



GOVERNMENT POLYTECHNIC, NABARANGPUR
DEPARTMENT OF MECHANICAL ENGINEERING

Discipline:
**MECHANICAL
ENGG**

Semester:
5TH

Name of the Teaching Faculty: LAXMAN GOLARI

Subject:
CAD/CAM LAB

No. of
days/per
week class
allotted: 04

Semester From date: 01.08.2023 To Date:

No. of Weeks: 15

**COURSE
OUTCOMES**

- CO1.** To understand the fundamentals and use of CAD.
CO2. To conceptualize drafting and modelling in CAD.
CO3. To interpret the various features in the menu of solid modelling package.
CO4. To synthesize various parts or components in an assembly.
CO5. To prepare CNC programmes for various jobs.

WEEK	CLASS DAY	Theory / Practical Topics
1 ST	1	1. PART -A INTRODUCTION Part modelling, Datum plane, Datum plane; constraint; dimensioning.
	2	Part modelling, Datum plane, Datum plane; constraint; dimensioning (Contd...)
	3	Extrude; revolve; sweep; protrusion; extrusion.
	4	Extrude; revolve; sweep; protrusion; extrusion (Contd...)
2 ND	1	Rib; shell; hole; round; chamfer
	2	Rib; shell; hole; round; chamfer (Contd...)
	3	Copy; mirror; assembly; align; orient.
	4	Copy; mirror; assembly; align; orient (Contd...)
3 RD	1	2D DRAWINGS Rectangle, circle, polygon and its dimensioning.
	2	Rectangle, circle, polygon and its dimensioning (Contd...)
	3	Rectangle, circle, polygon and its dimensioning (Contd...)
	4	3 D DRAWING Gib and cutter joint
4 TH	1	Gib and cutter joint (Contd...)
	2	Gib and cutter joint (Contd...)
	3	Screw Jack
	4	Screw Jack (Contd...)
5 TH	1	Screw Jack (Contd...)
	2	Connecting Rod
	3	Connecting Rod (Contd...)
	4	Connecting Rod (Contd...)
6 TH	1	Bearing Block.
	2	Bearing Block (Contd...)
	3	Bearing Block (Contd...)
	4	PART-B CNC Programming and Machining Study of CNC lathe, milling
7 TH	1	Study of CNC lathe, milling (Contd...)
	2	Study of CNC lathe, milling (Contd...)
	3	Study of international codes: G-Codes and M Codes.
	4	Study of international codes: G-Codes and M Codes (Contd...)
8 TH	1	Study of international codes: G-Codes and M Codes (Contd...)

	2	Format - Dimensioning methods.
	3	Format - Dimensioning methods (Contd...)
	4	Format - Dimensioning methods (Contd...)
9 th	1	Programme writing - Turning Simulator-Milling simulator IS practice-commands menus
	2	Programme writing - Turning Simulator-Milling simulator IS practice-commands menus (Contd...)
	3	Programme writing - Turning Simulator-Milling simulator IS practice-commands menus (Contd...)
	4	Programme writing - Turning Simulator-Milling simulator IS practice-commands menus (Contd...)
10 th	1	Editing the programme in the CNC MACHINES.
	2	Editing the programme in the CNC MACHINES (Contd...)
	3	Editing the programme in the CNC MACHINES (Contd...)
	4	Execute the programme in the CNC machines.
11 th	1	Execute the programme in the CNC machines (Contd...)
	2	Execute the programme in the CNC machines (Contd...)
	3	Print the programme and make the component in the CNC machine.
	4	Print the programme and make the component in the CNC machine (Contd...)
12 th	1	Print the programme and make the component in the CNC machine (Contd...)
	2	Print the programme and make the component in the CNC machine (Contd...)
	3	Print the programme and make the component in the CNC machine (Contd...)
	4	Print the programme and make the component in the CNC machine (Contd...)
13 th	1	Using canned cycle-create a part programme for thread cutting, grooving and produce component in the CNC Turning Machine.
	2	Using canned cycle-create a part programme for thread cutting, grooving and produce component in the CNC Turning Machine (Contd...)
	3	Using canned cycle-create a part programme for thread cutting, grooving and produce component in the CNC Turning Machine (Contd...)
	4	Using canned cycle-create a part programme for thread cutting, grooving and produce component in the CNC Turning Machine (Contd...)
14 th	1	Using canned cycle-create a part programme for thread cutting, grooving and produce component in the CNC Turning Machine (Contd...)
	2	Using canned cycle-create a part programme for thread cutting, grooving and produce component in the CNC Turning Machine (Contd...)
	3	Using Linear interpolation and Circular Interpolation-Create a part programme for grooving and produce component in the CNC Milling Machine
	4	Using Linear interpolation and Circular Interpolation-Create a part programme for grooving and produce component in the CNC Milling Machine (Contd...)
15 th	1	Using Linear interpolation and Circular Interpolation-Create a part programme for grooving and produce component in the CNC Milling Machine (Contd...)
	2	Using Linear interpolation and Circular Interpolation-Create a part programme for grooving and produce component in the CNC Milling Machine (Contd...)
	3	Using Linear interpolation and Circular Interpolation-Create a part programme for grooving and produce component in the CNC Milling Machine (Contd...)
	4	Using Linear interpolation and Circular Interpolation-Create a part programme for grooving and produce component in the CNC Milling Machine (Contd...)

Sign. Of Faculty concerned
Laxman Gotari

Academic co-ordinator

Principal, G.D.N. BARANGPUR

31/7/23

31/7/23