SCHEME OF COURSE WORK

Course Details:

Course Title	**: Computer Aided Manufacturing and Robotics Lab**		
Course Code	**: 13ME2122**	**L T P C**	**: 0 0 3 2**
Program:	**: M.Tech.**		
Specialization:	**: CAD/CAM**		
Semester	**: II**		
Prerequisites	**:Computer Aided Design, Computer Aided Manufacturing**		

Course Outcomes (COs):

At the end of the course, the student will be able to

1	Create the part model using CAM software
2	Use CNC part program for CNC turning and milling operations
3	Generate the tool path and NC part program for drilling and milling operations using CAM software
4	Demonstrate the tool path for turning operation using CAM software
5	Write a program for performing pick and place operations

Program Outcomes (POs)

At the end of the program, the students in CAD/CAM will be able to

1. acquire fundamentals in the areas of computer aided design and manufacturing
2. apply innovative skills and analyze computer aided design and manufacturing problems critically
3. identify, formulate and solve design and manufacturing problems
4. carry out research related to design and manufacturing
5. use existing and recent CAD/CAM software
6. collaborate with educational institutions, industry and R&D organizations in multidisciplinary teams
7. apply project and finance management principles in engineering projects
8. prepare technical reports and communicate effectively
9. engage in independent and life-long learning and pursue professional practice in their specialized areas of CAD/CAM
10. exhibit accountability to society while adhering to ethical practices
11. act independently and take corrective measures where necessary

Course Outcome Versus **Program Outcomes:**

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
CO-1	S	M	M	M	S				M			
CO-2	S		S	M	S	M			S			
CO-3	S	M	S	M	S				M			
CO-4	S	M	S	M	S				M			
CO-5	M				S				M			

S - Strongly correlated, *M* - *Moderately* correlated, *Blank* - *No correlation*

Assessment Methods:	Assignment / Quiz / Seminar / Case Study / Mid-Test / End Exam

Course Outcome-Assessment

Course outcomes	Delivery methods	Assessment methods	Sample viva questions
CO1	Lecturing-Demonstration and conducting experiments	Cycle – I Lab Exam	1. What are the basic commands for creating 2-D model? 2. What are the basic commands for creating 3-D model? 3. Explain the application of MASTERCAM software in industrial environment.
CO2	Lecturing-Demonstration and conducting experiments	Cycle – I Lab Exam and Cycle – II Lab Exam	1. Explain the codes G00, G01 and G02 in manual part program. 2. What is canned cycle? 3. What are the miscellaneous functions?
CO3	Lecturing-Demonstration and conducting experiments	Cycle – I Lab Exam	1. Explain the procedure for pocketing operation. 2. What is tool path simulation? 3. What is chain?
CO4	Lecturing-Demonstration and conducting experiments	Cycle – II Lab Exam	1. What are the considerations for selecting the cutting tools in CNC lathe? 2. What is home position?
CO5	Lecturing-Demonstration and conducting experiments	Cycle – II Lab Exam	1. Explain the application of robot. 2. Explain 3-D robot simulation.

Assessment methods

Continuous assessment methods: Verification of experiments on system, Record Correction

Mid semester assessment methods: Cycle – I Lab Exam, Cycle – II Lab Exam

End semester assessment methods: External Lab Exam