

# WORKSHOP PRACTICE

<b>Subject Code</b> <b>00108</b>	<b>Practical</b>			<b>No of Period in one session : 120</b>		
	<b>No. of Periods Per Week</b>			<b>Full Marks</b>	<b>:</b>	<b>50</b>
	<b>L</b>	<b>T</b>	<b>P/S</b>	<b>Annual Exam.</b>	<b>:</b>	<b>40</b>
	—	—	<b>04</b>	<b>Internal Exam.</b>	<b>:</b>	<b>10</b>

### Rationale & Objective:

A Diploma holder technician must know how to work on shop floor. This helps to develop psychomotor skill and attitude. The knowledge & skill to use machines, equipment, tools and measuring instruments is required to be developed. Safe handling of machines and tools is also very important. So, it is essential for students of 1<sup>st</sup> year to undergo basic workshop practical training. The topics include practical works in carpentry, welding, fitting, smithy sheet metal shop & machine shop. It is required to inculcate safe habits and attitude so that accidents are avoided at every step. Topics have been prescribed to fulfil these objectives.

The students are supposed to come in proper workshop dress. Wearing shoes in the workshop is compulsory.

<u>S.No.</u>	<u>Topic</u>	<u>No. of Jobs</u>	<u>No. of Periods</u>
01	Safety precautions and knowledge of hand tools	--	(03)
02	Duty & Responsibility of staffs working difference section.	02	(03)
03	Wood working (carpentry section)	02	(30)
04	Fitting Section	02	(30)
05	Blacksmithy Section	02	(20)
06	Welding	02	(19)
07	Sheet metal work	02	(15)
			(120)

### CONTENTS:

#### **TOPIC: 01 - SAFETY PRECAUTIONS & KNOWLEDGE OF HAND TOOLS:** **[03]**

- 01.01 Importance, general safety precautions on different shop floors.
- 01.02 Personal, tools and general safety.

#### **TOPIC:02 Dution & responsibility of staff working in different sections** **(03)**

#### **TOPIC: 03 - WOOD WORKING (CARPENTRY SECTION):** **[30]**

- 02.01 Carpentry Practice
- 02.01.01 Use of hand tools for holding drilling, cutting, marking & mixed tools such as vice, clamps, saw, hammers, mallet, screwdriver etc. **[03]**
- 02.01.02 Different carpenter joints & their application (Mortish & Tanon, Dovetail, half lap etc. **[03]**
- 02.02 Identification of joint in a particular job articles of furniture items. **[04]**
- 02.03 Jobs to be made: **[20]**
- 02.03.01 Wall hanger
- 02.03.02 Pulse mixer

#### **TOPIC: 04 - FITTING SECTION:** **[30]**

- 03.01 Importance of fitting operation such as chipping, sawing, filling, scraping, drilling, reaming etc. **[03]**
- 03.02 Functions, classification of tools, work holding and clamping specific tools for example File (length, type, grade of cut etc.) vices, cold chiesel, hand tools etc. **[05]**
- 03.03 Use of hand dies & tape for pipe work (water and sans) **[03]**
- 03.04 Fitting practice & jobs **[19]**
- 03.04.01 Male female joint - 01
- 03.04.02 Chipping, Filling, Scraping - 01
- 03.04.03 Marking, fitting

**TOPIC: 05 - BLACKSMITHY SECTION:** [20]

04.01	Introduction to smithy tools and their uses	[03]
04.02	Smithy Practice (forging)	[03]
04.02.01	Smithy operation such as offsetting, drawing, bending, welding round to square section and vice-versa.	
04.03	<u>Jobs to be made:</u>	[14]
04.03.01	Chisel	
04.03.02	Ring	
04.03.03	Punch	
04.03.04	Screw Driver	

**TOPIC: 06 - WELDING:** [19]

Before starting welding, the Foreman/ Instructor should show to the students the methods of line testing, working of iron clad switches, knife switches. [03]

By observation a student is able to:

- Identify welding materials
- Understand difference between gas welding & electric welding
- Understand difference between welding & soldering
- Know the materials which can be welded and materials which can not be welded.

05.01	Introduction to gas welding.	[05]
05.02	Use of welding equipment and tools and accessories including Personal Protective requirement such as Boot, Gloves, safety goggles, Apron etc.	
05.03	Welding Practice	[11]
05.03.01	Butt joint	
05.03.02	'T' joint	
05.04	Introduction to brazing process, filler material and fluxes application of brazing.	

**TOPIC: 07 - SHEET METAL WORK:** [15]

06.01	Introduction to sheet metal, procedure and safety precautions.	[03]
06.02	Aquaintance with sheet metal tools and their safe use.	
06.03	Sheet metal practice.	[03]
06.03.01	Simple Development and cutting, bending and shearing of sheet metal	
06.03.02	Marking	[09]
06.03.03	Filing & Finishing	
06.03.04	Fabrication of a sheet metal:	
	- Cabinet	
	- Conical funnel	

**Books Recommended for Workshop Practice (Practical):**

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|---------------------------------|----------------------------------|
| 1. Shop Theory                  | - By Anderson (Tata McGraw Hill) |
| 2. Workshop and Tools Hand Book | - Audel Series                   |
| 3. Workshop Technology          | - Hajra & Choudhary              |

**Reference Books:**

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|----------------------|------------------------------|
| 1. Workshop Practice | - Rajeev Upadhayay,          |
| 2. Workshop Practice | - by N.T.T.T.I. Chanandigarh |