

B.A. (VS) MATERIALS MANAGEMENT

DSE 5.1: Port 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		
Port Management DSE: 5.1	4	3	1	-	Pass in Class XII	NIL

Learning Objectives:

This course provides an in-depth understanding of the principles and practices of port management. Students will explore the various aspects of port operations, including terminal operations, cargo handling, port planning, logistics, and intermodal transportation. The course will also cover the regulatory and environmental considerations in port management, as well as emerging trends and challenges in the field.

Learning Outcomes

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

1. explain the role and importance of ports in global trade and transportation.
2. explain the key components of port management, including port planning, operations, and logistics.
3. analyze the challenges and trends in port management, including environmental sustainability and technological advancements.
4. evaluate the regulatory framework and policies impacting port operations.
5. apply relevant management principles and tools to optimize port efficiency and performance.
6. demonstrate knowledge of intermodal transportation and its integration with port operations.
7. assess the economic impact of ports on regional and national economies and develop critical thinking and problem-solving skills in the context of port management.

Unit 1: Introduction to Port Management

9 hours

Definition and functions of ports, Historical development and significance of ports, Types of ports and their characteristics, Port governance and stakeholders, Port Planning and Infrastructure, Port master planning and design, Port site selection and development, Terminal layout and design Port infrastructure and superstructure.

Unit 2: Port Operations, Port Logistics and Cargo Handling

9 hours

Vessel operations and navigation, Terminal operations and equipment, Cargo handling techniques and technologies, Containerization and container terminals, Port Logistics and Supply Chain Management, Port-centric logistics and distribution, Intermodal transportation and hinterland connectivity, Port hinterland modeling and optimization, Supply chain integration and collaboration

Unit 3: Port Security and Safety

9 hours

Port security regulations and initiatives, Risk management and emergency response, Safety protocols and best practices, Security technology and surveillance systems, Environmental Sustainability in Port Management, Environmental challenges and impacts of port activities Green port initiatives and sustainability frameworks, Alternative energy sources for port operations, Waste management and pollution control,

Unit 4: Port Regulations and Policy Frameworks

9 hours

International conventions and agreements, National and regional port regulations, Port governance and regulatory bodies, Economic and trade policies affecting ports

Unit 5: Emerging Trends and Future Challenges in Port Management

9 hours

Digitalization and smart port technologies, Automation and robotics in port operations, Port-city integration and urban planning, Climate change and adaptation strategies, Analysis of real-world port management cases.

Exercise

1. Imagine you are tasked with designing a new port. Outline the key considerations and steps involved in the port master planning and design process. Select a specific type of port (e.g., container port, bulk port) and describe its characteristics in terms of infrastructure, operations, and cargo handling.
2. Investigate the various terminal operations and equipment used in modern ports. Compare and contrast different cargo handling techniques and technologies, highlighting their advantages and limitations.
3. Develop a risk management plan for a port, considering potential hazards and emergency scenarios. Outline the steps to be taken in case of a security breach or natural disaster.
4. Research and compare national and regional port regulations in different countries or regions. Identify key similarities and differences and discuss their implications for port management.
5. Investigate the role of digitalization and smart port technologies in improving port efficiency and performance. Discuss the potential benefits and challenges associated with their implementation.

Suggested Readings

- Branch, A. E., & Wang, C. H. (Eds.). (2022). *The Handbook of Maritime Economics and Business* (2nd ed.). World Scientific Publishing.
- Slack, B. (2019). *Shipping and Logistics Management* (4th ed.). Kogan Page.
- Ducruet, C., & Notteboom, T. (Eds.). (2018). *Ports in Proximity: Competition and Coordination among Adjacent Seaports*. Edward Elgar Publishing.
- Monios, J., Wilmsmeier, G., & Lambert, B. (Eds.). (2019). *Dry Ports - A Global Perspective: Challenges and Developments in Serving Hinterlands*. Edward Elgar Publishing.
- Notteboom, T., & Rodrigue, J.-P. (Eds.). (2018). *Ports and Networks: Strategies, Operations and Perspectives*. Routledge.
- Ng, A. K. Y., & Yip, T. L. (2017). *Port Management and Operations* (3rd ed.). CRC Press.
- Song, D.-W., & Panayides, P. M. (2018). *Maritime Logistics: A Complete Guide to Effective Shipping and Port Management* (4th ed.). Kogan Page.
- Stopford, M. (2009). *Maritime Economics* (3rd ed.). Routledge.
- Talley, W. K. (2015). *Port Economics*. Routledge.
- Wilmsmeier, G., & Notteboom, T. (Eds.). (2018). *The Routledge Handbook of Transport Economics*. Routledge.

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.**