DEPARTMENT OF INTERNATIONAL BUSINESS
SCHOOL OF MANAGEMENT

MBA (Logistics and Supply Chain Management)

COURSE CURRICULUM

PONDICHERRY UNIVERSITY
PONDICHERRY 605 014

CONTENTS

DEPARTMENT OF INTERNATIONAL BUSINESS
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PONDICHERRY UNIVERSITY

The University

The Pondicherry University (A Central University) was established by an Act of Parliament, which was enforced by a Notification of the Government of India in October 1985. The campus is spread over 800 acres of land which is rolling down to the Bay of Bengal sea beach. The inner landscape is featured by sprawling lawns, well nurtured gardens, picturesque road shapes, and lush green belt with eco-forest mostly flavoured by Cashew-nuts. The tranquil setting makes Pondicherry University Campus a unique one with exquisite natural beauty with a sea shore that captures viewers' imagination and provides an ideal atmosphere for persuading study and research. On the University Campus, 15 Schools and 37 Departments with an ample number of students across the globe undertake post-graduation programs under Choice Based Credit System (CBCS). The University is a member of the Association of Commonwealth Universities and signed MoU with several foreign Universities/ Institutions.

School of Management

The School of Management is the first School to be established in the University in the year 1986 and is one of the popular Schools of Excellence in the campus primarily focusing on the business-related courses since the very inception of this University. The School is offering five MBA programs – MBA (International Business), MBA (Logistics and Supply Chain Management), MBA (General), MBA (Business Analytics), MBA (Tourism Studies), MBA (Banking Technology), MBA (General, Karaikal Campus) (Insurance Management, Karaikal Campus).

Department of International Business (DIB)

In response to the changes that are taking place on the face of the world business scenario and the needs of the industry at national and international level, on the recommendations of duly constituted advisory committee, Pondicherry University established the Department of International Business during the academic year 2006 – 2007 to offer a specialized MBA program in International Business under the roof of the School of Management. The MBA program is to prepare leader-managers with competencies in international business operations.

Vision: Vision of the Department is to shape management education with international orientation by generating new leading-edge knowledge and preparing upright, dependable, socially sensitive leader-managers highly committed to the progress of mankind.

Mission: To support business organizations in India and other developing countries by enriching the best practices in international business. It shall seek to do this by preparing risk-taking leader-managers who will pioneer emerging global business operations and set new benchmarks.

Objectives

I. To Provide a congenial learning and training environment to potential aspirants to gain deep insight in Logistics and Supply Chain Management.

II. To Enhance knowledge through innovative teaching and research, conceptual and applied, relevant to Logistics and Supply Chain

III. To Gain Command on the key factors in new business models based on e-commerce and an insight into how they affect traditional systems of Logistics Management

IV. To Analyze and organize Global Network Logistics for trade and transport systems, sourcing and procurement and Supply chain management.

V. To Address LSCM Problems in a Holistic approach by considering general management concepts, human resources, environmental concerns and quality, technological and economic aspects

About MBA (Logistics and Supply Chain Management) Program

Rapid developments in the Logistics and Supply Chain business on one hand and the consequential impact of the same on India's domestic market on the other, call for a professional approach and sensitivity to the Logistics and Supply Chain business environment.

The MBA: Logistics and Supply Chain Management is a specialized program for developing a competent cadre of business executives to meet the country's growing requirements of training personnel in the field of Logistics and Supply chain management.

The main academic focus is on equipping the participants with an in-depth knowledge of Logistics and Supply Chain business and to instill in them an urge to take up competitive global challenges in the Logistics and Supply Chain business environment. The program also focuses on equipping its students with all the knowledge and expertise in dealing with the Logistics and Supply Chain business world ranging from International Logistics and Management; Procurement, Storage and Warehouse Management; Distribution Management for Global Supply Chain; Port and Airport Management for Logistics; Containerization and multimodal transport; Maritime Logistics Law & Documentation and software related to Logistics and supply chain management.

The program aims to provide students with the knowledge, mind-set and skills necessary in building a successful career in global logistics and supply chain management. The program will enable students to:

- Take-up positions in managerial capacities in manufacturing, retailing, e-commerce companies and export & import houses.
- Work as merchandising and logistics managers in import and export operations.
- Work as system designers, packaging, warehousing and other operations for domestic and international logistics.
- Develop entrepreneurship capabilities and empower them to work on their own as logistics and supply chain providers.

This is a specialized program in Logistics & Supply Chain Management (L&SCM). It is a multi-disciplinary program having focus on design, planning and management of L&SCM functions, networks, processes and systems. It will have two pathways:

1. Domestic and International logistics and supply chain for import-export operations.
2. Supply chain management and optimization for transport systems like airways, shipping, railways and inland containers/cargos.

The overall educational aim of MBA - Logistics & Supply Chain Management is to equip students with knowledge, understanding, skills and experiential learning in Logistics, Packaging Logistics, Modelling & Simulation of Supply Chains, Cross-Functional Process Integration and Handling of Cargos and Clearance at Airports, Ports, Dry Ports, Customs, Export Processing Zones(EPZs), etc. In addition, students will be exposed to various facilities of L&SCM for hands-on training.

Program Features

The MBA: Logistic and Supply Chain Management Program – a multidisciplinary and integrative curriculum reinforcing the strategic, international and ethical dimensions of business – has the following salient features:

- With experienced teachers on the faculty, the program equips the students with the practical nuances of conducting international business in a competitive environment;
- The Course is meticulously designed to meet the growing international business challenges, and to develop a competent cadre of business executives.
- The University has a well-equipped library along with the school library, with online databases and Computer Centers with a 24 -hour Internet access.
- Using lectures, case studies, problem-based learning and group projects, the program prepares students to manage, motivate and innovate.
- Periodical Guest Lectures by Executives from different MNCs; Industry Visits; Port Visits, Summer and a Final Project in MNCs are the USPs of the program.

PONDICHERRY UNIVERSITY

Department of International Business
School of Management

Programme Outcome for MBA Logistics and Supply Chain Management (PO's)

PO 1 – Apply knowledge of logistics, operations, and supply chain management theories and practices to solve business and industry-specific problems.

PO 2 – Foster analytical and critical thinking abilities for effective decision-making in procurement, production, distribution, and supply chain optimization.

PO 3 – Ability to develop value-based leadership and managerial skills for managing logistics networks and supply chain operations.

PO 4 – Ability to understand, analyse, and communicate global, economic, legal, ethical, and sustainability aspects of logistics and supply chains.

PO 5 – Ability to lead teams and organizations in achieving supply chain efficiency and resilience, contributing effectively to collaborative environments.

Programme Specific Outcomes for MBA Logistics and Supply Chain Management (PSO's)

PSO 1 – Develop professionals capable of designing, managing, and optimizing end-to-end logistics and supply chain systems by applying analytical tools, technology, and sustainable practices.

PSO 2 – Cultivate the ability to identify, analyse, and resolve complex logistics and supply chain challenges ethically and innovatively, ensuring competitiveness in a dynamic global environment.

Program Thrust Areas:

Logistics and Supply Chain Management

- Basics of Logistics and Supply Chain Management
- Distribution Management for Global Supply Chain
- Procurement, Storage and Warehouse Management
- Port and Airport Management for Logistics
- International Logistics and Management
- Containerization and Multimodal Transport
- Supply Chain Risk Modeling and Management
- Applied GIS and Spatial Data Analytics
- Public Private Partnership and Port Development
- Supply Chain Software's
- Inventory Management & Material Requirements Planning

Career opportunities for Logistics Professionals

Logistics involves so many critical business activities that nearly every Fortune 500 and Global company can be considered a potential employer for logistics managers. The same can be said for smaller public and private companies around the world. From the largest automobile manufacturers to the smallest zipper producers, any company that purchases and /or sells products has a need for logistics professionals to manage the flow of product and information locally, nationally, and internationally.

Service firms like hospitals and restaurant chains must also manage logistics activities. LOGISTICS function functions as the integrator of the supply chain. Hence, an agile supply chain is managed by the skillful logisticians to get the product to the market – At the right time, At the Right place and At the right quantities.

Common Career path in Logistics

No single career path dominates logistics management. In fact, there are hundreds of potential career paths. Your career path will be largely influenced by your skills, interests, and personal decisions. It will also be impacted by the size, type, geographic scope, and organizational structure of the firm that you choose to work for.

A broad base of business skills, knowledge of the logistics process, and relevant internship/work experience will give you ample opportunity to begin your career with a manufacturer, retailer, carrier, third party logistics firm, or other organization. You will likely begin as a management trainee, analyst, or first line supervisor. As you demonstrate your managerial capabilities, you can progress to logistics positions of greater responsibility. You may also decide to gain experience in other parts of the organization. One key to your success in this field is flexibility. You will work with people throughout your company- logistics, manufacturing, and marketing. Depending on the size of your company, your initial responsibilities may deal with one or more logistics functions. Some positions will require you to specialize in a specific area of logistics. There are numerous opportunities and career paths in this field. It is up to you to seek them out and develop the appropriate skills to be successful.

Job profiles in the logistics industry

- Analyst
- Consultant
- Customer Service Manager
- International Logistics Manager
- Inventory Control Manager
- Logistics Engineer
- Logistics Manager
- Logistics Services salesperson
- Logistics Software Manager
- Materials Manager
- Production Manager
- Purchasing Manager
- Supply Chain Manager
- Systems Support Manager(MIS)
- Transportation Manager
- Vendor Managed Inventory Coordinator
- Warehouse Operations Manager

Employability / Placement

With literally hundreds of career paths to follow, working in the supply chain provides opportunities in every field, in both the private and public sector. From fashion, film production and video gaming, to health care, emergency services and aviation, there is an exciting and demanding supply chain role in virtually each and every area.

Whether it's sourcing materials, manufacturing goods, or the warehousing and distribution of products, more than three quarters of a million Canadians already work in supply chain roles for private companies, governments, charities and other organizations.

The supply chain sector labor force by sub-functions are:

- Senior management.
- Logistics information systems.
- Warehousing.
- Transportation.
- Inventory/material Control.
- Purchasing.
- Marketing and Sales.
- Customer Service

Faculty Profile

Academically highly vibrant and professionally committed core faculty is participating in the program. They have excellent credentials in their own field of specialization through publications and consultant activities.

Dr. Rajeesh Viswanath MA, MBA, Ph.D. Professor & Head Experience: 29 Years	Organizational Behaviour Performance Management Systems Cross Cultural Management.
Dr. P. Sridharan, M. Com, M.Phil., Ph.D. Professor Experience :36 Years	International Banking, Financial Management, Management Accounting.
Dr. Bushan D. Sudhakar, MIM, Ph.D. Professor Experience: 28 Years	Global Marketing, Advertising & Branding, Business Communication and Negotiation Skills.
Dr. Y. Srinivasulu, MBA, M. Phil, Ph.D. Professor Experience: 35 Years	Marketing Management, Services Marketing, Brand Management, Industrial Marketing.
Dr. M. Banumathi, MA, MBA, M.Phil., Ph.D. Professor Experience: 29 Years	Strategic Management, Green Marketing, International Trade, International Economics, Digital Marketing.
Dr. P.G. Arul, M. Com, M. Phil, MBA (IB), Ph.D., Professor Experience: 24 Years	International Trade & Logistics Foreign Exchange Management. International Human Resource Management
Dr. S. Thiyagarajan M.A., MBA, M.Com., M. Phil, Ph.D. Assistant Professor Experience: 15 Years	Quantitative Techniques Operations Research Research Methodology Accounting, Advertising
Dr. K. Ilangovan, MBA., M.Com., LL.M., PGDIPSY., Ph.D., Assistant Professor Experience: 7 Years	Marketing Management, Services Marketing Accounting and Finance, Financial Services

COURSE CURRICULUM GUIDELINES

Course Details

Two-year, four semesters full time Programme (Intake of 72) with dual specialization in any of the four functional areas namely Marketing, Finance, Human Resource and Operations & Systems.

Eligibility criteria:

Any graduate degree with 50% marks is eligible. For reservation candidates belonging to SC/ST, 5% relaxation is applicable.

Selection process:

Candidates will be short listed based on their performance in the pan India Entrance examination conducted by Pondicherry Central University. Kindly watch out for the university notification for MBA admissions in the 3rd week of January 2019. The NRI and foreign nationals are exempted from undergoing the regular selection process. However, foreign nationals are requested to route their applications through ICCR/MHRD, Government of India. The NRI candidates shall apply directly to the Head of the Department with proof of NRI status. The NRI status of the father/mother alone will be considered.

Choice Based Credit System (CBCS): The MBA (Logistics and Supply Chain Management) Degree program is offered through a unique 'Choice Based Credit System'. Under Choice Based Credit System, subjects are classified into Hard Core and Soft-Core Papers. Hard Core subjects are compulsory. The students have a choice to select from among the list of Soft-Core papers offered within the department and by other departments.

Weightage of Marks: The weightage of marks between continuous Internal Assessment and End Semester Examination shall be 40 and 60 respectively.

Passing Minimum: A student is declared to have passed a given subject only when he/ she secures a minimum of 40 marks in the end-semester examination and an aggregate of 50% marks (both Internal and End-Semester Examination put together). There is no minimum passing marks for the internal assessment component.

Internal Assessment Components: The weightage of 40 marks for Internal Assessment Components shall consist of the following components.

Evaluation of End Semester Written Examination: The answer scripts of the End Semester

1.	Two Class Tests (15+15)	: 30 marks
2.	Two Written Assignments (5+ 5)	: 10 marks
	Total	**: 40 marks**

Examination shall be evaluated for a weightage of 60 marks and this will be evaluated by one External Examiner and one Internal Examiner (course in-charge) separately. The average of the marks awarded by both Internal and External examiners shall be taken for providing the Grades. The list of External Examiners is to be approved by the Dean, School of Management from a panel of External Examiners to be given by the Course in-charge for each subject and the consolidated panel of examiners shall be forwarded to the Dean by the Head of the of the Department.

Comprehensive Viva-voce Examination: The End Semester Comprehensive Viva-Voce Examination shall carry a weightage of 50 marks and this will be evaluated by two Internal Examiners. The list of Internal Examiners is to be approved by the Dean, School of Management from a panel of Internal Examiners to be submitted by the Head of the Department.

Summer Project: Every student of MBA: **Logistics and Supply Chain Management** shall carry out a project in any leading business organization (preferably in an MNC) for a period of 8 weeks during summer vacation (May& June) under the guidance of a Faculty Member in the Department. Once guides are allotted to the students, the students should contact the respective guides periodically and get necessary guidance and feedback on the project work. At the end of the project period, every student shall make a presentation of his/ her project work and shall submit a structured project report as approved by the Faculty Guide within 15 days from the date of the completion of the project period.

The Summer Project Report and Viva-Voce examination will be evaluated by two Internal Examiners. The list of Internal Examiners is to be approved by the Dean, School of Management from a panel of Internal Examiners to be submitted by the Head of the Department. Summer Project Report will be valued for a weightage of 100 marks and Viva – Voce examination for the Summer Project shall carry a weightage of 50 marks (Total 150 Marks). The Summer Project marks obtained by the students will be recorded in the mark statement issued to them in the Third Semester (along with the third semester marks).

Internship: Every student of MBA: **Logistics and Supply Chain Management** shall undergo Internship training during the Third Semester of the program. This Internship shall be for 2 days (Fridays & Saturdays) in all the weeks of the entire Third Semester. During this Internship, every student should attach himself/ herself with any organization carrying on any type of international operations or transactions. The objective of the Internship training is to give the students a hands-on experience of real-life business operations. At the end of the Third Semester, each student should submit an Internship Training Report explaining clearly what each student has learnt during the Internship period. The Internship Report and the Viva-Voce Examination will be evaluated by the internal Faculty Guide. The Weightage for the Internship Report shall be 75 marks and weightage for Viva-Voce Examination shall be 25 marks (Total 100 marks).

Final Project: Every student of MBA: **Logistics and Supply Chain Management** should carry out a project in any leading business organization (preferably in an MNC) for a period of 8 weeks during the first part of the Fourth Semester till the third week of February. Once the guides are allotted to the students, the students should contact the respective guides periodically and get necessary guidance and feedback on the project work. At the end of the project period, every student shall submit a structured project report as approved by the Faculty Guide within the period specified by the Department.

The Final Project Report and Viva-Voce examination will be evaluated by two Internal Examiners. The list of Internal Examiners is to be approved by the Dean, School of Management from a panel of Internal Examiners to be submitted by the Head of the Department. Final Project Report will be valued for a weightage of 150 marks and Viva –Voce examination for the Final Project shall carry a weightage of 50 marks (Total 200 Marks).

Question Paper Pattern:

The question paper pattern for each of the subjects for the End-Semester Written Examination **(For 60 Marks)** shall be as given

Part A

Consist of 10 short answer questions each carrying two (02) marks (two questions should be asked from each Unit). (**10 X 2 = 20 marks)**

Part B

Five questions are to be answered (Either/Or pattern) each carrying six (06) marks (two questions will be asked from each Unit). (**5 X 6 = 30 marks)**

Part C

A compulsory question consisting a Case study/ Problem in the relevant Subject**.**

(1 X 10 = 10 marks)

Industrial / Port Visits: Industrial Visit (Industrial Study Tour) shall be the compulsory component of the MBA: International Business Program. Such tour will be organized with the approval from the appropriate authorities of the University. It is also resolved that one- three teachers along with few Ph.D. full time scholars of the Department by rotation will be accompanying the students.

Attendance: Each student shall obtain 70 per cent attendance to be eligible for appearing for the Semester-End Examination.

Grading: Grading of the marks obtained by the students shall be made as per the norms of Choice Based Credit System (CBCS) in the same manner as followed in other Departments of Pondicherry University.

PROGRAM DETAILS

(MBA – Logistics and Supply Chain Management)

Total Number of Credits	-	106
Total Number of Theory Papers	-	30
Total Number of Project Work	-	2
Total Number of Internship	-	1
Total No. of Comprehensive Viva-Voce	-	4

Mode of Evaluation for Continuous Internal Assessment (Weightage of Marks-40):

Two Class Tests, Two Written Assignments, and any of these following components: Attendance/ Mini Projects / Seminars / Quizzes (announced and / or unannounced case analysis and case discussion / Term Paper Class Participation / Assessment of Class Notes etc. End-Semester Examination (Weightage of Marks – 60):

At the end of the Semester a three-hour written examination will be conducted covering the entire syllabus

DETAILED COURSE STRUCTURE

FIRST SEMESTER

Code	Course	Credits	Marks	Hard/Soft Core
MLSM 101	Principles of Management	4	100	H
MLSM 102	Managerial Economics	4	100	H
MLSM 103	Accounting for Managers	4	100	H
MLSM 104	Statistics for Decision Making	4	100	H
MLSM 105	Global Business Environment	4	100	H
MLSM 106	IT Tools and Techniques for Logistics & SCM	4	100	H
MLSM 107	Comprehensive Viva-Voce	2	100	H
	Total	**26**	**700**	

SECOND SEMESTER

Code	Course	Credits	Marks	Hard/Soft Core
MLSM 108	Marketing Management	4	100	H
MLSM 109	Human Resources Management	4	100	H
MLSM 110	Financial Management	4	100	H
MLSM 111	Research Methods for Business	4	100	H
MLSM 112	Productions and Operations Management	4	100	H
MLSM 113	Logistics and Supply chain Management	4	100	H
MLSM 114	Comprehensive Viva-Voce	2	100	H
	Total	**26**	**700**	

THIRD SEMESTER

Code	Course	Credits	Marks	Hard/Soft Core
MLSM 201	Strategic Management in Logistics	4	100	H
MLSM 202	Procurement, Storage and Warehouse Management	3	100	H
MLSM 203	Sea Port and Airport Management for Logistics	3	100	H
MLSM 204	International Trade Procedures and Documentation	3	100	H
MLSM *	Elective – I	3	100	S
MLSM *	Elective – II	3	100	S
MLSM *	Elective – III	3	100	S
MLSM 205	Internship on LSCM	2	100	H
MLSM 206	Comprehensive Viva-Voce	2	100	H
MLSM 115	Summer Project – 6-8 Weeks (May- June)	6	100	H
	Total	**32**	**1000**	

* The Code Number for Elective Subjects will be followed as per the Elective Course in the specialization stream chosen by the students.

FOURTH SEMESTER

Code	Course	Credits	Marks	Hard/Soft Core
MLSM 207	Containerization and Multi Modal Transport	4	100	H
MLSM 208	Supply Chain Risk Modeling and Management	3	100	H
MLSM *	Elective – IV	3	100	S
MLSM *	Elective – V	3	100	S
MLSM *	Elective – VI	3	100	S
MLSM 209	Comprehensive Viva-Voce	2	100	H
MLSM 210	PROJECT WORK (8 Weeks) (Project Report – 75 Marks + Viva-Voce – 25 Marks)	6	100	H
	Total	**24**	**700**	

* The Code Number for Elective Subjects will be followed as per the Elective Course in the specialization stream chosen by the students.

LIST OF ELECTIVES				
Course Code	**Course Title**	**Credits**	**Marks**	**Soft Core**
MLSM 301	Applied GIS and Spatial Data Analytics	3	100	S
MLSM 302	Public Private Partnership and Port Development	3	100	S
MLSM 303	Modelling Techniques and IT for Operations Management	3	100	S
MLSM 304	Customer Relationship Management	3	100	S
MLSM 305	Inventory Management & Material Requirements Planning	3	100	S
MLSM 306	Distribution Management for Global Supply Chain	3	100	S
MLSM 307	Enterprise Resource Planning	3	100	S
MLSM 308	Package and Transportation	3	100	S
MLSM 309	Warehousing and Distribution Management	3	100	S
MLSM 310	Material Handling	3	100	S
MLSM 311	Third party Service providers	3	100	S
MLSM 312	Procurement and Negotiation skills	3	100	S
MLSM 313	Logistics Documentation Procedure	3	100	S
MLSM 314	Handling Dangerous and Hazardous goods	3	100	S

FIRST SEMESTER

Logistics and Supply Chain Management

MLSM 101	PRINCIPLES OF MANAGEMENT	L	T	P	C
		4	0	0	4

Course Objectives:

1. To give a comprehensive view on management process
2. To think logically to plan, organize and Control
3. To understand the basic issues and challenges in management models.
4. To Effectively make the decision

Course outcomes:

CO1: Analyze the foundational roles and challenges of a manager in both historical and modern contexts.

CO2: Apply strategic planning and decision-making models to address complex organizational issues.

CO3: Evaluate the impact of internal culture and the external environment on a company's operations.

CO4: Formulate effective strategies for leading and managing diverse groups and teams.

CO5: Design and implement control processes to enhance organizational and individual performance.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	3	2	3	2	3
CO2	3	3	2	3	3	3	2
CO3	2	1	2	2	2	2	3
CO4	2	3	3	3	3	2	2
CO5	2	3	2	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Management** Introduction to Management - Role of Manager and Challenges, History of Management - FW Taylor, Elton Mayo, MP Follett, Max Weber, Peter Drucker & Douglas McGregor, Decision Making Models
2	**Managing in a Contemporary Workplace** Basics of Managing in Today's Workplace - Influence of the External and the Organizations Culture, managing in a Global Environment, Managing Diversity, Managing Change and Development

3	**Planning, Strategy, and Entrepreneurship** Planning - Foundations of Planning, Types of Plans, Contemporary Issues in Planning, Managing Strategy, Entrepreneurial Venture - Start up Planning and issues, Organizing Issues, Leading Issues, Control Issues.
4	**Organizing & Leading** Organizing & Leading - Designing Organization Structures, Managing Human Resources, Managing Groups and Teams, Understanding and managing Individual behaviour, Motivating Employees, Leadership Theories
5	**Controlling** Controlling - Control Process, Controlling for Organizational and Employees Performance, Tools of Measuring Individual and Organizational Performance Contemporary Issues in Control

Text Books:

1. Management – Stephen P Robbins, Coutler, Amy & Rajeesh Viswanathan 15th Ed 2023, Pearson
2. Principles of Management – Rajeesh Viswanathan, Himalaya Publication, 1st Ed 2010
3. Management – Hitt Black Porter & Rajeesh, 2nd Ed, Pearson

Reference Books:

1. The John Adair Handbook of Management and Leadership by Neil Thomas, Viva Books Pvt Ltd
2. Strategic Leadership How Leaders at All Levels Prepare Themselves, Their Teams, and Organizations for the Future
3. The One Minute Manager, Ken Blanchard, Pearson

MLSM 102	MANAGERIAL ECONOMICS	L	T	P	C
		4	0	0	4

Course Objectives:

1. To help in managerial decision making in order to achieve desired economic goals.
2. To think systematically while solving business issues and also to forecast the future.
3. To enhance the ability to apply fundamental economic concepts to complex business realities.

Course outcomes:

CO1: Apply economic principles and concepts to real-world business decisions.

CO2: Analyze demand and supply dynamics to predict market trends and inform pricing strategies.

CO3: Evaluate production and cost relationships to optimize a firm's output and efficiency.

CO4: Formulate pricing strategies based on different market structures and competitive scenarios.

CO5: Assess the impact of the broader macroeconomic environment on business operations and financial performance.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	3	2	3	3	3
CO2	3	3	2	2	3	3	2
CO3	2	1	2	3	3	2	3
CO4	2	3	3	2	3	2	2
CO5	2	3	3	3	3	3	3

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Managerial Economics** Introduction: Nature and Scope of Managerial Economics - Significance of Economics in Management - Objectives of a firm - Managerial economist's role and responsibilities - Fundamental economic concepts.
2	**Demand and Supply Analysis** Demand Analysis: Individual and Market demand functions - Law of demand - Determinants of demand - Elasticity of demand - Price elasticity, income elasticity and cross elasticity - using elasticity in managerial decisions - Demand forecasting techniques - Law of supply.

3	**Production and Cost Analysis** Production analysis: Factors of production - Production function - Law of variable proportion - Economies of scale - Law of Returns to scale. Cost analysis: Types of costs - Cost of production - Cost output relationship in the short run and long run - their nature, shape and inter relationship - Break-even analysis.
4	**Market Structure and Pricing** Market Structure: Price determination under perfect competition - Monopoly Market - Duopoly - Monopolistic competition - Oligopoly - Game theory - Pricing methods.
5	**Macro-Economic Environment** Macro-Economic Environment: National income concepts, measurement -In India - International Comparison - uses of National Income - difficulties in calculation - Nature and phases of Business cycle - Theories of Business cycle. Inflation - Demand pull and cost-push inflation - effects of inflation and control measures- Government Policies - Fiscal and Monetary Policy - External Sector Policies

Text Books:

1. Karl E. Case and Ray C. Fair (2015), "Principles of Economics", 3rd edition, Pearson Education.
2. Christopher R Thomas, S. Charles Maurice (2014) "Managerial Economics",10th edition, TaTa Mc Graw Hill.

Reference Books:

1. Craig H. Peterson and Cris W. Lewis (2005) "Managerial Economics", Pearson Education,
2. Michael R. Baye (2006) "Managerial Economics and Business Strategy", Mc.Graw Hill
3. Dominick Salvatore (2009) "Managerial Economics – Principles and worldwide application"6th edition, Oxford Higher Education.
4. Gregory N Mankiw (2012) "Principles of Economics" Cengage Learning.
5. Robert J Michaels (2011) "Economics for Managers- Transaction and Strategy" Cengage Learning.
6. William A Mc. Eachern A Indira (2012) "Macro Economics" A south Asian Perspective, Cengage learning.

MLSM 103	ACCOUNTS FOR MANAGERS	L	T	P	C
		4	0	0	4

Course Objectives:

1. To acquaint the students with the fundamental principles of financial, Cost &Management Accounting.
2. To enable the students to take decisions using management accounting tools.
3. To expose the students to financial management for making efficient investment decisions.

Course outcomes:

CO1: Understand the foundational principles and conventions of financial accounting and the process of preparing core financial statements.

CO2: Analyze financial statements using techniques like ratio analysis, funds flow, and cash flow analysis to assess a firm's financial health.

CO3: Apply marginal costing principles for CVP analysis and breakeven decisions, and understand the elements and methods of cost accounting.

CO4: Comprehend the scope of financial management, the role of a finance manager, and the different sources of business funds.

CO5: Evaluate financial decisions related to time value of money, cost of capital, capital structure, and working capital management.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	1	2	2	1	2	2
CO2	1	1	2	2	1	3	2
CO3	1	2	2	3	2	2	2
CO4	1	1	2	2	1	2	2
CO5	1	1	2	2	2	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Foundations of Financial Accounting** Book-Keeping and Accounting - Objectives of Financial Accounting - Branches of Accounting: Financial, Cost and Management Accounting - Accounting Conventions - Journal - Ledger- Trial Balance - Preparation of Trading, Profit and Loss Account and Balance Sheet - Capital and Revenue Expenditure- Deferred Revenue Expenditure - Capital and Revenue Receipts - Depreciation - Causes and need for depreciation - Different Methods of Calculating Depreciation - Depreciation Accounting.

2	**Financial Statement Analysis** Financial Statements Types of Financial Analysis - Techniques of Financial Analysis - Comparative Statements, Common Size Statements -Ratio Analysis - Profitability Ratios - Coverage Ratios - Turnover Ratios - Financial Ratios - uses and limitations of Ratio Analysis - Funds Flow Analysis - uses and limitations - Cash Flow Analysis - uses and limitations - Difference between funds flow and cash flow analysis.
3	**Marginal Costing and Cost Accounting** Marginal Costing -Cost Volume Profit Analysis - Breakeven Analysis - Key Factor - Profit Planning - Decisions involving Alternative Choices: Determination of sales mix, exploring new markets and Make or Buy decisions. Costing - Elements of Cost - Cost Accounting - Objectives - preparation of Cost Sheet (Problems) - Classification of cost - Cost Unit and Cost Centre - Methods of Costing - Techniques of Costing.
4	**Introduction to Financial Management** Nature and Scope of Finance - Finance Functions - Changing Role of Finance Manager - Objectives of Finance - Profit Maximization Vs Wealth Maximization - Major Financial decision making areas - Sources of Funds - Short-Term & Long-Term Funds.
5	**Advanced Financial Decision-Making** Time Value of Money - Cost of Capital - Calculation of Cost of Capital - Capital Structure - Theories of Capital Structure - Capital Budgeting - Dividend Policies - Working Capital Management.

Text Books:

1. Grewal T S (2016) Management Accounting, Sultan Chand & Sons Private Limited
2. Maheswari S.N (2014) Cost & Management Accounting, Sultan Chand.
3. Bhattacharyya (2012), Essentials of Financial Accounting, Prentice

Reference Books

- Anthony R.N, (2010) Management Accounting- Text and Cases, Irwin.
- Horngren T. Charles, (2000) Cost Accounting, Prentice Hall.
- Kaplan D (2012) Introduction to Financial Statement Analysis, Kaplan Group

MLSM 104	STATISTICS FOR DECISION MAKING	L	T	P	C
		4	0	0	4

Course Objectives:

1. To expose the students to various Statistical and Operations research tools for data analysis.
2. To enable the students to interpretation the results.
3. To facilitate them to take objective decisions based on the models.

Course outcomes:

CO1: Understand and apply measures of central tendency, variance, and probability distributions to analyze data sets.

CO2: Conduct various hypothesis tests including t-tests, F-tests, and ANOVA to compare means and analyze variance.

CO3: Utilize non-parametric statistical methods to test hypotheses when data assumptions are not met.

CO4: Perform **correlation and regression analysis** and undertake forecasting.

CO5: Solve **business problems** using linear programming, transportation, assignment, and game theory models.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	1	2	2	1	2
CO2	1	2	1	2	2	1	2
CO3	1	2	1	2	2	1	2
CO4	1	2	1	2	2	2	2
CO5	1	2	1	2	2	2	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Descriptive Statistics and Probability** Measures of Central Tendency: Arithmetic Mean, Weighted Arithmetic Mean, Mean, Median Mode - Measurement of Variance: Range, Quartile deviation, Average deviation, Standard deviation, Coefficient of variance - Probability: Concept and theorems, Binomial, Poisson and Normal distribution - Determinate of Confidence interval
2	**Hypothesis Testing and ANOVA** Hypotheses testing: Errors in testing - one tail & two tail testing - one sample t test and two sample t tests - paired t test - F test - ANOVA: one way and two way.

3	**Non-Parametric Statistics** Non-Parametric statistics: Sign test, Runs test - Chi Square test - Mann Whitney - Wilcoxin test - Krushal Wallis - Friedman tests - Spearman' s Rank Correlation.
4	**Correlation, Regression, and Multivariate Analysis** Pearson Correlation and Regression analysis - Basics of Multivariate Analysis: Factor analysis - Cluster analysis - Discriminant Analysis - Multiple Regression - Multiple Analysis of variance.
5	**Operations Research Models** Linear programming: Problem formation, Graphical Method, Simplex - Transportation: Basic feasibility solution, Optimization Methods - Assignment - Game Theory: Saddle point, Dominance and Mixed strategy.

Text Books:

1. Sharma J. K, (2012) Operations Research: Theory and Application, Macin
2. Gupta S. P, (2006) Statistical Methods", Sultan Chand & Co., New Delhi.
3. Mustafi C. K, (2008) STATISTICAL METHODS IN MANAGERIAL DECISIONS

Reference Books:

1. Levin, I Richard, (2006) Statistics for Managers, Prentice-Hall, India.
2. Siegal Sidney and Castellan N. John, (1988) Non-Parametric Statistics for the Behavioural Sciences, McGraw Hill College, India.
3. Hair Joseph and Anderson Rolph (2010) Multivariate Data Analysis, Prentice Hall, India.
4. Anderson R David et. al., (2009) South-Western College Pub Quantitative Methods For Business South Western College, India.

MLSM 105	PRINCIPLES OF MANAGEMENT	L	T	P	C
		4	0	0	4

Course Objectives:

1. To understand about various factors that are having impact on the functioning of business
2. To study the impact of international factors that influences the business
3. To know about the important bilateral and multi-lateral economic cooperation agreements

Course outcomes:

CO1: Understand the fundamental concepts of international business, including different modes of entry and the role of major global institutions.

CO2: Analyze the influence of the socio-cultural and technological environments on international business operations.

CO3: Comprehend the complexities of the international financial system, foreign exchange markets, and foreign exchange risk management.

CO4: Evaluate the impact of the **political and legal environment** on multinational corporations and global business.

CO5: Examine the various forms of **regional economic cooperation and integration** and their implications for international trade.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	3	2	3	2	3
CO2	3	3	2	3	2	3	2
CO3	2	1	3	3	2	2	3
CO4	2	3	3	2	3	2	2
CO5	3	3	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to International Business** Basics of International Business, Modes of entry in to International Business; Frame work for analyzing international business environment; Institutional support to International Business-- UNO, IMF, World Bank; UNCTAD; WTO.
2	**The Socio-Cultural and Technological Environments of International Business** Factors affecting Socio-Cultural environment, Impact of Socio-Cultural environment on Business, Factors affecting Technological environment, Impact of Technological environment on Business, International Technology Transfers - importance and types, Foreign Technology Acquisition.

3	**The Global Financial and Economic Environment** Economic Environment-- International financial system, Foreign Exchange Markets: Determining exchange rates; Fixed and flexible exchange rate system; Participants in the Foreign exchange markets; Cash and Spot exchange market; Exchange rate quotes; LERMS; Factors affecting exchange rates – spot rates, forward exchange rates, forward exchange contracts; Foreign Exchange Risk: Transaction exposure, translation exposure and economic exposure, Management of exposures.
4	**Political, Legal, and Corporate Environment** Political and legal environment - Legislature, Executive, Judiciary - Multinational Corporations: Conceptual Frame work of MNCs - MNCs andHost and Home Country relations - Foreign investment flows and barriers. Ecological issues.
5	**Regional Economic Integration and Cooperation** Regional Economic Co-operation and Integration between Countries; Different levels of integration between Countries; European Union, NAFTA, ASEAN, EFTA, SAARC, SAPTA, The ANDEAN community, MERCOSUR.

Text Books:

1. F.Adhikary, Manab, Global Business Management, Macmillan, New Delhi
2. Black and Sundaram: International Business Environment, PHI New Delhi.
3. F. Buckley, Ardin: The Essence of International Money, PHI New Delhi

Reference Books:

- Bhattacharya, B: Going International Response Strategies for Indian Sector, Wheeler
- Gosh, Biswanath, Economic Environment of Business, South Asia Book, New Delhi
- Letiche, John M: International Economics Policies and Theoretical Foundations, Academic Press, New York
- Tayeb, Monis H: The Global Business Environment – An Introduction, Sage Publication, New Delhi

MLSM 106	IT TOOLS AND TECHNIQUES FOR LOGISTICS & SCM	L	T	P	C
		4	0	0	4

Course Objectives:

1. To understand the critical role and applications of Information Systems Tools
2. To enable the students with technological advancements
3. To achieve operational excellence with the business tools and techniques

Course outcomes:

CO1: Understand the fundamental concepts of Management Information Systems (MIS), including their evolution, design, and key components.

CO2: Differentiate between MIS and other decision support systems, such as DSS, AI, and expert systems, and evaluate their role in managerial decision-making.

CO3: Explain the role of computers and communication technologies in MIS, including networking concepts like LANs and WANs, and their relevance to global business.

CO4: Analyze the application of **functional information systems** across various business departments and understand the concept of Enterprise Resource Planning (ERP).

CO5: Grasp the principles of **client/server computing and e-commerce**, including digital networks, EDI, and the strategic applications of the internet.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	3	3	2	2	3
CO2	3	3	2	3	3	3	2
CO3	2	1	2	3	3	3	3
CO4	2	3	3	3	3	2	2
CO5	2	2	2	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Fundamentals of Management Information Systems** Concept of Management Information System: Concepts of Information System and Management information systems- Information System design and development- Implementation testing and conversion- Evolution and element of MIS - Definition - Characteristics and basic requirements of MIS - Structure of MIS- Approaches to MIS development- Computerized MIS- Pre- requisites of an effective MIS- Limitations
2	**MIS and Decision Support Systems** MIS and Decision support System (DSS): MIS Vs data processing -MIS and decision support system - MIS and information resource management - MIS and Operations Research- Executive information and decision support systems - Artificial intelligence and expert system - MIS in Indian organizations - Recent developments in information technology

3	**Information Technology and Global Integration** Computers and Communication: Information technology and Global integration -On-line information services - Electronic bulletin board systems - The internet, electronic mail, interactive video - Communication Channels - Communication networks - Local area networks - Wide area networks - Video conferencing- Relevance to MIS
4	**Functional and Inter-Organizational Information Systems** Functional Information systems: MIS for Research Production - MIS for Marketing - MIS for Personnel - MIS for Finance - MIS for Inventory- MIS for Logistics- MIS for Product Development- MIS for Market Development- Enterprise resource planning systems (ERP Systems) - Inter- organizational information systems - Value added networks - Networking.
5	**Client/Server Computing and E-Commerce** Client/ Server Computing: Communication servers - Digital networks - Electronic change and its applications. Electronic Commerce and Internet: E-Commerce bases - E- Commerce and Internet - M- Commerce- Electronic Data Inter-change (EDI)- Applications of internet and website management.

Text Books:

1. Anthony, Dear den& Bedford, Management Control Systems
2. N.P. Srinivasan & Gupta, Management Control Systems
3. O'Brien, James A, Management Information System, Golgotha Publications Ltd.
4. Sadagopan, S., Management Information System, Prentice Hall of India.

SECOND SEMESTER

Logistics and Supply Chain Management

MLSM 108	MARKETING MANAGEMENT	L	T	P	C
		4	0	0	4

Course Objectives:

1. To understand the basic concepts of Marketing.
2. To gain the knowledge of marketing management in the international perspective.
3. To develop marketing strategies for the dynamic international markets.

Course outcomes:

CO1: Understand the core concepts of marketing, its evolution, and apply segmentation, targeting, and positioning strategies using market research and decision support systems.

CO2: Gain insights into managing product mix, branding, product life cycle, and setting effective pricing strategies using various approaches.

CO3: Learn to design distribution channels, manage the promotion mix, and understand the framework and challenges of international marketing.

CO4: Formulate international marketing strategies involving product planning, pricing, and distribution channel management.

CO5: Design international promotional campaigns and manage sales efforts and promotional tools effectively in foreign markets.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	2	2	3	3	3	2
CO3	1	1	2	3	2	2	3
CO4	1	2	3	2	3	2	2
CO5	1	2	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Fundamentals of Marketing and Market Analysis** The Concept of marketing - Evolution of marketing: From transaction- based to relationship marketing- Marketing research and Decision support systems. Market Segmentation, Targeting and Positioning.
2	**Product and Pricing Strategies** Product Mix - Product management decisions, Branding and Packaging, Product Life Cycle strategies - New Product Development - Pricing considerations and approaches, Base Methods of setting Price, pricing strategies and Policies.
3	**Distribution, Promotion, and Introduction to International Marketing** Distribution channels and physical distribution. Marketing communication and Promotion mix Strategies. Nature of international marketing: meaning, Framework for International Marketing-Barriers for International Marketing

4	**Strategic International Marketing Decisions** Marketing Decisions: product Planning, Designing and Development for international markets-Pricing Decisions: Pricing Strategies and Price setting For International Markets. Distribution: Channel Management and Physical distribution.
5	**Promotion and Sales Management in International Markets** Management in International Marketing. Promotion: International Advertising Programs, Sales Management and Sales Promotion for Foreign Markets.

Text Books:

1. Philip Kotler, Marketing Management- The South Asian Perspective, Pearson Education
2. Warren J. Kegan: Global Marketing Management' Pearson Education
3. Svend Hollensen: Global Marketing: A Decision-Oriented Approach- , Pearson Education.
4. Ramasamy, Namakumari: Marketing Management, McMillan Publishers
5. Saxena: Marketing Management (Tata McGraw-Hill) International

MLSM 109	HUMAN RESOURCES MANAGEMENT	L	T	P	C
		4	0	0	4

Course Objectives:

1. To provide a thorough understanding of the HRM Practices from Indian Perspective.

Course outcomes:

CO1: Understand the nature, objectives, functions, and emerging trends in HRM, including the roles of HR managers and strategic and international HRM perspectives.

CO2: Learn the process of HR planning, job analysis, recruitment, selection, and placement, along with succession and promotion planning.

CO3: Understand the significance of HRD, training methods, competency mapping, performance appraisal techniques, and career development.

CO4: Analyze wage and salary administration, statutory benefits, quality of work life, and strategies for employee retention and performance management.

CO5: Gain knowledge of industrial relations, grievance handling, dispute resolution, collective bargaining, and trade union functions and evolution.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	1	2	3	3	3	2
CO3	1	1	2	3	2	2	3
CO4	1	2	2	2	3	2	2
CO5	1	2	2	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Human Resource Management** Introduction: Nature and Scope, Objectives and Functions of HRM. Role and responsibilities of Human Resource Manager, Concept of International HRM and Strategic HRM, Trends in HRM, Challenges faced by HRM.
2	**Human Resource Planning and Acquisition** Human Resource Planning: Meaning, Process of HRP- Job Analysis- Job Evaluation- Job Description- Job Specifications- Methods of Recruitment- Selection- Concept of Induction, Placement, Promotions and Succession Planning.

3	**Human Resource Development** Human Resource Development: Meaning and Importance of HRD- Competency Mapping-Training: Need and Objectives, Methods of Training- Career Planning and Development-Performance Appraisal-Techniques of Performance Appraisal.
4	**Compensation Management and Employee Welfare** Compensation and Welfare Measures: Wages and Salary Administration: P.F., ESI Schemes-Quality of Work Life Quality Circles- Health and Safety measures-Absenteeism- Employee Turnover, Employee Retention and Performance Management.
5	**Industrial Relations and Labour Management** Management of Industrial Relations: Objectives and Importance of Industrial Relations- Prevention and Settlement of Industrial Disputes, Grievance Redressal - Trade Unions: Evolution and responsibilities, Collective Bargaining and Worker's Participation in Management.

Text Books:

1. Rajeesh Viswanathan, Strategic Human Resource Management, . (1st Ed). Himalaya Publishing House. Mumbai
2. Biju Verkey & Garry Dessler, Human Resource Management, Pearson Publishers

MLSM 110	FINANCIAL MANAGEMENT	L	T	P	C
		4	0	0	4

Course Objectives:

1. The course provides an analytical framework of Financial Management.
2. It enables cross-border financing, valuation, and risk management analysis.
3. It analyses exchange rates, tax and legal issues and country risk.

Course outcomes:

CO1: Gain foundational knowledge of international finance, global financial markets, monetary systems, and international capital flows and investments.

CO2: Understand the types of foreign exchange exposures and use derivatives such as forwards, futures, and options to manage currency risk.

CO3: Analyze MNC capital budgeting, capital structure, and financing decisions considering international financial complexities.

CO4: Apply modern capital budgeting techniques and assess country risk in international investment decisions using economic indicators.

CO5: Understand and apply valuation models like CAPM and DCF for global financial decision-making, including estimating cash flows and discount rates.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	2	2	3	3	3	2
CO3	1	1	2	3	2	2	3
CO4	2	2	2	2	3	2	2
CO5	2	2	2	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to International Financial Management** Financial Management in a global perspective - IFM basic concept & challenges – International monetary system - Overview of international financial markets (Bond markets, Equity markets, Forex Market)- International Flow of Funds- International Portfolio Investments
2	**Foreign Exchange Exposure and Risk Management** Foreign Exchange Exposure and risk management- Exchange rate forecasting-volatility-Exposure types- Transaction Exposure, Translation exposure, Economic Exposure-Currency Derivatives-forward, futures & options-usage in firms as hedging tool.
3	**Financial Management of Multinational Corporations** Financial management of the MNC: Multinational Capital Budgeting – subsidiary Vs parent-MNC capital budgeting inputs and calculations- Multinational cost of capital - capital structure-factors influencing decisions- Long-term and Short-term financing decisions- Cash Management

4	**International Project Appraisal and Country Risk Analysis** International Project Appraisal – Traditional and Modern Techniques (Present value approach) Country Risk Analysis –importance-risk factors and assessment –risk ratings – incorporating risk in capital budgeting. Understanding global economic indicators.
5	**International Valuation Techniques** Introduction to valuation – Principles and practices – Tools and techniques – CAPM-Estimating discount rates-Estimating cash flows – Equity DCF models.

Text Books:

1. Jeff Madura, International Financial Management, 7th Edition, Thomson India.
2. Jeff Madura, International Corporate Finance, 8thEdition, SWcengage Indian Edition.

Reference Books:

1. Cheol S.Eun and Resnick, International Financial Management, SIE 4th Edition, TMH
2. Allen Shapiro, Multi-National Financial Management, Prentice-Hall of India
3. Apte, P.G. International Financial Management, Fourth edition, Tata McGraw-Hill
4. Aswath Damodaran, Corporate Finance -Theory and Practice, Wiley & Sons Inc,2ndEdn.
5. Aswath Damodaran, Investment Valuation, Wiley ,2nd Edition.

MLSM 111	RESEARCH METHODS FOR BUSINESS	L	T	P	C
		4	0	0	4

Course Objectives:

1. To familiarize students with the techniques and tools of Business Research.
2. To develop research report writing skills among students.
3. To introduce them to software packages widely used in research analysis.

Course outcomes:

CO1: Understand the meaning, objectives, and various types of research methods including exploratory, analytical, descriptive, and experimental.

CO2: Learn to define research problems, review literature, set objectives, and design a suitable research framework for data collection and analysis.

CO3: Gain insights into hypothesis formulation and testing, scaling techniques, and sampling methods used in research studies.

CO4: Develop skills in collecting and processing primary and secondary data, and writing structured research reports with academic rigor.

CO5: Apply statistical tools and software packages to perform hypothesis testing, correlation, regression, time series, and multivariate analysis.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	1	1	2	2	1	1
CO2	1	1	1	2	2	1	1
CO3	1	1	1	2	2	1	1
CO4	1	1	1	2	2	1	2
CO5	1	1	1	2	2	2	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Research Methodology** Overview of Research methodology: Meaning and purpose – Types of research: Exploratory, Analytical, Descriptive, Experimental and Case study.
2	**Research Design and Formulation** Research Focus: Problem definition, Selection and formulation – Review of Literature – Delimitation of the scope of the study – Setting Objectives – Definition of the concepts – Formulation of hypothesis – Preparation of Research design – Field work and Data collection.

3	**Hypothesis, Measurement, and Sampling Techniques** Meaning of Hypothesis – Types of Hypotheses – Sources of hypothesis – Testing of Hypothesis – Errors in Testing – Measurements – Scaling techniques and Scale Construction – Sample size – Sampling error – Sampling Methods and Applications.
4	**Data Collection and Report Writing** Data Collection: Primary and Secondary Data: Observation, Interview, Telephonic Interview, Questionnaire – Internal and External source of Secondary data – Construction of Interview schedule and Questionnaire – Pre testing and Pilot Study – Reliability and Validity tests – Processing and data analysis: Checking, Coding, transcription and tabulation of data – Report writing: Types of report, Contents of report, Styles and Conventions in report writing - Steps in drafting a report: Cover page, Introduction, Text, Bibliography and Appendix.
5	**Data Analysis Using Software Tools** Data Analysis using Computers: Software Packages – Parametric and Non-Parametric hypothesis testing – Correlation and Regression analysis – Time Series – Basic Multivariate analysis.

Text Books:

1. Krishnaswamy O R and Ranganatham M. (2014) Methodology of Research in Social Sciences, Himalaya Publication, India.
2. Kothari C R (2014), "Research Methodology: Methods and Techniques", New Age India.
3. Sekaran Uma and Bougie Roger (2010) Research Methods for Business

Reference Books:

1. Kerlinger Fred and Lee B Howard (1999), Foundations of Behavioural Research, S.Chand
2. Hatt K Paul and Goode J William, (2016), Methods in Social Research, Asia Law House.
3. Cooper R Donald and Schindler (1998) Pamela Business Research Methods Irwin Professional Publishing

MLSM 112	PRODUCTION AND OPERATIONS MANAGEMENT	L	T	P	C
		4	0	0	4

Course Objectives:

1. To introduce the production Process and Planning Process.
2. To Familiarize the concepts of Operations.
3. To expose the students to various models and techniques.

Course outcomes:

CO1: Understand the production system, process planning, productivity improvement, and forecasting techniques used in production decisions.

CO2: Learn methods for plant location, facility layout design, line balancing, and effective inventory and material handling systems.

CO3: Develop the ability to create aggregate production plans, understand MRP systems, and apply scheduling rules for efficient operations.

CO4: Apply tools like CPM, PERT, Gantt charts, and quality control techniques to improve project execution and product quality.

CO5: Understand maintenance planning, reliability analysis, and modern production strategies such as JIT, Six Sigma, TQM, Lean, and Kaizen.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	1	2	2	2
CO2	1	2	2	1	2	2	2
CO3	1	1	2	2	2	2	2
CO4	1	2	2	2	3	2	2
CO5	1	2	2	2	2	3	3

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Fundamentals of Production and Process Planning** System concept of production –Production system – Productivity – World class manufacturing- process planning and design- selection of process- value analysis/value engineering-make or buy decision- capacity planning and forecasting-Demand pattern- Forecasting model-selection of forecasting techniques-SMA-WMA-Simple exponential smoothing, Linear regression – Delphi method.
2	**Facility Location, Layout, and Material Management** Facility location; factors influencing plant location-break even analysis- facility layout-basic formats-classification- process layout, Product layout and Group technology layout- advantages and limitation- systematic layout planning (SLP) – Concept of CRAFT, ALDEP, CORELAP- Assembly Line – Line balancing concept-Concept of mass production. Material management and inventory control – Components of material management- Purchase model with instantaneous replenishment and without shortage – Manufacturing model without shortage – Material handling system- unit load concept- material handling principle-classification of material handling equipment.

3	**Production Planning and Scheduling** Aggregate sales and operation planning – Introduction – overview- Production planning environment. Material Requirement planning (MRP) - Product Structure/ Bill of material (BOM) – MRP System and overview-Production planning control-Planning phase-action phase- the control phase. Single machine scheduling (SMS); types of scheduling- concept of SMS-SPT rule to minimize mean flow time-minimizing weighted mean flow time – EDD rule to minimize maximum lateness-flow shop scheduling-Introduction to Johnson Problem – Extension of Johnson's rule.
4	**Project and Quality Management** Project management: CPM – PERT – GANTT chart/Time chart – work study-method study- time study – motion study. Quality control: Introduction- need to control quality- quality system- QC techniques- control charts for variables and attribute-Acceptance sampling – Operating characteristic curve – Single sampling plan.
5	**Maintenance and Modern Production Techniques** Maintenance - planning and control - Maintenance Objectives –Types – Basic reasons for replacement- reliability – reliability improvement- reliability calculations- Modern production management tools- JIT manufacturing - Introduction to Six sigma concepts- TQM- Lean manufacturing. -Kaizen.

Text Books:

1. Chary S, (2017) "Production and Operations Management", McGraw Hill Education
2. Chunawalla S A and Pate D R, (2016), "Production and Operation Management", Himalaya Publishing House.
3. Panneerselvam (2012) "Production and Operations Management", Prentice Hall India

Reference Books:

1. William J. Stevenson, (2017), "Operations Management", McGraw-Hill Education

MLSM 113	LOGISTICS AND SUPPLY CHAIN MANAGEMENT	L	T	P	C
		4	0	0	4

Course Objectives:

1. To study the importance of Logistics operations and its competitive edge.
2. To impart the knowledge on the procurement and vendor management for regular supply of goods.
3. To understand the various necessity of multi storage points and suitable delivery systems for making operations more efficient.
4. To study the nuances in invoice management and fulfilling customer orders.

Course outcomes:

CO1: Understand the scope, importance, and dimensions of logistics and supply chain management, including its role as a competitive advantage.

CO2: Analyze the role of logistics in procurement, vendor management, demand forecasting, and lean inventory systems like JIT and VMI.

CO3: Understand how logistics supports order fulfillment, market forecasting, and outbound distribution processes in a customer-focused environment.

CO4: Gain knowledge of export and import logistics procedures, documentation, customs, multimodal transport, and international logistics standards.

CO5: Explore advanced logistics functions such as 4PL services, intermodal logistics, perishables logistics, reverse logistics, and technology-enabled logistics.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	3	2	3	2	3
CO2	3	3	2	3	3	3	2
CO3	2	1	2	3	2	2	3
CO4	2	3	3	2	3	2	2
CO5	2	2	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Fundamentals of Logistics and Supply Chain Management** Concept and Scope: Concepts of Logistics and supply chain- Importance of Logistics in these days global Sourcing, Production and consumption- Dimension of Logistics: Macro and Micro aspects- Supply chain contours: Backward and forward linkages- Supply chain efficiency- Logistics as a competitive edge driver- Peculiarities and diversity of needs of Logistics.
2	**Logistics in Procurement and Inventory Management** Logistics and Procurement: Logistics as a Support function of Procurement and Vendor Facilitation - Logistics as interface function of Demand Forecasting, Global procurement, Tracking inward shipments and Storage Planning- Logistics as an enabler of Just-in-Time (JIT), Kanban (A scheduling system for lean inventory), Vendor Managed Inventory (VMI) for Vendors and the firm.

3	**Logistics in Marketing and Distribution** Logistics and Marketing: Logistics as a Support function of Order Fulfilment, Assembling & Labelling from Multi-storage points and Delivery- Logistics as an interface of Market forecasting, Stock level management, invoice or sales documentation, picking products, consolidation, transport-packaging, packing, marking, preparing outbound documentation and shipping out by loading into containers- customer facilitation tracking out-bound shipments.
4	**EXIM Logistics and Global Supply Chains** EXIM Logistics: Importance of Global Logistics- Export Logistics: Special Aspects of EX-IM logistics- Picking, Packing, Vessel Booking [Less-than Container Load(LCL) / Full Container Load (FCL)], Customs, Documentation, Shipment, Delivery to distribution centres, distributors and lastly the retail outlets- Import Logistics: Documents Collection- Valuing- Bonded Warehousing- Customs Formalities- Clearing- Distribution to Units- Security & Insurance- Multimodal Transport- UN International convention on MT of Goods- Terminal Networks: Types and Roles.
5	**Specialized Logistics and Value-Added Services** Invoice management, call centres, warehouse/distribution facilities - Carrier management- 4PL Specialties: Implementation Centre: Business process analysis/scoping, Development of all activities into an open systems framework- Product/Skill Centres: Supply chain engineering –4PL Value Added services: Knowledge Transfer, Business Development and Functional Support. Special Logistics: Inter-modal and Multimodal Logistics- Logistics for Trade Fairs and Events - Consolidation and Groupage- Logistics of Time Perishable and Logistics of Quality Perishables- GS1 System of world-wide supply-chain standards system- E-Logistics –Warehouse Logistics- Reverse Logistics.

Text Books:

1. Sahay B.S, Supply Chain Management for Global Competitiveness, Macmillan India Ltd., New Delhi.
2. Reguram G , Rangaraj N , Logistics and Supply Chain Management Cases and Concepts, Macmillan India Ltd., New Delhi.
3. Coyle, Bradi & Longby, T h e Management of Business Logistics, West Publishing Co. Martin Christopher, Logistics and Supply Chain Management
4. Paul R. Murphy Jr. and Donald Wood, Contemporary Logistics
5. Harvard Business Review, Managing Supply Chains
6. Alan E. Branch, Global Supply Chain Management and International Logistics
7. Simchi-Levi, Kaminsky & Simchi-Levi, Managing the Supply Chain: The Definitive Guide.

THIRD SEMESTER

Logistics and Supply Chain Management

MLSM 201	STRATEGIC MANAGEMENT IN LOGISTICS	L	T	P	C
		4	0	0	4

Course Objectives:

1. To understand how to develop a brand positioning for Asian brands.
2. Familiarity with the various qualitative and quantitative methodologies that are used to evaluate brand equity.
3. To critically analyze how to achieve growth through Strategic Asian Brand Management.

Course outcomes:

CO1: Explain the fundamental concepts, levels, and processes of strategic management and strategic planning in logistics.

CO2: Apply environmental scanning and internal assessment tools (SWOT, PEST, RBV, ETOP, Value Chain) to analyze logistics industries and propose strategic options.

CO3: Analyze corporate, business, and functional strategies (including Porter's Generic Model) to develop competitive advantage across logistics functions such as operations, finance, HR, marketing, and R&D.

CO4: Evaluate strategic alternatives using portfolio analysis models (BCG, GE, Shell, Hofer) and design implementation plans addressing structural, behavioral, and leadership challenges.

CO5: Develop comprehensive strategic evaluation and control frameworks (Balanced Scorecard, EVA, MVA, ERP, stakeholder analysis, and systems thinking) to ensure sustainable logistics management.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2	Mean Score
CO1	3	2	2	3	2	3	2	2.43
CO2	3	3	2	2	2	3	3	2.57
CO3	3	3	2	3	3	2	3	2.71
CO4	2	3	3	3	2	3	2	2.57
CO5	3	3	3	2	3	3	3	2.86
							Average Mean Score	2.63

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Strategic Planning and Management** Strategy: Introduction - Strategic planning and strategic management: Levels of strategic planning - Process of strategic planning - dimensions of strategic decisions - Strategic management process

2	**Environmental and Internal Analysis for Strategy** Environmental analysis: environmental scanning - Industry analysis - Competitive analysis -Internal analysis: Resource Based view, SWOT / PEST / ETOP analysis, Value Analysis. Strategy formulation / alternatives: Corporate strategies: grand strategies- stability, expansion, retrenchment and combination
3	**Strategy Formulation and Alternatives** Business level strategies: - acquiring core competencies – Porter's Generic Strategies Model – Functional level strategies: Production and Operations – Finance – HR – Marketing and R & D Strategies
4	**Strategic Analysis and Choice** Strategic analysis and choice: Portfolio Analysis-BCG Growth- Share Matrix, GE Business Screen, Shell's Directional Policy Matrix, Hofer's Product – Market Matrix Strategic implementation: Steps- structural issues- behavioral issues- strategic leadership.
5	**Strategy Implementation, Evaluation, and Control** Strategic evaluation and control: Balanced Score Card approach – EVA and MVA - ERP– Stake holder analysis – Systems thinking approach, Strategic control - Operational control – process and techniques.

References:

1. Azhar Kazmi, (2007), "Strategic Management and Business Policy – 3rd Editi on", Tata MC GRAW HILL New Delhi
2. R. Srinivasan, (2007), "Strategic Management - 3rd Edition", Prentice Hall India, N. Delhi
3. Thomson, Strickland and Pearson, (2005), "Strategic Management", Tata Mcgraw Hill, New Delhi
4. V.S. Ramasamy and S. Namakumari, "Strategic Planning-Formulation of corporate strategy", Macmillan India Pvt Ltd

MLSM 202	PROCUREMENT, STORAGE AND WAREHOUSE MANAGEMNT	L	T	P	C
		3	0	0	3

Course Objectives:

1. Provides know-how required to operate an efficient and cost-effective warehouse as also the role of inventory in warehouse management.
2. It provides guidance on using the latest technology, reducing inventory, people management, location and design and manage uncertainty risks of customer markets
3. Define the right structure of the supply network and inventory control and warehouse management system

Course outcomes:

CO1: Understand procurement principles, planning processes, and supplier selection strategies.

CO2: Explain warehousing concepts, processes, and the role of warehouse operations in the supply chain.

CO3: Apply inventory classification and control techniques, and evaluate warehouse layout and management systems.

CO4: Analyze storage technologies, equipment, warehouse costs, and assess ROI in warehouse operations.

CO5: Explain material handling processes, packaging, and safety regulations, and apply risk assessment and sustainable practices in warehouse management.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	2	1	2	2	3	2	3
CO2	2	2	2	3	3	3	2
CO3	2	1	2	3	2	2	3
CO4	2	3	1	2	3	2	2
CO5	2	2	2	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Procurement System and Supplier Management** Objectives of Procurement System, Principles of Procurement, History of procurement function: from administrative to strategic, value added role, Procurement Cycle, Procurement Planning, Purchasing Mix: Six Rights, Selecting the right supplier, Source of information and process, Supplier appraisal/vendor capability, Bidding process.

2	**Warehousing Concepts and Operations** Introduction to Warehousing Concepts -Role of warehouse-types of warehouse-warehouse location- Need for warehousing- Supply chain trends affecting warehouse -Warehouse functions- Role of warehouse manager-Warehouse process: e-commerce warehouse- Receiving and put away- Warehouse process - pick up preparation-Receiving - Pre- receipt - In- handling - Preparation - offloading - Checking - Cross-docking - Quality control - Put-away - Pick preparation - Pick area layout- Picking strategies and equipment -order picking methods - Warehouse processes-Replenishment to dispatch- Value adding services - Indirect activities - Stock management - Stock or Inventory counting - Perpetual inventory counts - Security - Returns processing - Dispatch.
3	**Storage Management and Inventory Control** Storage Management system - Storage Inventory Management - Functions of storage & Inventory - Classification of Inventory- Methods of Controlling Stock Levels- Always Better Control (ABC) Inventory system- Warehouse Management Systems (WMS) - choosing a WMS- the process implementation-cloud computing-Warehouse layout-Data collection-space calculation-aisle width- finding additional space.
4	**Storage Technologies and Warehouse Costing** Storage and Warehousing Information system -Storage Equipment: storage option - shuttle technology - very high bay warehouse - warehouse handling equipment - vertical and horizontal movement - Automated Storage/ Retrieval System (AS/RS)-specialized equipment- Technical advancements- Resourcing a warehouse-warehouse costs- Types of cost - Return on Investment (ROI) - Charging for shared-user warehouse service - Logistics charging methods Warehousing Information System (WIS)- Performance management- outsourcing decisions.
5	**Material Handling and Warehouse Safety** Material Handling and Warehouse safety Material handling- Product movement-concept- costs-product load activity–dispatch activity- unload activity-control device-impact of the computer technology- automatic identification-issues and trends in product transport-- Packaging - Pallet - Stretch wraps - Cartons - Labeling- Health and safety- Risk assessment - Layout and design - Fire safety- Slips and trips- Manual handling - Working at height - Vehicles - Forklift trucks - Warehouse equipment legislation. Warehouse safety check list- Warehouse Environment- Energy production - - Product waste - waste disposal - Hazardous waste- Sustainable warehouse Management.

Text Books:

1. Gwynne Richards (2014) Warehouse Management: A Complete Guide to Improve Efficiency and Minimizing Cost in the Modern Warehouse. The Chartered Institute of Logistics and Transport, Kegan page limited.
2. David E. Mulchy & Joachim Sidon (2008) A Supply Chain Logistics Program for Warehouse Management. Auerbachian Publications

References:

1. Bowersox, D.J., Closs, D.J., Cooper, M.B., & Bowersox, J.C. (2013). Supply Chain Logistics Management. (4 th ed.), McGraw Hill/Irwin.
2. Arnold, J.R., Chapman, S.N. (2012). The Introduction to Materials Management. (7th ed.), Prentice-Hall. Coyle, J.J., Jr. Langley, C.J., Novack, R.A, & Gibson, B.J. (2013). Managing Supply Chains: A Logistics Approach. (9th ed.), McGrawHill. Edward, F. (2002).
3. World-Class Warehousing and Material Handling. (International ed.), McGraw-Hill. Muller, M. (2011). Essentials of Inventory Management. (2nd ed.), American Management Association.

MLSM 203	SEA PORT AND AIRPORT MANAGEMENT FOR LOGISTICS	L	T	P	C
		3	0	0	3

Course Objectives:

1. To understand the nature of Port and Airport Management and their application in the Logistics Environment.
2. To understand the issues and deal with the peculiarities, diversity of the needs of the Port Logistics and their significance role in various Logistics Operation

Course outcomes:

CO1: Describe port types, structures, functions, and stakeholder roles.

CO2: Explain port operations, cargo handling processes, and performance metrics.

CO3: Understand port development phases and technological advancements in shipping.

CO4: Analyze port ownership structures, administrative frameworks, and reforms with a focus on India.

CO5: Explain air transport systems, cargo handling procedures, and information management.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	2	1	3	2	3	2	3
CO2	2	2	2	3	3	3	2
CO3	2	1	2	3	2	2	3
CO4	2	2	2	2	3	2	2
CO5	2	2	2	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Port Structure and Functions** Port Structure and Functions: Definition - Types and Layout of the Ports – Organizational Structure-Fundamental observations. Main functions and features of ports: Infrastructure and connectivity Administrative functions - Operational functions. Main services: Services and facilities for ships - Administrative formalities - Cargo transfer - Services and facilities for cargo - Additional “added value” service-Ports and their stakeholders like PHO, Immigration, Ship agents, Stevedores, CHA.
2	**Port Operations and Cargo Handling** Port Operations: Berths and Terminals - Berth Facilities and Equipment - ship Operation – Pre-shipment planning, the stowage plan and on-board stowage - cargo positioning and stowage on the terminal – Developments in cargo/container handling and terminal operation - Safety of cargo operations - Cargo security: Measuring and evaluating performance and productivity.

3	**Port Development and Shipping Technology** Port Development: Phases of port development - Growth in word trade - Changes in growth Development in terminal operation. Shipping technology and port: Ship knowledge Ship development and port development - Port time and ship speed - Other technical development affecting port.
4	**Port Development and Shipping Technology** Port Administration Ownership and Management Port ownership structure- Types of port ownership and administration – Organizations concerning ports - Boards governing the ports - Port management development Rise and fall of Ports - information technology in ports. Port ownership in Indian context: Acts governing the Ports in India - Port ownership structure in India. Port reform: Framework for port reform - Evolution of ports in a competitive world Alternative Port Management Structure and Ownership Models.
5	**Air Transport and Cargo Management** Air Transport: Introduction to Air Transport – Air Freight – IATA – Cargo Handling at Goods at Air Port – Information Management of AirCargo – System and Modules – Distribution of Goods.

Text Books:

1. Patrick M. Alderton. 2008, Port Management and Operations. Information Law Category, U.K.

Reference Books:

1. 1. World Bank. 2007, Port Reform Tool Kit. World Bank, Washington.
2. 2. Maria G. Burns. 2014., Port Management and Operations. CRS Press, U.K.
3. 3. Alan E. Branch. 2008, Elements of Shipping. Chapman and Hall, Fairplay Publications, U.K.
4. 4. De Monie. 1989., Measuring and Evaluating Port Performance and Productivity. UNCTAD, New York.

MLSM 204	INTERNATIONAL TRADE PROCEDURES AND DOCUMENTATION	L	T	P	C	TOTAL
		3	0	0	3	45 Hrs

Course Objectives:

1. To understand India's contribution in International Trade and Services
2. To know the Export and Import Documents used in Global Trade
3. To identify future opportunities and challenges of India's Foreign Trade

Course outcomes:

CO1: Understand the importance, trends, and structure of international trade with focus on India's position and trade policies.
CO2: Explain the process of starting an export organization, including product, market, and buyer selection, and registration procedures.
CO3: Identify various export documents and procedures related to shipment, payment, and compliance.
CO4: Evaluate sources of export finance, export promotion schemes, insurance, and risk management tools.
CO5: Describe import procedures, documentation, licensing schemes, and risk management practices for global sourcing.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	2	3	3	2	2	2	3
CO2	1	1	2	2	2	3	2
CO3	2	2	2	2	2	2	3
CO4	2	3	3	2	3	2	2
CO5	2	2	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**International Trade Overview** Need and importance of International Trade– Recent Trends in World Trade – Leading players – India's Foreign Trade – Commodity composition and Destination – India's Export and Import position in World merchandise trade and services –Project Exports- Deemed Exports -India's Foreign Trade Policy– India Trade Agreements and tariff benefits
2	**Starting an Export Organization** Starting an export firm – Selection of an export product – Market selection –Buyer selection - Registration procedure with GST and Customs and Excise Authorities and various Commodity Boards and Export Promotion Councils- IEC Number – Export Contract – Content – Global Rules as UCP 600 of ICC, INCOTERMS.
3	**Export Documentation** Need and Significance - Types of documents – Primary Documents – Regulatory Documents - Transport, Negotiation and Insurance documents – E- Databases and Documents – Terms of payment and Letter of Credit – Payment and Settlement of Exports and Imports

4	**Export Finance and Risk Management** Sources of Export Finance - Role of Commercial Banks - EXIM Bank – Developments Banks – ECGC - SIDBI and others – Export Promotion Schemes – Insurance for Export– Types Export Credit Insurance - Export Risk Management –Types of Export Risks – Risk Mitigation Methods
5	**Import Procedure and Documentation** Global sourcing – Types of Global Procurement – Tender – Negotiation – Contract and others – Customs regulations and import clearance formalities – Types of Import Licenses - Export Promotion Capital Goods Scheme (EPCG) license- Duty exemption scheme–Import formalities for EOUs and SEZs–CEZ- Import Risk Management.

Text Books:

- Aseem Kumar(2007) "Export and Import Management", Excel Books Publications, New Delhi
- David Stewart (2008)" International Supply Chain Management", Cengage Publications,
- Ram Singh (2008) "Export Management" Indian Institute of Foreign Trade, New Delhi

Reference Books:

- P. K. Khurana (2010): Export Management, Galgotia Publication, New Delhi
- Jeevanandam C (2002) "Foreign Exchange: Practices Concepts and control" Sultan Chand Publications, Delhi
- Foreign Trade Policy - Ministry of Commerce, Government of India.

FOURTH SEMESTER

Logistics and Supply Chain Management

MLSM 207	CONTAINERISATION AND MULTI MODAL TRANSPORT	L	T	P	C
		4	0	0	4

Course Objectives:

This subject is tailored to deliver theoretical and practical knowledge in handling methods, transportation modes and various conventions pertaining to carriage of cargo. Containerisation is taught in the perspective of the growing importance of transportation in world trade.

Course outcomes:

CO1: Understand the concept of containerization, types of containers, major trade routes, terminal planning, and container distribution systems.

CO2: Learn about cargo types, stowage practices, handling equipment, packaging methods, and international classifications including dangerous goods under the IMDG Code.

CO3: Understand the evolution, components, and strategies of multimodalism and its advantages in global trade logistics.

CO4: Analyze the operations of various transport modes (sea, road, rail, air), container consolidation processes, and logistics infrastructure like ICDs, CFS, and SEZs.

CO5: Gain knowledge of global legal frameworks and conventions governing multimodal transport, cargo liability, and safe handling of goods.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	2	2	3	3	3	2
CO3	1	1	2	3	2	2	3
CO4	1	1	3	2	3	2	2
CO5	1	2	2	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Containerization** Basic concepts of Containerisation :Meaning - Major Container Trades - Container Operators - Container Ships - Terminal- Consideration of Container Terminal Planning - Container Distribution – Container types - ISO Container Dimension by types - Non- Containerisable cargo - Features of Containerization - Equipment for non-containerisable cargo.
2	**Cargo Handling and Packaging** Cargos: International Trade Distribution - Stowage: Meaning - Stowage of cargo – Factor Consideration - Types of cargo - Characteristics - Cargo and Container handling equipment - Types of Packing- Marking of cargo - Dangerous Cargo - IMDG Code –Classes.
3	**Fundamentals of Multimodal Transport** Multi modalism: Multi-modal Trade Routes - Evolution - Basic Intermodal System - Modal Interface Factors outline why shippers favour Multi-modalism - Factors in Development Features -Multi-Modalism Strategy – Components.

4	**Multimodal Transport Operations and Stakeholders** Physical multi modal operations: Liners - Tramps - Specialized Vessels - Terms - Road transport vehicle – Road Transport Weight and Measurement - Rail Transport Vehicle and Equipment – Air Transport - Ports - LCL - FCL - NVOCC - Freight forwarders - Consolidator - ICD CFS- Free Trade Area - SEZ - Factors affecting mode and route choice.
5	**International Conventions on Multimodal Transport** Conventions relating to multimodal transport: Cargo Liability Convention: International Conventions relating to Bill of Lading (The Hague and Hague/Visby Rules (Appendix 8) - Hamburg Rule - Convention relating to Through Transport operation by Land, Rail, Air - Conventions relation to Dangerous Cargo - Carriage of Perishable Goods - International Convention for safe containers1972 (CSC).

Text Books:

1. Alan E Branch & Michael Robarts (2014) Branch's Elements of Shipping, 9th Edition, Routledge Publication.
2. Claus, Hyldager (2013) Logistics and Multi-modal Transport. 2013 Edition, Institute of Chartered Shipbrokers.

Reference Books:

1. Hariharan, K. V. (2002) A Text Book on Containerization and Multimodal Transport. Shroff Publishers and Distributors: New Delhi.
2. Hariharan, K. V. (2002) Containerization, Multimodal Transport and Infrastructure Development in India. 5th edition, Shroff Publishers and Distributors Private Ltd.,

MLSM 208	SUPPLY CHAIN RISK MODELLING AND MANAGEMENT	L	T	P	C
		3	0	0	3

Course Objectives:

As the nature of supply chains evolves with increasing globalization, consolidation and just in time inventories, the amount of risk continues to increase. This course enables the students to get an insight on valuable perspectives on supply chain vulnerabilities. With emphasis on data, models and modelling systems the students can analyze supply chain planning problems.

Course outcomes:

CO1: Understand integrated supply chain planning, modeling systems, and the role of data in supply chain and demand management decisions.

CO2: Apply linear and network programming techniques to model and solve resource allocation and supply chain optimization problems.

CO3: Use advanced optimization techniques and simulation models to support decision-making in supply chain design, competitive analysis, and inventory management.

CO4: Analyze the sources and impact of risk in supply chains and explore agile, globalized, and cost-effective strategies to manage them.

CO5: Identify various types of supply chain risks, assess their impact, and develop structured, integrated approaches for risk mitigation and response.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	3	2	3	2	3
CO2	3	3	2	3	3	3	2
CO3	2	1	2	3	2	2	3
CO4	2	3	3	2	3	2	2
CO5	2	2	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Supply Chain Planning and Data Integration** Supply Chain Management - Integrated Planning and Models - Supply Chain Models & modeling Systems – Supply Chain Decision Databases – Data Aggressions, Facility Data, Transportation Network data, Supplier Data – Integrating Supply Chain & Demand Management, Price & location Sensitive Revenue Curves.
2	**Fundamentals of Optimization in Supply Chains** Fundamentals of Optimization Models – Linear programming Modelling – Resource Allocation Model, Infeasible & Unbounded Models, Multipored Resource Allocation Model, Network Models., Properties of Linear Programming Models, Dual Linear Programming Model, Parametric 7 Sensitivity Analysis., Spread sheet and Multiple Objective, unified Optimization, Stochastic Programming. Mixed Integer Programming Modelling, Distribution Centre Location Models, Supply Chain Network Optimization Models, Optimization Software.

3	**Advanced Optimization and Simulation Models** Optimization Models for Competitive Analysis, Scenario Planning, Decision trees & Stochastic Programming, Supply Chain Strategies for managing Product Variety. Simulation Models & Systems – Deterministic Simulation, Monte Carlo Simulation, Simulation Software, Simulation Vs Optimization, Inventory Theory Models – Deterministic Models, Probabilistic Models, ABC Classification.
4	**Risk in Supply Chain Management** Risk and Management - Risk in the Supply Chain, Features of Risk, Decisions &Risk, Structure of Decisions, Decisions with uncertainty, Risk, ignorance, Managing Risk Structure of a Supply Chain, Increasing Risk, Trends in Supply Chain Management. Integration of supply Chains, Cost Reduction, Agile logistics, E – Business, Globalization, Outsourcing, Changing practices in Logistics. Approaches to Risk Management.
5	**Risk Identification, Analysis, and Response** Identifying Risks – Types of Risks, Tools for analyzing past events, Operations, Problems with Risk Identification, Measuring Risk, Consequences of Risk, Responding to Risk – Alternative responses, Defining Options, Choosing the best response, Implementation & Activation, A Network view of Risk – Shared Risks, Achieving an Integrated approach, Analyzing & responding to risks.

Text Books:

1. Gregory L. Schlegel, Robert J. Trent Supply Chain Risk Management: An Emerging Discipline (Resource Management) Hardcover – Import, 3 Nov 2014.
2. Donald Waters – Supply Chain Risk Management, Published by the Chartered Institute of Logistics & Transport, U.K
3. Jeremy F.Shapiro, Modelling the Supply Chain, Duxbury.

ELECTIVES

LIST OF ELECTIVES				
Course Code	**Course Title**	**Credits**	**Marks**	**Soft Core**
MLSM 301	Applied GIS and Spatial Data Analytics	3	100	S
MLSM 302	Public Private Partnership And Port Development	3	100	S
MLSM 303	Modelling Techniques and it for Operations Management	3	100	S
MLSM 304	Customer Relationship Management	3	100	S
MLSM 305	Inventory Management & Material Requirements Planning	3	100	S
MLSM 306	Distribution Management for Global Supply Chain	3	100	S
MLSM 307	Enterprise Resource Planning	3	100	S
MLSM 308	Package and Transportation	3	100	S
MLSM 309	Warehousing and Distribution Management	3	100	S
MLSM 310	Material handling	3	100	S
MLSM 311	Third part service providers	3	100	S
MLSM 312	Procurement and negotiation skills	3	100	S
MLSM 313	Logistics Documentation Procedure	3	100	S
MLSM 314	Handling Dangerous and Hazardous goods	3	100	S

MLSM 301	APPLIED GIS AND SPATIAL DATA ANALYTICS	L	T	P	C
		3	0	0	3

Course Objectives:

1. To understand the critical role and applications of Information Systems Tools
2. To enable the students with technological advancements
3. To achieve operational excellence with the business tools and techniques

Course outcomes:

CO1: Explain the principles, components, and functions of GIS

CO2: Identify and acquire GIS data from various sources using appropriate input methods.

CO3: Differentiate and apply spatial and attribute data models and database management systems

CO4: Perform GIS data analysis using spatial queries, overlays, and advanced techniques.

CO5: Apply GIS in real-world scenarios including business, environment, and emergency systems.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	3	2	2	3	3	3	2
CO3	2	2	2	3	2	2	3
CO4	2	3	3	2	3	2	2
CO5	2	2	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Fundamentals of GIS** GIS -Definition - Principles - Concepts -Components of GIS, Functions of GIS, Uses of GIS; Important GIS Vendors - ESRI - ArcGIS, MAPINFO, GEOMEDIA - Open source GIS-QGIS
2	**GIS Data Sources and Input Methods** Data sources (Open Source for Vector data - GLCF, Google Earth, Bing Maps, Bhuvan for Raster data) Data acquisition from data sources - (Topographic, Cartographic, remotely sensed, Census, other records and Surveys). Data input - Scanning, Registration, Digitizing, Editing.
3	**GIS Data Models and Database Management** GIS data- Spatial and Attribute data. Data types- spatial, attribute, topology - Spatial data models - Raster and vector - advantages and disadvantages Data conversion. R2V, V2R. shp, dxf etc., Attribute data models - Hierarchical, relational and network. Database Management Systems: types -merits and demerits.

4	**GIS Data Analysis Techniques** GIS data analysis - Query (onscreen query, attribute query, spatial query) Classification, reclass, Overlay, Buffer, interpolation Advanced analysis - Network analysis, Terrain analysis, Morphometric analysis, creation of TIN and DEM and multi criteria evaluation (MCE)
5	**GIS Applications in Real-World Scenarios** GIS Application: GIS as a Decision Support System, GIS for Business solutions, application of GIS in Land Information System and site suitability analysis, probability analysis, Location and Network analysis Application of mapping in Retail business and international trade. Tracking. Environmental Management, coastal management, Emergency Response System.

Text Books:

1. Burrough P.A. Principles of Geographic information Systems for Land Resource Assessment Oxford University Press, New York, 1986
2. Aronoff S. Geographic Information Systems: A Management Perspective, DDL Publication Ottawa, 1989.
3. Chang, & K.-T. (2008). Introduction to geographic information systems. Boston: McGraw-Hill.

Reference Books:

1. Davis, B. E. (2001). GIS: A visual approach. Albany, NY: Delmar Thomson Learning.
2. Fraser Taylor D.R. Geographic information Systems. Pergamon Press, Oxford, 1991.
3. Maquire D.J.M.F. Goodchild and D.W. Rhind (eds.). Geographic information Systems: Principles and Application. Taylor & Francis, Washington, 1991.
4. Mark S Monmonier. Computer-assisted Cartography. Prentice-Hall, Englewood Cliff, New Jersey, 1982.
5. Peuquet D.J and D.F. Marble, Introductory Reading in Geographic Information Systems. Taylor & Francis, Washington, 1990.
6. Star J and J. Estes. Geographic Information Systems: An Introduction. Prentice Hall, Englewood Cliff, New Jersey, 1994.

MLSM 302	PUBLIC PRIVATE PARTNERSHIP AND PORT DEVELOPOMENT	L	T	P	C
		3	0	0	3

Course Objectives:

To introduce the unique characteristics, models, financial approach, institutional and legal framework and lessons learned from the PPP projects.

Course outcomes:

CO1: Understand the fundamentals, models, evolution, and policy framework of PPPs, including the Indian scenario and key challenges.

CO2: Identify, allocate, and mitigate risks in PPP projects, and evaluate financial structures, funding sources, and cost components.

CO3: Analyze the legal, contractual, and regulatory mechanisms involved in PPP projects, including concession arrangements and independent regulation.

CO4: Gain insights into the characteristics and commercialization of infrastructure, its environmental and social impact, and related policy frameworks.

CO5: Study major PPP initiatives in Indian ports and evaluate different port management models and project outcomes.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	2	2	3	3	3	2
CO3	1	1	2	3	2	2	3
CO4	2	2	2	2	3	2	2
CO5	2	2	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Public Private Partnership (PPP)** Introduction to Public Private Partnership: Definition - History - Roles - Benefits - Output-based approach - PPP and Privatization- PPP Models - Indian Scenario - Stumbling Blocks - Government initiative – Policy framework - Partnership architecture - Procedural network - Institutional structure.
2	**Risk Management and Financial Approach in PPP** Risk Identification and Financial Approach: Risk: Identification - Mitigation - Allocation. Financial Approach: General Factors Deciding determinants - Financial involvements - Sources and tools – Cost components and financing sequence.

3	**Contractual, Legal, and Regulatory Framework** Contractual, Legal and Regulatory Framework: Contractual Framework: Concession contract's Features - Concession contract and a Commercial contract - Concession arrangement - Critical issues – Unsolicited proposals - Contractual Structure. Legal Framework: Existing legal framework Infirmities. Regulatory Framework: Regulatory body - Functions Contracting out regulatory functions - Regulation by contract - Indian Scenario – Independent regulators.
4	**Infrastructure Development and PPP** Infrastructure: Salient Features - Importance - Types - Commercialisation of Infrastructure - Infrastructure and Environment - Infrastructure and the poor- Policy framework Indian Scenario - Phases of project development - Slow progress.
5	**PPP in the Indian Port Sector** Indian Port Sector and PPP projects: Indian Ports: Major ports - Corporate ports - Non-major ports - Changing Trends Port Management Models. Indian Ports and PPP: Nhava Sheva International Container Terminal - Kakinada Deep Water Port - Gangavaram Port.

Text Books:

1. JOSHI, R. N. (2013) Public Private Partnership in Infrastructure: Perspectives, Principles and Practices. Vision Books: New Delhi.
2. Asian Development Bank (2008) Public-Private Partnership Handbook. ADB: Manila.

Reference Books:

1. Asian Development Bank (2012) Public - Private Partnership Operational Plan 2012 - 2020. ADB: Manila
2. World Bank (2007) Port Reform Tool Kit. World Bank: Washington. Evolving Perspectives in the Development of Indian Infrastructure Vol. I&II. Orient Blackswan Private Limited: Hyderabad, India.

MLSM 303	MODELLING TECHNIQUES AND IT FOR OPERATIONS MANAGEMENT	L	T	P	C
		3	0	0	3

Course Objectives:

To help students to understand the modelling techniques like business modelling, Linear programming, Decision trees, Dynamic programming and IT in operations management. To learn the features of Enterprise Resource Planning To understand the significance of IT in operations Management

Course outcomes:

CO1: Understand the process and significance of modeling in decision-making under certainty and uncertainty using spreadsheet tools.

CO2: Formulate and solve linear and goal programming problems for effective decision-making in operations management.

CO3: Apply decision trees and scheduling algorithms for solving sequencing and job dispatching problems in operations.

CO4: Understand ERP system features and apply dynamic programming and simulation models to operational decision scenarios.

CO5: Analyze the role of IT in optimizing operations, and evaluate software tools used for project scheduling, logistics, and quality management.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	2	2	3	3	3	2
CO3	1	1	2	3	2	2	3
CO4	1	1	2	2	3	2	2
CO5	2	2	2	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Business Modeling** Introduction to Business Modeling: Modelling – meaning and process, Certainty and uncertainty in models, importance of understanding data before modelling, Modelling with spreadsheet in simple decision- making situations.
2	**Linear and Goal Programming Applications** Linear Programming: Application of LPP in operations management, Formulation of LPP, simplex method, duality, Sensitivity Analysis. Trans- shipment problems. Concept of Goal programming, Goal programming model formulation.
3	**Decision Trees and Scheduling Problems** Decision Trees: Concept, Application of Decision Trees in operations management. Sequencing problems: Concept, Application- Job Sheet Scheduling: Priority Dispatching rules, None-Delay schedule generation algorithm.

4	**ERP Systems and Advanced Modeling Techniques** Concept and Introduction- Salient features of ERP systems offered by leading vendors, prerequisites and process of implementation. Dynamic Programming: Terminologies of Dynamic Programming- Applications in Capital Budgeting Problems, Reliability improving problems. Simulation- types of Simulation, Steps of stimulation, Flow Chart for single server queuing Model, Flowchart for Parallel Server queuing model.
5	**Role of IT in Operations Management** IT in Operations: Importance of IT in operations, IT as a competitive edge, Role of IT in – Design, Production Planning, Layout and Logistical operations- Software in operations: Introduction, characteristics and key features of software's for Project Scheduling, Logistics / Supply chain management and Quality management.

Text Books:

1. N.D. Vohra, (2009) "Quantitative Techniques in Management", McGraw Hill Education; 4th edition
2. Bal Krishnan, Render, Stair, (2012) "Managerial Decisions Modelling with Spreadsheets, Pearson; 3rd edition

Reference Books:

1. Chase, Aquilano, Jacobs, Agarwal, (2006) "Operations Management for Competitive Advantage" the McGraw-Hill; 11th edition
2. Gillette B.E, (1976) "Introduction to Operations Research" McGraw-Hill Inc., US
3. Taha Hatndy, (2010) "Operations Research" An Introduction- Pearson; 9th edition
4. Render, Stair, (2014) Jr "Quantitative Analysis for Management" Pearson; 12th edition

MLSM 304	CUSTOMER RELATIONSHIP MANAGEMENT	L	T	P	C
		3	0	0	3

Course Objectives:

To Understand the shifting focus from Conquest Marketing to Relation Marketing. To Analysis of how to maintain relationships with the customers in order to retain them. To help the students to Correlate the Customer Data Analysis

Course outcomes:

CO1: Understand the fundamentals, evolution, and strategic importance of CRM in enhancing customer relationships and stakeholder value.

CO2: Analyze customer data, profiles, perceptions, and behaviors to evaluate customer lifetime value and identify profitable segments.

CO3: Learn the key elements and processes of CRM and develop strategies for customer acquisition, retention, and defection prevention.

CO4: Understand the strategic planning and implementation of CRM, including tools like analytical and operational CRM, and the role of CRM managers.

CO5: Explore e-CRM solutions, data warehousing, data mining, and familiarize with CRM software applications for effective customer management.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	3	3	3	2	3	2	3
CO2	3	3	2	3	3	3	2
CO3	2	1	2	3	2	2	3
CO4	2	3	3	2	3	2	2
CO5	2	2	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Customer Relationship Management (CRM)** Definitions - Concepts and Context of relationship Management – Evolution of CRM Transactional Vs Relationship Approach – CRM as a strategic marketing tool – CRM significance to the stakeholders
2	**Customer Data and Behavioural Analysis** Customer information Database – Customer Profile Analysis - Customer perception, Expectations analysis – Customer behaviour in relationship perspectives; individual and group customer's - Customer life time value – Selection of Profitable customer segments
3	**CRM Process and Strategic Applications** Elements of CRM – CRM Process – Strategies for Customer Acquisition – Retention and Prevention of defection – Models of CRM – CRM road map for business applications.

4	**CRM Planning and Implementation** Strategic CRM planning process – Implementation issues – CRM Tools- Analytical CRM – Operational CRM – Call centre management – Role of CRM Managers.
5	**Technology in CRM – e-CRM and Software Tools** E - CRM Solutions – Data Warehousing – Data mining for CRM – an introduction to CRM software packages.

Text Books:

1. G.Shainesh, Jagdish, N.Sheth, Customer Relationships Management Strategic Prespective, Macmillan.
2. Alok Kumar et al, Customer Relationship Management: Concepts and applications

Reference Books:

1. H.Peeru Mohamed and A.Sahadevan, Customer Relation Management, Vikas Publishing
2. Jim Catheart, The Eight Competencies of Relationship selling, Macmillan India,
3. Assel, Consumer Behavior, Cengage Learning, 6th Edition.
4. Kumar, Customer Relationship Management - A Database Approach, Wiley India.
5. Francis Buttle, Customer Relationship Management: Concepts & Tools, Elsevier

MLSM 305	INVENTORY MANAGEMENT AND MATERIAL REQUIREMENTS PLANNING	L	T	P	C
		3	0	0	3

Course Objectives:

1. To introduce the fundamental nature of inventory from a financial, physical, forecasting, and material requirement planning standpoint.
2. To emphasize the significance of inventory management for smooth operation of business.
3. To introduce various inventory management and requirement planning techniques and tools to students.

Course outcomes:

CO1: Understand the concepts, types, functions, and strategic role of inventory management in achieving profitability and competitive advantage.

CO2: Apply classification techniques and inventory strategies to improve inventory turnover, reduce WIP, and minimize inventory waste.

CO3: Analyze and apply various deterministic and probabilistic inventory models to manage stock efficiently under certainty and uncertainty.

CO4: Understand the structure and purpose of MRP systems, including BOMs and inventory data management for production planning.

CO5: Explore JIT principles, vendor-managed inventory, and apply evaluation tools like AHP for assessing materials management and vendor performance.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	2	2	3	3	3	2
CO3	1	1	2	3	2	2	3
CO4	1	2	2	2	3	2	2
CO5	1	2	2	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Fundamentals of Inventory Management** Inventory Management: Inventory concept; need for inventory; types of Inventory, functions, use; Dependent and Independent Demand, Responsibility for inventory management. Strategic Inventory Management: Objectives and Importance of the inventory management function about Profitability, Strategy, customer satisfaction and Competitive Advantage.
2	**Inventory Control Techniques and Optimization** Inventory Control Techniques: Inventory classification and its use in controlling inventory, Setup time and inventory control, safety stock determination considering service level. Strategies to increase Inventory Turns, reduce through put time, Reduce WIP, eliminate waste, and reduce inventory level in service and manufacturing organizations.

3	**Inventory Models and Demand Forecasting** Inventory Models: Inventory models – Fixed Order Versus Fixed Interval systems – Developing Special Quantity Discount Models – Inventory Model for Manufactured Items – Economic Lot Size when Stock Replenishment is instantaneous – Non-instantaneous Replenishment Models – Inventory Models with uncertainty – Probabilistic Inventory Models – Models with Service Levels and Safety Stock.
4	**Material Requirement Planning (MRP) Systems** Material Requirement Planning Systems (MRP): Meaning, purpose and advantage of MRP, Data Requirements and Management – Updating Inventory Records – Bill of Materials, types of BOM, Modular BOM.
5	**Inventory Management in JIT and Performance Evaluation** Materials Management in JIT Environment: Zero inventory concept, Excess Inventory: A Roadblock to World-Class Manufacturing, Materials management in JIT environment, Vendor Managed Inventory, vendor relationship in JIT context. Performance: Evaluation of Performance of Materials Function - Criteria and methodology of evaluation, AHP for Vendor Evaluating and Selection.

Text Books:

1. Zipkin (2000), "Foundations of Inventory Management", McGraw-Hill Higher Education.
2. Seetharama L Narsimhan, Dennis W McLeavy, Peter J Billington,(1994) "Production Planning and Inventory Control"; Prentice Hall
3. J. R. Tony Arnold, Stephen N. Chapman (2010), "Introduction to Materials Management"

Reference Books:

1. Richard J. Tersine, (1993) "Principles of Inventory and Materials Management" Prentice Hall; 4th edition
2. Max Muller, (2011) "Essentials of Inventory Management", AMACOM; 2 editions
3. Plossl,(1994) "Orliky'sMRP"McGraw-Hill; 2 edition
4. J H Greene, Homewood III: Richard D Irwin, (1986) "Production and Inventory.

MLSM 306	DISTRIBUTION MANAGEMENT FOR GLOBAL SUPPLY	L	T	P	C
		3	0	0	3

Course Objectives:

1. To understand the strategic role of logistics management.
2. To study the important modes of logistics operations.
3. To Know supply chain techniques from an international perspective.

Course outcomes:

CO1: Understand the need, functions, and systems approach of physical distribution and analyze key marketing forces and trends impacting distribution strategies.

CO2: Learn the structure, functions, and design of marketing channels, and evaluate the role and selection of intermediaries in the distribution process.

CO3: Apply control techniques to monitor and evaluate distribution performance, and understand organizational structures and conflict management in distribution.

CO4: Understand the role of material handling in logistics and assess the benefits of outsourcing logistics functions to third-party and fourth-party providers.

CO5: Analyze the logistics needs of distribution channels and develop strategies to support channel members through effective logistics integration.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	1	2	3	3	3	2
CO3	1	1	2	3	2	2	3
CO4	1	2	2	2	3	2	2
CO5	2	2	1	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Physical Distribution** Need for physical distribution – functions of distribution –marketing forces affecting distribution. The distribution concept – Systems perspective. Physical distribution trends.
2	**Marketing Channels and Intermediaries** Channels of distribution: role of marketing channels – channel functions – channel structure –designing distribution channel –choice of distribution channels – factors affecting. Intermediaries: functions of intermediaries – types of intermediaries – variables in selecting channel members – motivating – training – evaluating channel members – modifying channel arrangements.

3	**Distribution Control and Organizational Structure** Distribution control & Evaluation: Distribution control – stages of control process – standards & goals– performance report - measurement – monitoring – corrective action. Organization for Distribution: Distribution Organization structure – Private & Public organizations - conflict resolution – rising costs& need for control – complexities of physical distribution
4	**Material Handling and Outsourcing in Logistics** Role of Material Handling in Logistics – Material Handling Guide lines – Material Handling Equipment and Systems – Automated Material Handling, Benefits of Logistics Outsourcing – Third Party Logistics – Fourth Party Logistics – Value Added Services
5	**Logistics Support to Distribution Channels** Role of Logistics in Distribution Channel – Distribution Channel Structure – Logistic Requirements of Channel Members – Logistics Support to Distribution Channel.

Text Books:

1. Kapoor Satish K., and Kansal Purva, 'Basics of Distribution Management: A Logistical Approach, Prentice Hall of India.
2. D K Agrawal, Distribution and Logistics Management: A Strategic Marketing Approach , Macmillan publishers India.
3. Alan Ruston, Phil Crouches, Peter Baker, The Handbook of Logistics and Distribution Management kogan page.
4. Kapoor Satish K., and Kansal Purva, 'Basics of Distribution Management: A Logistical Approach', prentice hall off India.
5. D K Agrawal, 'Distribution and Logistics Management: A Strategic Marketing Approach', Macmillan publishers India.

MLSM 307	ENTERPRISE RESOURCE PLANNING	L	T	P	C
		3	0	0	3

Course outcomes:

1. To make the students participate in planning and implementation of advanced enterprise wide systems and technologies in their career.
2. To grasp the activities of ERP project management cycle.
3. To understand the emerging trends in ERP developments

CO1: Understand ERP concepts, evolution, and implementation processes in modern businesses.

CO2: Analyze ERP system architecture, integration layers, and data management.

CO3: Apply ERP configuration strategies, data migration techniques, and maintenance practices.

CO4: Explain ERP integration with core business processes and advanced technologies like IoT and BI.

CO5: Evaluate ERP strategies for global operations, sustainability, and vendor selection

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	2	2	3	3	3	2
CO3	2	1	2	3	2	2	3
CO4	2	2	3	2	3	2	2
CO5	2	2	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Overview of ERP Systems** Overview of ERP Systems - Definition and concept - Evolution and importance of ERP in modern business - Problems of Systems islands – Need for system integration and interface. Process of ERP Implementation - Benefits and Challenges of ERP Implementation - ERP Modules and Functional Areas - Change Management - Preparing IT infrastructure
2	**ERP System Architecture and Integration** ERP System Architecture and Integration: Layers and components of an ERP system's architecture - Data Integration and Data Migration - Interfaces and APIs in ERP - Cloud-Based ERP Solutions - Mobile ERP and Remote Access - Data Security and Privacy in ERP – ERP Analytics

3	**ERP Implementation and Configuration** ERP Implementation and Configuration: ERP modules to align with organizational processes; data migration from legacy systems to ERP - Strategies for a successful ERP system launch - ERP Upgrades and Maintenance - System Stability and Data integrity during maintenance - ERP Implementation Case Studies
4	**ERP and Business Process Integration** ERP and Business Process Integration: Business Process Reengineering - Integration of SCM, CRM, HRM, F&AM - Challenges and Benefits of ERP in International SCM - Analytics and Business Intelligence (BI) in ERP - IoT and Industry 4.0 Integration with ERP - Cross-Border Logistics and ERP Integration - Cost Management and ERP in International Procurement - - ERP for International Transportation Management
5	**ERP Strategies for Global Business Operations** ERP Strategies for Global Business Operations - ERP System Evaluation and ROI Assessment - ERP Selection and Vendor Evaluation - ERP-enabled risk assessment and contingency planning - ERP Systems and Sustainability Role of ERP in managing sustainable supply chains

Text Books:

1. Alexis Leon (2014), ERP Demystified, 3rd Edn, McGraw Hill Education
2. Veena Bansal (2013), Enterprise Resource Planning: A Managerial Perspective, Pearson

Reference Books:

- Dimpi Srivastava (2020), ERP Systems, Dreamtech Press,
- Dr. Vinod Waiker (2021) ERP implementation Issues and Challenges, Notion Press
- Dimitris N. Chorafas (2018) Integrating ERP, CRM, Supply Chain Management, and Smart Materials, Auerbach Publications
- Carol A Ptak (2016) ERP: Tools, Techniques, and Applications for Integrating the Supply Chain, Second Edition (Resource Management) 2nd Edition, CRC Press

MLSM 308	PACKAGE AND TRANSPORTATION	L	T	P	C
		3	0	0	3

Course Objectives:

1. To understand the significance of transportation in the logistics process.
2. To know the importance of packaging and different types of packaging.
3. To understand the documents required for transportation of goods.

Course outcomes:

CO1: Understand the fundamentals of logistics, transportation types, associated costs, and the role of governmental bodies in regulating transportation, especially in international trade.

CO2: Analyze the principles and functionality of multimodal transportation, characteristics of various transport modes, and the operational aspects of ICDs and containerization.

CO3: Learn the functions, types, and requirements of packaging for various transport modes and understand the use of identification codes, barcodes, and EDI systems in logistics.

CO4: Evaluate sourcing decisions, transportation modes, design options, and trade-offs in supply chain networks with an emphasis on logistics planning and performance.

CO5: Gain practical knowledge of logistics processes in export and import activities including documentation, customs formalities, warehousing, and last-mile distribution.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	2	2	3	3	3	2
CO3	1	1	2	3	2	2	3
CO4	1	1	3	2	3	2	2
CO5	2	2	2	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Logistics and Transportation Systems** Introduction to elements of Logistics – Transportation and different types of transportation and its significance – Transportation cost – International Trade and modes of Transportations - Role of Ministry of Ports, Shipping and Waterways in Transportations.
2	**Multimodal Transport and Containerization** Basics of Transportation, Transportation Functionality and Principles; Multimodal Transport: Modal Characteristics; Modal Comparisons; International Air Cargo Transport; Coastal and Ocean transportation, Characteristics of shipping transport-Types of Ships. Containerization: Genesis, Concept, Classification, Benefits and Constraints; Inland Container Depot (ICD): Roles and Functions, CFS, Export Clearance at ICD; CONCOR; ICDs under CONCOR;

3	**Packing, Packaging, and Labeling in Logistics** Packing and Packaging: Meaning, Functions and Essentials of Packing and Packaging, Packing for Storage- Overseas Shipment- Inland- Transportation- Product content Protection, Packaging Types: Primary, Secondary and Tertiary- Requirements of Consumer Packaging, Channel Member Packaging and Transport Packaging - Shrink packaging – Identification codes, barcodes, and electronic data interchange (EDI)- Universal Product Code- GS1 Standards- package labels- Symbols used on packages and labels.
4	**Sourcing and Transportation Planning in Supply Chains** Sourcing and Planning Transportation Networks in Supply Chain: Sourcing decision in supply chain: Role of sourcing – in-house or outsource – Third and Fourth – Party Logistics providers – Supplier scoring and assessment – Transportation in Supply Chain: role- modes- performance characteristics – Logistics - Design options- role of IT- risk – Trade–offs in transportation design.
5	**Export and Import Logistics Operations** Special Aspects of Export Logistics: Picking, Packing, Vessel Booking [Less-than Container Load (LCL) / Full Container Load (FCL)], Customs, Documentation, Shipment, Delivery to distribution centres, distributors and lastly the retail outlets- Import Logistics: Documents Collection- Valuing- Bonded Warehousing- Customs Formalities- Clearing, Distribution to Units.

Text Books:

1. Bowersox, Closs, Cooper, Supply Chain Logistics Management, McGraw Hill.
2. Burt, Dobbler, Starling, World Class Supply Management, TMH.
3. Donald J Bowersox, David J Closs, Logistical Management, TMH
4. Pierre David, ―International Logistics‖, Biztantra.

Reference Books:

1. Sunil Chopra, Peter Meindl, Supply Chain Management, Pearson Education, India.
2. Liu, J., Supply Chain Management and Transport Logistics, Routledge, 2011.
3. Sinha, A. and Kotzab, H., Supply Chain Management: A Managerial Approach, Tata McGraw-Hill Education, 2011.
4. Sople, V.V., Supply Chain Management: Text and Cases, Pearson, 2011.

MLSM 309	WAREHOUSING AND DISTRIBUTION MANAGEMENT	L	T	P	C
		3	0	0	3

Course Objectives:

1. To provide in-depth understanding of Warehouse Management in Supply Chain.
2. To help the students understand various decision parameters for efficient warehouse Management.
3. To know the cost factors and performances in warehouse management.
4. To provide in-depth understanding of Distribution Channels in Supply chain and logistics.
5. To have a basic understanding of various modes of transportations and its uses.

Course outcomes:

CO1: Understand warehouse functions, types, strategies, layouts, and automation to improve operational efficiency and sustainability.

CO2: Analyze warehouse processes including receiving, put-away, picking, replenishment, and documentation for effective inventory management.

CO3: Evaluate warehouse costs, ROI, costing methods, performance metrics, and safety issues for better warehouse financial and operational control.

CO4: Understand distribution environments, channel roles, transaction and inventory flows, reverse logistics, and sustainability in distribution networks.

CO5: Examine characteristics, cost structures, and decision criteria for various transportation modes and carriers to optimize transport operations.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	1	2	3	3	3	2
CO3	2	1	2	3	2	2	3
CO4	1	2	2	2	3	2	2
CO5	1	2	1	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Warehouse Management and Strategy** Warehouse Management: Importance of Warehousing and Warehousing Functions, Types of Warehouses, Specialized Warehouse Services, Developing Warehouse Strategies, Establishing Warehouse Standards, Receiving and Stocking, Order Picking and Shipping. Sizing the Warehouse, Warehouse Layout, Stocking Inventory in Warehouse Locations. Warehouse Automation, Warehouse Management and Environmental Sustainability, Today's Warehouse Challenges. Case Studies and Latest Updates.

2	**Warehouse Operations and Processes** Warehouse Management Process: Receiving and Put Away, Picking Strategies and Equipment, Order Pick Method, Replenishment, Stock Counting, Cycle Counting, Return Processing and Dispatch, Documentations. Case Studies and Latest Updates
3	**Warehouse Costing and Performance Measurement** Warehouse Costs and Performance Management: Types of Costs in Warehousing, Return on Investment, Traditional vs Activity Based Costing, Logistics Charging Methods, Selecting Right Performance Measures, Traditional and New Productivity Matrices, Integrated Performance Model, Benchmarking and Balance Scorecard. Health and Safety issues in Warehousing. Case Studies and Latest Updates.
4	**Distribution Management and Channel Functions** The Distribution Management Environment: Defining the Distribution Function, Basic Supply Chain Distribution Formats, Alternative Distribution Channel Formats, Role of Distribution Channels, Service Outputs and Functions of Distribution Channels, Distribution Channel Transaction Flows, Distribution Channel Inventory Flows, Substituting Information for Inventory. Reverse Logistics, Sustainability in Distribution. Case Studies and Latest Updates.
5	**Transportation Modes and Carrier Selection** Various Modes of Transportation: Importance of Various Modes of Transport-Rail, Road, Water, Air, Pipeline with their Characteristics and Cost Structure, The Carrier Selection Decision, Determinants of Carrier Selection, Legal Classification of Carriers, Role of Couriers as Carriers. Transportation Costs - Fixed, Variable, Joint and Common Costs, Product Related & Market Related Factors Influencing Transport Cost. Case Studies and Latest Updates.

Text Books:

1. Gwynne Richards, Warehouse Management: A Complete Guide to Improving Efficiency and Minimizing Costs in the Modern Warehouse (Kogan Press)
2. David Frederick Ross, Distribution Planning and Control Managing in the Era of Supply Chain Management (Springer).

Reference Books:

1. David J. Bloomberg, Stephen LeMay &: Logistics, Prentice-Hall of India Pvt Ltd., Joe B. Hanna New Delhi,
2. Donald J. Bowersox & David J. Closs: Logistical Management, Tata McGraw Hill Publishing Co. Ltd, New Delhi
3. Satish C. Ailawadi & Rakesh Singh: Logistics Management, Prentice-Hall of India Pvt Ltd., New Delhi
4. Donald Waters: Logistics. Palgrave Macmillan, New York,
5. Sarika Kulkarni: Supply Chain Management, Tata McGraw Hill Publishing Co Ltd., New Delhi,

MLSM 310	MATERIAL HANDLING	L	T	P	C
		3	0	0	3

Course Objectives:

- To know the significance of material handling
- To understand the Process involved in material handing
- To identify the problems during the material handing process

Course outcomes:

CO1: Explain the purchasing and supply process, purchasing roles, and procurement policies.

CO2: Understand organizational structures for purchasing and evaluate centralized vs decentralized systems.

CO3: Apply principles of Integrated Materials Management and inventory control techniques.

CO4: Analyze inventory systems, vendor selection, legal aspects, and performance evaluation in purchasing.

CO5: Evaluate store layouts, stock verification, and the management of dead stock and materials handling.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	2	3	3	2	2	2	3
CO2	2	3	2	3	3	3	2
CO3	2	1	2	2	2	2	3
CO4	2	2	2	2	3	2	2
CO5	2	2	2	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Purchasing and Supply Process** The purchasing and supply process - Introduction to purchasing and SCM - Strategic supply management roles and responsibilities - Improving the procure to pay process - Approval, contract and purchase order preparation - Types of purchases - Purchasing policy and procedures -Policy overview - Purchasing policies Policy defining- Role and conduct of purchasing, Buyer supplier Relationship, operational issues- Purchasing procedures.
2	**Organizing the Purchasing Function** Organizing the purchasing function: Purchase function position within the organization structure, factors affecting purchasing position, reporting of purchasing function, organizing of purchasing, separating operational and strategic purchasing- advantages and disadvantages of centralized- decentralized purchasing, hybrid purchasing structure.

3	**Integrated Materials Management (IMM)** Concept of Integrated Materials Management (IMM) – Organizing for IMM – Types of Inventories – Inventory Problems in India. Codification – Computerization and Information Systems – Standardization and Variety Reduction – Value Analysis: ABC, VED, XYZ and other methods of Selective Analysis.
4	**Inventory Systems and Purchasing Practices** Q-Based Inventory System – P-Based Inventory System – S-S based Inventory System – Practical Inventory Models – Inventory Valuation. Purchasing – Source Selection – Vendor Rating – Purchase Budget – Systems – Tenders – Price Negotiations – Forward Buying – Purchasing Capital Equipment – Seasonal Goods – Special Items – Deferred Payment Schemes – Lending Institutions – Global Purchases – Government Buying – EGS & D – Rate Contract – Insurance – Legal Aspects in Purchasing – Evaluation of Purchase Performance.
5	**Stores and Materials Handling** Stores Layouts – Stores Accounting Procedures and Forms – Stock Verification – Practical Problems in Management of Dead Stocks – Surplus and Scraps – Evaluation of Stores Performance – Materials Handing and Transportation Management.

Text Books:

1. John Wiley, ―Global Operations & Logistics: Text & Cases-Dornier‖, Pearson Education, 2nd Edition 2013.
2. Gopalakrishnan, P & Sundaresan, M: Materials Management – An Integrated Approach; Prentice Hall of Indian Private Ltd.

Reference Books:

1. David Simchi-Levi, ―Designing & Managing Supply Chain-Concepts, Strategies‖, TataMcGraw- Hill, 8th Edition, 2000.
2. Ammer, D.S, Materials Management; Irwin.
3. Datta, A.K: Materials Management – Procedures, Text and Cases; Prentice Hall of India Private Ltd.
4.Gokaran, P.R: Essentials of Materials Management; Somaiya Publications.
5.Menon, P.G: Materials Management and O.R. In India; M.M.J. Publication.

MLSM 311	THIRD PARTY SERVICES PROVIDERS	L	T	P	C
		3	0	0	3

Course Objectives:

1. To study and understand the role of 3PL in the Logistics Industry.
2. To find out the need and emergence of 3PL, 4PL etc., in the logistics industry.
3. To understand 3PL and performance related issues in logistics and supply chain.

Course outcomes:

CO1: Understand the fundamentals of logistics services, the role of 3PL in outsourcing, e-commerce impact, selection criteria, and cost-benefit analysis of 3PL providers.

CO2: Analyze the various types of 3PL service providers, their roles in transportation, warehousing, logistics management, and the emergence of 4PL services.

CO3: Examine the 3PL market landscape, value-added services, key drivers, outsourcing contexts, and critical factors influencing 3PL selection including current industry challenges.

CO4: Identify different categories of 3PL providers, evaluate their advantages and disadvantages, and understand emerging trends shaping the future of 3PL in logistics.

CO5: Understand the benefits of 4PL, differences between 3PL and 4PL, and the strategic aspects of logistics including kitting, packaging, freight fulfillment, inventory, and reverse logistics management.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	1	2	2	3	2	3
CO2	1	2	2	3	3	3	2
CO3	1	1	2	3	2	2	3
CO4	1	2	2	2	3	2	2
CO5	1	2	1	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Logistics Services and 3PL Outsourcing** Logistics Services: Introduction – general approaches –detailed steps in the context of outsourcing and use of 3PL - E-Commerce and Emergence of 3 Party Logistics Services (3PL) – Selection of right 3PL – Cost benefit analysis of 3PL
2	**Roles and Types of Third-Party and Fourth-Party Logistics Providers** Role of Third-Party Logistics (3PL) Service Providers – Types of 3PL service providers – Transportation Carriers – Warehousing Providers – Logistics Management Providers – Emergence of 4PL service providers.

3	**Overview of Major 3PL Providers and Market Dynamics** Major 3PL Service Providers: Introduction – Overall 3PL Market – Broad Services and Type of Services – Value Added Services of 3PL – Key Derivers of 3PL: Introduction – Outsourcing context – Business derivers- Logistics derivers and drawback – the critical factors of choice: Current issues and influences: External and Internal outsourcing issues
4	**Classification of 3PL Providers and Future Trends** Standard 3PL Providers - Service Developer 3PL- Customer Adapter 3PL- Customer Developer 3PL: Advantages and Disadvantages of 3PL – Future of 3PL in Logistics Industry
5	**Emergence and Strategic Role of Fourth-Party Logistics (4PL)** Emergence of 4PL services: Benefits of 4PL (End-to-end Solution, Resource Management and Data analytics) 3PL Vs. 4PL, Kitting, Bundling, Packaging and Drop shipping- Logistics Strategy- Sourcing/ Fulfilment of Freight Strategy- Inventory Planning & Management Support- Management of Inbound, Outbound, and Reverse Logistics

Reference Books:

1. Changsen Zhang: Third Party Logistics Management, Logos-Verlag, 2005.
2. Alan Rushton, Steve Walker: International Logistics and Supply Chain Outsourcing: From Local to Global, Kogan Page Publishers, 2007.

MLSM 312	PROCUREMENT AND NEGOTIATION SKILLS	L	T	P	C
		3	0	0	3

Course Objectives:

1. To provide advance understanding about Procurement Management and Sourcing.
2. To help the students understand the processes in Effective Procurements & Sourcing.
3. To provide conceptual understanding for Vendor Selection for efficient SCM.
4. To provide an understanding for an integrated approach for Inventory Decisions.
5. To help the students understand the latest aspects of Global Sourcing

Course outcomes:

CO1: Understand sourcing vs procurement, purchasing cycles, sourcing strategies, and risk management.

CO2: Apply procurement processes including market analysis, buying methods, documentation, negotiation, and e-procurement.

CO3: Evaluate vendor selection, performance, quality management, and vendor relationships.

CO4: Align procurement with inventory management objectives, price volatility handling, and logistics coordination.

CO5: Analyze global procurement challenges, international trade laws, environmental concerns, and performance benchmarking.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	3	2	3	2	3
CO2	2	2	2	3	3	3	2
CO3	2	1	2	3	2	2	3
CO4	2	2	3	2	3	2	2
CO5	3	2	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Framework of Procurement Management** Framework of Procurement Management: Introduction to Sourcing, Sourcing v/s Procurement, Purchasing: Purchasing Cycle, 8 R's of Purchasing, Role of a Purchasing Manager, Risks associated with purchasing process and its mitigation, Placing Orders, Budgets and Expense Allocation, Establishing Concept and applications of Make or Buy Decision, Types and Methods of Sourcing in Retail, Centralized vs Decentralized Approaches, Single Sourcing vs Multiple Sourcing, Day-to-Day vs Long Term Sourcing, Case Studies and Latest Updates.
2	**Processes in Procurements** Processes in Procurements: Market Analysis and Supplier Research, Identifying Prime Sources of Suppliers' Information, Request for Proposal, Different Methods of Buying, Fundamental Steps of the Buying Process, Terms and Condition of Purchase, Buying Documentation, Negotiation in Procurement, Use of IT in Sourcing, Global Tenders and E-Procurement, Reverse Auctions, Overview of Global Purchasing, Case Studies and Latest Updates.

3	**Vendor Selection in Procurement** Vendor Selection in Procurement: Vendor Selection Process, Evaluation of Existing Vendors, Developing Vendor Performance Measures, New Vendor Development Process, Working with Suppliers to Manage Quality, JIT and TQM in Sourcing, Key Supplier Account Management, Vendor Relationship Development, Vendor Monitoring, Promoting SME suppliers. Case Studies and Latest Updates.
4	**Aligning Inventory Objectives with Procurement** Aligning Inventory Objectives with Procurement (7 Hours) What are the objective of purchasing management at strategic in alignment of Material Management with Supply Chain, Role of purchasing in Supporting Inventory Objectives, hedging vs. Forward Buying, Managing Price Fluctuation and Volatility in International Finance, Payment Modes, Matching Supply with Customer Demand, Managing Inward Logistics. Case Studies and Latest Updates.
5	**Global Procurement Management** Global Procurement Management: Global Trade Barriers, Dealing with International Suppliers, UNO and GATT conventions, Legal, Socio-Cultural Issues in International Buying, Environmental Issues & Green Purchasing, Industry Best Practices, Measurement of Sourcing Performance, Benchmarking in Retail Purchasing. Case Studies and Latest Updates.

Text Books:

1. Sollish, F. and Semanch, J. Strategic Global Sourcing: Best Practices, Wiley Publications
2. Chopra and Miendl, Supply Chain Management: Strategy, planning and operation, Pearson Books

Reference Books:

1. by Sherry R. Gordon, Supplier Evaluation and Performance Excellence: A Guide to Meaningful Metrics and Successful Results.
2. B S Sahay, Emerging Issues in Supply Chain Management (McMillan)
3. Alan Harrison, Logistics Management and Strategy (Pearson)

MLSM 313	LOGISTICS DOCUMENTATION PROCEDURE	L	T	P	C	TOTAL
		3	0	0	3	45 Hrs

Course Objectives:

1. To understand the significance of logistics in domestic and international trade.
2. To know the different documentation processes followed during the logistics process.
3. To identify the nuances of strategic logistics and documentation process.

Course outcomes:

CO1: Understand the essentials and legal framework of contracts relevant to supply chain management.

CO2: Identify and apply export-import classifications, licensing, and payment methods.

CO3: Comprehend and utilize key shipping and trade documentation and certifications.

CO4: Execute export-import procedures and ensure regulatory compliance effectively.

CO5: Analyze international trade policies and GST implications on logistics and supply chain operations.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	1	2	2	2	3	2	3
CO2	1	1	2	3	3	3	2
CO3	1	1	2	3	2	2	3
CO4	1	2	2	2	3	2	2
CO5	1	2	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction of Contracts and its Importance in Supply Chain** Introduction of Contracts and its Importance in Supply Chain: Essentials of a Contract, Void Agreements and Contingent Agreements, Performance and Discharge, Remedies for Breach and Quasi Contracts, Consideration and Legality of Object, Bailment and Pledge, Carriage of Goods, Indemnity and Guarantee. Overview of Contracts in Supply chain. Latest Updates and Case Studies.
2	**Preliminaries for Exports and Imports** Preliminaries for Exports and Imports : Classifications and Types of Export and Import, Export Licensing, Selection of Export Product, Methods of Exporting, Pricing Quotations, Payment Terms, Letter of Credit., Liberalization of Imports, Negative List for Imports, Categories of Importers. Latest updates and Case Studies.
3	**Documents for Shipping Logistics** Documents for Shipping Logistics: Commercial Invoice, Shipping Bill, Certificate of Origin, Consular Invoice, Bill of Lading, GR Form, ISO 9000, Procedure for obtaining ISO 9000, BIS 14000 Certification, Types of Marine Insurance Policies., Import Documents, Transport Documents, Bill to Entry, Certificate of Inspection, Certificate of Measurements, Freight Declaration. Latest updates and Case Studies.

4	**Procedure and Regulatory Compliances in Export-Import** Procedure and Regulatory Compliances in Export-Import: Steps in Export Procedure, Export Contract, Forward Cover, Excise Clearance, Pre-shipment Inspection, Methods of Pre-shipment Inspection, Marine Insurance, Role of Clearing and Forwarding Agents, Shipping and Customs Formalities, Customs EDI System, Realization of Exports Proceeds. Pre-Import Procedure, Steps in Import Procedure, Legal Dimensions of Import Procedure, Customs Formalities for Imports Exchange Control Provisions for Imports. Latest Updates and Case Studies.
5	**International Trade Policy and GST** International Trade Policy and GST: Latest Foreign Trade Policy, Anti-dumping & Countervailing Laws, Trade Secrets and Intellectual property Rights. Provisions for Air Cargo Supply Chain and Contract of the Carriage. Various Provisions of Goods and Service Acts (GST) with reference to Logistics. Latest Updates and Case Studies.

Text Books:

1. Ruwantissa Abeyratne, Law and Regulation of Air Cargo(Springer)
2. Ram Singh, Export and Import Management (Sage)
3. Thomas E. Johnson, Export Import Documentation and procedure (AMCOM)

Reference Books:

1. Nabhi's Board of Editors, How to EXPORT(Nabhi Publications)
2. S. D.Majumdar , GST: Explained for Common Man (Niyogi Book)
3. M. I. Mahajan, Import – Do it Yourself, Snow White Publications, New Delhi
4. D C Kapoor, Export Management (Vikas Publishing House)
5. Chawla, Garg & Sarin, Mercantile Law, (Kalyani Publishers)
6. Handbook of Import-Export Procedures – Ministry of Commerce, -, Government of India, New Delhi.

MLSM 314	HANDLING DANGEROUS AND HAZARDOUS GOODS	L	T	P	C
		3	0	0	3

Course Objectives:

1. This course is intended for those persons and facilities that handle air or ship hazardous materials.
2. Transportation's hazardous materials transportation training requirements for: (1) general awareness and familiarization; (2) general safety; (3) hazardous materials security awareness; and (4) function specific training for the above transportation and pre-transportation functions

Course outcomes:

CO1: Understand the classification and regulatory framework for transporting dangerous goods.

CO2: Explain roles, rights, and responsibilities of consignors, freight forwarders, and carriers in multimodal transport.

CO3: Identify packaging, labeling, documentation, and emergency procedures for hazardous cargo.

CO4: Apply compliance procedures with national and international transport regulations including IATA and IMDG codes.

CO5: Evaluate environmental, safety, and security considerations in hazardous material handling and transportation.

CO/PO Matrix

CO/PO	PO1	PO2	PO3	PO4	PO5	PSO1	PSO2
CO1	2	2	2	2	3	2	3
CO2	1	2	2	3	3	3	2
CO3	2	1	2	3	2	2	3
CO4	2	3	3	2	3	2	2
CO5	2	2	3	3	3	3	2

Correlation Level: 1 – Low, 2 - Medium, 3 – High

Unit	Description
1	**Introduction to Dangerous Goods and Regulations** Handling and transport of Dangerous Cargo: Objective, what are dangerous goods? - Classification of dangerous goods, IATA dangerous goods regulations, Responsibilities of consignor and freight forwarder, shipper declaration for transport of dangerous goods, Trained personnel., Right, Duties and Responsibilities for Carriage of Goods by Road, Rail, Sea and Air

2	**Regulatory Framework and Transport Modalities** National and international laws and regulations - Multi-modal transport of dangerous goods - Classification of dangerous goods - Stowage of dangerous goods on board ships - Separation of dangerous goods on board ships - Requirements for packaging for dangerous goods - Declaration of hazardous and other transport documents - Emergency measures in case of accidents and incidents
3	**Packaging, Labeling, and Documentation** Determining the hazard class of a dangerous goods; - Selecting a limited quantity dangerous goods packaging; - Filing a limited quantity dangerous goods packaging; - Securing a closure on a filed or partially filled limited quantity dangerous goods package; - Marking a package to indicate that it contains a dangerous goods in limited or excepted quantities; - Preparing a shipping paper for limited or excepted quantities, if applicable Providing and maintaining emergency response information, when required;- Reviewing a shipping paper to verify compliance with the HMR - Certifying that a hazardous material conforms to the requirements of the HMR
4	**Shipping Procedures and Compliance** International Civil Aviation Organization - Loading, blocking, and bracing a hazardous materials package
5	**Environmental and Security Aspects** Hazardous Material Shipping Procedure: International and National regulations for transportation of Hazardous material in bulk and packaged form (IMDG code), Environment protection requirements involved in transportation of Hazardous Cargo, Responsibilities of importer / exporter, shippers and agents, dangerous goods declaration, classes of dangerous goods, procedures for handling dangerous materials; Port Security, Marine Security, Cargo Security, Traffic Control, Technology and Equipment used in port security, Maritime frauds

References:

1. Wendy Buckley: Hazardous Materials Transportation: A Guide to Success for Environmental, Health, & Safety Students and Professionals Paperback – Import, 13 August 2021
2. Michael S Hildebrand Gregory G Noll : Hazardous Materials Managing the Incident Managing the Incident 4Th Edition, Publisher: Jones & Bartlett (2012)