

BWS151/ BWS251: WORKSHOP PRACTICE LAB

LIST OF EXPERIMENTS

1. Introduction to Mechanical workshop material, tools and machines

- To study layout, safety measures and different engineering materials (mild steel, medium carbon steel, high carbon steel, high speed steel and cast iron etc) used in workshop.
- To study and use of different types of tools, equipment, devices & machines used in fitting, sheet metal and welding section.
- To determine the least count of Vernier calliper, vernier height gauge, micrometer (Screw gauge) and take different reading over given metallic pieces using these instruments.

2. Machine shop

- Demonstration of working, construction and accessories for Lathe machine
- Perform operations on Lathe - Facing, Plane Turning , step turning, taper turning, threading, knurling and parting.

3. Fitting shop

- Practice marking operations
- Preparation of U or V -Shape Male Female Work piece which contains: Filing, Sawing, Drilling, Grinding.

4. Carpentry Shop

- Study of Carpentry Tools, Equipment and different joints.
- Making of Cross Half lap joint, Half lap Dovetail joint and Mortise Tenon Joint

5. Welding Shop

- Practice of Making Butt Joint
- Practice of Making Lap Joint

6. Moulding and Casting Shop

- Introduction to Patterns, pattern allowances, ingredients of moulding sand and melting furnaces.
- Foundry tools and their purposes
- Demo of mould preparation and Aluminum casting
- Practice – Study and Preparation of mould for Plastic

7. CNC Shop

- Study of main features and working parts of CNC machine and accessories that can be used. Perform different operations on metal components using any CNC machines

8. To prepare a product using 3D printing

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LIST OF EQUIPMENTS**

S. No.	Name of Item	Quantity
1	Center lathe machine	9
2	Radial drilling machine	1
3	Sand testing machine	1
4	Tube bending machine	1
5	Power saw	1
6	Bend saw	1
7	Tool grinder	2
8	Hand press	1
9	Drill machine	1
10	Surface grinding machine	1
11	Shaper machine	1
12	Milling machine (horizontal)	2
13	Milling machine (vertical/ universal)	1
14	Electric arc welding set	2
15	Gas welding	1
16	Tig welding	1
17	Mig welding	1
18	Hand shearing machine	1
19	Sheet rolling machine	1
20	Wood working lathe machine	2
21	Open hearth furnace	1
22	Anvil	4
23	Swage block	1