

Course Name : 03 Years Diploma in Mining Engineering

year : First

Subject Title : Workshop Practice

Subject Code : M116

Teaching and Examination Scheme:

Teaching Scheme			Examination					
L	T	P	Full Marks.	External Exam Marks	Internal Exam Marks	External Pas Marks	Total Pass Marks	Duration of External Exams
		2	100	60	40	--	50	---

Rationale:

Engineering diploma technician is expected to know basic workshop practice. like Wood working, Sheet metal. The students are required to identify, operate, control various machines, select and use various tools and equipments related to Wood working and sheet metal processes together with exposure to fabrication soldering and joint making of various types.

Objectives:

The student will able to

- Know basic workshop processes.
- Read and interpret job drawing.
- Identify, select and use various marking, measuring, holding, striking and cutting tools & equipments.
- Operate, control different machines and equipments.
- Inspect the job for specified dimensions
- Produce jobs as per specified dimensions.
- Adopt safety practices while working on various machines.

CONTENTS:

Sr. No	Details Of Theory Contents	Jobs	Practice(hr)
01	CARPENTRY SHOP 1. Introduction. 2. Various types of woods. 3. Different types of tools, machines and accessories. 4. Practice Job (any two) a. Preparation of cross lap joints. b. T Lap joints c. Dovetail Joints d. Wood turning	02	08

02	FITTING SHOP: 1. Introduction 2. Various marking, measuring, cutting, holding and striking tools. 3. Different fitting operation like chipping, filing, right angle, marking, drilling, tapping etc. 4. Working Principle of Drilling machine, Tapping dies its use. 5. Safety precautions and safety equipments. 6. Practice any 2 Jobs (V groove, Square notch, Fitting of two parts)	02	08
03	SHEET METAL SHOP. 1. Introduction 2. Various types of tools, equipments and accessories. 3. Different types of operations in sheet metal shop. 4. Soldering and riveting. 5. Safety precautions 6. Practice Jobs (Making funnel, tray, cylinder)	02	08
04	TURNING SHOP 1. Introduction 2. Various marking, measuring, cutting, holding and striking tools. 3. Working Principle of Drilling machine, Tapping dies its use. 4. Drilling and Tapping 5. Turning: Plain, taper 6. Threading and Knurling 7. Safety precautions and safety equipments.	02	08
05	ELECTRICAL & ELECTRONICS 1. Various types of electrical and electronic components and equipments. 2. Safety precautions 3. Preparation of different type of joints and switching systems 4. Wiring of two bulb, one fan one power point with a fuse connection. 5. Fault finding and repairing of common household appliances 6. Soldering and desoldering practice, Soldering of a pyramid 7. Soldering of a battery eliminator circuit/charger/PCB	02	10
06	WELDING & BLACK SMITHY SHOP 1. Introduction to equipments and accessories used in welding 2. Gas, Arc, Spot, welding practice 3. Lap welding practice 4. Butt welding practice 5. Spot welding practice 6. Preparation of commonly used instruments such as flat chisel, ring, screw driver.	02	10

07	PLUMBING SHOP 1. Introduction. 2. Various marking, measuring, cutting, holding and striking tools. 3. Different types of G.I. & PVC pipes, flexible pipes used in practice. 4. Piping layout. 5. G.I. & PVC pipes fittings and accessories, Adhesive solvents- chemical action,	02	08
Total		14	60

Skill to be developed:

Intellectual Skills:

1. Ability to read job drawing
2. Ability to identify and select proper material, tools, equipments and machine.
3. Ability to select proper parameters (like cutting speed, feed, depth cut use of lubricants) in machine.

Motor Skills:

1. Ability to set tools, work piece, and machines for desired operations.
2. Ability to complete job as per job drawing in allotted time.
3. Ability to use safety equipment and follow safety procedures during operations.

4. Ability to inspect the job for confirming desired dimensions and shape.
5. Ability to acquire hands-on experience.

Notes: 1] The Faculty/Instructor shall give demonstration to the
2] The workshop diary shall be maintained by each student duly signed by Faculty/Instructor of respective shop

Books:

- S.K. Hajara Chaudhary- Workshop Technology-Media Promoters and Publishers, New Delhi
- B.S. Raghuwanshi- Workshop Technology- Dhanpat Rai and sons, New Delhi
- R K Jain- Production Technology- Khanna Publishers, New Delhi
- H.S.Bawa- Workshop Technology- Tata McGraw Hill Publishers, New Delhi
- Kent's Mechanical Engineering Hand book- John Wiley and Sons, New York
- Electronics Trade & technology Development Corporation.(A Govt. of India undertaking) Akbar Hotel Annex, Chanakyapuri, New Delhi- 110 021
- Learning Materials Transparencies, CBT Packages developed by N.I.T.T.E.R. Bhopal.