

GE Pool for Students other than that of BA (VS) Materials Management
Semester VI

GE 6.1: Introduction to Warehouse Management

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE, REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Introduction to Warehouse Management GE: 6.1	4	3	1	-	Pass in Class XII	NIL

Learning Objectives:

To understand the concepts of warehouse management and inventory control, students will get a basic idea about warehousing and inventory management techniques. It will help them in understanding the need for warehouse management systems and measures of Material handling systems.

Learning Outcomes: After completion of this course, the learners will be able to:

1. Recognize the need for warehousing in today's competitive environment and how supply chaintrends are impacting the design and operation of warehouses.
2. Identify different types of material handling equipment and their characteristics and use a material handling equipment checklist to select the most suitable equipment for a given warehouseoperation.
3. Develop strategies for improving receiving and issuing material operations, including the use of barcoding and RFID technologies, the use of automation, and the optimization of picking and replenishment operations.
4. Identify the functions of inventory and the different types of inventories, including WIP, finishedgoods, and MRO.

5. Evaluate the applications of barcoding technology in material handling systems, including the benefits of real-time data collection, accuracy, and efficiency.

Unit1: Introduction to Warehouse

9 hours

Warehouse: definition, warehouseman, depositor. Warehouse functions, warehouse process, types of warehouses: public and private warehouses, warehousing corporations-central and state warehouses, role of warehousing in an economy, Supply chain trends affecting warehousing, Problems and challenges in warehousing, characteristics of ideal warehouse, warehousing for online businesses. Recent trends in warehousing: Cloud-based operations management, Technology for omnichannel logistics, Simulation to anticipate needs, Logistics decisions based on big data, Robotics and Drones in warehousing.

Unit2: Warehouse Management Systems

9 hours

Warehouse management systems, the necessity of WMS, warehouse location, Logics of determining locations and sequences, independent demand systems, uncertainties in material management systems, dependent demand systems, distribution resource planning. The layout of the warehouse, Size and shape of the warehouse, Storage utilization and organization, Types of storage systems, Fixed versus random location, Material handling equipment, Material handling equipment checklist, Improving the receiving/issuing material operations, choosing a WMS-the process implementation-cloud computing, Warehouse layout-Data collection-space calculation- aisle width- finding additional space.

Unit3: Warehouse Operations

9 hours

The principles and performance measures of material handling systems –Vehicle travel path (time)
– Handling time –vehicle utilization –number of loads completed –congestion –Effective performance systems, Importance of Warehouse Information, Decision Making Using Warehouse Information, ICT Applications in a Warehouse, Fundamentals of various types of material handling systems –automated storage and retrieval systems Bar Code Scanners, Wireless LAN, Mobile Computers, Bar coding technology and applications RFID technology. Warehouse automation.

Unit4: Inventory Management in Warehouse

9 hours

Introduction to inventory management, role in the supply chain, role in competitive strategy: Role of inventory, functions of inventory, types of inventories, WIP inventory, finished goods inventory, MRO (maintenance, repair, and operations) inventories, cost of inventories, need to hold inventory. Warehousing and inventory costs, Customer service in warehousing, locating inventory, organizing inventory, Dispatching inventory, Methods of inventory

control: ABC Inventory control, managing inventories by ABC, FSN, EOQ, Batch tracking, multi –echelon inventory systems Managing inventory in multi echelon networks –managing inventory in single echelon networks.

Unit 5: Material Handling and Warehouse Safety

9 hours

Material Handling and Warehouse Safety: Material handling, Product movement-concept-costs- product load activity, dispatch activity unload, activity-control device-impact of computer technology-automatic identification-issues and trends in product transport, Packaging, Pallet, Stretch wraps, Cartons, Labelling, Health.

Practical Exercises:

The learners are required to:

1. identify the issues affecting warehousing and warehousing facilities by visiting to somewherehouse.
2. prepare a report on the inventory management of any given company.
3. suggest the solutions to various uncertainties in material management systems in any warehouse
4. prepare the report on the multi –echelon inventory systems of any company.
5. apply the material handling systems for any company of your choice
6. to prepare report as a warehouse manager for a retail company that sells clothing andaccessories online which want to set up a new warehouse facility for the company.

Suggested Readings:

- Arnold, J. R., & Chapman, S. N. (2018). *The Introduction to Materials Management* (7thed.). Prentice-Hall.
- Blanchard, D. (2018). *Supply Chain Management Best Practices*. Wiley Publishing.
- Coyle, J. J., Jr., Langley, C. J., Novack, R.A., & Gibson, B.J. (2022). *Managing SupplyChains: A Logistics Approach* (9th ed.). McGraw-Hill.
- Chopra, S., & Meindl, P. (2018). *Supply Chain Management: Strategy, Planning, andOperation*. Pearson Education.
- Ten Hompel, M., & Schmidt, T. (2017). *Warehouse Management: Automation and Organisation of Warehouse and Order Picking Systems* [With CDROM]. Springer Verlag.

- Jessop, D. (1999). *Stores and Inventory Management*. Chartered Institute of Purchasing and Supply.
- Jacobs, F. R., & Chase, R. B. (2017). *Operations and Supply Chain Management*. McGraw-Hill Education.
- Mangan, J., Lalwani, C., & Butcher, T. (2016). *Global Logistics and Supply Chain Management*. John Wiley & Sons.
- Mentzer, J. T., Stank, T. P., & Esper, T. L. (2008). *Supply Chain Management: Principles and Practice*. Sage Publications.
- Rushton, A., Croucher, P., & Baker, P. (2020). *The Handbook of Logistics and Distribution Management: Understanding the Supply Chain*. Kogan Page.
- Saxena, J.P. (2018). *Warehouse Management and Inventory Control*. Vikas Publication House Pvt Ltd.
- Tompkins, J.A., & Harmelink, D. (2017). *Basics of Supply Chain Management*. St. Lucie Press.
- Waters, D. (2017). *Supply Chain Management: An Introduction to Logistics*. Palgrave Macmillan.
- Wild, R. (2017). *Warehouse Management: A Complete Guide to Improving Efficiency and Minimizing Costs in the Modern Warehouse*. Kogan Page.

Notes:

- **Suggested readings shall be updated and uploaded on the college website from time to time.**
- **Examination scheme and mode shall be prescribed by the Examination branch, University of Delhi from time to time.**