LOMA : DIPLOMA IN MECHANICAL ENGINEERING

RSE CODE : ME

ESTER : SIXTH FOR ME

ECT TITLE : CAD-CAM (ELECTIVE – II)

ECT CODE :

Ehing and Examination Scheme:

Teaching Scheme

Examination Scheme

TH	TU	PR	PAPER HRS	TH	TEST	PR /OR	TW	TOTAL
B	–	02	03	75	25	50	25	175-for Sem.
							–	175 – for m.p & eics.
03	–	02	03	100	50 (Pr. As) 25			

tionale:

The need of today's manufacturing industrial world is based on best quality & precision ented shorter manufacturing cycle time .To satisfy this need the use of CAD/CAM & automation inevitable .To satisfy industrial need, diploma engineer should be able to cope with CAD/CAM nology. With this intention this subject is introduced in the curriculum. The prerequisites of this ject have been introduced in earlier subjects such as engineering drawing & machine drawing.

ectives:

lent should be able to:

1. Understand the fundamentals & use CAD.
2. Conceptualize drafting and modelling in CAD.
3. Prepare CNC part programming.
4. Conceptualize automation and FMS.

Contents: Theory

Chapter	Name of the Topic	Hours	Marks
01	**Introduction to CAD/CAM** Computers in industrial manufacturing. Product Cycle, CAD/CAM CAD/CAM hardware:- basic structure, CPU, Memory, I/O devices, Storage devices and system configuration	06	06
02	**Geometric Modelling** Requirement of geometric modelling, Types of geometric models. Geometric construction method-sweep, solid modelling-Primitives & Boolean operations, free formed surfaces (Classification of surface only) (No numerical treatment)	10	16
03	**Introduction to computer numerical Control** Introduction - NC, CNC, DNC, Advantages of CNC, The coordinate system in CNC, Motion control system - point to point, straight line, Continuous path (Contouring). Application of CNC.	05	12
04	**Part programming** Fundamentals, manual part programming, NC –Words, Programming format, part programming, use of subroutines and do loops, computer aided part programming (APT).	12	16
05	**Industrial Robotics** Introduction, physical configuration, basic robot motions, technical features such as - work volume, precision and speed of movement, weight carrying capacity, drive system, End effectors, robot sensors. Application – Material transfer, machine loading, welding, spray coating, processing operation, assembly, inspection.	09	16
06	**Automation** Basic elements of automated system, advanced automation functions, levels of automation. Flexible manufacturing system :-Introduction, FMS equipment FMS application, Introduction to CIM	06	09
		48	75

arning Resources:

ooks:

/CAM principles and applications ---------------P.N. Rao

CAM/CIM --RadhaKrishna P & Subramanyam

machines-- P S Babla & M Adithan

aputer Aided design and Manufacturing------------Groover M P & Zimmers Jr.