

Basic Workshop Practice – I

F.E. Sem. I

EVALUATION SYSTEM

	Time	Marks
Theory Exam	–	–
Practical Exam	–	–
Oral Exam	–	–
Term Work	–	50

SYLLABUS

Note : The syllabus and the Term - work to be done during semester I and Semester II is given together. Individual Instructor for the course is to design the jobs for practice and demonstration and spread the work over entire two semesters. The objective is to impart training to help the students develop engineering skill sets. This exercise also aims in inculcating respect for physical work and hard labor in addition to some amount of value addition by getting exposed to interdisciplinary engineering domains. The two compulsory trades (Sr. No. 1 - Fitting and 2 - Carpentry) shall be offered in separate semesters. Select any four trade topics (two per semester) out of the topic at Sr. n. 3 to 11. Demonstrations and hands on experience to be provided during the periods allotted for the same. Report on the demonstration including suitable sketches is also to be included in the term - work

1. Fitting (compulsory)

- Use and setting of fitting tools for chipping, cutting, filing, marking, center punching, drilling, tapping.
- Term work to include one job involving following operations : filing to size, one simple male-female joint, drilling and tapping

2. Carpentry (compulsory)

- Use and setting of hand tools like hacksaws, jack planes, chisels and gauges for construction of various joints, wood tuning and modern wood turning methods.
- Term work to include one carpentry job involving a joint and report on demonstration of a job involving wood turning

3. Forging (Smithy)

- At least one workshop practice job (Lifting hook and handle) is to be demonstrated.

4. Welding

- Edge preparation for welding jobs. Arc welding for different job like, Lap welding of two plates, butt welding of plates with simple cover, arc welding to join plates at right angles.

5. Machine Shop

- At least one turning job is to be demonstrated.

6. Electrical board wiring

- House wiring, staircase wiring, wiring diagram for fluorescent tube light, Godown wiring and three phase wiring for electrical motors.

7. PCB Laboratory Exercises

- Layout drawing, Positive and negative film making, PCB etching and drilling, Tinning and soldering technique.
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8. Sheet metal working and Brazing

- Use of sheet metal, working hand tools, cutting , bending , spot welding

9. Plumbing

- Use of plumbing tools, spanners, wrenches, threading dies, demonstration of preparation of a domestic line involving fixing of a water tap and use of coupling, elbow, tee, and union etc.

10. Masonry

- Use of masons tools like trowels, hammer, spirit level, square, plumb line and pins etc. demonstration of mortar making, single and one and half brick masonry , English and Flemish bonds, block masonry, pointing and plastering.

11. Hardware and Networking:

- Dismantling of a Personal Computer (PC), Identification of Components of a PC such as power supply, motherboard, processor, hard disk, memory (RAM, ROM), CMOS battery, CD drive, monitor, keyboard, mouse, printer, scanner, pen drives, disk drives etc.
- Assembling of PC, Installation of Operating System (Any one) and Device drivers, Boot-up sequence. Installation of application software (at least one)
- Basic troubleshooting and maintenance
- Identification of network components: LAN card, wireless card, switch, hub, router, different types of network cables (straight cables, crossover cables, rollover cables) Basic networking and crimping.

NOTE: Hands on experience to be given in a group of not more than four students.

