Course Details:

Course Title: Introduction to Operations Management **Credit Hours:** 3

Course Code: OTM-351 **Pre-requisite:** Nil

Course Description :

This course introduces operations as a functional area of management and explores its links with other key functional areas of the firms. Students will learn to analyse firms from a process-perspective and to design, operate, and improve the systems that deliver goods and services through various operations management tools. You will learn about firm's (manufacturing and services) performance evaluation and management by covering topics such as resource planning, product and process design, process improvement, production planning and scheduling, statistical quality control, project management, forecasting, technology deployment and its integration with modern decision support systems to support and improve the operational performance within the firm. Both manufacturing and service systems will be explored, and students will be introduced to contemporary operations management issues such as just-in-time systems and flexible manufacturing systems. The entire course will be focused on the exploration of the body of knowledge and practical applications of well-tested theories and techniques in the design and operation of both manufacturing and service systems. Added emphasis will be placed on new trends and emerging strategies in the field. Realistic examples from the industry will be taught to support the learning process. The lectures will be supplemented by statistical data, spread sheets, and videos.

Course Learning Outcomes:

Upon completion of this course, the student should be able to:

1. *Summarize* the fundamental concepts of operations in service and manufacturing organizations.
2. *Examine* multiple tiers of operations, their focus, and characteristics in an organization.
3. *Analyse* problems from various domains such as forecasting, layout, process analysis, quality management, and material requirement planning for a correct course of action.
4. *Solve* real-world operations management problems using acquired knowledge.

LO 4.2: Students will be able to apply ethical guidelines to address business problems by examining a set of alternatives.

Required Course Material:

Textbook (s):

1. **Operation Management**, 13th ed., by Jay Heizer Barry Render. Pearson, 2020.

Reference book:

1. **Operations Management**, 11th ed., by William J Stevenson. Prentice Hall, 2012.

Other Material:

1. HBS Case Studies/Case Studies from book
2. Instructor Notes

Software

Following software will be used for solving complex operation management problems during course and projects

1. Microsoft Excel

Weekly Schedule:

Week	Lecture No. and Topic	Preparation Material	Session Outcomes (Students should be able to…)
1	Lecture 1: Introduction to Operations Management: Operations and Productivity	**Chapter 1:** Operation Management by Jay Heizer Barry Render.	Summarize the key operations management concepts (CLO1)
	Lecture 2: Operations Strategy in a Global Environment	**Chapter 2:** Operation Management by Jay Heizer Barry Render.	Summarize the key operations management concepts in a global environment (CLO1)
2	Lecture 3 & 4: Design of Goods and Services • Product development • Issues for product design • Product development continuum • Defining a product • Documents for production • Service Design	**Chapter 5:** Operation Management by Jay Heizer Barry Render.	Summarize the differentiation between goods and services (CLO1)
3	Lecture 5 & 6: Project Management • Characteristics of a Project • Importance of Project Management • Project Planning, Scheduling and Controlling • Project Management Techniques	**Chapter 3:** Operation Management by Jay Heizer Barry Render.	Analyse the project management concepts to achieve optimal results (CLO3)
	• PERT and CPM		
4	Lecture 7 & 8: Forecasting Methods - I • Forecasting Time Horizons • Types of Forecasts • Steps in forecasting • Time-series Forecasting • Measuring forecasting Error	**Chapter 4:** Operation Management by Jay Heizer Barry Render. Reading Notes/excel modelling/LAB	Summarize the understanding of the concept of different forecasting methods (CLO1)

5	Lecture 9 : Forecasting Methods - II • Associative forecasting methods • Linear Regression • Comparison of the forecasting methods Lecture 10: • HBSP Case Study or Case Study from the book	**Chapter 4:** Operation Management by Jay Heizer Barry Render. Reading Notes/excel modelling/LAB HBSP case or BOOK Case: TBD	Summarize the understanding of the concept of different forecasting methods (CLO1)
6	Lecture 11 & 12: Managing Quality • Quality and Strategy • Defining Quality • Total Quality Management • Tools of TQM • The Role of Inspection	**Chapter 6:** Operation Management by Jay Heizer Barry Render.	Examine the necessary tools required for the management of quality in operations (CLO2)
7	Lecture 13 & 14: Statistical Process Control • Purpose of a control chart • Statistical Process Control • Role of the central limit theorem in SPC	**Supplement 6:** Operation Management by Jay Heizer Barry Render.	Examine the prominent statistical method used for controlling processes (CLO2)
8	Lecture 15 & 16: Process Strategy • Four Process Strategies • Selection of Equipment • Production Technology	**Chapter 7:** Operation Management by Jay Heizer Barry Render.	Summarize the understanding of process strategies used for improving operations (CLO1)
9	**MID-TERM EXAM WEEK**		
10	Lecture 19 & 20: Location Design Strategies • Strategic Importance of Location • Factors that Affect location Decision	**Chapter 8:** Operation Management by Jay Heizer Barry Render.	Analyse the location strategies to achieve different goals (CLO3)
	• Methods of Evaluating location Alternatives		
11	Lecture 21 & 22: Work Design and Measurement • Components of Job Design • Work measurement • Labor planning • Labor Work schedules	**Chapter 10:** Operation Management by Jay Heizer Barry Render.	Summarize key concepts and theories (CLO1)
12	Lecture 23 & 24: Aggregate Planning • Aggregate Planning Strategies • Methods for Aggregate Planning	**Chapter 13:** Operation Management by Jay Heizer Barry Render.	Solve the aggregate planning problems in an operations management environment (CLO4)

13	Lecture 25 & 26: Material Requirement Planning • Master Production Schedule • Bill of Materials • Lot Sizing Techniques	**Chapter 14:** Operation Management by Jay Heizer Barry Render.	Solve the Material Requirement Planning problems in the context of operations management (CLO4)
14	Lecture 27 & 28: Material Requirement Planning • MRP II • MRP in services	**Chapter 14:** Operation Management by Jay Heizer Barry Render.	Solve the Material Requirement Planning problems in the context of operations management (CLO4)
15	Lecture 29: Short- Term Scheduling • Importance of Short term scheduling • Scheduling process focused facilities • Loading Jobs Lecture 30: Lean Operations • Lean Operations • Lean and Just-in-Time	**Chapter 15:** Operation Management by Jay Heizer Barry Render. **Chapter 16:** Operation Management by Jay Heizer Barry Render.	Summarize the understanding of the concept of Short-term Scheduling and lean operations in the context of operations management (CLO1)
16	Lecture 31 & 32: Project Presentations		Solve a real business environment using the learnt operations management techniques (CLO 4)
17	**PREPARATION WEEK (if required)**		
18	**FINAL EXAM WEEK**		