ME302 Operations & Supply chain management										
L	**T**	**P**	Credit	Area		**CWS**	**PRS**	**MTE**	**ETE**	**PRE**
3	0	2	4	DCC		15	25	20	40	-

Objective: To apply the most widely used quantitative techniques in decision making. To realize the importance of certain mathematical techniques in getting the best possible solution to a problem involving limited resources.

Syllabus		**Contact Hours**
Unit-1	**Introduction** Introduction to operations management- role, scope and interface with marketing, finance, strategy; **Work study and Ergonomics** Work Study, Work Measurement, Activity Sampling, MOST, Ergonomics, Learning Curve.	**8**
Unit-2	**Forecasting** Demand forecasting, Time Series, Regression Analysis and Qualitative techniques, Forecast Error **Product Design and Development** Product Design and Process Selection, Service Design, Outsourcing, Make buy decision, Value Engineering, QFD, Concurrent Engineering	**6**
Unit-3	**Facility Planning** Facility Planning- location, layout; Line balancing; Analytical tools and techniques for facility planning and design, Single Facility Location **Quality Management** Total Quality Management (TQM), Statistical Process Control (SPC); Concepts of Six-sigma; Maintenance management and equipment replacement policies; World class manufacturing; Concepts of supply chain management, Case studies.	**6**
Unit-4	Introduction to supply chain and logistics management, Historical evolution of SCM, JIT and logistics, Value stream mapping, Inbound and outbound logistics, product postponement and decoupling point in supply chain. Purpose and cost associated with inventory management, Types of inventory, ABC/VED/FSN analysis, Deterministic and probabilistic inventory model, Newspaper boy problem.	**12**
Unit-5	Information technology in supply chain, Uncertainties in demand and supply, Bullwhip effect and its quantification, causes and methods to reduce bullwhip effect, computerized bear game.	**6**
Unit-6	Transportation and warehousing strategies, centralized and decentralized distribution system, concept of Risk pulling.	**4**
	Total	**42**

Reference Books:	
1	Operations Management, Haizer, Render, and Jagdeesh, Prentice Hall
2	Operations Management, Chase, Jacob, and Equilano, Tata McGraw Hill
3	Operations Management, Evans and Collier, Cengage Learning
4	Designing and Managing the Supply Chain: Concepts, strategies and case studies, 3/e, by Simchi Levi, Kaminsky, Simchi levi, Ravi Shankar, TMH.
5	Winser, Leong and Tan, Supply Chain management: a balanced approach, Cengage Learning.
6.	Mohanti and Deshmukh, Biztantra.Supply Chain Management Theory and practices

Course Outcomes

CO1	To define and describe the scope of operations management, trends in business and management process and forecast the demand for products and services for a given organization.
CO2	To solve managerial problems related to product and service design and capacity planning.
CO3	To analyze managerial problems related to plant location and layout, assembly line balancing, aggregate and material requirement planning for a given organization.
CO4	To develop an understanding of the importance of logistics in the formulation of the business strategy and the conduct of supply chain operations.
CO5	To imlement an in-depth understanding of logistics operating areas and their interrelationship.
CO6	To apply strengthen integrative management analytical and problem-solving skills in case studies.

CO-PO/PSOMatrix

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
CO1	3	3	3	2	2	0	0	0	0	0	0	2	2	1	1
CO2	3	3	2	3	1	0	0	0	0	0	0	1	2	1	1
CO3	3	3	3	3	1	0	0	0	0	0	0	2	3	3	2
CO4	3	3	3	3	1	0	0	0	0	0	0	1	3	3	2
CO5	2	2	2	2	2	0	0	0	0	0	0	1	2	2	2