical properties of material (i.e. wood, cement, plastics and alloys).
- Mechanical properties of engineering materials. True stress-strain curves, ultimate strength, ductility, impact strength, hardness, creep and fatigue failure.
- Electrical properties: conductivity, semi-conductivity
- Optical and magnetic properties of materials. Stability of materials in the service environment, corrosive media, sub-zero and elevated temperatures, irradiation.
- Basic criteria for the selection of materials for engineering applications.
- Engineering properties of wood, concrete, ceramics, polymers, ferrous and non-ferrous metals and alloys, cryogenic, corrosive media and nuclear application.