

SECOND YEAR

Course Title: Mechanics of solids:

- Analyse the various stresses developed in bodies subjected to different kind of loading.
- Identify the beam or mechanical component problem, create formulation and provide solution by using graphical or analytical methods.
- Create a design of component by using formulas & theories.
- Apply knowledge of materials and cross section to the analysis of component.

Course Title: Metallurgy and Material Science:

- Understand the physical, mechanical, structures, metallurgical, engineering concepts for metals and preparation of alloys.
- Analyse the microstructures of metals, alloys and relationship to heat treatment
- Explain the properties and applications of ferrous and nonferrous alloys.
- Compare the properties of ceramics, glasses, compositions and polymers for industrial applications

Course Title: Fluid Mechanics and Hydraulic Machines: • Apply fundamental relationship and formation of relationship for static, dynamics and kinematic systems.

- Determine performance of flow metering devices by using Bernoulli's principle.
- Analyse the performance of for centrifugal pump and reciprocating pump.
- Analyse frictional flow in pipes and piping networks.
- Analyse boundary layer flows.

Course Title: Kinematics of Machinery:

- Understanding and analysis of mechanisms.
- Drawing velocity and acceleration diagrams by 'Relative velocity' and 'Instantaneous centre' methods, for mechanisms.
- Knowledge of Straight line and Approximate Straight line generating mechanisms, Steering mechanisms and Hooke's joint.
- Understanding concepts of design of different kinds of Cams and Followers.
- Understanding and design of toothed gears and Gear Trains.

Course Title: Production Technology:

- Acquire knowledge about the casting processes
- Analyse the different welding processes.
- Understand the properties, importance of hot working and cold working process.
- Describe the manufacturing process of extrusion and forging.

Course Title: Machine Drawing:

- Understand the drawings of conventional representation and assemblies along with their utility for design and development of mechanical system.
- Work effectively with engineering and science teams as well as with multidisciplinary designs.
- Skillfully use modern engineering tools and techniques such as CAD- CAM software for mechanical engineering design, analysis and application
- Understand the drawings of mechanical components.

Course Title: Thermal Engineering – I:

- Explain working of thermal systems in different applications.
- Analyse thermal systems and find the solution for problem.
- Find out factors influence on thermal systems.
- Investigate the problem in thermal systems and provide solution