10 ME 411 CAD/CAM
IV B.Tech I Semester
(with effect from the academic year 2013-2014)

Lectures/week: 4 Hrs. *Credits: 4*
University Exam:3 Hrs *Sessional Marks: 40*
End Examination Marks: 60

UNIT-I

Fundamentals of CAD – The design process – Applications of Computers for design – benefits of CAD – Computers configuration of CAD applications - Computer peripherals for CAD – Design work station – Graphics terminal, Introduction to data base management system.

UNIT-II

Geometry and line generation, Computer Graphics: Transformations – Points and lines Transformation – Translation, rotation, Scaling, Mirror Reflection, shear, introduction to 2D transformations – Windowing and Clipping.

UNIT-III

Curve generation – Plane curves – Space curves – Surface description and generation – hidden line algorithm; modeling concepts: 2D and 3D modeling – Wire frame, Surface and Solid modeling.

B-rep solid modelers and constructive solid geometry.

B-Splines – Bezier curve and surface representations. Principles of Computer Aided Drafting.

UNIT-IV

CAM – Definition, Divisions of CIM; Group Technology – Introduction, Concepts of GT, Analysis of GT, Classification and Coding System, Advances of GT. Flexible Manufacturing System(FMS) – Definition, Different flexibilities Need of FMS, classification of FMS, Difference between conventional manufacturing system and FMS, Advantages of FMS, FMS Layout configuration.

Basic Concepts of Material Handling Systems like – AS/RS, Conveyers, AGVS and their applications. Applications of Robots in manufacturing and material handling.

UNIT-V

Computer Aided Process Planning – Variant and Generative CAPP systems. Benefits of CAPP, Materials Requirement Planning – Inputs to MRP, Benefits, Capacity Planning.
Basic concepts of Shop floor data – Types of factory data and collection systems – concepts of automatic identification methods – Bar code technology – Concepts and uses.

TEXT BOOKS:

1. CAD/CAM/CIM	:	Rao P.N
3. CAD/CAM	:	Ibrahim Zeid

REFERENCES:

1. Computer Graphics	:	A.N.Sinha & Arun D.Udai
2. Mathematical Elements of Computer Graphics	:	Rogers and Adam
3. CAD/CAM	:	Besant and Lui