



**GOVERNMENT POLYTECHNIC,
NABARANGPUR ,DEPARTMENT OF
MECHANICAL ENGINEERING**

**Discipline:
Civil &
Automobile**

**Semester:
1st**

Name of the Teaching Faculty: Lect. Laxman Golari

**Subject:
WORKSHOP
PRACTICE**

**No. of days
/per
week
class
lotted:
6**

Semester From date:16.08.2023 To Date:

No. of Weeks:15

Week

**Class
Day**

Theory/Practical Topics

1ST

1-3

FITTING SHOP 1.1 Demonstrate safety practices in the fitting shop.

4

1.2 Select suitable holding & clamping devices for fitting jobs. 1.3 Select suitable tools like- files, vice, chisels, punch, scriber, hammers, surface plate, V-block, try square, caliper etc.

6

2ND

1-3

1.4 Demonstrate the following operations: Sawing, Chipping, Fitting, Craping, Grinding, Marking, Reaming, Tapping, Drilling & Angular cutting. 1.5 Introduction of chipping, demonstration on chipping and its applications.

4-6

1.6 Description, demonstration and practice of simple operation of hack saw straight and angular cutting. 1.7 Introduction and use of measuring tools used in fitting shop like steel rule, measuring tape, outside micrometer, vernier caliper and vernier height gauge.

3RD

1-3

1.8 Description and Demonstration and practice of thread cutting using taps and dies. Job: Cutting & fitting practice on a square of 50mm X 50mm X 8mm

4-6

Job: Preparation of stud (to cut external threads) with the help of dies (mm or BSW).

4TH

1-3

Job: H-fitting in the mild steel (ms) square.

4-6

Job: H-fitting in the mild steel (ms) square.

5TH

1-3

Job: Prepare one job on male female fitting.

4-6

Job: Prepare one job on male female fitting.

6 TH	1-3	2. SHEET METAL 2.1 Demonstrate safety practices in sheet metal shop. 2.2 Prepare surface development for the jobs according to the drawing. 2.3 Cut M.S and G.P. sheets according to the surface development / drawing using standard sheet metal cutting tools.
	4-6	2.4 Select hand tools for sheet metal work. 2.5 Demonstrate the process of metal clamp joining and reveted joining of sheet metals.
7 TH	1-3	Job: Making of sheet metal joints.
	4-6	Job: Prepare a sheet metal tray or a funnel
8 TH	1-3	Job: Prepare a sheet metal job involving rolling, shearing, creasing, bending & cornering.

	4-6	Job: Prepare a lap riveting joint.
--	-----	------------------------------------

9 TH	1-3	3. WELDING SHOP 3.1 Introduction. 3.2 Safety precautions in welding, safety equipments & its application in welding shop. 3.3 Introduction to welding, type of welding, common materials that can be welded, introduction to gas welding equipment, types of flame, adjustment of flame, applications of gas welding, Welding tools & safety precautions.
-----------------	-----	---

	4-6	3.4 Introduction to electric arc welding (AC & DC), practice in setting current & voltage for striking proper arc, precautions while using electric arc welding. Applications of arc welding. Introduction to polarity & their use. 3.5 Demonstrate & use of the different tools used in the welding shop with sketches, Hand shield, helmet, clipping hammer, gloves, welding lead, connectors, aprons, goggles, etc.
10 ^T H	1-3	3.6 Demonstrate of welding defects & various types of joints & end preparation. Job: Preparation of lap joint by arc welding rod. Job: Preparation of Tee joint by arc welding.
	4-6	Job: Preparation of single V or double V butt joint by electric arc welding.
11 ^T H	1-3	Job: Brazing practice. Use of Spelt or (on MS sheet pieces). Job: Gas welding practice on worn-out & broken parts
	4-6	4. TURNING SHOP 4.1 Introduction. 4.2 Safety precaution & safety equipments. 4.3 Various marking, measuring, cutting & holding tools
12 ^T H	1-3	4.4 Demonstration of different parts of a lathe
	4-6	demonstration on centering & turning operation in a group of 06 students.
13 ^T H	1-3	Job: plain turning, taper turning & grooving practices on round bar.
	4-6	Job: plain turning, taper turning & grooving practices on round bar.
14 ^T H	1-3	Job: plain turning, taper turning & grooving practices on round bar.
	4-6	5. EXPOSURE TO C.N.C MILLING / LATHE MACHINE
15 ^T H	1-3	5. EXPOSURE TO C.N.C MILLING / LATHE MACHINE
	4-6	LAB RECORD SUBMISSION

Sign of faculty

Laxman Gotara

Academic coordinator
21/7/23

HOD, IC
21/7/23

Principal, GPN
21/7/23