Syllabus for Bachelor of Vocation (B.Voc.), 4th Semester
Branch: Production Technology
Subject Name: Computer Integrated Manufacturing Lab
Subject Code: 21140306

Type of course: Under Graduate

Prerequisite: CAD-CAM.

Rationale: The course is intended to provide exposure of CNC technology. The manufacturing field has witnessed the development of major automation alternatives recently. CNC machines play a big role in manufacturing field. An attempt has been made to focus on CNC machine tools, related programming and their advanced features.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory Marks		Practical		
L	T	P	C	ESE(E)	PA(M)	PA(V)	PA(I)	
-	-	2	2	-	-	30	20	50

L- Lectures; T- Tutorial/Teacher Guided Student Activity; P- Practical; C- Credit; ESE- End Semester Examination; PA- Progressive Assessment

Contents:

Sr. No.	Practical / Hands on Exercise	Total Hrs.	% Weightage
1.	Introduction to CNC technology and CNC Machines.	4	15
2.	To study about G & M codes used in CNC Machines.	4	15
3.	To prepare part programming for facing, turning, taper turning, step turning.	6	20
4.	To prepare part program for threading operation.	4	15
5.	To prepare part program to obtain linear and circular interpolation on the given work piece in milling and lathe machine.	6	20
6.	To prepare part program for drilling operation.	4	15
	Total	**28**	**100**

Major Equipment:
1. Computers / Workstations
2. CAM Software
3. CNC Machine

Course Outcomes:

Students will be able to:

Sr. No.	CO Statement	Marks % Weightage
CO-1	Understand CNC technology and G & M Codes used in CNC Machines.	25
CO-2	Understand and apply the basic concept of part programming using CNC Turning.	40
CO-3	Understand and apply the basic concept of part programming using CNC Milling.	35

References:

1. CAD / CAM: Theory and Practice by Ibrahim Zied, McGraw-Hill
2. CAD / CAM and Automation, Farazdak Haideri, Nirali Prakashan
3. CAD/CAM/CIM by P. Radhakrishnan, New Age International Publishers

List of Open Source Software/learning website:

1) NPTEL tutorials
2) Videos on CNC programming