

**PME6J003 COMPUTER AIDED DESIGN AND COMPUTER AIDED  
MANUFACTURING (CAD&CAM)**

**(PROFESSIONAL ELECTIVE)**

**MODULE - I (14 HOURS)**

Fundamentals of CAD: Design process, Applications of computer for design, Creating the Manufacturing Database, The Design workstation, Graphical Terminal, Operator input Devices, Plotters and other devices, Central Processing Unit, Memory types.

**MODULE - II (14 HOURS)**

Computer graphics Software and Database: Configuration, Graphics Packages, Constructing the Geometry, Transformations of geometry, Database structure and content, Wire frame versus solid modeling, Constraint- Based modeling, Geometric commands, Display control commands, Editing.

**MODULE III (14 HOUR)**

CAM - Numerical Control and NC Part Programming: Numerical Control, Numerical Control elements, NC Coordinate system, NC motion control system, Manual and Computer Aided programming, the APT language, Miscellaneous Functions, M, Advanced part-programming methods.

Problems with conventional NC, NC technology: CNC, DNC, Combined DNC/ CNC system, Adaptive control manufacturing systems, Computer Integrated Manufacturing system, Machine Tools and related equipment, Materials Handling system: AGV, Robots, Lean manufacturing.

**TEXT BOOKS :**

1. CAD/CAM Computer Aided Design and Manufacturing, M.P.Goover and E.W.Zimmers, Jr., Pearson.
2. CAD & CAM, J Srinivas, Oxford University Press

**REFERENCE BOOKS:**

1. CAD/CAM Theory and Practice, Zeid and Subramanian, TMH
2. CAD/CAM Principles, Practice and Manufacturing Management, McMahon and Browne, Pearson Education
3. CAD/CAM Concepts and Applications, C.R.Alavala, PHI
4. Computer Aided Design and Manufacturing, Lalit Narayan, Mallkarjuna Rao and Sarcar, PHI
5. CAD/CAM Theory and Concepts, K.Sareen and C.Grewal, S.Chand Publication
6. CAD/CAM/CAE, N.K.Chougule, Scitech