### SEMESTER II

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**TOTAL CREDITS TO BE EARNED FOR THE AWARD OF THE DEGREE:**

\[21+20+15+12 = 68\]
## ELECTIVES FOR M.E.MANUFACTURING ENGINEERING

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AIM:
To impart knowledge in the area of Robot designing and programming in Robotic languages.

OBJECTIVES:
To teach the students about the kinematic arrangement of robots and its applications in the area of manufacturing sectors.

UNIT I  INTRODUCTION  9
Definition, Need Application, Types of robots – Classifications – Configuration, work volume, control loops, controls and intelligence, specifications of robot, degrees of freedoms, end effectors – types, selection applications.

UNIT II  ROBOT KINEMATICS  9

UNIT III  ROBOT DYNAMICS AND TRAJECTORY PLANNING  9
Lagrangeon mechanics, dynamic equations for sing, double and multiple DOF robots – static force analysis of robots, Trajectory planning – joint space, Cartesian space description and trajectory planning – third order, fifth order - Polynomial trajectory planning

UNIT IV  ROBOT PROGRAMMING & AI TECHNIQUES  9
Types of Programming – Teach Pendant programming – Basic concepts in AI techniques – Concept of knowledge representations – Expert system and its components.

UNIT V  ROBOT SENSORS AND ACTUATORS  9
Design of Robots – characteristics of actuating systems, comparison, microprocessors control of electric motors, magnetostrictive actuators, shape memory type metals, sensors, position, velocity, force, temperature, pressure sensors – Contact and non contact sensors, infrared sensors, RCC, vision sensors.

TOTAL: 45 PERIODS

REFERENCES
AIM:
To expose the students, the importance of measurement and the various latest measuring techniques using Laser, Coordinate measuring machines and Opto-electronics devices. Also to stress upon the importance of quality in manufacturing.

OBJECTIVES:
To impart through knowledge in various latest measurement systems such as laser metrology, coordinate measuring machines and electro-optical devices. Also to make the students to understand quality

UNIT I  LASER METROLOGY  8

UNIT II  PRECISION INSTRUMENTS BASED ON LASER  9

UNIT III  CO-ORDINATE MEASURING MACHINE  10

UNIT IV  OPTO ELECTRONICS AND VISION SYSTEM  9

UNIT V  QUALITY IN MANUFACTURING ENGINEERING  9
Importance of manufacturing planning for quality – concepts of controllability – need for quality management system and models – quality engineering tools and techniques – statistical process control – six sigma concepts – Poka Yoke – Computer controlled systems used in inspection.

TOTAL: 45 PERIODS

REFERENCES:
AIM:
To impart knowledge on plasticity, surface treatment for forming of various types of metal forming process.

OBJECTIVES:
- To study the basic concepts of metal forming techniques and to develop force calculation in metal forming process.
- To study the thermo mechanical regimes and its requirements of metal forming

UNIT I THEORY OF PLASTICITY 9

UNIT II THEORY AND PRACTICE OF BULK FORMING PROCESSES 8
Analysis of plastic deformation in Forging, Rolling, Extrusion, rod/wire drawing and tube drawing – Effect of friction – calculation of forces, work done – Process parameters, equipment used – Defects – applications – Recent advances in Forging, Rolling, Extrusion and Drawing processes – Design consideration in forming.

UNIT III SHEET METAL FORMING 8

UNIT IV POWDER METALLURGY AND SPECIAL FORMING PROCESSES 9

UNIT V SURFACE TREATMENT AND METAL FORMING APPLICATIONS 9

TOTAL: 45 PERIODS

REFERENCES:

MF9224 MEMS & NANO TECHNOLOGY

AIM:
To inspire the students to expect to the trends in manufacturing micro components and measuring systems to nano scale.

OBJECTIVES:
- To expose the students to the evolution of micro electromechanical systems, to the various fabrication techniques and to make students to be award of micro actuators.
- Also to impart knowledge to the students about nano materials and various nano measurements techniques.

UNIT I OVER VIEW OF MEMS AND MICROSYSTEMS
Definition – historical development – fundamentals – properties, micro fluidics, design and fabrication micro-system, microelectronics, working principle and applications of micro system.

UNIT II MATERIALS, FABRICATION PROCESSES AND MICRO SYSTEM PACKAGING
Substrates and wafers, silicon as substrate material, mechanical properties of Si, Silicon Compounds silicon piezo resistors, Galium arsenide, quartz, polymers for MEMS, conductive polymers. Photolithography, photo resist applications, light sources, in implantation, diffusion process exudation – thermal oxidation, silicon diode, chemical vapour deposition, sputtering - deposition by epitoxy – etching – bulk and surface machining – LIGA process Micro system packaging – considerations packaging – levels of micro system packaging die level, device level and system level.

UNIT III MICRO DEVICES AND MATERIALS

UNIT IV SCIENCE OF NANO MATERIALS
Classification of nano structures – effect of the nanometer length scale effects of nano scale dimensions on various properties – structural, thermal, chemical, mechanical, magnetic, optical and electronic properties – effect of nanoscale dimensions on biological systems. Fabrication methods – Top down processes – bottom up process.
UNIT V CHARACTERIZATION OF NANO MATERIALS


TOTAL: 45 PERIODS

REFERENCES:

MF9225 AUTOMATION LAB

AIM:
To impart knowledge in the area of hydraulics and pneumatic components and its functions.

OBJECTIVES:
- To make the students to learn the basic concepts of hydraulics and pneumatics and its applications in the area of manufacturing process.
- To simulate the various hydraulics and pneumatics circuits.

1. Simulation of single and double acting cylinder circuits
2. Simulation of simple Hydraulic and Pneumatic circuits
3. Simulation of electro pneumatic and electro hydraulic circuits
4. Simulation of electro pneumatic sequencing circuits
5. Simulation of Hydraulic and Pneumatic circuits using PLC circuits
6. Simulation of Hydraulic and Pneumatic circuits using automation studio
7. Exercises on linear, angular and speed measurements
8. Exercises on Vibration measurements
10. Exercises on stepper motor.
11. Exercises on microprocessor based data acquisition system.

TOTAL : 60 PERIODS
AIM:
To impart knowledge in the area of finite element methods and its application in manufacturing.

OBJECTIVE:
To study the fundamentals of one dimensional and two dimensional problems using FEA in manufacturing.

UNIT I  INTRODUCTION  6

UNIT II  ONE DIMENSIONAL ANALYSIS  10
Steps in FEM – Discretization. Interpolation, derivation of elements characteristic matrix, shape function, assembly and imposition of boundary conditions-solution and post processing – One dimensional analysis in solid mechanics and heat transfer.

UNIT III  SHAPE FUNCTIONS AND HIGHER ORDER FORMULATIONS  10
Shape functions for one and two dimensional elements- Three noded triangular and four nodded quadrilateral element Global and natural co-ordinates—Non linear analysis – Isoparametric elements – Jacobian matrices and transformations – Basics of two dimensional, plane stress, plane strain and axisymmetric analysis.

UNIT IV  COMPUTER IMPLEMENTATION  9
Pre Processing, mesh generation, elements connecting, boundary conditions, input of material and processing characteristics – Solution and post processing – Overview of application packages – Development of code for one dimensional analysis and validation

UNIT V  ANALYSIS OF PRODUCTION PROCESSES  10

TOTAL: 45 PERIODS

REFERENCES:
6. www.tbook.com
7. www.pollockeng.com
AIM:
To impart knowledge in the area of hydraulics, pneumatic and fluid power components and its functions.

OBJECTIVES:
- To make the students to learn the basic concepts of hydraulics and pneumatics and their controlling elements in the area of manufacturing process.
- To train the students in designing the hydraulics and pneumatic circuits using ladder diagram.

UNIT I INTRODUCTION 5

UNIT II FLUID POWER GENERATING/UTILIZING ELEMENTS 8

UNIT III CONTROL AND REGULATION ELEMENTS 8
Direction flow and pressure control valves-Methods of actuation, types, sizing of ports-pressure and temperature compensation, overlapped and underlapped spool valves-operating characteristics-electro hydraulic servo valves-Different types-characteristics and performance.

UNIT IV CIRCUIT DESIGN 10

UNIT V ELECTRO PNEUMATICS & ELECTRONIC CONTROL OF HYDRAULIC AND PNEUMATIC CIRCUITS 7
Electrical control of pneumatic and hydraulic circuits-use of relays, timers, counters, Ladder diagram. Programmable logic control of Hydraulics Pneumatics circuits, PLC ladder diagram for various circuits, motion controllers, use of field busses in circuits. Electronic drive circuits for various Motors.

TOTAL: 45 PERIODS

REFERENCES:
UNIT I TOLERANCE ANALYSIS 8

UNIT II TOLERANCE ALLOCATION 8

UNIT III GD&T 10

UNIT IV TOLERANCE CHARTING 9

UNIT V MANUFACTURING GUIDELINES 10

TOTAL: 45 PERIODS

REFERENCES:
AIM:
To introduce to the students the various functions of materials management and logistics

OBJECTIVE:
To make the students familiar with the various concepts and functions of material management, so that the students will be in a position to manage the materials management department independently.

UNIT I INTRODUCTION 6
Introduction to materials management – Objectives – Functions – Operating Cycle – Value analysis – Make or buy decisions.

UNIT II MANAGEMENT OF PURCHASE 7

UNIT III MANAGEMENT OF STORES AND LOGISTICS 12

UNIT IV MATERIALS PLANNING 10

UNIT V INVENTORY MANAGEMENT 10
ABC analysis – Aggregate planning – Lot size under constraints – Just in Time (JIT) system.

TOTAL: 45 PERIODS

REFERENCES
AIM:
To impart knowledge on basic concepts and advances in casting and welding processes.

OBJECTIVES:
- To study the metallurgical concepts and applications of casting and welding process.
- To acquire knowledge in CAD of casting and automation of welding process.

UNIT I  CASTING DESIGN  8
Heat transfer between metal and mould — Design considerations in casting – Designing for directional solidification and minimum stresses - principles and design of gating and risering

UNIT II  CASTING METALLURGY  8

UNIT III  RECENT TRENDS IN CASTING AND FOUNDRY LAYOUT  8
Shell moulding, precision investment casting, CO₂ moulding, centrifugal casting, Die casting, Continuous casting, Counter gravity low pressure casting, Squeeze casting and semisolid processes. Layout of mechanized foundry – sand reclamation – material handling in foundry pollution control in foundry — Computer aided design of casting.

UNIT IV  WELDING METALLURGY AND DESIGN  10

UNIT V  RECENT TRENDS IN WELDING  11

TOTAL: 45 PERIODS

REFERENCES:
2. ASM Handbook vol.6, welding Brazing & Soldering, 2003
AIM:
To impart the knowledge and train the students in the area of metal cutting theory and its importance.

OBJECTIVE:
- To make the students familiar with the various principles of metal cutting, cutting tool materials and its wear mechanisms during the machining operation.

UNIT I INTRODUCTION
Need for rational approach to the problem of cutting materials-observation made in the cutting of metals-basic mechanism of chip formation-thin and thick zone modes-types of chips-chip breaker-orthogonal Vs oblique cutting-force velocity relationship for shear plane angle in orthogonal cutting-energy consideration in machining-review of Merchant, Lee and Shafter theories-critical comparison.

UNIT II SYSTEM OF TOOL NOMENCLATURE
Nomenclature of single point cutting tool-System of tool nomenclature and conversion of rake angles-nomenclature of multi point tools like drills, milling-conventional Vs climb milling, mean cross sectional area of chip in milling-specific cutting pressure.

UNIT III THERMAL ASPECTS OF MACHINING
Heat distribution in machining-effects of various parameters on temperature-methods of temperature measurement in machining-hot machining-cutting fluids.

UNIT IV TOOL MATERIALS, TOOL LIFE AND TOOL WEAR

UNIT V WEAR MECHANISMS AND CHATTER IN MACHINING
Processing and Machining – Measuring Techniques – Reasons for failure of cutting tools and forms of wear-mechanisms of wear-chatter in machining-factors effecting chatter in machining-types of chatter-mechanism of chatter.

TOTAL : 45 PERIODS

REFERENCES
AIM:
To introduce the concepts of probability, sampling techniques, estimation to the students.

OBJECTIVE:
To train the students so that students will be able to design experimental designs and use these concepts for research design.

UNIT I PROBABILITY THEORY
Random variables – probability density and distribution functions-moment generating and characteristic functions – Binomial, Poisson, Normal distributions and their applications.

UNIT II SAMPLING THEORY
Sampling distributions – Standard error – t, F, Chi square distributions – application

UNIT III ESTIMATION THEORY
Interval estimation for population mean, standard deviation, difference in means, ratio of standard deviations – point estimation.

UNIT IV TESTING OF HYPOTHESIS AND ANOVA

UNIT V CORRELATION, REGRESSION AND TIME SERIES ANALYSIS

TOTAL : 45 PERIODS

REFERENCES:
AIM:
To introduce the various concepts of manufacturing system simulation.

OBJECTIVES:
• To model manufacturing systems of different kinds.
• To make use of simulation languages for manufacturing systems.

UNIT I  INTRODUCTION  8
Basic concepts of system – elements of manufacturing system - concept of simulation – simulation as a decision making tool – types of simulation – Monte-Carlo simulation - system modeling – types of modeling – Limitations and Areas of application of simulation.

UNIT II  RANDOM NUMBERS  10
Probability and statistical concepts of simulation – Pseudo random numbers – methods of generating random numbers – discrete and continuous distribution – testing of random numbers – kolmogorov-Smirnov test, the Chi-Square test - sampling - simple, random and simulated.

UNIT III  DESIGN OF SIMULATION EXPERIMENTS  10

UNIT IV  SIMULATION LANGUAGE  9
Comparison and selection of simulation languages - Study of GPSS (Basic blocks only) Generate, Queue, Depart, Size, Release, Advance, Terminate, Transfer, Enter and Leave.

UNIT V  CASE STUDIES  10
Development of simulation models using GPSS for queuing, production, inventory, maintenance and replacement systems – case studies.

TOTAL: 45 PERIODS

REFERENCES:
AIM:
To introduce the various optimization techniques and their advancements.

OBJECTIVES:
- To make use of the above techniques while modeling and solving the engineering problems of different fields.

UNIT I  INTRODUCTION  5

UNIT II  CLASSIC OPTIMIZATION TECHNIQUES  10

UNIT III  NON-LINEAR PROGRAMMING  9
Introduction – Lagrangeon Method – Kuhn-Tucker conditions – Quadratic programming – Separable programming – Stochastic programming – Geometric programming

UNIT IV  INTEGER PROGRAMMING AND DYNAMIC PROGRAMMING AND NETWORK TECHNIQUES  12

UNIT V  ADVANCES IN SIMULATION  9
Genetic algorithms – simulated annealing – Neural Network and Fuzzy systems

TOTAL: 45 PERIODS

REFERENCES:
UNIT I  INTRODUCTION

UNIT II  ANTHROPOMETRY
Physical dimensions of the human body as a working machine – Motion size relationships – Static and dynamic anthropometry – Anthropometric aids – Design principles – Using anthropometric measures for industrial design – Procedure for anthropometric design.

UNIT III  DESIGN OF SYSTEMS

UNIT IV  ENVIRONMENTAL FACTORS IN DESIGN

UNIT V  WORK PHYSIOLOGY
Provision of energy for muscular work – Role of oxygen physical exertion – Measurement of energy expenditure Respiration – Pulse rate and blood pressure during physical work – Physical work capacity and its evaluation.

TOTAL: 45 PERIODS

REFERENCES:
• To develop knowledge on processing, interfacial properties and application of computers.

UNIT I PROPERTIES OF POLYMERS 8
Chemistry and Classification of Polymers – Properties of Thermo plastics – Properties of Thermosetting Plastics – Applications – Merits and Disadvantages.

UNIT II PROCESSING OF POLYMERS 9

UNIT III INTRODUCTION TO FIBRES AND COMPOSITE MATERIALS 9
Fibres – Fabrication, Structure, properties and applications - Glass, Boron, carbon, organic, ceramic and metallic fibers whiskers– Matrix materials structure – polymers, – metals and ceramics – Physical and chemical properties

UNIT IV PROCESSING OF POLYMER MATRIX COMPOSITES 9

UNIT V PROCESSING OF - METAL MATRIX COMPOSITES AND CERAMIC MATRIX COMPOSITES 10

TOTAL: 45 PERIODS

REFERENCES:
AIM:
To stress the importance of NDT in engineering.

OBJECTIVES:
To introduce all types of NNDT and their applications in Engineering.

UNIT I  NON-DESTRUCTIVE TESTING: AN INTRODUCTION, VISUAL INSPECTION & LIQUID PENETRANT TESTING  6
Introduction to various non-destructive methods, Comparison of Destructive and Non destructive Tests, Visual Inspection, Optical aids used for visual inspection, Applications. Physical principles, procedure for penetrant testing, Penetrant testing materials, Penetrant testing methods-water washable, Post – Emulsification methods, Applications

UNIT II  EDDY CURRENT TESTING & ACOUSTIC EMISSION  10

UNIT III  MAGNETIC PARTICLE TESTING & THERMOGRAPHY  10
Principle of MPT, procedure used for testing a component, Equipment used for MPT, Magnetizing techniques, Applications.Principle of Thermography, Infrared Radiometry, Active thermography measurements, Applications – Imaging entrapped water under an epoxy coating, Detection of carbon fiber contaminants.

UNIT IV  ULTRASONIC TESTING & RADIOGRAPHY  10
Principle, Ultrasonic transducers, Ultrasonic Flaw detection Equipment, Modes of display A- scan, B-Scan, C- Scan, Applications, Inspection Methods - Normal Incident Pulse-Echo Inspection, Normal Incident Through-transmission Testing, Angle Beam Pulse-Echo testing, Applications of Normal Beam Inspection in detecting fatigue cracks, Inclusions, Slag, Porosity and Intergranular cracks.
Principle of Radiography, Effect of radiation on Film, Radiographic imaging, Inspection Techniques – Single wall single image, Double wall Penetration, Multiwall Penetration technique, Real Time Radiography

UNIT V  CASE STUDIES, COMPARISON AND SELECTION OF NDT METHODS  9
Case studies on defects in cast, rolled, extruded, welded and heat treated components. Comparison and selection of various NDT techniques. Codes, standards, specification and procedures.

TOTAL:  45 PERIODS

REFERENCES:
4. www.ndt.net
AIM:
To understand the various types and applications of Fuzzy Logics and Artificial Neural Networks.

OBJECTIVE:
This course is intended for learning the basic concepts, Operations and Principles of Fuzzy Logic, applications of various Fuzzy Logic systems, architecture and Taxonomy of Neural Networks. This course is also gives the ideas of ANN Architectures, Genetic Algorithms. Meta Heuristic techniques and Applications in Design and Manufacturing.

UNIT I  INTRODUCTION TO FUZZY LOGIC  8

UNIT II  FUZZY LOGIC APPLICATIONS  10

UNIT III  INTRODUCTION TO ARTIFICIAL NEURAL NETWORKS  7

UNIT IV  OTHER ANN ARCHITECTURES  10

UNIT V  RECENT ADVANCES  10

TOTAL: 45 PERIODS

REFERENCES:
AIM:
To introduce the concepts of lean manufacturing system.

OBJECTIVES:
- To study the various tools for lean manufacturing (LM).
- To apply the above tools to implement LM system in an organization.

UNIT I INTRODUCTION TO LEAN MANUFACTURING

UNIT II CELLULAR MANUFACTURING, JIT, TPM
Cellular Manufacturing – Types of Layout, Principles of Cell layout, Implementation. JIT – Principles of JIT and Implementation of Kanban. TPM – Pillars of TPM, Principles and implementation of TPM.

UNIT III SET UP TIME REDUCTION, TQM, 5S, VSM
Set up time reduction – Definition, philosophies and reduction approaches. TQM – Principles and implementation. 5S Principles and implementation - Value stream mapping - Procedure and principles.

UNIT IV SIX SIGMA
Six Sigma – Definition, statistical considerations, variability reduction, design of experiments – Six Sigma implementation

UNIT V CASE STUDIES
Various case studies of implementation of lean manufacturing at industries.

TOTAL: 45 PERIODS

REFERENCES:
2. Rother M. and Shook J, 1999 ‘Learning to See: Value Stream Mapping to Add Value and Eliminate Muda’, Lean Enterprise Institute, Brookline, MA.
AIM:
To expose the students to the various quality control techniques and also to understand the importance and concept of reliability and maintainability in industries.

OBJECTIVES:
To make the students to understand the various quality control techniques and to construct the various quality control charts for variables and attributes and also the design concepts for reliable system and maintenance aspects in industries.

UNIT I  QUALITY & STATISTICAL PROCESS CONTROL  8

UNIT II  ACCEPTANCE SAMPLING  8

UNIT III  EXPERIMENTAL DESIGN AND TAGUCHI METHOD  9

UNIT IV  CONCEPT OF RELIABILITY  9
Definition – reliability vs quality, reliability function – MTBF, MTTR, availability, bathtub curve – time dependent failure models – distributions – normal, weibull, lognormal – Reliability of system and models – serial, parallel and combined configuration – Markov analysis, load sharing systems, standby systems, covariant models, static models, dynamic models.

UNIT V  DESIGN FOR RELIABILITY AND MAINTAINABILITY  11
Reliability design process, system effectiveness, economic analysis and life cycle cost, reliability allocation, design methods, parts and material selection, derating, stress-strength and analysis, failure analysis, identification determination of causes, assessments of effects, computation of criticality index, corrective action, system safety – analysis of down-time – the repair time distribution, stochastic point processes system repair time, reliability under preventive maintenance state dependent system with repair. MTTR – mean system down time, repair vs replacement, replacement models, proactive, preventive, predictive maintenance maintainability and availability, optimization techniques for system reliability with redundancy heuristic methods applied to optimal system reliability.

TOTAL: 45 PERIODS
REFERENCES:

MF9265 COMPUTER AIDED PRODUCT DESIGN L T P C
3 0 0 3

AIM:
To introduce the computer aided modeling and various concepts of product design.

OBJECTIVES:
• To model a product using CAD software.
• To apply the various design concepts and design tools and techniques while designing a product.

UNIT I INTRODUCTION 8
Introduction to Engineering Design – Various phases of systematic design – sequential engineering and concurrent engineering – Computer hardware & Peripherals – software packages for design and drafting.

UNIT II COMPUTER GRAPHICS FUNDAMENTALS AND GEOMETRIC MODEL 8

UNIT III PRODUCT DESIGN CONCEPTS 9

UNIT IV PRODUCT DESIGN TOOLS & TECHNIQUES 12
UNIT V PRODUCT DATA MANAGEMENT 8
Product Data Management – concepts – Collaborative product design and commerce – 
Information Acquisition – Sourcing factor – manufacturing planning factor – 
Customization factor – Product life cycle management.

TOTAL : 45 PERIODS

TEXT BOOK:

REFERENCES:
McGraw Hill, 1990

MF9266 FINANCIAL MANAGEMENT L T P C 3 0 0 3

AIM:
To introduce the concepts of financial and various functions of financial management so 
that the students will be able to handle higher level financial decisions.

OBJECTIVES:
To train students in various functions of finance such as working capital management, 
current assets management so that students will be able to make high investment 
decisions when they take up senior managerial positions.

UNIT I FINANCIAL ACCOUNTING 8
Accounting principles - Basic records - Preparation and interpretation of profit and loss 
statement - balance sheet - Fixed assets - Current assets.

UNIT II COST ACCOUNTING 12
Elements of cost - cost classification - material cost - labour costs - overheads - cost of a 
product - costing systems - cost determination - process - costing - Allocation of 
overheads - Depreciation - methods.

UNIT III MANAGEMENT OF WORKING CAPITAL 10
Current assets - Estimation of working capital requirements - Management of accounts 
receivable - Inventory - Cash - Inventory valuation methods.

UNIT IV CAPITAL BUDGETING 8
Significance of capital budgeting - payback period - present value method - accounting 
rate of return method - Internal rate of return method.
UNIT V  PROFIT PLANNING AND ANALYSIS  7
Cost - Volume profit relationship Relevant costs in decision making profit management analysis - Break even analysis.

REFERENCES:

MF9267  RAPID MANUFACTURING  L T P C
3 0 0 3

AIM:
To expose the students the importance of concurrent engineering in the present manufacturing and also the need and importance of rapid prototype tooling in manufacturing.

OBJECTIVES:
To make the students understand the concepts of concurrent engineering such as artificial intelligence, expert system, JIT, automated assembly system etc. Also to impart knowledge in various rapid tooling techniques and processes.

UNIT I  INTRODUCTION TO CONCURRENT ENGINEERING  7

UNIT II  DESIGN STATE  9

UNIT III  MANUFACTURING CONCEPTS AND ANALYSIS  9

UNIT IV  RAPID PROTOTYPE TOOLING PROCESSES  10
UNIT V MODULAR AND RAPID TOOLING

REFERENCES:

WEB REF:
1. www.tm.tu.nl/vace/ce/ce95.html

MF9268 MANUFACTURING MANAGEMENT

AIM:
To introduce the concepts of manufacturing management and various manufacturing management function to the students.

OBJECTIVE:
To train the students on various functions of manufacturing management so that the students will be able to take up these functions as they get in to senior managerial positions.

UNIT I PLANT ENGINEERING

UNIT II WORK STUDY

UNIT III PROCESS PLANNING AND FORECASTING
Process planning – Aims of process planning – steps to prepare the detailed work sheets for manufacturing a given component – Break even analysis – Forecasting – Purpose of forecasting – Methods of forecasting – Time series – Regression and Correlation – Exponential smoothing – Forecast errors.
UNIT IV SCHEDULING AND PROJECT MANAGEMENT

UNIT V PERSONNEL AND MARKETING MANAGEMENT

TOTAL: 45 PERIODS

REFERENCES
1. Dr. R. Kesavan, C.Elanchezian and B.Vijayaramnath, Production Planning and Control, Anuratha Publications, Chennai – 2008
5. Martand T. Telsang, Production Management, S.Chand & Co., 2005