

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

LESSON PLAN		
Discipline: <b>Mechanical</b>	Semester: 4th	Name of the Teaching Faculty: <b>BIBHASH MANDAL</b>
Subject: <b>CAD/CAM LAB</b>	No. of days/week class allotted 4	Semester From date: 22.12.2025 To date: 18.04.2026 No. of Week: 15
<b>Course Outcomes</b>	<ul style="list-style-type: none"> <li>• Create 3D solid model and find the mass properties of simple solids.</li> <li>• Demonstrate the working of CNC turning and milling machine</li> <li>• Develop the part program using simulation software for Lathe and Milling</li> <li>• Assess the part program, edit and execute in CNC turning and machining centre</li> </ul>	
<b>Week</b>	<b>Class Day</b>	<b>Theory/Practical Topics</b>
1st	1st	Introduction: Part modelling; Datum Plane; constraint
	2nd	sketch; dimensioning; extrude; revolve
2nd	1st	sweep; blend; protrusion; extrusion; rib; shell
	2nd	hole; round; chamfer; copy; mirror; assembly; align; orient
3rd	1st	Exercises: 3D Drawings of 1). Geneva Wheel;
	2nd	Bearing Block
4th	1st	Bushed bearing;
	2nd	Gib and Cotter joint
5th	1st	Screw Jack
	2nd	Connecting Rod
6th	1st	Introduction CNC Programming and Machining
	2nd	Study of CNC lathe,
7th	1st	Study of CNC milling
	2nd	Study of international standard codes
8th	1st	G-Codes and M-Codes
	2nd	Format – Dimensioning methods
9th	1st	Program writing – Turning simulator
	2nd	Milling simulator, IS practice – commands menus
10th	1st	Editing the program in the CNC machines;
	2nd	Execute the program in the CNC machines
11th	1st	Using Linear and Circular interpolation - Create a part program and produce component in the Machine
	2nd	Using Stock removal cycle – Create a part program for multiple turning operations and produce component in the Machine.
12th	1st	Using Stock removal cycle – Create a part program for multiple turning operations and produce component in the Machine.
	2nd	Using canned cycle - Create a part program for thread cutting, grooving and produce component in the Machine
13th	1st	Using canned cycle - Create a part program for thread cutting, grooving and produce component in the Machine
	2nd	Using Linear interpolation and Circular interpolation – Create a part program for grooving and produce component in the Machine
14th	1st	Using Linear interpolation and Circular interpolation – Create a part program for grooving and produce component in the Machine
	2nd	Using canned cycle - Create a part program for drilling, tapping, counter sinking and produce component in the Machine
15th	1st	Using subprogram - Create a part program for mirroring and produce component in the Machine.
	2nd	Using subprogram - Create a part program for mirroring and produce component in the Machine.

*Bibhash Mandal*  
Signature of Faculty

*Bibhash Mandal*  
Signature of HOD/  
*Bibhash Mandal*  
Signature of Principal

*Bibhash Mandal*  
Signature of Academic Coordinator