

Annexture 76-84
College of Vocational Studies
Material Management
Semester VII

DSC-1	Sustainable Material Management
DSE-1	Business Research Methodology in Material Management
DSE-1	Strategic Procurement and Supplier Relationship Management
DSE-2	Hands-on Python
DSE-2	Linear Programming
<u>GE Common Pool for BA (VS) Material Management</u>	
1	Offered by History Department
2	Offered by Political Science Department
3	Offered by Mathematics Department
4	Offered by Economics Department
5	Service marketing for Tourism and Hospitality (Offered by Department of Tourism, CVS)

Semester-VII
Sustainable Material Management
DISCIPLINE SPECIFIC CORE (DSC-7.1)

Credit Distribution, Eligibility and Pre-requisites the Course

Course Title & Code	Total Credits	Lectures	Tutorial	Practical	Eligibility	Prerequisite of the course
Sustainable Material Management	4	3	1	-		

Learning Objectives:

- Introduce the principles and practices of Sustainable Materials Management (SMM) and its significance in modern industries.
- Develop critical understanding of green procurement, eco-certifications, and sustainable sourcing.
- Examine waste minimization practices and current global regulations for hazardous and e-waste management.
- Explore sustainable approaches to warehousing, packaging, transportation, and distribution systems.

Learning Outcomes :

- Define and explain Sustainable Materials Management (SMM) and differentiate it from conventional practices.
- Apply green procurement techniques and assess suppliers based on environmental and ethical criteria.
- Implement circular economy principles to optimize resource usage and extend product lifecycles.
- Devise strategies for minimizing, recycling, recovering, and responsibly disposing of industrial waste.
- Design energy-efficient warehousing systems and sustainable logistics solutions.
- Critically evaluate eco-labels, certifications, and sustainability metrics (KPIs) for materials flow.
- Enhance employability by gaining sustainability, environmental compliance, and green supply chain management skills.

Learning Outcomes After completing this course, students will be able to:

- Define and explain Sustainable Materials Management (SMM) and differentiate it from conventional practices.

- Apply green procurement techniques and assess suppliers based on environmental and ethical criteria.
- Implement circular economy principles to optimize resource usage and extend product lifecycles.
- Devise strategies for minimizing, recycling, recovering, and responsibly disposing of industrial waste.
- Design energy-efficient warehousing systems and sustainable logistics solutions.
- Critically evaluate eco-labels, certifications, and sustainability metrics (KPIs) for materials flow.
- Enhance employability by gaining sustainability, environmental compliance, and green supply chain management skills.

Unit-I	Introduction to Sustainable Materials Management Definition, key principles, and primary objectives. Distinction between conventional materials management and sustainable approaches. Importance and emerging role of SMM in contemporary industries.	(10 Hours)
Unit II	Green Procurement and Sustainable Sourcing: Concept and significance of green procurement. Criteria for supplier evaluation based on environmental and ethical performance. Overview of major eco-labels and sustainability certifications (e.g., ISO 14001, FSC, EPEAT, Energy Star).	(11 Hours)
Unit III	Circular Economy and Resource Optimization: Introduction to Cradle-to-Cradle design philosophy. Strategies for extending product lifecycles. Approaches for material recovery, reuse, and redesign. Role and management of reverse logistics.	(12 Hours)
Unit IV:	Waste Minimization and Sustainable Disposal Techniques: Understanding the waste hierarchy (Reduce, Reuse, Recycle, Recover). Safe handling and disposal of hazardous materials. Current e-waste management regulations and global best practices.	(12 Hours)

Suggestive Readings:

- Sustainable Materials Management: Making Better Use of Resources
William McDonough & Michael Braungart (2002) – Cradle to Cradle: Remaking the Way We Make Things
- Joseph Sarkis (2006) – Greening the Supply Chain
- Trevor M. Letcher (2011) – Waste: A Handbook for Management
- Ken Peattie (2001) – Towards Sustainability: The Third Age of Green Marketing
- Walter R. Stahel (2019) – The Circular Economy: A User's Guide
- Chartered Institute of Procurement & Supply (CIPS, latest) – Guide to Sustainable Procurement
- European Environment Agency (EEA Reports) – Circular Economy and Material Resource Efficiency

- Environmental Protection Agency (EPA, USA) – Sustainable Materials Management: The Road Ahead (Report)
- UNEP (United Nations Environment Programme) – Sustainable Resource Management: Global Trends and Practices

Teaching Pedagogy/Methodology:

- Lectures for conceptual foundations and theoretical frameworks.
- \Case Studies of companies practicing sustainable supply chain and materials management.
- Workshops/Practicals on eco-label evaluation and sustainable design strategies.
- Seminars and Group Discussions on emerging trends like Industry 5.0 and circular economy.
- Projects/Assignments involving real-world audits of green procurement and waste management systems.
- Industry Expert Talks/Webinars to give practical exposure.
- **SWAYAM Reference:** SWAYAM references for blended learning (as NEP 2020 recommends integrating online modules. Since SWAYAM directly doesn't have a course titled "Sustainable Materials Management", the closest and most relevant course available is:
- **SWAYAM:** Solid and Hazardous Waste Management - Institution: IIT Kharagpur, **Instructor:** Prof. Brajesh Kr. Dubey, **Course Focus:** Waste management, resource recovery, sustainable practices — all integral to Sustainable Materials Management.
- **Alternate useful SWAYAM course:** Introduction to Circular Economy, Institution: IIT Roorkee, Instructor: Prof. Gaurav Dixit, **Course Focus:** Circular economy frameworks that directly link to Unit III (Circular Economy and Resource Optimization).

Semester-VII

DISCIPLINE SPECIFIC ELECTIVE- DSE I- 7.1

Semester-VII

Business Research Methodology in Material Management

Offered by Commerce Department, College of Vocational Studies

Credit Distribution, Eligibility and Pre-requisites the Course

Course Title & Code	Total Credits	Lectures	Tutorial	Practical	Eligibility	Prerequisite of the course
Business Research Methodology in Material Management	4	3	1	-		

Learning Objectives:

- Understand various research methodologies applicable to material management.
- Formulate research problems and hypotheses.
- Design and conduct empirical research.
- Apply quantitative and qualitative methods to supply chain and material flow problems.
- Analyze data using relevant statistical tools.
- Interpret findings and develop actionable insights for material management decisions.

Learning Outcomes :

- By the end of this course, students will be able to:
- Explain the role of research in material management and its contribution to effective decision-making in inventory control, procurement, and logistics operations.
- Formulate clear and focused research problems relevant to material management, and develop appropriate research questions and hypotheses.
- Conduct thorough literature reviews to identify knowledge gaps and support research in the context of material handling, warehousing, and supply chain management.
- Design effective research methodologies (qualitative, quantitative, or mixed methods) tailored to investigate material management challenges.
- Select and apply appropriate data collection techniques, such as surveys, interviews, observations, and secondary data analysis, in the context of warehouse audits, supplier evaluations, and logistics performance studies.
- Employ statistical tools and software (e.g., Excel, SPSS, R) for data analysis and interpretation of findings related to forecasting, inventory performance, and material flow.
- Critically analyze research data to derive meaningful conclusions and recommendations for material management strategy and operations.
- Assess the reliability and validity of research instruments, ensuring the integrity and relevance of research findings in material management applications.
- Demonstrate ethical research practices in data collection, analysis, reporting, and stakeholder engagement.

Course Outline:

Units	Course Outline	
Unit-I	Introduction to Research in Material Management Role of research in logistics and material management Research process overview Types of research: basic vs. applied, quantitative vs. qualitative Case studies in material management research Importance of literature reviews Sources of literature: academic journals, industry reports Identifying research gaps Formulating research problems, objectives, and hypotheses	(10Hours)
Unit II	Research Design and Data Collection Methods	(11Hours)

	<p>Exploratory, descriptive, and causal research</p> <p>Cross-sectional vs. longitudinal studies</p> <p>Case study and action research methods</p> <p>Primary vs. secondary data</p> <p>Surveys, interviews, focus groups</p> <p>Observational methods in warehouses and inventory systems</p> <p>Best practices in instrument design (questionnaires, interview guides)</p>	
Unit III	<p>Sampling & Scaling Techniques</p> <p>Population and sample definitions</p> <p>Probability vs. non-probability sampling</p> <p>Sample size calculation</p> <p>Sampling in warehouse audits and vendor performance studies</p> <p>Variables and measurement scales</p> <p>Reliability and validity</p> <p>Likert scales, semantic differential scales</p> <p>Application to vendor evaluation, quality ratings</p>	(12Hours)
Unit IV	<p>Measures of central tendency and dispersion</p> <p>Data visualization techniques</p> <p>Use of Excel/SPSS for basic analysis</p> <p>Hypothesis testing, t-tests, ANOVA</p> <p>Correlation and regression analysis</p> <p>Applications in demand forecasting and inventory optimization</p> <p>Introduction to SPSS, R, Excel, NVivo (for qualitative data)</p> <p>Forecasting tools in material management (e.g., Arena, Minitab)</p>	(12 Hours)

Suggested Readings:

1. Cooper, D. R. & Schindler, P. S. (2017). Business Research Methods (12th ed.). McGraw-Hill.
2. Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2021). Business Research Methods (10th ed.). Cengage.
3. Kothari, C. R. (2014). Research Methodology: Methods and Techniques (3rd ed.). New Age International.
4. Saunders, M., Lewis, P., & Thornhill, A. (2019). Research Methods for Business Students (8th ed.). Pearson.
5. Uma Sekaran & Roger Bougie (2020). Research Methods for Business. Wiley.
6. Hair, J. F., et al. (2020). Essentials of Business Research Methods. Routledge.
7. Harvard Business Review (HBR) articles on applied research and HR analytics
8. SPSS User Manual and online tutorials.
9. YouTube Channels: Crash Course on Statistics, SPSS Tutorials, Excel Tips.

Other Suggestive Reading Materials/References:

1. **Kothari, C.R.** (2019). *Research Methodology: Methods and Techniques*. New Age International Publishers.
2. **Sekaran, U., & Bougie, R.** (2019). *Research Methods for Business: A Skill-Building Approach*. Wiley.
3. **Cooper, D.R., & Schindler, P.S.** (2014). *Business Research Methods*. McGraw-Hill.
4. **Zikmund, W.G., Babin, B.J., Carr, J.C., & Griffin, M.** (2013). *Business Research Methods*. Cengage Learning.
5. **Malhotra, N.K.** (2010). *Marketing Research: An Applied Orientation*. Pearson.
6. **Bryman, A., & Bell, E.** (2015). *Business Research Methods*. Oxford University Press.
7. **Saunders, M., Lewis, P., & Thornhill, A.** (2016). *Research Methods for Business Students*. Pearson.
8. **Hair, J.F., Wolfinbarger, M., Money, A.H., Samouel, P., & Page, M.** (2015). *Essentials of Business Research Methods*. Routledge.
9. **Creswell, J.W.** (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. SAGE Publications.
10. **Flick, U.** (2018). *An Introduction to Qualitative Research*. SAGE Publications.

Teaching Pedagogy/Methodology:

- **Lectures:** To introduce theoretical concepts and frameworks.
- **Case Studies:** Analysis of real-world business scenarios to apply research methods.
- **Workshops:** Hands-on sessions using digital tools like SPSS, Excel, and online survey platforms.
- **Group Discussions:** Collaborative exploration of research topics and methodologies.
- **Mini Project:** Conducting a primary research survey on an **SWAYAM Portal Reference: For a comprehensive course on Business Research Methods, refer to the SWAYAM portal: https://onlinecourses.swayam2.ac.in/cec20_mg14/preview**

Semester-VII

DISCIPLINE SPECIFIC ELECTIVE (DSE-I 7.2)

Strategic Procurement and Supplier Relationship Management

Offered by Commerce Department, College of Vocational Studies

Credit Distribution, Eligibility and Pre-requisites the Course

Course Title & Code	Total Credits	Lectures	Tutorial	Practical	Eligibility	Prerequisite of the course
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Strategic Procurement and Supplier Relationship Management	4	3	1	-		
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Learning Objectives:

- To understand the role of strategic procurement in aligning corporate goals with supplier partnerships.
- To explore digital tools and technologies enhancing procurement, such as Big Data, AI, and e-Procurement.
- To examine the lifecycle of supplier relationships and the shift from transactional to strategic collaborations.
- To develop knowledge in contract management, SLAs, and digital contracts within the context of procurement.
- To introduce risk management strategies in procurement and integrate sustainability criteria.

Learning Outcomes :

- Students will be able to design a procurement strategy that aligns with corporate goals and utilizes digital tools for supplier analysis.
- Students will gain the ability to establish and manage strategic supplier relationships, fostering innovation co-creation and collaboration.
- Students will be proficient in drafting supplier contracts and SLAs, integrating compliance terms, and resolving disputes effectively.
- Students will acquire skills in identifying and managing supplier risks while integrating sustainability and ESG criteria.
- Students will be capable of designing supplier performance evaluation systems, applying continuous improvement methodologies like Lean and Six Sigma.

Unit	Course Outline	
Unit I	Strategic Procurement and Digital Planning& Supplier Relationship Understanding Business Procurement Strategy aligned with Corporate Goals, Supplier Market Analysis using Digital Tools (Big Data, Market Intelligence), Supplier Selection Criteria: Cost, Innovation Capability, Sustainability, and Ethics, Role of Technology (e-Procurement, AI-driven Supplier Discovery) in Strategic Procurement. Lifecycle of Supplier Relationships: From Transactional to Strategic Collaboration, Supplier Segmentation and Partnership Models (Tiered Suppliers, Strategic Alliances), Building Innovation Partnerships with Suppliers (Co-Development, Open Innovation), Human-centric Collaboration and Value Co-Creation in Industry 5.0.	(12 Hours)
Unit II	Contract Management, SLAs, and Digital Contracts: Essentials of Traditional and Digital Supplier Contracts (Smart Contracts, Blockchain Basics), Drafting Service Level Agreements (SLAs) with Sustainability and Ethical Compliance Terms, Dispute Resolution Mechanisms: Negotiation, Arbitration, Online Dispute Resolution (ODR), Legal and Ethical Issues in Global Procurement (Data Protection, Cybersecurity).	(10 Hours)
Unit III	Risk Management and Sustainable Procurement:	(11Hours)

	Identifying Supplier Risks (Operational, Financial, Geopolitical, Technological), Supply Continuity and Resilience Planning in a VUCA World (Volatility, Uncertainty, Complexity, Ambiguity), Digital Tools for Supplier Risk Monitoring (Predictive Analytics, AI Risk Scoring), Embedding Sustainability and ESG (Environmental, Social, Governance) Risk Criteria in Procurement.	
Unit IV	Supplier Performance Evaluation and Continuous Improvement: Designing Supplier KPIs: Quality, Delivery, Innovation, ESG Compliance, Diversity and Inclusion, Building and Using Supplier Scorecards (Balanced Scorecard Approach), Supplier Development Programs: Training, Technology Sharing, Joint Problem Solving, Continuous Improvement Models: Kaizen, Lean Procurement, Six Sigma in Supplier Management.	(12Hours)

Suggestive Reading Materials/References:

1. **Monczka, R. M., Handfield, R. B., Giunipero, L. C., & Patterson, J. L.** (2020). *Purchasing and Supply Chain Management*. Cengage Learning.
2. **Christopher, M.** (2016). *Logistics & Supply Chain Management*. Pearson Education.
3. **Cousins, P. D., Lamming, R. C., Lawson, B., Petersen, K. J.** (2008). *Strategic Supply Management: Principles, Theories and Practice*. Pearson Education.
4. **Gelderman, C. J., & van Weele, A. J.** (2005). *Strategic Sourcing Management: Theories and Practices*. Springer.
5. Title: "Don't Let Your Supply Chain Control Your Business", Authors: Choi, T. Y., & Linton, J. D., Published in: **Harvard Business Review**, December 2011, Link: <https://hbr.org/2011/12/dont-let-your-supply-chain-control-your-business>
6. **Scholten, H., & Schilder, S.** (2015). *Supplier Relationship Management: Unlocking the Power of Collaboration*. Wiley.
7. **Sodhi, M. S., & Tang, C. S.** (2019). *Managing Supply Chain Risk*. Springer.
8. **Hugos, M. H.** (2018). *Essentials of Supply Chain Management*. Wiley.
9. **Transforming Food Supply Chains for Sustainability**, Published in: Journal of Supply Chain Management, Link: <https://onlinelibrary.wiley.com/doi/abs/10.1111/jscm.12310>
10. **Teece, D. J.** (2010). *Business Models, Business Strategy, and Innovation*. Long Range Planning.

Teaching Pedagogy/Methodology:

- **Lectures:** To introduce key concepts and theories in procurement and supplier management.
- **Case Studies:** Real-world examples to analyze strategic procurement decisions and supplier relationship management.
- **Group Discussions:** Encouraging students to critically discuss current trends and innovations in supplier collaboration.
- **Project Work:** Students will develop a strategic procurement plan for a hypothetical organization, considering the integration of digital tools and sustainability.
- **Workshops:** Hands-on training with digital procurement tools and contract management systems.

SWAYAM Reference: SWAYAM references for blended learning (as NEP 2020 recommends integrating online modules. Since SWAYAM directly doesn't have a course titled " *Strategic*

Procurement and Supplier Relationship Management ", the closest and most relevant course available is:

https://onlinecourses.nptel.ac.in/noc24_mg58/preview,

https://onlinecourses.nptel.ac.in/noc20_mg29/preview,

https://onlinecourses.nptel.ac.in/noc24_mg57/preview

Semester-VII

Discipline Specific Elective-DSE-II 7.3

Hands-on Python

Offered by Department of Economics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Semester	Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
			Lecture	Tutorial	Practical/ Practice		
VII	Hands-on Python	4	1	0	3	Class 12th Pass	NIL

Course Objectives:

The objective of this course is to equip students with the fundamental knowledge and practical skills in Python programming. It will enable the students in understanding usefulness of Python as an analytical tool in diverse fields. They will learn how to use lists, tuples, dictionaries, and functions programs. They will be prepared to use the program for managing data frames, visualising datasets and performing simple statistical calculations.

Course learning outcomes:

After completion of the course students will be able to:

1. Describe the concepts of constants, variables, data frames and operators.
2. Write programs using list, tuple, set and strings handling functions.
3. Write programs using user-defined functions and python dictionary.
4. Create data frames and transform and aggregate them through slicing, merging and visualising.
5. Visualise and present data sets with the help various types of charts and graphs.
6. Calculate measures of central tendency and measures of dispersion.

Unit 1: Introduction to Python Programming [4 Theory Hours + 10 Practical Hours]

Introduction to Python and its features, Setting up the Python Development Environment, Basic Python syntax and data types, Variables, operators, and expressions in Python, Python List, Tuples, Python Dictionaries, Functions and Packages, NumPy

Unit 2: Data Manipulation with Pandas [3 Theory Hours + 30 Practical Hours]

Transforming DataFrame, Aggregating DataFrame, Slicing and Indexing DataFrame, Creating and Visualizing DataFrame, Data Merging Basics, Merging Tables With Different Join Types, Advanced Merging and Concatenating

Unit 3: Data Visualization and Analysis [3 Theory Hours + 30 Practical Hours]

Introduction to data visualization libraries (Matplotlib, Seaborn), Plotting and customizing charts and graphs, Exploratory data analysis using Python, Presenting insights and findings with visualizations, Creating interactive and appealing data visualizations

Unit 4: Statistics with Python [5 Theory Hours + 20 Practical Hours]

Data Classification (Discrete, Continuous, Categorical), Mean, Median, Mode, Variance, Standard Deviation, Quartile, Percentile, Inter-quartile Range, Identifying outliers, correlation

Suggested Readings:

- VanderPlas, J. (2016). Python Data Science Handbook: Essential Tools for Working with Data. O'Reilly Media.
- Downey, A. B. (2014). Think Stats: Exploratory Data Analysis in Python (2nd ed.). O'Reilly Media.

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.**

Semester-VII**Discipline Specific Elective-DSE-II 7.4****Linear Programming**

Offered by Department of Economics

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Semester	Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
			Lecture	Tutorial	Practical/ Practice		
VII	Linear Programming	4	3	1	0	Class 12th Pass	Nil

Learning Objectives:

Linear programming is an important modelling technique used to determine the best way to use available resources. Managers, analysts and entrepreneurs often face the problem of decision-making when resources are limited. The aim of this course is to brush up linear algebra and then introduce students to linear programming with emphasis on mathematical formulation and finding solutions to practical problems. Linear programming helps them to achieve various goals like cost minimization, money and time management, reducing waste and improving financial portfolio. The course includes simplex method for solving the transportation and assignment problems. Some of these topics are illustrated by means of Microsoft excel solver.

Learning Outcomes:

The students will be able to:

- Mathematically formulate and model fundamental decision-making problems.
- Geometrically solve a linear programming problem in two variables.
- Apply simplex algorithm to solve a linear programming problem.
- Utilize computer software to find solutions of a linear programming model.
- Produce a dual of a linear program.
- Understand and appreciate the practical ways to implement a linear programming model.

Unit I: Linear Algebra: Matrices and vectors, matrix operations, matrix operations using excel, systems of linear equations, finding solution using Gauss Jordan method, linear independence and dependence, rank of a matrix, matrix inversion and finding the solution using excel, determinant.

Wayne L. Winston: Chapter 2

(10 hours)

Unit II: Introduction to Linear Programming: The linear programming model, assumptions, examples, formulating and solving linear programming models using excel.

Hillier and Lieberman: Chapter 3 excluding section 3.6

(11 hours)

Unit III: Simplex Method: Understanding simplex method, setting up the simplex method, algebra of the simplex method, simplex method in tabular form, postoptimality analysis.

Hillier and Lieberman: Chapter 4 excluding sections 4.5, 4.6 and 4.9 **(12 hours)**

Unit IV: Duality: Understanding Duality theory, economic interpretation of duality theory, primal-dual relationships, role of duality theory in sensitivity analysis.

Hillier and Lieberman: Chapter 6 excluding sections 6.4. **(12 hours)**

Practical Exercises:

The learners are required to:

1. solve problems given in class on applying matrix multiplication in cryptography with the use of Microsoft excel. (Unit I)
2. make a group presentation of case studies of companies where linear programming is used for minimizing costs, optimizing capacity, managing financial portfolios, asset management through fieldwork or surveys. (Unit II)
3. formulate any transportation problem or assignment problem and apply simplex method using excel solver. (Unit III)
4. identify any other decision-making problem which they face as students, then formulate and solve it using simplex method. (Unit III)
5. engage in a group discussion on how duality theory enhances the ability to analyse linear programming problems, particularly in the field of economics and business. (Unit V)

Suggested Readings:

- Winston, W. L. (2022). *Operations Research: Applications and Algorithms*. (4th ed.). Cengage Learning.
- Hillier, F. S., & Lieberman, G. J. (2015). *Introduction To Operations Research*. (10th ed.). McGraw-Hill Education.

Additional Reading

- Thie, P. R., & Keough, G. E. (2008). *An Introduction to Linear Programming And Game Theory*. (3rd ed.). New Jersey: John Wiley and Sons, Inc., Hoboken.

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.

Semester VII
Generic Elective-GE
Service marketing for Tourism and Hospitality
Offered by Tourism Management Department, College of Vocational Studies
Credit Distribution, Eligibility and Pre-Requisite of the Course

Course Title and Code	Course Code	No. of credits	Components of the course			Eligibility Criteria	Pre- requisites of the course
			Lecture	Tutorial	Practical		
Service marketing for Tourism and Hospitality GE -7.1	GE 7.1	4	3	1	0	Pass in Class XII	NIL

Learning Objectives:

This course explores the unique nature of service marketing within the tourism and hospitality industries. Students will learn the core principles of services marketing, understand consumer behavior in service settings, and develop strategies for creating value, enhancing customer experience, and building long-term relationships in service-based businesses. The course blends theory with practical insights through case studies, discussions, and real-world examples.

Learning Outcomes:

After completing this course, the learners would be able to:

1. explain the distinctive characteristics of service marketing in tourism and hospitality.
2. apply the 7 Ps framework to design and manage effective service marketing strategies.
3. analyze service encounters and customer expectations in various hospitality contexts.
4. evaluate service quality using models like SERVQUAL and propose improvements.
5. use digital and relationship marketing tools to enhance customer engagement and retention.

Unit I

Introduction to Service Marketing

(11Hours)

Definition and characteristics of services, Difference between goods and services, Role of services in tourism and hospitality, The service marketing triangle, Customer expectation from Hospitality services, The expanded marketing mix (7 Ps) in tourism and hospitality,

Unit II

Understanding Customer Expectations and Perceptions (11Hours)

Customer expectations and perceptions of service, The concept of service encounters and moments of truth, Service quality models: SERVQUAL and GAP Model, Managing demand and capacity in services, Customer satisfaction and complaint management.

Unit III

Designing Service Marketing Strategies (11Hours)

Market segmentation, targeting, and positioning for service offerings, Service product design and innovation, Branding services and destination marketing, Pricing strategies for services, Promotion and communication in service businesses.

Unit IV

Modern Marketing (12Hours)

Green marketing, Mobile marketing, Cross-cultural marketing, Web marketing, Buzz marketing, Relationship marketing in hospitality: loyalty programs, CRM, personalization, Role of technology in service marketing, Social media and online reviews as marketing tools.

Exercises

The learners are required to:

1. analyze and present examples of the 7 Ps in a hotel/resort of their choice.
2. develop a customer feedback questionnaire for a hotel or travel agency.
3. develop a promotional campaign for a tourism destination
4. design a loyalty program for a hotel or travel firm.

Suggested Readings:

- Hoffman, K. D., & Bateson, J. E. G. (2017). Services Marketing: Concepts, Strategies, and Cases (5th ed.). Cengage Learning.
- Hudson, S. (2020). Marketing for tourism, hospitality & events: A global & digital approach. SAGE Publications.

- Kotler, P., Bowen, J. T., Makens, J. C., & Baloglu, S. (2016). Marketing for Hospitality and Tourism (7th ed.). Pearson Education.
- Lovelock, C., Wirtz, J., & Chatterjee, J. (2019). Services Marketing: People, Technology, Strategy (8th ed.). Pearson.
- Mariani, M. M., Baggio, R., Della Corte, V., & Buhalis, D. (2021). Smart tourism: Foundations and developments. Springer.
- Morrison, A. M. (2022). Marketing and managing tourism destinations (2nd ed.). Routledge.
- Solomon, M. R. (2022). Consumer behavior: Buying, having, and being (13th ed.). Pearson.
- Wirtz, J. (2022). Services marketing: People, technology, strategy (9th ed.). World Scientific Publishing.
- Zeithaml, V. A., Bitner, M. J., & Gremler, D. D. (2020). Services Marketing: Integrating Customer Focus Across the Firm (7th ed.). McGraw-Hill Education.

Notes:

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

College of Vocational Studies

Material Management

Semester VIII

DSC-1	Emerging Technologies in Materials Management
DSE-1	Lean Inventory and Operations Management
DSE-1	Advanced Logistics and Distribution Strategies
DSE-2	Application to data analytics with R
DSE-2	Economics of Start-ups
GE Common Pool <u>for BA (VS) Material Management</u>	
1	Offered by Department of History
2	Offered by Department of Political Science
3	Offered by Department of Economics
4	Offered by Department of Mathematics
5	Tourism Startups and Innovations (Offered by Department of Tourism Management)

Semester-VIII
DISCIPLINE SPECIFIC CORE (DSC-8.1)
Emerging Technologies in Materials Management

Credit Distribution, Eligibility and Pre-requisites the Course

Course Title & Code	Total Credits	Lectures	Tutorial	Practical	Eligibility	Prerequisite of the course
Emerging Technologies in Materials Management	4	3	1	-		

Learning Objectives:

- To understand the digital transformation in materials management and the role of Industry 4.0 technologies in supply chains.
- To explore the use of IoT, RFID, and sensor-based systems for real-time inventory management.
- To analyze blockchain applications for improving transparency and efficiency in procurement and supply chains.
- To examine the integration of automation, robotics, and AI in warehousing and materials handling.
- To introduce the concept of digital twins and simulation models for materials planning, scenario analysis, and risk management.

Learning Outcome:

Upon successful completion of this course, students will be able to:

1. Explain the components and impact of Industry 4.0 technologies on materials management and supply chains.
2. Evaluate the use of IoT and RFID technologies for real-time inventory tracking and predictive stock management.
3. Analyze blockchain technology's role in enhancing transparency, procurement processes, and product authentication.
4. Demonstrate the application of automation, robotics, and AI in warehousing and materials handling.
5. Apply digital twin technology and simulation models for materials planning, risk forecasting, and scenario analysis.

Unit	Contents	
Unit I	Introduction to Industry 4.0 and Smart Materials Management: Digital transformation of supply chains. Industry 4.0 components — Cyber-Physical Systems, Cloud Computing, Big Data, AI.	(10 Hours)
Unit II	IoT and Real-Time Inventory Tracking: Concepts of IoT. RFID vs Barcoding, smart shelves, sensor-based inventory. Predictive analytics in stock management.	(11 Hours)
Unit III	Blockchain for Supply Chain Transparency: Distributed ledger basics. Applications in procurement, contract execution, product authentication, and anti-counterfeit systems.	(12 Hours)
Unit IV	Automation, Robotics, and AI in Warehousing: AGVs, autonomous forklifts, robotic picking systems. AI-driven demand forecasting. Case studies of automated fulfillment centers.	(12 Hours)

Suggestive Reading Materials/References:

1. **Wang, S., & Xu, C. (2017).** *Industry 4.0: A Survey on Technologies and Applications*. Journal of Industrial Engineering and Management.
2. **Çodur, S., & Erkeyman, B. (2025).** **Blockchain Technology from The Supply Chain Perspective: A Systematic Literature Review.** *Spectrum of Decision Making and Applications*, 2(1), 268-285..
3. **Zhang, G., Yang, Y., & Yang, G. (2023).** *Smart supply chain management in Industry 4.0: the review, research agenda and strategies in North America*. *Annals of operations research*, 322(2), 1075-1117.
4. **Reaidy, P., Alaeddini, M., Gunasekaran, A., Lavastre, O., & Shahzad, M. (2024).** *Unveiling the impact of industry 4.0 on supply chain performance: the mediating role of integration and visibility*. *Production Planning & Control*, 1-22.
5. **Ben-Daya, M., Hassini, E., & Bahroun, Z. (2019).** *Internet of things and supply chain management: a literature review*. *International journal of production research*, 57(15-16), 4719-4742.
6. **Tapscott, D., & Tapscott, A. (2016).** *Blockchain Revolution: How the Technology Behind Bitcoin and Other Cryptocurrencies is Changing the World*. Penguin.
7. **Groover, M. P. (2016).** *Automation, production systems, and computer-integrated manufacturing*. Pearson Education India..
8. **Min, H. (2010).** *Artificial intelligence in supply chain management: theory and applications*. *International Journal of Logistics: Research and Applications*, 13(1), 13-39..
9. **Jing, H., & Fan, Y. (2024).** **Digital Transformation, Supply Chain Integration and Supply Chain Performance: Evidence From Chinese Manufacturing Listed Firms.** *SAGE Open*, 14(3), 21582440241281616..

Teaching Pedagogy/Methodology:

- **Lectures:** Introduction to emerging technologies and their role in materials management.
- **Case Studies:** Exploration of real-world applications of IoT, blockchain, and AI in supply chains and materials management.
- **Workshops:** Hands-on sessions with RFID, sensor-based inventory management systems, and blockchain applications.

- **Simulations:** Use of cloud-based simulation tools for digital twin applications and scenario planning.
- **Group Projects:** Design and implement a digital transformation strategy for a supply chain using emerging technologies.

SWAYAM Reference: SWAYAM references for blended learning (as NEP 2020 recommends integrating online modules. Since SWAYAM directly doesn't have a course titled " *Emerging Technologies in Materials Management* ", the closest and most relevant course available is:

https://onlinecourses.nptel.ac.in/noc20_mg70/preview

https://onlinecourses.nptel.ac.in/noc22_mm20/preview

https://onlinecourses.nptel.ac.in/noc23_mg89/preview

https://onlinecourses.nptel.ac.in/noc21_mg45/preview

Semester-VIII
DISCIPLINE SPECIFIC ELECTIVE (DSE-8.1)
Lean Inventory and Operations Management
Offered by Commerce Department, College of Vocational Studies

Credit Distribution, Eligibility and Pre-requisites the Course

Course Title & Code	Total Credits	Lectures	Tutorial	Practical	Eligibility	Prerequisite of the course
Lean Inventory and Operations Management	4	3	1	-		

Learning Objectives:

1. **Understand Lean Principles:** Comprehend the fundamentals of lean thinking and the Toyota Production System (TPS).
2. **Optimize Processes:** Apply value stream mapping and process optimization techniques to enhance operational efficiency.
3. **Implement Pull Systems:** Utilize pull-based inventory systems, including Just-in-Time (JIT) and Kanban, to streamline inventory management.
4. **Foster Continuous Improvement:** Promote a culture of continuous improvement through methodologies like Kaizen and Total Productive Maintenance (TPM).
5. **Leverage Digital Tools:** Integrate digital technologies for real-time inventory tracking and data-driven decision-making.

Learning Outcome:

1. Explain the principles of lean thinking and the Toyota Production System (TPS).
2. Develop value stream maps to identify and eliminate waste in processes.
3. Design and implement pull-based inventory systems using JIT and Kanban.
4. Apply continuous improvement techniques such as Kaizen and TPM to enhance operational performance.
5. Utilize digital tools for real-time inventory management and performance analysis.

Unit	Contents	
Unit I	Lean Principles and Sustainable Practices: Understanding lean thinking, the Toyota Production System (TPS), waste elimination, focusing on sustainable practices like reducing energy consumption and material waste, and integrating environmental sustainability within lean principles.	(10 Hours)
Unit II	Value Stream Mapping and Process Optimization: Mapping current state and future state, identifying bottlenecks, utilizing critical thinking to optimize flow, applying eco-efficient process techniques, and leveraging digital tools to visualize and optimize the value stream.	(11 Hours)
Unit III	Pull Systems, Kanban, and Digital Inventory Management: Fundamentals of pull-based inventory systems, Just-in-Time (JIT) replenishment, Kanban boards, and the use of digital technologies (e.g., IoT and cloud platforms) for real-time inventory tracking.	(12 Hours)
Unit IV	Continuous Improvement and Innovation: Kaizen, 5S, Poka-Yoke, Total Productive Maintenance (TPM), fostering innovation and problem-solving in continuous improvement, introducing smart technologies like robotic automation for maintenance, and data-driven decision-making for improved performance.	(12 Hours)

Suggestive Reading Materials/References:

1. **Womack, J.P., & Jones, D.T.** (2003). *Lean Thinking: Banish Waste and Create Wealth in Your Corporation*. Free Press.
2. **Ohno, T.** (1988). *Toyota Production System: Beyond Large-Scale Production*. Productivity Press.
3. **Shingo, S.** (1989). *A Study of the Toyota Production System from an Industrial Engineering Viewpoint*. Productivity Press.
4. **Liker, J.K.** (2004). *The Toyota Way: 14 Management Principles from the World's Greatest Manufacturer*. McGraw-Hill.
5. **Hines, P., Holweg, M., & Rich, N.** (2004). *Learning to Evolve: A Review of Contemporary Lean Thinking*. International Journal of Operations & Production Management.
6. **Bicheno, J., & Holweg, M.** (2009). *The Lean Toolbox: The Essential Guide to Lean Transformation*. PICSIE Books.
7. **Slack, N., Chambers, S., & Johnston, R.** (2010). *Operations Management*. Pearson Education.
8. **Heizer, J., & Render, B.** (2013). *Operations Management*. Pearson Education.
9. **Goldratt, E.M.** (1990). *The Haystack Syndrome: Sifting Information Out of the Data Ocean*. North River Press.
10. **Monden, Y.** (2011). *Toyota Production System: An Integrated Approach to Just-In-Time*. CRC Press.

Teaching Pedagogy/Methodology:

- **Lectures:** Introduction to lean principles, TPS, and process optimization techniques.
- **Case Studies:** Analysis of real-world applications of lean inventory and operations management.
- **Workshops:** Hands-on sessions on value stream mapping, JIT implementation, and Kanban systems.
- **Simulations:** Use of digital tools for inventory management and performance analysis.
- **Group Projects:** Collaborative projects to design and implement lean systems in simulated environments.

SWAYAM Reference: SWAYAM references for blended learning (as NEP 2020 recommends integrating online modules. Since SWAYAM directly doesn't have a course titled " *Lean Inventory and Operations Management* ", the closest and most relevant course available is:

https://onlinecourses.swayam2.ac.in/imb24_mg119/preview

https://onlinecourses.nptel.ac.in/noc20_mg06/preview

https://onlinecourses.nptel.ac.in/noc20_mg17/preview

https://onlinecourses.nptel.ac.in/noc24_hs128/preview

Semester-VIII
DISCIPLINE SPECIFIC ELECTIVE (DSE-8.1)
Advanced Logistics and Distribution Strategies
Offered by Commerce Department, College of Vocational Studies

Credit Distribution, Eligibility and Pre-requisites the Course

Course Title & Code	Total Credits	Lectures	Tutorial	Practical	Eligibility	Prerequisite of the course
Advanced Logistics and Distribution Strategies	4	3	1	-		

Learning Objectives:

- To explore advanced logistics concepts and strategies for optimizing the movement of goods within the supply chain.

- To understand and implement distribution strategies that enhance customer satisfaction and operational efficiency.
- To analyze the role of technology in modern logistics, including digital tools, AI, and automation.
- To develop skills in managing global logistics and distribution networks, considering economic, cultural, and regulatory factors.
- To examine innovative trends in logistics such as last-mile delivery and green logistics, contributing to sustainable supply chain practices.

Learning Outcome:

Upon successful completion of this course, students will be able to:

1. Design and implement advanced logistics strategies to optimize goods movement across the supply chain.
2. Develop distribution strategies tailored to customer needs, cost efficiency, and service excellence.
3. Analyze the integration of digital tools and technologies, such as AI and IoT, into logistics and distribution networks.
4. Manage logistics operations on a global scale, navigating challenges related to international trade, regulations, and cultural differences.
5. Apply sustainable logistics practices and evaluate innovations like last-mile delivery solutions and green logistics.

Course Outline

Unit	Contents	
Unit I	Strategic Logistics Management and Sustainable Networks: Design of global and regional distribution networks, facility location decisions, integrating sustainability into logistics management by considering carbon footprints, eco-friendly packaging, and green supply chains.	(10 Hours)
Unit II	Third-Party and Fourth-Party Logistics (3PL/4PL) with Digital Integration: Roles, benefits, and contract management, integration of digital platforms (e.g., Blockchain, IoT) for real-time tracking, enhancing collaboration between 3PL/4PL providers and clients.	(11 Hours)
Unit III	Multi-Modal Transport Strategies and Intelligent Systems: Integration of road, rail, air, and sea transport in distribution planning, utilizing smart transportation technologies like AI and machine learning for dynamic route optimization, and leveraging autonomous vehicles and drones in logistics.	(12 Hours)
Unit IV	Last-Mile Delivery Optimization and AI-Driven Solutions: Urban logistics, delivery routing, time-window constraints, and the use of AI, predictive analytics, and machine learning to optimize last-mile delivery, minimizing delivery time, cost, and emissions.	(12 Hours)

Suggestive Reading Materials/References:

1. **Ballou, R. H.** (2007). *Business Logistics/Supply Chain Management: Planning, Organization, and Control*. Pearson.
2. **Christopher, M.** (2016). *Logistics & Supply Chain Management: Creating Value-Added Networks*. Pearson.
3. **Coyle, J. J., Langley, C. J., Novack, R. A., & Gibson, B. J.** (2016). *Supply Chain Management: A Logistics Perspective*. Cengage Learning.
4. **Rushton, A., Croucher, P., & Baker, P.** (2017). *The Handbook of Logistics and Distribution Management: Understanding the Supply Chain*. Kogan Page.
5. **Harrison, A., & Van Hoek, R.** (2014). *Logistics Management and Strategy: Competing Through the Supply Chain*. Pearson.
6. **Jahre, M., & Heiser, D.** (2016). *Global Logistics and Distribution Planning: Strategies for Management*. Kogan Page.
7. **Kabir, M. A., Khan, S. A., Gunasekaran, A., & Mubarik, M. S.** (2025). Multi-criteria decision making to explore the relationship between supply chain mapping and performance. *Decision Analytics Journal*, 100577.
8. **Mangan, J., & Lalwani, C.** (2016). *Global logistics and supply chain management*. John Wiley & Sons.
9. **Carter, C.R., & Easton, P.L.** (2011). *Sustainable Supply Chain Management: Evolution and Future Directions*. *International Journal of Physical Distribution & Logistics Management*.

Teaching Pedagogy/Methodology:

- **Lectures:** Introduction to advanced logistics concepts and distribution strategies.
- **Case Studies:** Real-world examples of logistics optimization, distribution network design, and technology integration.
- **Workshops:** Hands-on sessions on using digital tools for logistics management, inventory optimization, and last-mile delivery solutions.
- **Guest Lectures:** Industry experts sharing insights on global logistics challenges and best practices in distribution strategies.
- **Group Projects:** Design and simulate a comprehensive logistics strategy for a global supply chain, considering economic, cultural, and regulatory factors.

SWAYAM Reference: SWAYAM references for blended learning (as NEP 2020 recommends integrating online modules. Since SWAYAM directly doesn't have a course titled " *Advanced Logistics and Distribution Strategies* ", the closest and most relevant course available is: https://onlinecourses.nptel.ac.in/noc24_hs128/preview

Semester-VIII**Discipline Specific Elective-8.1****Title of the Paper: Application to Data Analytics with R****Offered by Economics Department, College of Vocational Studies****CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE**

Semester	Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
			Lecture	Tutorial	Practical/ Practice		
VIII	Application to data analytics with R	4	2	0	2	Class 12th Pass	Nil

Learning Objectives:

This Paper provides a comprehensive introduction to R programming language and data analysis, with focus on vocational fields. It will equip learners with foundational knowledge and skills to use R for statistical computing and data analysis. Key learning objectives include understanding basic R syntax, working with data structures, performing data manipulation and analysis, and creating visualisations. Students will be able to grasp the reading, cleaning and transforming and manipulating data using the built-in functions and packages.

Learning Outcomes:

The students will be able to:

- Understand the basics of R programming language, including data types, variables, and control
- Learn to import, manipulate, and visualize data in R
- Apply statistical concepts and methods to real-world data using R
- Understand how to perform inferential statistics, including hypothesis testing and confidence intervals.
- Interpret the results of statistical analyses and communicate findings effectively

Unit I: Overview of R and its' IDEs, Basics of R syntax and programming concepts, Data types, variables and operations in R, Control structures, Array, Matrix, Vectors, Factors, R packages, Handling missing values

(7 hours)

Unit II: Data manipulation and preparation: Importing and exporting data in text, excel, Stata format, Data cleaning, sorting and preparation with dplyr, Data transformation using tidyr. Functions: Built in functions, Creating custom functions, conditional statements, Loops, apply, Lapply, sapply

(15 hours)

Unit III: Data analysis and statistics: Descriptive statistics and exploratory data analysis, Hypothesis testing and inferential statistics, Regression analysis vs correlation, Simple regression, multiple regression, OLS, Assumptions of classical Normal Linear regression model, Auto correlation, heteroscedasticity, Time series data

Data visualisation with R: Adding layers, themes and customization using ggplot2, interactive visualisation with plotly

(15 hours)

Unit IV: Advanced analytics and introduction to machine learning.

Project work : Extracting unit level data and Analysing it with the help of appropriate tools
(8 hours)

Practical Exercises:

The learners are required to:

1. Loading and cleaning of data sets
2. Performing data analysis, creating visualisation and generating reports

Suggested Readings:

- Gardner, M. (2008). *Beginning R: The statistical programming*, Wiley & Sons.
- Verzani, J. (2014). *Using R for introductory statistics* (2nd ed.). Chapman & Hall
- The R Guide
- Gujarati, D.N. et al (2018) *Basic Econometrics* (5th ed), McGraw Hill India.

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.

Semester-VIII

Discipline Specific Elective- DSE8.2

Title of the Paper: Economics of Startup

Offered by Economics Department, College of Vocational Studies

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Semester	Course title & Code	Credits	Duration (per week)			Eligibility Criteria	Prerequisite
			Lecture	Tutorial	Practical/ Practice		

VIII	Economics of Startups	4	3	-	1	Class XII	Nil
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Learning Objectives:

The learning objectives of this paper are to understand and analyse the economics of startups. The paper also intends to apply economic concepts to market price and output determination. Startups and entrepreneurship culture will help to reduce problems associated with economy. The aim of this paper is to inspire the current learners to create new startups by providing them the ability to generate new ideas.

Learning Outcomes:

The students will be able to:

- Develop a start-up Enterprise with Big Idea Generation.
- Analyse start-up capital requirement by analysing legal factors.
- Interpret feasibility Analysis towards funding issues.
- Access growth stages in new venture and reasons for scaling ventures.

Unit I: Market imperfection concepts and problems in macroeconomics – Nature of the firm, price and output determination in monopoly, oligopoly and monopolistic competition; problems of inequality, poverty, unemployment and inflation in a economy.

(10 hours)

Unit II: Startups- overview, structure, concepts and terminologies, Startups as an economic tool, Need of startups for reducing inequality, poverty, unemployment and inflation; new ideas and thinking about doing business, factors affecting startups, removing obstacles to entrepreneurship.

(13 hours)

Unit III: Indian startups ecosystem – drivers, challenges and pillars; financing of startups in India; entrepreneurship and startups culture in India; needs and opportunities of startups in Indian economy.

(11 hours)

Unit IV: Startup action plan in India, Initiatives and government policies to encourage startups in India; status of startups in India in past one decade.

(11 hours)

Practical Exercises:

The learner will analyse one startup and accordingly make the plan to set up a new startup with his new ideas.

Suggested Readings:

- Case, Karl E. & Ray C. Fair: Principles of Economics, Pearson Education, Inc., latest edition; page no. 269-328, 367-387, 441-456.

- Coase, R.H. (1937), The Nature of the Firm, *Economica*, vol. 4 (16), page 386-405.
- World Bank Group, *Doing Business 2020*, comparing business regulations in 190 economies (chapter 1 &3).
- Lambert, T., Ralcheva, A. & Roosenboom, P. (2018), The crowd- entrepreneur relationship in startup financing. Chapter in book edited by Cumming, D. & Hornuf, L. (2018), *The Economics of Crowdfunding- Startups, Portals, and Investor Behaviour*, Palgrave macmillan Publication, Page no. 57-78.
- Mehmeti, V. & Musabelli, E. (2024), Start-ups: Importance and Role in the Economy, *Interdisciplinary Journal of Research and Development*, vol. 11, page 60-65.
- Bilan, I. & Apostoaie, M. (2023), Unemployment benefits, entrepreneurship policies, and new business creation, *Small Bus Econ*, Springer publication, vol. 61, page no. 1411-1436.
- Startup India, Draft Compendium of startup- specific initiatives, under central ministries, Government of India, Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry, GOI.
- Korreck, S. (2019), *The Indian Startup Ecosystem: Drivers, Challenges and Pillars of Support*, ORF Occasional Paper, Observer Research Foundation.
- Singh, Vijay K. (2020), Policy and Regulatory changes for a successful Startup revolution: Experiences from the Startup Action Plan in India, ADBI working paper series 1146, Asian Development Bank Institute.
- Nine Years of Startup India (2025), Research Unit, Press Information Bureau, Government of India, Ministry of Commerce and Industry, GOI.
- Singh, P. (2022), *Entrepreneurship and Startups Culture in India*, Bharti Publication New Delhi, (Edited book).

Notes:

- 1. Reference 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.**

Semester VIII

Generic Elective Course -GE-8.1

Tourism Startups and Innovations

Offered by Tourism Management Department, College of Vocational Studies

Credit Distribution, Eligibility and Pre-Requisite of the Course

Course Title and Code	No. of credits	Components of the course			Eligibility Criteria	Pre-requisites of the course
		Lecture	Tutorial	Practical		
Tourism Startups and Innovations G.E.- 8.1	4	3	1	0	Pass in Class XII	NIL

Learning Objectives:

The course aims to introduce students to the foundational concepts of entrepreneurship and innovation within the tourism sector. It explores the dynamics of the tourism startup ecosystem, including various business models and funding sources that support entrepreneurial ventures. By fostering creativity and problem-solving, the course encourages students to design innovative tourism services and products that respond to market needs. Additionally, it focuses on developing practical skills essential for planning, launching, and managing a successful tourism startup, preparing students to contribute meaningfully to the evolving landscape of the tourism industry.

Learning Outcomes:

After completing this course, the learners would be able to

1. understand entrepreneurship fundamentals and innovation frameworks in tourism.
2. analyze case studies of successful tourism startups and identify key success factors.
3. develop/create a business model for a tourism startup using tools like the Business Model Canvas.
4. pitch a startup idea addressing real-world tourism challenges.
5. evaluate the feasibility and sustainability of proposed tourism startup ideas.
6. assess the impact of innovation on competitiveness and value creation in tourism enterprises.
7. apply innovative thinking and sustainable approaches in tourism product development.

Unit-I

Introduction to Tourism Entrepreneurship and Innovation (10 Hours)

Entrepreneurship in tourism: Characteristics, types, and roles, Innovation in tourism: Process, need, and significance, Creative thinking, design thinking, and idea generation techniques, Overview of the tourism startup ecosystem (incubators, accelerators, angel investors)

Unit II

Business Models and Planning for Tourism Startups (15 Hours)

Business Model Canvas: Value proposition, customer segments, revenue streams, Tourism startup planning: Market research, feasibility study, risk analysis, Legal structure and licensing requirements for tourism enterprises, Branding and positioning strategies in tourism startups.

Unit III

Digital Innovation and Technology in Tourism Startups (10 Hours)

Role of digital platforms, AI, and mobile apps in tourism innovation, Smart tourism, virtual reality (VR), and augmented reality (AR) experiences, Social media marketing, e-commerce, and online distribution in startups, Case studies: Airbnb, Tripoto, Klook, OYO Rooms, etc.

Unit IV

Funding, Growth, and Sustainable Innovation (10 Hours)

Sources of startup funding: Bootstrapping, venture capital, crowdfunding, Growth hacking strategies and scalability in tourism ventures, Social entrepreneurship and sustainable innovation in tourism, Challenges and failures in tourism startups: Learning from setbacks.

Exercises:

The learners are required to:

1. pitch a tourism startup idea to a mock investor panel (Shark Tank-style).
2. group project: Develop a sustainable tourism startup proposal.
3. prepare a Business Model Canvas for a proposed tourism startup.
4. conduct a SWOT analysis of a local tourism venture.
5. design a basic digital marketing strategy for a tourism startup.
6. make presentation on: technology driven tourism business models.

Suggested Readings:

- Correia, A., Lopes, J. D., & Portugal, M. (Eds.). (2024). *International Case Studies in Innovation and Entrepreneurship in Tourism*. Routledge.
- Hallak, R., & Lee, C. (Eds.). (2024). *Handbook of Tourism Entrepreneurship*. Edward Elgar Publishing.
- Aguiar-Quintana, T., Day, J., & Álamo-Vera, F. R. (Eds.). (2024). *Corporate Entrepreneurship and Innovation in Tourism and Hospitality*. Routledge.
- Gupta, A., George, G., & Fewer, T. J. (2024). *Venture Meets Mission: Aligning People, Purpose, and Profit to Innovate and Transform Society*. Stanford University Press.
- McClanahan, P. (2024). *The New Tourist: Waking Up to the Power and Perils of Travel*. Simon & Schuster.
- Baggio, R., & Del Chiappa, G. (2017). *Tourism destinations and eTourism: Digital marketing practices*. Channel View Publications.
- Morrison, A. M. (2019). *Hospitality and travel marketing (5th ed.)*. Cengage Learning.
- Guttentag, D. A. (2015). *Airbnb: Disruptive innovation and the rise of an informal tourism accommodation sector*. *Current Issues in Tourism*, 18(12), 1192–1217.
- Cooper, C. (2016). *Innovation in tourism: Applying the diffusion of innovation model*. *Tourism Recreation Research*, 41(3), 301–304.
- Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: A handbook for visionaries, game changers, and challengers*. Wiley.

Notes:

1. **Suggested Readings will be updated and uploaded on college website from time to time.**
2. **Examination scheme and mode shall be as prescribed by the Examination Branch, University of Delhi, from time to time.**

