

Course Name : 03 Years Diploma in Engineering**Semester : Second****Subject Title : Workshop- II****Subject Code : 209****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 |
| | | 4 | 50 | 30 | 20 | -- | 25 | --- |

Rationale:

Engineering diploma technicians are expected to know basic workshop practice with special reference to Gas and arc Welding, Gas cutting, Drilling, Tapping, Plumbing and Hot Working Processes. The students are required to select and use various tools and equipments for welding, fitting, tapping drilling, plumbing and forging operations.

Objectives:

The student will able to:

- Know basic workshop processes.
- Read and interpret job drawings.
- Identify, select and use various marking, measuring, and holding, striking and cutting tools & equipments wood working and sheet metal shops.
- Operate, control different machines and equipments.
- Select proper welding rods and fluxes.
- Inspect the job for specified dimensions
- Produce jobs as per specified dimensions.
- Adopt safety practices while working on various machines.

- Notes:**
- 1] The Faculty/Instructor shall give demonstration to the students by preparing a specimen job as per the job drawing.
 - 2] The workshop diary shall be maintained by each student duly signed by Faculty/Instructor of respective shop.

CONTENTS: Subject practical content as shown in the table below: Skill to be develop.

Intellectual Skills:

1. Ability to read job drawings.
2. Ability to identify and select proper material, tools and equipments and machines.
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

| Sr. No. | Details of | Job | Theory | Practice |
|---------|---|-----|--------|----------|
| 01 | HOUSE WIRING AND ELECTRICAL FITTING <ol style="list-style-type: none"> 1. Introduction 2. Various types of electrical wiring 3. Safety precautions 4. Preparation of different type of joints 5. Wiring of two way switching system 6. Wiring of two bulb, one fan one power point with a fuse connection. 7. Introduction to commonly used equipments, earth resistance measurement 8. Fault finding and repairing of common household appliances | | | |
| | | 03 | 02 | 10 |
| 02 | Electronics <ol style="list-style-type: none"> 1. Introduction to different types of components 2. Soldering practice 3. Soldering of a pyramid 4. Soldering of a battery eliminator circuit/charger 5. Soldering on PCB 6. Introduction to desoldering and practice 7. Introduction to CRO and other electronic measuring instrument | 03 | 02 | 10 |
| 03 | WELDING SHOP <ol style="list-style-type: none"> 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 | 03 | 04 | 12 |
| 04 | PLUMBING SHOP <ol style="list-style-type: none"> 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, | 03 | 03 | 12 |

| | | | | |
|----|---|-----------|-----------|-----------|
| 05 | Black Smithy Shop 1. Introduction to tools and techniques 2. Preparation of commonly used instruments such as flat chisel, ring, screw driver. | 03 | 03 | 12 |
| | Total | 15 | 14 | 56 |

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.

| | |
|----|--|
| 01 | TURNING SHOP Note:1] One job related to Plane and Taper turning, threading and knurling 2] One job related to Drilling and tapping 3] Batch size should be selected depending on volume of work. 4] Job allotted should comprise of 6-8 hours of actual working 5] Student shall calculate the cost of material and labor cost for their job from the drawing. |
| 02 | WELDING SHOP Note:1] One job of standard size (Saleable/marketable article shall be preferred) 2] Batch size should be selected depending on volume of work . 3] Job allotted should comprise of 6-8 hours of actual working operations. 4] Student shall calculate the cost of material and labor required for their job from the drawing. |
| 03 | PLUMBING SHOP <ul style="list-style-type: none"> • Demonstration of PVC pipe joint with various fittings. • Exercise for students on preparing actual pipeline layout for PVC pipe. Preparing actual drawing and bill of material. |

(Note: Utility item are not to be assessed)

Learning Resources:**Books:**

| Sr. No. | Author | Title | Publisher |
|----------------|-----------------------|---|---|
| 01 | S.K. Hajara Chaudhary | Workshop Technology | Media Promoters and Publishers, New Delhi |
| 02 | B.S. Raghuwanshi | Workshop Technology | Dhanpat Rai and Sons, New Delhi |
| 03 | R K Jain | Production Technology | Khanna Publishers, New Delhi |
| 04 | H.S.Bawa | Workshop Technology | Tata McGraw Hill Publishers, New Delhi |
| 05 | -- | Kent's Mechanical Engineering Hand book | John Wiley and Sons, New York |

Video Cassettes / CDS

- Learning Materials Transparencies, CBT Packages developed by NITTER Bhopal.