I Year I Semester   **L   P   C**

Code: 17CC137   **4   0   3**

COMPUTER AIDED PROCESS PLANNING
(Elective-II)

UNIT - I
Introduction to CAPP: Information requirement for process planning system, Role of process planning, advantages of conventional process planning over CAPP, Structure of Automated process planning system, feature recognition, methods.

UNIT- II
Generative CAPP system: Importance, principle of Generative CAPP system, automation of logical decisions, Knowledge based systems, Inference Engine, implementation, benefits.
Retrieval CAPP system: Significance, group technology, structure, relative advantages, implementation, and applications.

UNIT – III
Selection of manufacturing sequence: Significance, alternative manufacturing processes, reduction of total set-up cost for a particular sequence, quantitative methods for optimal selection, examples.
Determination of machining parameters: reasons for optimal selection of machining parameters, effect of parameters on production rate, cost and surface quality, different approaches, advantages of mathematical approach over conventional approach, solvingoptimization models of machining processes.

UNIT –IV
Determination of manufacturing tolerances: design tolerances, manufacturing tolerances, methods of tolerance allocation, sequential approach, integration of design and manufacturing tolerances, advantages of integrated approach over sequential approach.

UNIT –V
Generation of tool path: Simulation of machining processes, NC tool path generation, graphical implementation, determination of optimal index positions for executing fixed sequence, quantitative methods. Implementation techniques for CAPP: MIPLAN system, Computer programming languages for CAPP, criteria for selecting a CAPP system and benefits of CAPP. Computer integrated planning systems, and Capacity planning system.

TEXT BOOKS:
1. Computer Aided Process Planning – Joseph Tulkoff, SME Publications
2. Computer Aided Process Planning – Hsu-Pin Wang, Jian-Kang Li, Elsevier

REFERENCES BOOKS:
1. Automation , Production systems and Computer Integrated Manufacturing System – Mikell P.Groover
2. Computer Aided Design and Manufacturing – Dr.Sadhu Singh. 3.Computer Aided Engineering – David Bedworth