



MANIPAL UNIVERSITY JAIPUR

School of Automobile Mechanical and Mechatronics Engineering

Department of Mechanical Engineering

Course Hand-out

Computer Integrated Manufacturing | ME 1708 | 3 Credits | 3 0 0 3

Session: July 18 – Dec 18 | Faculty: Prof. A.K.Sharma, Mr Shyam Sundar Sharma;

Dr. A.Pandey | Class: B. Tech. VII Semester

Course Outcomes: At the end of the course, students will be able to,

[ME 1708.1]. Identify the main elements in computer integrated manufacturing systems;

[ME 1708.2]. Demonstrate the knowledge of computer numerical control (CNC) and CNC programming, use commercial CAD/CAM software to process product models & demonstrate the knowledge of the operation of CNC machines for employability.

[ME 1708.3]. Describe and distinguish between the various parameters effecting the production in a manufacturing industry.

[ME1708.4]. Describe scope of group technology in fabrication industry & Prepare CAPP (Computer Aided Process Planning) for fabrication process equipment.

[ME 1708.5]. Describe FMS (Flexible manufacturing System) in welding shop & understand the integration of computers with the various sections of a manufacturing industry.

A. Syllabus:

Development in Machine Tools, Components of NC Machine, Problem with conventional NC. CNC Machine, Classification, Advantages and disadvantages of CNC machine, Design consideration of CNC Machines, Methods of improving machine accuracy and productivity; Programming of CNC, Co-ordinate measuring machines. Introduction to Robotics, Robot anatomy physical configurations, Types of Manufacturing System, Machine Tools and related equipment, Material Handling System, Computer control in CIM, Human Labour in CIM, benefits of CIM, Computer Aided Process planning, Computer integrated planning systems, Material requirement planning. Capacity planning, Shop Floor Control, Factory Data Collection Systems, Automatic Identification Systems - Bar Code Technology, Automated Data Collection Systems.

B. Text Books:

i. K.Yoram, Computer Control of Manufacturing Systems and Computer Integrated Manufacturing, McGraw Hill, Singapore, 1983.

ii. P.G.Mikell, Automation, Production Systems, and computer Integrated manufacturing" Prentice Hall of India, New Delhi, 2003.

