

Computer Aided Manufacturing

B.E. Sem. VIII [PROD]

EVALUATION SYSTEM

	Time	Marks
Theory Exam	3 Hrs.	100
Practical Exam	–	25
Oral Exam	–	–
Term Work	–	25

SYLLABUS

1. Introduction

Elements of CAM system, Brief history of NC machines like Tape formats & Tape readers etc, Computer Numerical control of Machine Tools, Fundamental elements of CNC, Benefits of CNC, Computer control concepts, Data processing units & Binary calculation.

2. CNC control system:

Motion controller, Interpolation-Linear & Circular, Positioning & contouring control loops, Incremental & Absolute system, DNC & CNC systems, Adaptive control system.

3. CNC Hardware Basics

CNC drives, Spindle design, Actuation, Feedback devices

4. CNC Tooling

Turning tools, Milling tools, Tool presetter, ATC, work holding devices, Cutting process parameters.

5. CNC Programming

Introduction to CNC Lathe & Milling, Touch probe system, Tool length, nose radius & Diameter compensation, Turning & Machining centre programming, CNC part programming using ISO controllers, Canned cycles, Looping Jumping Subroutines Macros, Parametric programming, Computer aided part programming using APT & Post processing.

6. CIM

Computer applications in manufacturing, Automation, Integrated production management systems. Brief introduction to Inventory, MRP – I & MRP – II Concepts of ERP, Lean manufacturing, FMS systems Automated Material handling systems, Conveyors, AVG, AS/RS, CAPP, Automated inspection procedure, Distributed Numerical control & Benefits of CIM implementation.

Reference Books :

1. Mastering CAD/CAM (*Ibrahim Zeid*)
2. CAD/CAM (*P.N.Rao*)
3. Computer aided design and manufacturing (*Mikel.P.Groover*)
4. CNC & CAM (*G.E.Thyer*).
5. Numerical Control and computer aided Manufacturing (*T.K.Kundra, R.N.Rao, and N.K.Durai*).
6. CAD/CAM/CIM (*P.Radha Krishnan and S.Subramanyam*).
7. CAD/CAM Hand Book (*Machever c and Baluth R.E*)
8. Programming for Numerical control of machines (*Roberts A.D and Prentice R.C*)
9. Computer Integrated Manufacturing (*Alan Weatherall*)
10. CAD/CAM systems, Planning and Implementation (*Charles S Knox*)
11. CAD/CAM Handbook (*Erich Teicholz*)

