GOVERNMENT POLYTECHNIC, PURI
DEPARTMENT OF MECHANICAL ENGINEERING

Discipline: **MECHANICAL ENGG**	Semester: **1ST**	Name of the Teaching Faculty: **SUDEEPTA KUMAR PRADHAN, GAT IN MECH. ENGG.**
Subject: **WOKSHOP PRACTICE**	No. of days/per week class allotted: **06**	Semester From date: **25.10.2021** To Date: **31.01.2022** No. of Weeks: **14**
PRE-REQUISITE	• Basic knowledge about unit and dimensions. • Basic knowledge about different instrument.	
COURSE OUTCOMES	**CO1**; To demonstrate safely practice in various shops of the workshop. **CO2**; To select suitable tools & equipment in the following shops. (a) Fitting. (b) Sheet Metal. (c) Welding (Gas & Electrical). (d) Turning. **CO3**; To select suitable materials for different process in the above shops. **CO4**; To demonstrate the different processes adopted in the above shops. **CO5**; To finish the jobs within stipulated time and with accuracy as per specifications	

Week	Class Day	Theory / Practical Topics	DELIVERY METHOD
1ST	1ST	Safety practices in the fitting shop	Whiteboard
	2ND	Holding & clamping devices for fitting jobs. Various tools like - files, vice, chisels, punch, scriber, hammers, surface plate, V- block, try square, caliper used in fitting shop.	Whiteboard
	3RD	Demonstration of following operations: Sawing, Chipping, Fitting, Craping, Grinding, Marking, Reaming, Tapping, Drilling & Angular cutting.	Whiteboard
2ND	1ST	Introduction of chipping, demonstration on chipping and its applications. Description, demonstration and practice of simple operation of hack saw straight and angular cutting.	Whiteboard
	2ND	Introduction and use of measuring tools used in fitting shop like steel rule, measuring tape, outside micrometer, vernier caliper and vernier height gauge.	Whiteboard
	3RD	Description and Demonstration and practice of thread cutting using taps and dies.	Whiteboard
3RD	1ST	Job: Cutting & fitting practice on a square	Whiteboard
	2ND	Job: Cutting & fitting practice on a square Record checking.	Whiteboard
	3RD	Job: Angular cutting practice of 45degree, Job submitted, Record checking	Whiteboard
4TH	1ST	Job: Preparation of stud (to cut external threads) with the help of dies	Whiteboard
	2ND	Job: Preparation of stud with the help of dies, Job submitted, Record checking	Whiteboard
	3RD	Job: H-fitting	Whiteboard
5TH	1ST	Job: Preparation of H-fitting, Job submitted, Record checking.	Whiteboard
	2ND	Job: Preparation one job on male female fitting.	Whiteboard
	3rd	Job: Preparation of male female fitting, job submitted, record checking.	Whiteboard
6TH	1ST	Demonstrate safety practices in sheet metal shop. Preparation surface development for the jobs according to the drawing.	Whiteboard
	2ND	Cut M.S and G.P. sheets according to the surface development / drawing using standard sheet metal cutting tools. Selection hand tools for sheet metal work.	Whiteboard

		Demonstration- the process of metal clamp joining and rivet joining of sheet metals.	
	3RD	Job: Making of sheet metal joints. Job submitted. Record checking.	Whiteboard
7TH	1ST	Job: Prepare a sheet metal tray or a funnel. Job submitted. Record checking.	Whiteboard
	2ND	Job: Prepare a sheet metal job involving rolling, shearing, creasing.	Whiteboard
	3RD	Job: Prepare a sheet metal job involving bending & cornering. Job submitted. Record checking.	Whiteboard
8TH	1ST	Job: Prepare a lap riveting joint. Job submitted. Record checking	Whiteboard
	2ND	Introduction. Safety precautions in welding. safety equipment & its application in welding shop	Whiteboard
	3RD	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	Whiteboard
9TH	1ST	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.	Whiteboard
	2ND	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. Demonstrate of welding defects & various types of joints & end preparation.	Whiteboard
	3RD	Job: Preparation of lap joint by arc welding rod.	Whiteboard
10TH	1ST	Job: Preparation of lap joint by arc welding rod. Job submitted. Record checking	Whiteboard
	2ND	Job: Preparation of Tee joint by arc welding	Whiteboard
	3RD	Job: Preparation of Tee joint by arc welding. Job submitted Record checking	Whiteboard
11TH	1ST	Job: Preparation of single V or double V butt joint by electric arc welding.	Whiteboard
	2ND	Job: Preparation of single V or double V butt joint by electric arc welding. Job submitted. Record checking.	Whiteboard
	3RD	Job: Brazing practice. Job submitted. Record checking.	Whiteboard
12TH	1ST	Job: Gas welding practice on worn-out & broken parts. Job submitted. Record checking.	Whiteboard
	2ND	Introduction. Safety precaution & safety equipment (Turning Shop).	Whiteboard
	3RD	Various marking, measuring, cutting & holding tools. Demonstration of different parts of a lathe, demonstration centering & turning operation.	Whiteboard
13TH	1ST	Plain turning practices on round bar	Whiteboard
	2ND	Taper turning practices on round bar	Whiteboard
	3RD	Grooving practices on round bar. Job submitted. Record checking	Whiteboard
14TH	1ST	EXPOSURE TO C.N.C MILLING / LATHE MACHINE	Whiteboard

LEARNING RESOUCES:

1. Workshop Technology by S.K.Hajara Choudhray, Media Promoters Pub., New Delhi.
2. Workshop Technology by B.S. Raghubanshi, Dhanpat Rai and Sons, New Delhi.
3. Workshop Technology by H.S. Bawa – TMH.
4. Workshop Familiarization by E Wilkinson.
5. Sheet metal shop practice by Bruce & Meyer.
6. Workshop Technology by R.S. Khurmi & J.K. Gupta, S.Chand.

25/10/21
Sign. of Faculty concerned

25/10/21
Sign. of HOD i/c

Principal
G.P.Puri