Course Type	Course Code	Name of the Course	L	T	P	Credits
DC	NMSC509	Operations Management	3	1	0	4

Course Objective

This course introduces the students to the theory and practice of operations management as a functional area in the management of business enterprises. It also includes the methods, strategies, and applications of various mathematical tools in solving production and operation-related problems. The objective is to understand the strategic role of operations management in creating and enhancing a firm's competitive advantages.

learning outcomes

At the end of the course the students will be able to: (a) understand the functions of operation management in the context of business enterprise; (b) develop skills in solving operation management problems.

Unit No.	Topics to be covered	Lecture Hours	Learning Outcome
1	Introduction to operations management. Basic forecasting concepts. Qualitative and quantitative forecasting techniques. Moving Average, Exponential Smoothing, and Regressions. Concept of seasonality. Concepts of forecasting errors. Case studies.	7L + 3T	After completing the section student should able to – o understand the basic concept of operations management o understand when to use which forecasting model o understand how to calculate forecast errors
2	Concept of Aggregate Production Planning and related strategies like Chase, level, and Mixed. Basic Concept of Materials Requirement Planning. Developing MRP tables and related numerical problems. Case studies.	7L + 3T	After completing the section student should able to- o Understand the concept of aggregateplanning of aggregate production planning and MRP o Create the MRP tables based on the strategy adopted o When to use which strategy for production.
3	Concept of Job Shop Scheduling and Sequencing Strategies, Johnson Rule and Extension of Johnson Rule. CDS heuristics. Introduction to inventory management. Inventory models and problems. Case studies.	11 L + 5T	After completing the section student should able to – o Apply the assignment method for loading jobs o Use Johnson's rule for scheduling the jobs o Understand basic inventory

			management theories o Calculate EOQ, safety stock, no of orders and costs
4	Facility Location concepts and mathematical models (Fixed charged location-allocation problem, capacitated problems). Theory of Facility Layout and related algorithms like CRAFT and ALDEP.	7 L+ 3T	After completing the section student should able to - o Identify and explain major factors that affect location decisions o Apply various mathematical models to solve facility location problems. o Understand various issues in facility layout o Create and optimize a facility layout
5	Concept of Operations Strategy, Product and Process Design, Concept of JIT. Case studies	10L	After completing the section student should able to – o understand the importance of operations strategy for manufacturing and services o Understand product and process design o Understand the concepts of just-in-time, TPS, and lean operations
	Total	**42L + 14T**	

Text Books:

1. Operations Management, Jay Heizer & Barry Render, Pearson

2. Operations Management, William J Stevenson, McGraw-Hill

Reference Books:
1. Operations and Supply Chain Management, F. Robert Jacobs, Ravi Shankar, Richard B. Chase, McGraw-Hill
2. Operations Research Theory & Applications, JK Sharma, Trinity Publication