



STUDENT HAND BOOK

M. TECH.

Semester- 3rd

Study Scheme- 2015 onwards

MRSPTU, Bathinda

DEPARTMENT OF MECHANICAL ENGINEERING
ASRA COLLEGE OF ENGINEERING & TECHNOLOGY
BHAWANIGARH (SANGRUR)

Department of Mechanical Engineering

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Study Scheme of M.Tech.(Mechanical Engg)

3rd Semester

Sr. No.	Subject Code	Title of the Subject	Teaching Load/Week			Total Hrs/week
			L	T	P/D	
1.	MME-	Elective-I	4	-	-	3
2.	MME-	Elective-II	4	-	-	3
3.	MME-511	Project-II (leading to Dissertation)	8	-	-	-
4.	MME-513	Seminar	-	-	-	-
			16			

List of Elective Subjects

MT-515 Total Quality Management
ME-517 Industrial Automation

Production	Design	Thermal
MME-519 Computer Aided Manufacturing	MME-539 Advanced Mechanics of Solids	MME-559 Advanced Internal
MME-521 Machining Science	MME-541 Mechanical Vibrations	Combustion Engines
MME-523 Production Planning & Control	MME-543 Experimental Stress Analysis	MME-561 Turbo-machinery
MME-527 Maintenance Engg. & Factory Planning	MME-545 Advanced Kinematics & Dynamics of Machines	MME-563 Refrigeration Engineering
MME-529 Advanced Manufacturing Techniques	MME-547 Instrumentation	MME-565 Air Conditioning
MME-531 Advanced Machining Processes	MME-549 Tribology	MME-567 Direct Energy Conversion
MME-533 Strategic Entrepreneurship	MME-551 Industrial Robotics	MME-569 Fluid Engineering
MME-535 Computer Integrated manufacturing Systems	MME-553 Finite Element Methods	MME-571 Gas Dynamics
MME-537 Machine Vision	MME-555 Advanced Machine Design & Design of machineries	MME-573 Nuclear Engineering
	MME-557 Machine Vision	MME-575 Rocket & Jet Propulsion
		MME-577 Solar Energy

MT- 515

Course Code/ME: 515

Course Title: TOTAL QUALITY MANAGEMENT

Contact Hours:	L	T	P
	4	0	0

Quality and Total Quality Management: Excellence in manufacturing/services, factors of excellence, and relevance of TQM.

Concept and definition of quality: Total quality control (TQC) and Total quality Management (TQM), salient features of TQC and TQM. Total Quality Management Models, benefits of TQM.

Just-in-Time (JIT): Definition: Elements, benefits, equipment layout for JIT system, Kanban system, MRP (Material Requirement Planning) vs JIT system, Waste elimination, workers involvement through JIT: JIT, cause and effect chain, JIT implementation.

Customer: Satisfaction, data collection and complaint redressal mechanisms.

Process Management: Factors affecting process management, Quality function deployment (QFD), Quality Assurance System.

Total Employees Involvement: Empowering employees: Team building; quality circles, Reward and Recognition; Education and Training, Suggestion schemes.

Problem solving: Defining problem, problem identification and solving process, QC tools.

Benchmarking: Definition, concept, process and types of benchmarking.

Quality Systems: Concept of quality system standards, Relevance and origin of ISO 9000, Benefits, Elements of ISO 9001, ISO 9002, ISO 9003.

Books Recommended

1. Besterfield and Besterfield, "*Total Quality Management*", 2nd Edition, Pearson Education (Singapore) P Ltd, India (2001).
2. Sunder Raju, "*Total Quality Management A Primer*", 3rd Edition, Tata McGraw Hill, Delhi (2001).
3. Zairi M, "*Total Quality Management for Engineers*", 2nd Edition, Aditya Books, Delhi, (1995).
4. Hradesky J L, "*Total Quality Management Handbook*", McGraw Hill (1994).
5. Dalela S and Saurabh, "*A manual of ISO 9000 Quality System*", 2nd Edition, S Chand & Company Ltd, Delhi (1999).

Course Code: MME: 523

Course Title: PRODUCTION PLANNING & CONTROL

Contact Hours:	L	T	P
	4	0	0

1. General :

Functions of production planning and control, preplanning planning, control, plant layout, simplification and standardization, time and motion study. **(4 hrs)**

2. Product Development and Design:

Effect of competition on design, Long-range Planning, Company policy, product analysis, marketing aspects, the product characteristics, functional aspect, operational aspect, durability and dependability, Aesthetic aspect; Economic analysis, Profit and competitiveness, The three S's:- Standardization, Simplification and Specialization. Break Even Analysis. **(9 hrs)**

3. Inventory Control:

Definition, classification, objectives of inventory control, functions, economic order quantity various inventory models. Numericals on inventory control. Inventory carrying costs, factors affecting inventory costs. V.E.D. analysis, S-D-E analysis, F-S-N analysis H-M-L analysis and ABC analysis. Safety stocks, their objectives safety stocks and service levels. **(9 hrs)**

4. Evaluation of Material and Processes:

Introduction, value analysis, consideration of new techniques and materials, value analysis tests, material utilization of a product or assembly. Numerical problems on material utilization of a product. Value engineering job plan and various phases of job plan in systematic value engineering approach. **(10 hrs)**

5. Routing, Loading and Scheduling:

Introduction, Scheduling Procedure, Master Schedule, its objectives, Order scheduling, Loading by scheduled period, Dispatching, Job card, Job order Commercial Loading & Scheduling Devices. **(8 hrs)**

Books Recommended:

1. Production Planning and control: Samuel Eilon
2. Production Planning and Control: K.C. Aggarwal & K.C. Jain
3. Industrial Engg. & Operation Management by S.K. Sharma & Savita Sharma.
4. Production Planning and Control: King J.R.
5. Production Planning and Control: Sharma, Hari Rraghu Rama.
6. Production Planning and Control: Narasimhan Seetha-rama L.

Subject: TQM

ASSIGNMENT NO.1

1. What are the strategies for quality management?
2. What are the obstacles and barriers to adopting TQM?
3. Explain the benefits of total quality management.

ASSIGNMENT NO.2

1. What is JIT? Explain the elements & benefits of JIT system.
2. Explain the implementation problems of JIT.
3. Differentiate between 'Customer Expectation' & 'Customer Satisfaction'

ASSIGNMENT NO.3

1. What do you mean by the term 'Quality Paradigm'?
2. What are the outcomes of Planning? What is 'Mission Statement'?
3. What are the elements of process management?

ASSIGNMENT NO.4

1. What is team building? Explain the elements of team building.
2. What are the different stages of benchmarking process?
3. Explain the role of ISO standards to Society.

Subject: PPC

ASSIGNMENT NO - 1

1. What are the functions of production planning?
2. Describe plant layout.
3. What is time and motion study?

ASSIGNMENT NO - 2

1. What is product analysis?
2. What is Long range Planning?
3. Describe Break Even Analysis.

ASSIGNMENT NO - 3

1. What is value analysis?
2. What is safety stock?
3. What is value engineering job plan?

ASSIGNMENT NO - 4

1. Describe scheduling procedure
2. What are scheduling devices?
3. What is loading by scheduled period?