

VARIOUS SHOPS IN CENTRAL WORKSHOP

Carpentry Shop: Students acquire skills in using both power and hand tools and general information regarding building materials. Students undertake the practice of sawing, planing and chiseling operation. The shop is equipped with Wooden Lathes, Mechanised Planing and Grooving Machine, Drilling Machine, Band Saw, various types of Hand Saws, Wooden & Steels Planes and Miscellaneous Tools.



Electrical Shop: Study demonstration and identification of common electrical materials such as wires, cables, switches, fuses, ceiling roses, batten allied items, tools, accessories, electrical safety measures and demonstration about use of protective devices. The students learn the process of star and delta connections, construction of transformer and winding of different motors, various type of wiring circuits etc. The shop is equipped with the various instruments which are helpful in conducting the power energy audit.



Fitting Shop: Fitting Shop involves a large number of hand operations to finish the work to desired shape, size and accuracy. The various operations performed are marking, chipping, sawing, filing, scraping, drilling, tap (Internal threading) and die (External threading). Students acquire skills in using tools and basic fitting equipment, identification of materials, description and demonstration of various bench vices, holding devices and files, drilling and threading tools. Shop is also equipped with mechanized hydraulic bending attachment. The basic operations performed in fitting shop are drilling, reaming, boring, counter sinking, tapping, threading and grinding etc.



Foundry Shop: In foundry shop the students are practicing mould making with the help of various types of Moulding Sands, different types of patterns are used in the preparation of moulds. Shop consists of state of the art Induction Furnance to have melting of different types of metals (ferrous & non-ferrous) and alloys. Sand preparation muller is also available in foundry shop to prepare sand for moulds. Students learn the processes of hot metal casting. The various testing equipments for sand & mould are also available in the sand testing laboratory. Temperature of the mould is judged with the help of portable pyrometer. The basic operations performed in foundry shop are preparation of mould, melting of different metal like Aluminium, Brass, Copper and Steel in induction furnance and preparation of casting by using sand casting process. Different jobs in which the students are practicing are gating system, testing of mould, permeability test and use of sieve shaker to obtain different mesh size of sand and study the rate of solidification of metal in Mould.



Machine Shop: It is equipped with Lathes, Shapers, Milling Machines, Tool Room Lathe, Tool & Cutter Grinder, Lathe Grinding Attachment, Semi Norton Lathe, Radial Drilling Machine, Surface Grinding Machine, Bench Grinder and Weighing Machine. The Various Operations practiced by students in Machine Shop are Cylindrical Turning, Taper Turning, Step Turning, Facing, Threading, Cutting, Slotting, Milling, Grooving Chamfering, Drilling, Reaming etc.



Sheet Metal Shop: The sheet metal implies metal and alloys in sheets rolled to thickness ranging from 10 S.W.G. and thinner. Sheet and Foplate metal work has its own importance in manufacturing industry and it plays an essential role in various aspects of our day to day needs. The indispensable engineering articles made of sheet metal find their application in agriculture, building construction, house hold, offices, laboratories and shop equipment, heating and air conditioning, transportation, decorative work, toys and many other such areas. Using specialized sheet metal tools the various concepts from development of surface to actual fabrication are practiced. The various operations performed during sheet metal jobs are cutting, rolling, bending,

and shaping. Different jobs are seam joint, lap joint, cylinder fabrication, tray fabrication, riveting and soldering applications.



Smithy Shop: Forging is the processes of shaping steel to desired form by heating them to forging temperatures (plastic condition) and by the application of hammer blows. This is one of the oldest manufacturing process. The working of small objects heated in an open furnance, operated manually is known as Smithy. Technical knowhow is imparted on Blowers, Open Hearth Furnace, Anvil Blocks, and Swage Blocks. The various black smith operations performed in the shop are Fullering. Setting Up, Setting Down, Bending, Hot & Cold Forging etc. The jobs undertaken by the students in smithy shop are conversion of shape from raw material such as square shape, hexagonal, round shape and making letter by steel bars of different diameter and size of rod, screw driver, chisels etc.



Welding Shop: Shop comprises Submerged Arc Welding, Gas Tungsten Arc Welding, Gas Metal Arc Welding, Spot Welding, Arc Welding, Abrasive Wheel Cutter, Gas Welding and Cutting apparatus. The welding shop is equipped with Fume Extractor System to provide the eco-friendly environment for working. The different operations practiced in Welding Shop are

Position Welding, Butt Welding, Lap Welding, Spot welding, Dissimilar Metal Welding and Metal Cutting.



B Tech Ist year student undergo two weeks training program during summer vacation at the Central workshop after the completion of second semester. This is mandatory Non-credit course for students. B Tech major and minor projects of especially Mechanical engineering and Industrial & Production Engineering are Manufacture and Fabricated in the Central workshop.

In addition to the above mentioned program. The B.Tech, M.Tech, PhD students are enrolled in Central workshop for to complete their projects, thesis work respectively.