I Year I Semester		L	P	C
Code: 17CC102		4	0	3

COMPUTER AIDED MANUFCTURING

UNIT – I
COMPUTER AIDED PROGRAMMING: General information, APT programming, Examples Apt programming problems (2D machining only). NC programming on CAD/CAM systems, the design and implementation of post processors .Introduction to CAD/CAM software, Automatic Tool Path generation.

UNIT - II
TOOLING FOR CNC MACHINES: Interchangeable tooling system, preset and qualified too is, coolant fed tooling system, modular fixturing, quick change tooling system, automatic head changers. DNC Systems and Adaptive Control: Introduction, type of DNC systems, advantages arid disadvantages of DNC, adaptive control with optimization, Adaptive control with constrains, Adaptive control of machining processes like turning, grinding.

UNIT - III
POST PROCESSORS FOR CNC: Introduction to Post Processors: The necessity of a Post Processor, the general structure of a Post Processor, the functions of a Post Processor, DAPP — based- Post Processor: Communication channels and major variables in the DAPP — based Post Processor, the creation of a DAPP — Based Post Processor.

UNIT - IV
MICRO CONTROLLERS: Introduction, Hardware components, I/O pins, ports, external memory:, counters, timers and serial data I/O interrupts. Selection of Micro Controllers Embedded Controllers, Applications and Programming of Micro Controllers. Programmable Logic Controllers (PLC' s): Introduction, Hardware components of PLC, System, basic structure, principle of operations, Programming mnemonics timers, Internal relays and counters, Applications of PLC's in CNC Machines.

UNIT - V
COMPUTER AIDED PROCESS PLANNING: Hybrid CAAP System, Computer Aided Inspection and quality control, Coordinate Measuring Machine, Limitations of CMM, Computer Aided Testing, Optical Inspection Methods, Artificial Intelligence and expert system: Artificial Neural Networks, Artificial Intelligence in CAD, Experts systems and its structures.

TEXT BOOKS:
1. Computer Control of Manufacturing Systems / Yoram Koren / Mc Graw Hill. 1983.
2. CAD/CAM Principles and Applications, P.N.Rao, TMH

REFERENCES BOOKS:

1. Computer Aided Design Manufacturing – K. Lalit Narayan, K. Mallikarjuna Rao and
2. M.M.M. Sarcar, PHI, 2008.
3. CAD / CAM Theory and Practice,/ Ibrahim Zeid,TMH
4. CAD / CAM / CIM, Radhakrishnan and Subramanian, New Age
5. Principles of Computer Aided Design and Manufacturing, Farid Amirouche, Pearson
6. Computer Numerical Control Concepts and programming, Warren S Seames, Thomson