Subject Code : SIJ1:2

COMPUTER GRAPHICS and CAD/CAM.

Unit – I: Display Files and Transformations.

Transformation Principle – Matrix representation – Two dimensional and three dimensional transformation matrices – Basic concept of clipping and windowing.

Unit – II: Command Language.

Computer graphics system command Language – Design issues – Graphics system design – Graphics packages structure- Interactive and non interactive graphics – The mouse – Tablets – Acoustic tablets – Light pen.

Unit – III: Computer Aided Design

Fundamental of CAD – Design process – Application of computer for design – Creating the manufacturing data base – Benefits of Computer Aided Design – Examples.

Unit – IV - Numerical control – Beginning of CAD.

Conventional numerical control – Basic components of an NC system – NC procedure – NC coordinate system – NC motion control system – Applications of numerical control – NC part programming – Manual part programming – Computer controls in NC

Unit – V: Industrial Robots.

Robot technology – Robot physical configurations – Basic robot motions – Programming the robot – Robot programming languages – Robotic sensors – Robot applications (qualitative aspects only)

Books for study

1. Principles of interactive computer graphics – P.M. Newman and R.E Sproull – McGraw Hill
2. CAD/CAM: Computer Aided Design and Manufacturing – Milkell P. Groorer and Emory W. Zimmers – Prentice Hall India – 1994.