Teaching Scheme				Total Credit	Evaluation Scheme					Total Marks
					THEORY		IE	CIA	PR. / VIVO	
L	T	P	Total		Hrs	Marks	Marks	Marks	Marks	
Hrs	Hrs	Hrs	Hrs							
2	0	0	2	2	3	70	30	0	20	120

LEARNING OBJECTIVES:
The objective of this course is
- To learn various concepts of GT,CAPP,MHS which helps in industrial automation

LESSON PLANNING

SR.NO	CHAPTER NO	DATE/WEEK	%WEIGTAGE
1	1,3	1st 2nd 3rd	20
2	2	4th 5th 6th	20
3	4,5	7th 8th 9th	20
4	6,7	10th 11th 12th	20
5	8	13th 14th 15th	20

Total hours (Theory): 30, Total hours (Practical):00, Total hours: 30

DETAILED SYLLABUS

Chap. No.	Topic
1	**Group Technology**: Introduction, objectives, part families, algorithms and models for G.T. - Rank order clustering, Bond energy, mathematical model for machine – component cell formation.
2	Design and manufacturing attributes. Parts classification and coding, concept of composite job machine group, cell group tooling, design rationalization.
3	**Computer Aided Process Planning:** Generative and variant types, backward and forward approach, feature based and CAD based CAPP.
4	**Introduction to FMS** - concepts, advantages, components of FMS and their integration in the data processing systems, FMS scheduling - examples of FMS installations.
5	**Distributed data processing in FMS**: DBMS and their applications in CAD/CAM and FMS – distributed systems in FMS - Integration of CAD and CAM
6	**Part programming** in FMS, tool data base - Clamping devices and fixtures data base.
7	**Material Handling systems:** Conveyors - AGVs – industrial robots in material handling - AS/RS.
8	**Interfacing of computers** - machine tool controllers and handling systems: communications standards - programmable Logic Controllers (PLC's) – Interfacing - Computer aided Project planning – dynamic part scheduling.

INSTRUCTIONAL METHOD AND PEDAGOGY (Continuous Internal Assessment (CIA) Scheme)
- At the start of course, the course delivery pattern, prerequisite of the subject will be discussed

- Lecture may be conducted with the aid of multi-media projector, black board, OHP etc. & equal weightage should be given to all units while conducting teaching & examination.
- Attendance is compulsory in lectures and Tutorial.
- Viva Voce will be conducted at the end of the semester of 30 Marks.
- One internal exam of 30 marks is conducted as a part of Mid semester evaluation.

STUDENTS LEARNING OUTCOMES:

At the end of the course

The students will gain an experience in the implementation of flexible systems for industrial automation

Reference Books:

1. Paul Ranky., "The design and operation of FMS", IFS publication, 1983.
2. Mikell P Groover, "Automation Production systems, Computer Integrated Manufacturing", Prentice Hall, 1987.
3. David J.Parrish, "Flexible Manufacturing" Butterworth-Heinemann, 1990.
4. Computer Aided Manufacture by Chien Chang and Richard A Wysk, Prentice HALL
5. G.T. in the engineering industry Burbridge.
6. CAD / CAM / CIM by P. Radhakrishnan, S. Subramanyan, New Age International.
7. Global Manufacturing, YORAM KORAMSr.