Computer Aided Design & Computer Integrated Manufacturing

.

Introduction to CAD/CAM, representation of curves, surfaces and solids for CAD/CAM applications, computational geometry for manufacturing, product design for manufacture and assembly, computer aided process planning, computer aided assembly planning, computer aided inspection and reverse engineering, manufacturing processes simulation, virtual and distributed manufacturing, computer integrated manufacturing.

Fundamental of Manufacturing and Automation: Production operation and automation strategies, Manufacturing industries, Types of production function in manufacturing, Production concept and mathematical models, Automation strategies. Group Technology: Part families, Part classification and coding, Production flow analysis, Machine cell design, Benefits of Group Technology. Industrial Robotics: Robotic programming, Robotic languages, work cell control Robot cleft design types of robot application, processing operations. Flexible Manufacturing system: What is FMS ?, FMS work station, Material Handling and storage systems, Computer control system, Analysis methods for flexible manufacturing systems, application & benefits. Computer Integrated Manufacturing: What is CAD, CAM & CIMS? CIM Data base Model and Manufacturing data base. Computer aided process planning, Computer integrated Production Planning system. Brief introduction to concurrent Engineering, Rapid Prototypes and Reverse Engineering Programmable Logic controllers: Parts of PLC, Operation and application of PLC, Fundamentals of Net workings. Computer Aided Quality Control: QC and CIM, objectives of CAQC, CMM, Flexible Inspection systems.

Text Books:

1. Automation, Production systems & Computer Integrated Manufacturing - M.P. Groover, PHI.
2. CAD, CAM & CIM - P. Radhakrishna and V. Raju, New Age International

Reference Books:

(1) Principles of CAD/CAM/CAE - Kunwoolee.
(2) Computer aided design and manufacturing –Farid M.L a mirouche.