MANIPAL UNIVERSITY JAIPUR

International Winter School- Manipal University Jaipur [IWSMUJ]-2023

[Hybrid Mode]

Course Overview

Name of Course- Inventory Control and Supply Chain Management

Name of instructor: Dr. Himanshu Rathore
Session: Jan.-Feb. 2023
Language of instruction: English
Number of contact hours: 36
Credit awarded: 03

Objective of Course/Project

Our goal in this course is to let students understand how to use basic concepts, strategies and techniques to analyse a variety of inventory systems and make optimal decisions for the improvement of these systems. In addition, we emphasize the practical implementation of the strategies and techniques that are taught in this course.

Syllabus:

Review And Overview of The Basic Concepts

Inventory management defined

Independent and dependent demands

Deterministic and stochastic demands

Different inventory systems

Inventory costs

Service level and safety stock

Inventory policy, order quantity and reorder point

One-Item Inventory Models

Deterministic demand model

Stochastic demand model

Newsvendor model

Optimal solution and approximations

Multi-Item Inventory Models

Independent and dependent demands

ABC Analysis

Joint replenishment inventory problem

Series, assembly, tree, and general production network systems

Optimal solution, heuristics, and approximation

Bill of material and material requirements planning (MRP)

Supply chain management

Material management organization

Centralized and decentralized management

Organization of Course

Total contact hrs 36		
1st week:	10 hrs (classes)	2 hrs (self-study/project)
2nd week:	10 hrs (classes)	2 hrs (Mid-term exam/assessment/discussion)
3rd week:	10 hrs (classes)	2 hrs
4th week:	6 hrs (Classes)	2hrs (End term exam)

Mode of lectures: Hybrid mode lecture/videos/case study/ discussion/ workshop/ hands-on

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Photo

Course/Project Plan

Lecture no.	Topic	Lecture mode	Instructor
L: 1-3	Introduction to the course, basic terminology of inventory control modelling,	Hybrid	Dr Himanshu Rathore
L: 4-5	Inventory management defined Independent and dependent demands Deterministic and stochastic demands Different inventory systems	Hybrid	Dr Himanshu Rathore
L: 6-7	Inventory costs Service level and safety stock	Hybrid	Dr Himanshu Rathore
L: 8-9	Inventory policy, order quantity and reorder point	Hybrid	Dr Himanshu Rathore
L: 10-11	Deterministic demand model	Hybrid	Dr Himanshu Rathore
L:12-13	Stochastic demand model	Hybrid	Dr Himanshu Rathore
L:14-15	Newsvendor model	Hybrid	Dr Himanshu Rathore
L: 15-19	Optimal solution and approximations	Hybrid	Dr Himanshu Rathore
L:20-21	Independent and dependent demands ABC Analysis	Hybrid	Dr Himanshu Rathore
L: 22-25	Joint replenishment inventory problem Series, assembly, tree and general production network systems	Video	Dr Himanshu Rathore
L: 26-30	Optimal solution, heuristics and approximation Bill of material and material requirements planning (MRP)	Video	Dr Himanshu Rathore
L: 31-34	Supply chain management Problem Class	Hybrid	Dr Himanshu Rathore
L: 35-36	Material management organization Centralized and decentralized management	Hybrid	Dr Himanshu Rathore

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Brief profile of the instructor

Dr Himanshu Rathore, is working as Assistant Professor in Department of Mathematics and Statistics, Manipal University Jaipur, Jaipur. She is having 14 years of teaching and research experience. She has participated and published many papers in reputed international conferences and journals.