MBCG 816	Warehouse Management	L	T	P	C
Version 1.0		3	0	0	3
Pre-requisites/Exposure	Students should have basic concepts of logistics & supply chain, analytical & logical skills and, business mathematics & statistics. They should be well acquainted with use of Excel Spread Sheet.				
Co-requisites	--				

Course Objectives

1. To understand how Logistics, Supply Chain, Operations, Channels of Distribution fit in to various types of Business viz., Manufacturing, Service and Project.
2. To understand how Warehouse Management and, other functions in Logistics fits into Logistics & Supply Chain Management.
3. To understand how Managers, take decisions – strategic, tactical and operations - and how they are taken in Warehouse Management functional area.

Course Outcomes

CO1. Identify and Analyze Business Models, Business Strategies and, corresponding Competitive Advantage.
CO2. Formulate and implement Warehouse Best Practices and Strategies
CO3. Plan Warehouse and Logistics operations for optimum utilization of resources

Catalog Description

Warehouse Management is one of the main Operations in Logistics & Supply Chain Domain. Warehouses are capital-intensive units where well-articulated strategic decision need be taken. Also, a well thought of Standard Operating Process need be in place for smooth operations of all warehouses. Rest is the Operations to for maximizing the investment.

Course Content

Unit I: The Role of Warehouse 8 lecture hours
Types of warehouses, stock management & housekeeping, role of warehouse managers-warehouse trade-offs, warehouse manager's challenge, people management

Unit II: Warehouses Processes 7 lecture hours
Receiving & put away-receiving, pre-receipt, offloading, preparation, cross docking, cross docking handling equipment's, storage equipment, barcode scanning, cycle counting or perpetual Inventory counts, Stock or Inventory counting, dispatch

Unit III: Warehouse Management Systems 7 lecture hours
Need of WMS, Choosing a WMS, process, Warehouse layout: design, space calculations, aisle width, storage & handling equipment: storage equipment, storage option, Automated storage and retrieval systems(AS/RS)

Unit IV: Warehouse Cost 7 lecture hours
Types of cost, return on Investment(ROI), Performance measurement: Balanced scorecard, benchmarking, outsourcing decisions, cost reductions, role of third party contractors.

Unit V: Health & Safety 7 lecture hours
Risk assessment, layout & design, fire safety, working at height, warehouse equipment legislations, first aid, warehouse and the environment: warehouse energy usage, environment & waste, waste disposal, hazardous waste

Text Books

1. Frazelle Edward H. (2009). Supply Chain Strategy: The Logistics of Supply Chain Management. Tata McGraw Hill.

Reference Books

1. Ballou Ronald H., Srivastava Samir K. (2014). Business Logistics/Supply Chain Management, 5th Edition. Pearson.
2. Shah Janat. (2009). Supply Chain Management: Text and Cases. Pearson
3. Bowersox Donald D., Closs David J., Cooper Bixby M. (2008). Supply Chain Logistics Management, 2nd Edition. Tata McGraw Hill.
4. Shapiro Jeremy F. (2002). Modeling The Supply Chain, 2nd Edition. Thompson Press

Modes of Evaluation:
Continuous Evaluation Components: Individual Assignment (IA)/Group Assignment (GA) / Written Quiz (WQ) Examination Scheme:

Components	IA	GA	WQ	End Semester Exam
Weightage (%)	10	10	30	50

Relationship between the Course Outcomes (COs) and Program Outcomes (POs)

Mapping between COs and POs		
	COURSE OUTCOMES (COs)	POs
CO 1	Identify and Analyze Business Models, Business Strategies and, corresponding Competitive Advantage.	PO 1,2, 3,4,7,8,9,10, 11,13, 14
CO 2	Formulate and implement Warehouse Best Practices and Strategies	PO 1,2, 3, 7,8,9,10, 11,14
CO 3	Plan Warehouse and Logistics operations for optimum utilization of resources	PO 1,2, 3, 8,9,10, 11, 13,14

Program Outcome / Course Outcome mapping

Course	CO 1	CO 2	CO 3

Outcomes			
PO 1	3	3	3
PO 2	3	3	3
PO 3	3	3	3
PO 4	3	1	1
PO 5	2	2	1
PO 6	1	1	1
PO 7	3	3	1
PO 8	3	3	3
PSO 9	3	3	3
PSO 10	3	3	3
PSO 11	3	3	3
PSO 12	1	1	1
PSO 13	3	1	3
PSO 14	3	3	3

		Students will be able to develop and evaluate alternate managerial decisions and identify optimal solutions	Students will demonstrate effective application capabilities of their conceptual understanding to the real world business situations	Students will be able to exhibit effective decision making skills, employing analytical and critical thinking ability	Students will demonstrate effective oral and written communication skills in the professional context	Students will able to work effectively in teams and demonstrate team building capabilities	Students will exhibit leadership and networking skills while handling business situations	Students will demonstrate sensitivity towards ethical and moral issues and have ability to address them in the course of business	Students will demonstrate employability traits in line with the changing dynamics of the industry	Students will demonstrate strong conceptual knowledge in the functional area of management as well as LSCM domain	Students will demonstrate effective understanding of relevant functional areas of management and their application in LSCM	Students will demonstrate analytical skills in identification and resolution of business problems pertaining to LSCM & general management	Students will exhibit the ability to integrate functional areas of management with domain perspective for the purpose of planning, implementation & control of LSCM	Students will have global perspective towards business situations in the area of LSCM	Students will exhibit deployable skills pertinent to the LSCM sector
Course Code	Course Title	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PSO 9	PSO 10	PSO 11	PS12	PSO 13	PSO14
MBC G 816	**Warehouse Management**	3	3	3	2	2	1	3	3	2	2	3	2	3	3

1 – Weakly mapped
2 – Moderately mapped
3 – Strongly mapped

Model Question Paper

Name:

Enrolment No:

UPES

Course: MBCG 816 – Warehouse Management

Programme: MBA- Logistics & Supply Chain Management **Semester: 3**

Time: 03 hrs. **Max. Marks:100**

Instructions:

Attempt all questions from **Section A** (each carrying 1 marks); any **Two Questions** from **Section B** (each carrying 20 marks)**. Section C** is Compulsory (carrying 40 marks)**.**

Section A (attempt all questions)

1.	a.We do not need a warehouse; because . . . . inventory is a cost. Therefore, ideally the . . . . should be restricted to barest minimum viz., ... i.e. warehouse-on-wheels between the production and consumption locations. (03/03)	**[3]**	**CO3**
	b. The demand made on a Warehouse Manager is to deliver . . . . in . . . . , ... and, ...; also provide . . . . services. (05/08)	**[5]**	**CO1**
	c. Factor Rating is one of the methods of shortlisting candidate warehouse locations based on . . . . criteria. In this exercise, the . . . . or, ... on which a warehouse location need be finalized and their . . . . is gathered from industry experts. Each one gives a . . . . number of criteria, which is then consolidated – . . . . are used for repetitive criteria. Relative frequency distribution of the criteria are the . . . . . Candidate warehouse locations are gathered from a . . . . of the members of management in Logistics & Supply Chain Department. The candidate locations are . . . . by the Industry Experts by . . . . comparison of the location across the criteria. (10/18).	**[10]**	**CO2**
	d. . . . . is a mirror image of staging because in the former break-bulking is done and in the later . . . . is done (02/20).	**[2]**	**CO4**
	Please choose the word from below factors / criteria / weights / predetermined less-time / transit-days / value-added / storage-time qualitative / less-cost / less-errors / consensus Idle / more-orders / paired / consolidation rated / weightage / put-away / tally marks		
	SECTION B (attempt only four questions)		
	How ABC and FSN analysis of the stock help in storage of goods? (Marks 05)	**[05]**	**CO4**
	What is Centralized and De-centralized Distribution Networks? (Marks 05)	**[05]**	**CO2**
	What is risk pooling in terms of safety stock? (Marks 0.5).	**[05]**	**CO1**
	What is Square Root Law (Marks 2.5) and what are the assumptions (Marks 2.5)?	**[05]**	**CO2**
	What is Dock-to-Stock (Marks 2.5) and Warehouse Operations Cycle Time (Marks 2.5)?	**[05]**	**CO3**
	What is functions of a warehouse? (Marks 05)	**[05]**	**CO1**

	SECTION C is Compulsory		
2.	What are the basic Warehouse Operations, discuss (Marks 10)?	**[10]**	**CO4**
3.	Given below is fifteen carton sizes. Calculate the maximum number of cartons, which can be placed in 1000 square feet area in a ground plus six-layer configuration. Carton Sizes (LxWxH) in mm CTN - 590 x 390 x 530 CTN - 590 x 390 x 480 CTN - 590 x 390 x 400 CTN - 590 x 390 x 600 CTN - 620 x 390 x 460 CTN - 470 x 470 x 500 CTN - 590 x 390 x 330 CTN - 610 x 480 x 350 CTN - 500 x 500 x 430 CTN - 520 x 520 x 400 CTN - 590 x 390 x 425 CTN - 600 x 480 x 400 CTN - 530 x 420 x 400 CTN - 480 x 340 x 450	**[10]**	**CO2**
4.	Best Buys operates eight warehouses, each carries Rs. 2,500,000 of inventory on the average. The company wants to consolidate inventories into two warehouses. Assuming demands across the markets are negatively correlated; calculate the savings that the company would achieve (Marks 10)?	**[10]**	**CO5**
	SECTION D is Compulsory		
5.	a. Attached is a Warehouse layout. Given that, 1000 Square Feet can accommodate 2800 cartons; calculate the capacity of the warehouse in terms of number of cartons (Marks 10).	**[10]**	**CO4**
	b. Prepare a rough sketch of two alternate layouts – use the basic principle of enhancing the capacity and, calculate the capacity in each case. Discuss the effect of product categories, pick faces and, need for large working area for value added services in each of the three alternate layout plans (Marks 10x2 = 20).	**[20]**	**CO4**