

Course Contents

Category of Course	Course Title	Course Code	Credits – 4C		
Engineering Sciences ES-2	Workshop Practice	BE207	L	T	P
			1	0	3

Branch: Common to all branches.

Course: BE207 Workshop Practice

Unit I

Black Smithy Shop

Smithy forges, maintenance and control of fire and fuel used in smithy shop. Use of various smithy tools such as swage block, Anvil, different types of Hammers, Tongs, Flatters, Cold set, Hot set, Hydraulic swages, fullers, set hammers punches, Drifts and rivet headers (rivet snaps) etc. Study of following forging operations: Upsetting, Drawing down, Fullering, Swaging, Cutting down, Forge welding, Punching and drafting.

Suggested Jobs: Forging of chisel, forging of Screw Driver

Unit II

Carpentry Shop:

Timber : Type, Qualities of timber disease, Timber grains, Structure of timber, Timber, Timber seasoning, Timber preservation, Approximate conversion & Market forms of timber.

Wood Working tools: Wood working machinery, joints & joinery. Various operations of planning using various carpentry planes, sawing and marking of various carpentry joints.

Suggested Jobs: Name Plate, Any of the Carpentry joint like mortise or tennon joint

Unit III

Fitting Shop:

Metal bench work Study and use of Measuring instruments, Engineer steel rule, Surface gauges caliper, Hermaphrodite caliper (Jenny caliper), Height gauges, feeler gauges, Try square and micrometer. use, care and maintenance of hand tools such as hammer, cold chisel of different types, Center punch, Hack-saw, Dot punch, Drift, Different types of files, File cuts, File grades, Use of surface plate, Surface gauges, types of drills, Taps and dies for drilling tapping and screw threads.

Fitting operations: Chipping, filling, Drilling and tapping.

Suggested Jobs: Preparation of job piece by making use of filling, sawing and chipping , drilling and tapping operations.

Unit IV

Foundry:

Pattern Making: Study of Pattern materials, pattern allowances and types of patterns. Core box and core print, .Use and care of tools used for making wooden patterns.

Moulding:

Properties of good mould & Core sand, Composition of green , Dry and loam sand.

Methods used to prepare simple green and bench and pit mould dry san bench mould using single piece and split patterns. Care and use of moulding tools.

Unit V

Welding: Study and use of tools used for :Equipment used for Brazing, Soldering , Gas & Arc welding. Preparing Lap or Butt joints using gas and arc welding methods ,Study of TIG & MIG welding processes . Use of tools and equipments, Safety precautions.

Reference Books

1. Manufacturing Processes - Chapman, Vol. I & II.
2. Workshop Technology - Raghuwanshi, Vol. I & II.
3. Workshop Practices - Hazara Choudhary, Vol. I & II.
4. Production Technology - R.K. Jain.