

B.A. (VS) MATERIALS MANAGEMENT**DSC 6.1: Supply Chain Risk 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		
Supply Chain Risk Management DSC: 6.1	4	3	1	-	Pass in Class XII	NIL

Learning Objectives:

This course provides an in-depth exploration of supply chain risk management, focusing on identifying, assessing, and mitigating risks in a global supply chain environment. Students will learn about various types of risks, such as disruptions, demand fluctuations, supplier failures, geopolitical risks, and natural disasters, and develop strategies to manage and mitigate these risks. The course will also cover the role of technology and data analytics in supply chain risk management.

Learning Outcomes:

By the end of this course, students will be able to:

1. Discuss the concept of supply chain risk management and its importance in modern business operations.
2. classify different types of supply chain risks and their potential impact on business performance.
3. analyze and assess supply chain risks using appropriate tools and techniques and develop effective strategies to mitigate and manage supply chain risks.
4. evaluate the role of technology, data analytics, and decision support systems in supply chain risk management.
5. apply supply chain risk management principles to real-world business scenarios and case studies and communicate and present supply chain risk management strategies and findings effectively.

Unit 1: Introduction to Supply Chain Risk Management**12 hours**

Definition and importance of supply chain risk management, Key objectives and benefits of effective risk management, Supply chain risk management framework and process, Types of Supply Chain Risks, Internal and external risks, Demand-related risks, Supply-related risks, Operational and process risks, Financial and market risks, Geopolitical and regulatory risks, Environmental and sustainability risks

Unit 2: Risk Identification and Assessment**9 hours**

Risk identification techniques (brainstorming, checklists, scenario analysis), Risk impact and probability assessment, Risk mapping and prioritization, Risk Mitigation Strategies, Risk avoidance, transfer, and sharing, Reducing vulnerability and increasing resilience, Supply chain design and redundancy, Supplier relationship management and collaboration, Business continuity planning

Unit 3: Technology and Data Analytics in Supply Chain Risk Management**9 hours**

Role of technology and automation, Automated data collection: Technology facilitates the collection of real-time data from various sources within the supply chain, such as IoT sensors, RFID tags, and barcode scanners. Workflow automation: Technologies like robotic process automation (RPA) and artificial intelligence (AI) Data collection, analysis, and visualization, Predictive analytics and early warning systems, Supply chain digitization: Digital platforms and tools enable the integration and collaboration of different supply chain stakeholders, enhancing communication and visibility. Supply chain visibility and traceability, Case Studies in Supply Chain Risk Management

Unit 4: supply chain disruptions and Sustainable supply chain risk management**9 hours**

Analyzing and discussing real-world examples of supply chain disruptions and their impact, examining successful risk management strategies employed by organizations, Lessons learned and best practices in supply chain risk management, Emerging Trends in Supply Chain Risk Management, Sustainable supply chain risk management, Reshoring and nearshoring as risk mitigation strategies, Cybersecurity and data protection, Supply chain risk management in the era of artificial intelligence and blockchain technology

Unit 5: Application and Integration supply chain risk management principles**6 hours**

Applying supply chain risk management principles to simulated scenarios, Integrating risk management with other supply chain functions, Developing a comprehensive risk management plan.

Exercise

1. A pharmaceutical company must comply with stringent regulations imposed by different countries where it operates. Failure to comply with these regulations can lead to fines, product recalls, and reputational damage. Identify and classify the type of risk the pharmaceutical company is facing, and discuss the importance of understanding geopolitical and regulatory risks in supply chain risk management.
2. A global manufacturing company sources raw materials from multiple suppliers located in different countries. Due to recent geopolitical tensions, the company is facing disruptions in the supply of critical materials. Identify and classify the type of risk this company is facing, and explain how it fits into the supply chain risk management framework.

3. Examine how a retail company used predictive analytics and early warning systems to anticipate and mitigate risks associated with sudden shifts in consumer preferences or market trends. Analyze how a global manufacturing company successfully mitigated supply chain risks by implementing a data analytics platform that provided real-time visibility into demand, inventory, and production capacity. where a company leveraged technology and automation to respond swiftly to a major supplier disruption, ensuring minimal disruption to its own operations and customers.
4. Explore a case study where an organization successfully managed a supply chain disruption by implementing a robust risk management strategy, such as having alternative suppliers or diversifying its sourcing locations. how effectively it collaborated with its supply chain partners to mitigate risks and ensure business continuity during a disruptive event.
5. XYZ Manufacturing is a global company that specializes in producing electronic components. The company sources raw materials from multiple suppliers and distributes its products to customers worldwide. XYZ Manufacturing aims to enhance its supply chain resilience and mitigate potential risks. The company faces several supply chain risks, including supplier disruptions, transportation delays, and quality issues. To address these challenges, suggest plans to XYZ Manufacturing decides to integrate supply chain risk management principles into its operations. You are required to e challenges.

Suggested readings

- Choi, T. Y., & Behdani, B. (2013). Managing Risks in Supply Chains: How to Build Reliable Collaboration in Logistics Networks. *Business Horizons*, 56(1), 7-17.
- Chopra, S., & Sodhi, M. S. (2014). Managing Risk to Avoid Supply-Chain Breakdown. *MIT Sloan Management Review*, 55(2), 53-62.
- Chopra, S., & Meindl, P. (2018). *Supply Chain Management: Strategy, Planning, and Operation*. Prentice Hall.
- Christopher, M., & Peck, H. (2019). Building the Resilient Supply Chain. *The International Journal of Logistics Management*, 15(2), 1-13.
- Kleindorfer, P. R., Singhal, K., & Wassenhove, L. N. V. (2005). Sustainable Operations Management. *Production and Operations Management*, 14(4), 482-492.
- Lee, H. L., & Billington, C. (1995). The Evolution of Supply-Chain-Management Models and Practice at Hewlett-Packard. *Interfaces*, 25(5), 42-63.
- Manuj, I., & Mentzer, J. T. (2008). Global Supply Chain Risk Management Strategies. *International Journal of Physical Distribution & Logistics Management*, 38(3), 192-223.
- Schlegel, G. L., & Trent, R. J. (2018). *Supply Chain Risk Management: An Emerging Discipline*. CRC Press.
- Sheffi, Y. (2005). *The Resilient Enterprise: Overcoming Vulnerability for Competitive Advantage*. The MIT Press.
- Tang, O., & Nurmaya Musa, S. (2011). Identifying Risk Issues and Research Advancements in Supply Chain Risk Management. *International Journal of Physical Distribution & Logistics Management*, 41(4), 276-296.

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.**

B.A. (VS) MATERIALS MANAGEMENT**DSC 6.2: Strategic Supply Chain 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		
Strategic Supply Chain Management DSC: 6.2	4	3	-	1	Pass in Class XII	NIL

Learning Objectives:

The Strategic Supply Chain Management course provides a comprehensive understanding of the strategic aspects of supply chain management and their impact on organizational success. The course covers various topics related to designing and managing a resilient and efficient supply chain. Students will gain knowledge and skills to develop and execute effective supply chain strategies, optimize operations, mitigate risks, and leverage technology and innovation to gain a competitive advantage.

Learning Outcomes:

1. Analyze factors influencing supply chain design decisions and apply techniques and tools for designing an efficient and effective supply chain network. Evaluate network optimization options for improving supply chain performance.
2. Apply demand forecasting techniques to estimate future customer demand and Implement collaborative forecasting practices to enhance demand-driven supply chains.
3. Apply supplier selection, evaluation, and performance measurement criteria and Develop strategies for collaboration and partnership with suppliers. Evaluate make-or-buy decisions and supplier evaluation criteria and apply negotiation and contract management techniques in procurement.
4. Apply lean principles and practices to streamline supply chain operations and Develop agile supply chain strategies for responsiveness and flexibility. Further apply inventory optimization techniques and models and implement inventory control strategies and technology-enabled solutions.
5. Understand environmental and social considerations in supply chain management and Apply green supply chain practices and sustainability metrics.

6. Evaluate emerging technologies in supply chain management and Develop strategies for innovation and digital transformation in the supply chain.

Unit 1: Strategic Supply Chain Design, Management and Network Optimization 9 hours

Definition and importance of strategic supply chain management, Key concepts and principles in supply chain strategy, Aligning supply chain strategy with business objectives, Designing an efficient and effective supply chain network, Factors influencing supply chain design decisions, Network optimization techniques and tools

Unit 2: Strategic demand planning and Supplier Relationship Management 9 hours

Strategic customer demand planning, Techniques for demand planning and management, Collaborative forecasting and demand-driven supply chains, Importance of effective supplier relationship management, Supplier selection, evaluation, and performance measurement, Collaboration and partnership strategies with suppliers. Procurement platforms for SRM.

Unit 3: Strategic Sourcing and Procurement 9hours

Strategic sourcing process and its impact on supply chain, Make-or-buy decisions and supplier evaluation criteria, Negotiation and contract management in procurement, Lean principles and practices in supply chain management, Agile supply chain strategies for responsiveness and flexibility, Balancing lean and agile approaches in the supply chain, Role of inventory in supply chain performance. Inventory optimization techniques and models, Inventory control strategies and technology-enabled solutions, Appropriate Strategic Sourcing software and applications to be used.

Unit 4: Risk Management and Resilience in Supply Chains (9hours)

Identifying and assessing supply chain risks, Strategies for risk mitigation and supply chain resilience, Business continuity planning and crisis management, Sustainable Supply Chain Management, Environmental and social considerations in supply chain, Green supply chain practices and sustainability metrics, Supplier sustainability assessment and collaboration

Unit 5: Supply Chain Technology and Innovation (9hours)

Role of technology in enhancing supply chain performance, Emerging technologies in supply chain management, Innovation and digital transformation in the supply chain, Strategic advantage of Technology and Innovation in SCM.

Practical Exercise

1. Select a specific industry and discuss the importance of strategic supply chain management in that industry. Provide examples of key concepts and principles in supply chain strategy relevant to the industry.

2. Imagine you are responsible for evaluating and selecting suppliers for a manufacturing company. Develop a supplier evaluation framework and explain how you would measure supplier performance.
3. Role-play a negotiation scenario with a potential supplier. Develop a negotiation strategy and discuss how you would handle contract management in the procurement process.
4. Select a company known for its sustainability practices. Discuss the environmental and social considerations in its supply chain and the green supply chain practices it has adopted.
5. Identify an industry that has undergone a significant digital transformation in its supply chain. Discuss the strategic advantages gained by leveraging technology and innovation in that industry.

Suggested Readings

- Chopra, S., & Meindl, P. (2016). Supply chain management: Strategy, planning, and operation (6th ed.). Pearson.
- Christopher, M., & Peck, H. (2011). Marketing logistics. Routledge.
- Fawcett, S. E., Ellram, L. M., & Ogden, J. A. (2014). Supply chain management: From vision to implementation (2nd ed.). Pearson.
- Handfield, R. B., & Nichols, E. L. (2019). Introduction to supply chain management (2nd ed.). Prentice Hall.
- Hugos, M. H. (2018). Essentials of supply chain management (4th ed.). John Wiley & Sons.
- Lambert, D. M., Cooper, M. C., & Pagh, J. D. (2016). Supply chain management: Processes, partnerships, performance (4th ed.). Supply Chain Management Institute.
- Mangan, J., Lalwani, C., & Butcher, T. (2008). Global logistics and supply chain management. John Wiley & Sons.
- Monczka, R. M., Handfield, R. B., Giunipero, L. C., & Patterson, J. L. (2020). Purchasing and supply chain management (7th ed.). Cengage Learning.
- Simchi-Levi, D., Kaminsky, P., & Simchi-Levi, E. (2014). Designing and managing the supply chain: Concepts, strategies, and case studies (3rd ed.). McGraw-Hill.
- Wisner, J. D., Tan, K.-C., & Leong, G. K. (2019). Principles of supply chain management: A balanced approach (5th ed.). Cengage Learning.

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.**

B.A. (VS) MATERIALS MANAGEMENT**DSC 6.3: DIGITAL ECONOMY****CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Course Title & Code	Total Credits	Lectures	Tutorial	Practical	Eligibility criteria	Pre-requisite of the course
Digital Economy (DSC 6.3)	4	3	1	0	Class XII	Nil

Learning Objectives: The course aims to familiarise the student with the economics of the digital goods and services, characterized by transient market behaviour, feedback mechanisms, international impact, global markets, many stakeholders, and technological dependencies never seen in any markets before. It will cover the complex ecosystem, logic of the structures of the digital economy and its outcomes - such as powerful companies & non-monetary pricing, ethical and legal aspects & insights into digital consumer behaviour.

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

- explain the structural peculiarities of the digital economy and the consequences for market structures and market outcomes.
- develop expedient solutions by identifying structural incentives using prevalent economic models and concepts.
- examine structural incentives underlying the digital economy and its alterations to achieve different outcomes.
- identify ethically desirable states and behaviours and examine how to achieve these via adequate incentive structures.
- explain the logic underlying global efforts to regulate the digital economy
- appraise the consequences and ethical implications of various business models and behaviours in the digital economy.

Unit 1: Introduction to the digital economy: Evolution and digital economy eco-system, digital goods and services, production and value creation models. (10 hours)

Unit 2: Fundamentals of digital economics: multi-sided platforms, network effects and positive feedbacks, path dependence, lock-in and switching costs, formation of monopolies in the digital economy, the “long tail”. (13 hours)

Unit 3: Digital markets: Stakeholders and relationships in digital markets, the layered internet model, competition, cooperation, and cooptation;
Digital business, strategy and innovation: Digital innovations, Business models, Strategic positioning. (12 hours)

Unit 4: Some legal developments: Digital Markets Act, Digital Services Act; Ethical challenges in the digital economy; challenges for the Digital payment systems, Challenges for society, Challenges for ethics. (10 hours)

Practical Exercises:

The learners are required to:

1. make a group presentation on how digitization of the economy is impacting your neighbourhood. Search for news articles (2-3) and discuss how digitization influences the various sectors of the economy, the public sector and business domains. (Unit 1)
2. engage in a classroom discussion on the 5G systems and its linkage with the digital economy in India & globally. (Unit2)
2. prepare group presentations describing and discussing the eco-system for the Apple App store, Uber, or any other such platform. (Unit 3)
3. prepare a presentation on services offered in several market segments by any two-sided and multi-sided platform. (Unit 3)
4. engage in a group discussion on the business of streaming services and real-time online gaming with reference to net neutrality, resource sharing and network performance. (Unit 4)

Suggested Readings:

- Harald. Ø., & Audestad. J. A., (2021), *Intoduction to Digital Economics: Foundations, Business Models and the Case Studies* (2nd ed.). Sweden: Springer.
- Harald. Ø., & Audestad. J. A. (2018), *Digital Economics: How Information and Communication Technology is Shaping Markets, Businesses, and Innovation*, Scotts Valley: CreateSpace.
- Belleflamme, P., & Peitz M., (2015), *Industrial Organization: Markets and Strategies* (ch. 20-23). Cambridge: Cambridge University Press.

Notes:

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