

APPRENTICESHIP-BASED UG DEGREE PROGRAMME IN LOGISTICS

COLLABORATIVE PROGRAMME OF LSC



REGULATION & CURRICULUM

VERSION 2021-22

NATIONAL SKILL QUALIFICATION FRAMEWORK LEVEL:5

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Apprenticeship-based UG Degree Programme in Logistics

COLLABORATIVE PROGRAMME OF LSC

The Programme

Apprenticeship-based UG Degree Programme in Logistics is offered by Logistics Sector Skill Council (LSC) in collaboration with Higher Education Institutions that are duly approved by the concerned authorities.

Logistics Sector Skill Council, established by the Ministry of Skill Development and Entrepreneurship (MSDE) through the National Skill Development Corporation of India (NSDC), has taken up several initiatives to create adequate skills for gainful employment at various levels in Logistics Industry. The apprenticeship-based UG Degree Programme in Logistics is one of the programmes.

The Collaborating Institution may choose either B.Com. or BBA or BMS as the nomenclature for this UG Degree Programme.

LSC takes up the following responsibilities so far as BBA/BMS/B.Com. Degree is concerned.

- Curriculum Development and Continuous Improvement
- Sensitisation of Students on Apprenticeship Assignment
- Create Course Materials on all Domain Courses and provide access to students through Logistics Learning Management System
- Securing Apprenticeship Training (On-the-job Training) in Logistics Companies for all students of this Programme under the provisions of Apprentices Act, 1961
- Securing a monthly stipend, as fixed by the Government from time to time, during the Apprenticeship Training period for every student.
- Assessing the performance & learning of students in Apprenticeship
- Arrange the conduct of final placement drive for the students of this Programme
- Assessment of the progress made by the Collaborating Institutions (CI) in the Programme, and offering suggestions & help achieve the objective of making the students skilful.

The Regulation and Curriculum given below shall be duly approved by the various academic bodies of the HEI/University and apply to all candidates admitted to the Programme.

1. Eligibility for Admission

Candidates for admission to this Apprenticeship-based UG Degree Programme should have passed 10+2 in any Board or possess an equivalent qualification. Any subject group in 10+2 is acceptable.

2. Admission

The Collaborating Institutions shall decide the minimum mark percentage for admission. The Reservation Policy of the State where the HEI is functioning is applicable.

3. Programme Duration

The Programme extends for three years consisting of Four teaching semesters and two apprenticeship semesters.

4. Programme Content

- 28 Courses in Semesters I, II, III, and IV
- 2 Allied Courses in the MOOC format in Semesters V and VI
- 2 Spells of Apprenticeship Training for six months each in Semesters V and VI

5. Standard of Passing & Award Division

Standard of Passing & Award Divisions shall be as per the Collaborating Institution's policies that offer this Programme.

6. Continuous Internal Assessment

The Continuous Internal Assessment System, including the assessment components, periodicity, and proportionate weight in the total score for a particular course, is as per the policies and practices of the Collaborating Institution.

7. Attendance

The mandatory minimum attendance in teaching Semesters is as per the existing policies and practices of the Collaborating Institution.

Attendance requirement during Apprenticeship Training is as per the conditions/norms of the Apprenticeship Contract, Apprentices Act 1961, and National Apprenticeship Promotion Scheme.

8. Examination

The End Semester Examination for courses scheduled in teaching Semesters will be conducted and results declared by the Collaborating Institution. The question paper pattern for these examinations is as per the format decided by the Collaborating Institution.

9. Miscellaneous

- ✓ Each student shall possess Aadhaar Card, PAN, and Bank Account, which are necessary for onboarding for Apprenticeship.
- ✓ Students shall be willing to move out of their present place of residence to get onboarded in companies that might be located in different cities.
- ✓ Students shall take care of Boarding and Lodging arrangements in cities where the Apprenticeship providing company is located.
- ✓ Students need to possess the prescribed textbooks for all Courses of the Programme.
- ✓ The Collaborating Institution will award the Degree to students who successfully complete the Programme.

10. Fee Payment

The Programme Fee and Examination Fee are payable by students to the Collaborating Institution as per its norms.

Assessment System

The Assessment System of the apprenticeship-based Degree Programmes developed & offered by Logistics Sector Skill Council is designed to make an objective assessment of Knowledge, Skill, and Attitude development of students. In order to make the Assessment System fool-proof and inclusive, the Programme provides adequate & appropriate representation to the Industry, Sector Skill Council, and the Collaborating Institution in assessing the students. This makes the Assessment System objectively measure industry-readiness of students.

Teaching Semesters:

Semesters I, II, III, and IV are Teaching Semesters. All Courses scheduled in Teaching Semesters are assessed by the Collaborating Institution. The Assessment System (proportion of marks between the Continuous Internal Assessment & End Semester Examination, and the Question Paper Pattern) for these courses shall be as per the norms, standards and practices of the Collaborating Institution, notwithstanding the Regulations given in the Curriculum Booklet issued by LSC.

Apprenticeship Semesters:

Semesters V, and VI are Apprenticeship Semesters. Assessment System for the Courses scheduled in these Semesters will be as per the process described below.

Allied Courses: The Allied Courses are offered by LSC on the pattern of MOOC. LSC delivers the course online through Logistics Learning Management System (LLMS), and makes online assessment of students. Three online tests are conducted for 25 marks each for the CIA Component. The total of the best performed two tests would be assigned as CIA Mark. One online End Semester Examination is conducted for a maximum mark of 50. The marks scored by students in both CIA and ESE for a total of 100 marks would be communicated to the Collaborating Institution by LSC. The Collaborating Institution may modify the proportion of marks between CIA and ESE as per its norms, standards, and practices.

Apprenticeship: The CIA Component of Apprenticeship is assessed by the Manager / Supervisor under whom the students work during Apprenticeship Semesters, and LSC for a maximum mark of 250. The Manager / Supervisor makes the assessment for 150 marks based on skill & attitudinal development of students. LSC assess the practical knowledge of students for 100 marks by conducting a Test on conceptual knowledge relevant to the process undergone during Apprenticeship, and Viva.

The Collaborating Institution will evaluate the Apprenticeship Report (comprising Work Diary) submitted by students, and conduct Viva for a mark of 150, which is considered as ESE. The Evaluation & Viva shall be conducted by a Panel comprising of the HoD (or Programme Coordinator), Student's Mentor, and one Executive from Logistics Sector. The Collaborating Institution may modify the proportion of marks between CIA and ESE as per its norms, standards, and practices.

Minimum Marks, Grading & Classification:

Minimum Marks required for passing courses, Pattern of Grading, and Classification of Successful Candidates between 'Distinction', 'First Class', 'Second Class', etc. shall be as per the norms, standards, and practices of Collaborating Institution.

APPRENTICESHIP-BASED UG DEGREE (LOGISTICS)**COLLABORATIVE PROGRAMME OF LSC****B.B.A (Logistics) Three Year Degree Course****SEMESTER -I**

Code	Subjects	Periods/ Week			Exam Durati on Hours	Marks		Total Marks	Credits
		L	T	P		CA	FE		
21LGSC 101	Language I	3	0	0	3	25	75	100	3
21LGSC 102	Environmental Studies	3	0	0	3	25	75	100	3
21LGSC 103	Fundamentals of Logistics	3	0	0	3	25	75	100	3
21LGSC 104	Principles of Management	3	0	0	3	25	75	100	3
21LGSC 105	Business Statistics	4	0	0	3	25	75	100	4
21LGSC 106	Materials Management	4	0	0	3	25	75	100	4
21LGSC 107	Warehousing and Distribution Centre Operations	3	0	0	3	25	75	100	3
Total		23	0	0		175	525	700	23

[L] – Lecture [T] – Theory [P] – Practical [CA] – Continuous Assessment [FE] – Final Examination

SEMESTER -II

Code	Subjects	Periods/ Week			Exam Durati on Hours	Marks		Total Marks	Credits
		L	T	P		CA	FE		
21LGSC 201	Language II	3	0	0	3	25	75	100	3
21LGSC 202	Business Communication	3	0	0	3	25	75	100	3
21LGSC 203	Freight Forwarding (Ocean & Air Cargo)	3	0	0	3	25	75	100	3
21LGSC 204	Forecasting and Inventory Management	4	0	0	3	25	75	100	3
21LGSC 205	Surface Transportation	3	0	0	3	25	75	100	4
21LGSC 206	Human Resources Management	3	0	0	3	25	75	100	4
21LGSC 207	Management and Cost Accounting	4	0	0	3	25	75	100	3
Total		23	0	0		175	525	700	23

SEMESTER -III

Code	Subjects	Periods/Week			Exam Duration on Hours	Marks		Total Marks	Credits
		L	T	P		CA	FE		
21LGSC 301	MIS for Logistics	4	0	0	3	25	75	100	4
21LGSC 302	International Logistics Management	3	0	0	3	25	75	100	3
21LGSC 303	Marketing Management	3	0	0	3	25	75	100	3
21LGSC 304	Retail Logistics and E-Commerce	3	0	0	3	25	75	100	3
21LGSP 305	Word & Presentation Tools - Practical	0	0	4	3	40	60	100	4
21LGSP 306	Life Skill Development - Practical	0	0	3	3	40	60	100	3
21LGSC 307	Liner Logistics	3	0	0	3	25	75	100	3
Total		16	0	7		305	495	700	23

SEMESTER -IV

Code	Subjects	Periods/Week			Exam Duration on Hours	Marks		Total Marks	Credits
		L	T	P		CA	FE		
21LGSC 401	Port Terminal Logistics	4	0	0	3	25	75	100	4
21LGSC 402	Data Analysis using Spread Sheet	3	0	0	3	25	75	100	3
21LGSC 403	Commercial Geography	3	0	0	3	25	75	100	3
21LGSC 404	Logistics Network Design	3	0	0	3	25	75	100	3
21LGSC 405	Logistics 4.0	3	0	0	3	25	75	100	3
21LGSC 406	Specialisation Module – Course I	3	0	0	3	25	75	100	3
21LGSC 407	Specialisation Module – Course II	3	0	0	3	25	75	100	3
Total		22	0	0		175	525	700	22

SEMESTER -V

Code	Subjects	Periods/Week			Exam Duration on Hours	Marks		Total Marks	Credits
		L	T	P		CA	FE		
21LGSE 501	Allied course - MOOC	2	0	0	3	25	75	100	2
21LGSE 502	Allied course - MOOC	2	0	0	3	25	75	100	2
21LGSP 503	Apprenticeship – I	0	0	22	3	40	60	100	22
Total		4	0	22		90	210	300	26

SEMESTER –VI

Code	Subjects	Periods/ Week			Exam Duratio n Hours	Marks		Total Marks	Credits
		L	T	P		CA	FE		
21LGSE 601	Allied Course - MOOC	2	0	0	3	25	75	100	2
21LGSE 602	Allied Course - MOOC	2	0	0	3	25	75	100	2
21LGSP 603	Apprenticeship – II	0	0	22	3	40	60	100	22
Total		4	0	22		40	260	300	26

List of MOOC Courses

Sem	No.	Code	Course	Hours	Credit	Marks		
						CIA	Exam	Total
V	1.	21LGSE 501	Warehouse Automation	60	2	25	75	100
V	2.		Best Practices in Transportation	60	2	25	75	100
V	3.	21LGSE 502	Inland Waterways & Costal Shipping	60	2	25	75	100
VI	1.	21LGSE 601	Courier, Express & Parcel Services	60	2	25	75	100
VI	2.		In plant Logistics	60	2	25	75	100
VI	3.	21LGSE 602	Documentation for Exports & Imports	60	2	25	75	100

Specialization Modules

Course	Group A – Aviation	Group B – Ecommerce	Group C – Land Transportation
1	Introduction to Aviation Industry & Airport Operations	First Mile Operations	Multimodal Transportation
2	Introduction to Air Cargo Industry	Last Mile Operations	Commercial Aspects of Transportation

Students shall choose one of the three Modules and pursue both courses listed in the chosen Module.

Course-Credit Distribution

Sem	Total	
	Courses	Credits
I	7	23
II	7	23
III	7	23
IV	7	22
V	3	26
VI	3	26
Total	34	143

21LGSC101 - LANGUAGE I

Course Objective:

- To help students achieve proficiency in English
- To develop students professional communication skills to meet the demand in the field of global communication to enable them to acquire placement anywhere with ease and confidence.

Learning Outcomes:

- ✓ Students enhance their communicative skills in real life situations.
- ✓ Students will equip with oral and appropriate written communication skills.

UNIT I READING

Definition of reading, Levels of reading- Requirements of reading- Types of reading- Techniques of reading- Academic reading tips- Exercise

UNIT II WRITING

The Sentence, The Phrase, Kinds of Sentences, Parts of Sentence, Parts of speech, Articles-Types of Sentences, Time Management Tips-Test Preparation Tips, Tips for Taking Exams-Construction of Paragraph, Linkage and Cohesion-Academic Essay Writing-Thesis- Report Abstracts- Letter Writing- Memo, Cover Letter, Resume writing-Exercise

UNIT III LISTENING SKILLS

Types of Listening- Objectives- Active Listening- an Effective Listening Skill- Note Taking Tips -Barriers for Good Listening, Purpose of Listening, Outlines and Signposting- Gambits- Exercise

UNIT IV COMMUNICATION SKILLS

Communication Skills -Speaking skills, Definition- Barriers of Communication-Types of Communication- Exercise

UNIT V APTITUDE

Verbal and numerical aptitude-Notes to be made from listening short lectures. Adapting to corporate life- Corporate Etiquette – Grooming and Dressing-Organizing and Attending Meetings – Facing Interviews.

TEXT BOOKS

1. Dhanavel, S.P. "English and Communication Skills for Students of Science and Engineering", Orient Blackswan Ltd., 2009.
2. Meenakshi Raman and Sangeetha Sharama, "Technical Communication- Principles and Practice", Oxford University Press, 2009.

REFERENCE BOOKS

1. LALA, PUSHPA and Sanjay Kumar. 'Communicate or collapse: a handbook of effective public speaking, group discussions and interviews'. PHI Learning Pvt. Ltd., 2007.
2. Edgar Thorpe, 'Course in Mental Ability and Quantitative Aptitude', Tata McGraw-Hill, 2003.
3. Edgar Thorpe. 'Test of Reasoning', Tata McGraw-Hill, 2003.
4. H.M.Prasad, 'How to prepare for Group Discussion and Interview'. Tata McGraw- Hill, 2001.
5. Career Press Editors, '101 Great Resumes', Jaico Publishing House, 2003.
6. R.S. Aggarwal 'A Modern Approach to Verbal & Non-Verbal Reasoning', S.Chand & Co, 2004.
7. Mishra Sunita and Muralikrishna, 'Communication Skills for Engineers', 1st Edition. Pearson Education, 2004.

21LGSC102 - ENVIRONMENTAL STUDIES**COURSE OBJECTIVES:**

- It is concerned with the exploration, investigation and development of an understanding of the natural, human and social dimensions of local and wider environments.
- It provides opportunities to engage in active learning, to use a wide range of skills, and to acquire open, critical and responsible attitudes.

LEARNING OUTCOMES:

- Master core concepts and methods from economic, political, and social analysis as they pertain to the design and evaluation of environmental policies and institutions.
- Appreciate the ethical, cross-cultural, and historical context of environmental issues and the links between human and natural systems.
- Understand the transnational character of environmental problems and ways of addressing them, including interactions across local to global scales.

Unit	Topics
I	Ecology Ecosystem – Introduction- Abiotic and Biotic components. Structure and functions of Ecosystem – Food Chain, Food web, Ecological pyramids, Energy flow and biogeochemical cycles. Biodiversity – Values, Type and levels of Biodiversity. Causes of depletion. Conservation of biodiversity
II	Pollution Water Pollution - Sources of water, water quality standards, type of pollutants - its sources and effects. Air Pollution - composition of atmosphere, Air quality standards, Sources and adverse effects of air pollution, Greenhouse effect, global warming, acid rain, ozone depletion, Noise Pollution - Introduction, Level of noise, Sources and adverse effects of noise, Control of noise pollution.
III	Solid Waste Management Municipal waste – Introduction, classification of solid waste, composition and characteristics of solid waste, collection conveyance and disposal of solid waste, recovery of resources. Sanitary land filling, Vermi composting, incineration. Biomedical waste – Generation, collection and disposal.
IV	Non-Conventional energy sources Introduction, renewable sources of energy: solar energy, wind energy, Energy from ocean, energy from biomass, geothermal energy and nuclear energy. Potential of renewable energy resources in India.
V	Social Issues and EIA Sustainable Development-Rainwater harvesting. Public awareness and environmental education. Environmental Legislations in India – Environmental Protection act-1986, Air (Prevention and control of Pollution) act, water (Prevention and control of Pollution) act, wildlife protection act, Forest conservation act.

Text & Reference Books:

1. Agarwal Shikha, Suresh Sahu, Environmental Engineering and Disaster Management, Dhanpat Rai & Co., 2010
2. Brunner R.C., Hazardous Waste Incineration, McGraw Hill Inc. 1989. Textbooks & Suggested Readings:
3. Clark R.S., Marine Pollution, Clarendon Press Oxford (TB)
4. Cunningham, W.P, Cooper, T.H. Gorhani, E & Hepworth, M.T., Environmental Encyclopaedia, Jaico Publishing House, Mumbai, 2001.

21LGSC103 - FUNDAMENTALS OF LOGISTICS

COURSE OBJECTIVES:

- To develop competencies and knowledge of students to become logistics professionals
- To orient students in the field of Logistics
- To help Students to understand Fundamentals of Logistics

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of Logistics in the real-life situation
- This subject will enable them to enhance their ability and professional skills in Logistics

Unit	Topics
I	Introduction to Logistics: History of Logistics Need for logistics- Cost and Productivity, cost saving & Productivity improvement. Logistics Cost, reduction in logistics cost, benefits of efficient Logistics, Principles of Logistics, Technology & Logistics -Informatics, Logistics optimization. Listing of Sub-sectors of Logistics
II	Logistics and Customer Service - Definition of Customer Service Elements of Customer Service-Phases in Customer Service-Customer Retention - Procurement and Outsourcing - Definition of Procurement/Outsourcing - Benefits of Logistics Outsourcing - Critical Issues in Logistics Outsourcing
III	Global Logistics - Global Supply Chain - Organizing for Global Logistics-Strategic Issues in Global Logistics - Forces driving Globalization - Modes of Transportation in Global Logistics Barriers to Global Logistics - Markets and Competition - Financial Issues in Logistics Performance - Integrated Logistics - Need for Integration - Activity Centres in Integrated Logistics. Role of 3PL&4PL.
IV	a) Warehouse: Warehouse-Meaning, Types of Warehouses Benefits of Warehousing. b) Transportation- Meaning; Types of Transportations, efficient transportation system and Benefits of efficient transportation systems. c) Courier/Express - Courier/Express-Meaning, Categorization of Shipments, Courier Guidelines, Pricing in Courier - Express Sector for international and domestic shipping. d) E-Commerce - Meaning, Brief on Fulfillment Centers, Reverse logistics in e-commerce sector, Marketing in e-commerce and future trends in e-commerce.
V	a) EXIM: Brief on EXIM/FF & CC, Multi-modal transportation, brief on customs clearance, bulk load handling and brief on trans-shipment. b) Supply chain. c) Cold chain. d) Liquid Logistics. e) Rail Logistics.

Text & Reference Books:

1. Course Material Prepared by LSC
2. Fundamentals of Logistics Management (The Irwin/Mcgraw-Hill Series in Marketing), Douglas Lambert, James R Stock, Lisa M. Ellram, McGraw-hill/Irwin, First Edition, 1998.
3. Vinod V. Sople (2009) Logistic Management (2nd Edn.) Pearson Limited.
4. Logistics Management for International Business: Text and Cases, Sudalaimuthu & Anthony Raj, PHI Learning, First Edition, 2009.
5. Fundamentals of Logistics Management, David Grant, Douglas M. Lambert, James R. Stock, Lisa M. Ellram, McGraw Hill Higher Education, 1997.
6. Logistics Management, Ismail Reji, Excel Book, First Edition, 2008.

21LGSC104 - PRINCIPLES OF MANAGEMENT

COURSE OBJECTIVES:

- To develop competencies and knowledge of students to become effective professionals
- To orient students on recent changes and development in the field of management
- To help Students to understand basic Principles and concepts of Management

LEARNING OUTCOMES:

- To apply the knowledge about management in the real-life business situation
- To enhance their managerial ability and professional skills

Unit	Topics
I	Management: Nature, Definition, Characteristics and Scope of Management - Management as a Science or Art or Profession- Contemporary Issues and - Levels of Management-Skills of a manager- Roles of a manager-Manger Vs Entrepreneur-Challenges in Management of 21st Century
II	Planning: The Process of Planning, Objectives, Policy and Procedures, Forecasting and Decision Making-Strategic Planning – meaning and process MBO – meaning, process and requirements for implementation;
III	Organisation Design and Structure Organisation – Meaning; Process; Principles; Organisation structure – Determinants and forms: Line and staff, project, matrix and committees; Formal and Informal Organisation; Departmentation –Span of Control – Authority, Responsibility and Accountability; Delegation –Process; Principles; Centralisation and Decentralisation –Degree of decentralisation-Delegation and decentralisation
IV	Staffing and Directing: Staffing - Manpower Planning-Recruitment and Selection - Training and Development- Performance Appraisal Directing-Principles-Theory X & Y- Motivation and Behaviour- Theories of Motivation- Maslow’s theory and Herzberg theory, Leadership: Styles and Theories
V	Controlling & Decision making Ethics in the contemporary management and corporate social responsibility; Macro and Micro environmental factors of business-Controllable and uncontrollable factors, SWOT analysis and 7s model of analysis- Decision Making –Types of decisions; Process; Significance; Limitations; –Models-Programmed and non-programmed decisions

Text & Reference Books:

1. L M Prasad, Principles and Practices of Management, Himalaya Publishing House
2. Rao, P.S. Principles of Management, Himalaya Publishing House.
3. Rao, V.S.P. & Krishna, V. H. Management: Text and Cases, Excel Books
4. Sharma, R.K & Gupta, S.K. Business Management (3rd edition), New Delhi: Kalyani Publishers.

21LGSC105 - BUSINESS STATISTICS

COURSE OBJECTIVES:

- This course aims at aiding the students in reaching a level of increased competence in business statistics and expands understanding of the applications of statistical concepts in business.
- Emphasis is placed upon learning statistical concepts through common business problems.

LEARNING OUTCOMES:

- Gain conceptual and working knowledge of Business Statistics and use it in the applications of business.
- Learn the methods of solving problems on basic concepts and analytical business statistical model.
- Enable the student to use introductory level of Transportation and queuing theory.

Unit	Topics
I	<p>Data collection and Measures of Central Tendency :</p> <p>Collection and Presentation of Data - Statistical data – Primary and Secondary; Methods of collection of Primary data; Presentation of Data – Textual, Tabular and Diagrammatic form (Line chart, Bar chart, Pie chart, Histogram, Frequency polygon and Ogive); Frequency distribution.</p> <p>Measures of Central Tendency – Mean (A.M., G.M., H.M.), Median, Mode – different properties; Partition values – Quartiles, Deciles, Percentiles; Partion values from Ogives.</p> <p>Measures of Dispersion – Range, Q.D., M.D., S.D. – their coefficients; Comparing consistency; Different properties.</p> <p>Moments, Skewness and Kurtosis – Moments about an arbitrary number; Central Moments; Relation between central and non-central moments up to 4th order 2 3 and – coefficients.</p>
II	<p>Correlation Analysis: Methods of Studying Correlation for Grouped and Ungrouped Frequency Distribution.</p> <p>Regression Analysis: Equation of Regression Lines for Grouped and Ungrouped Frequency Distribution, Standard Error Estimate.</p>
III	<p>Index Number – Construction, Price and Quantity index numbers, Laspeyres', Paasche's, Edgeworth-Marshall's, Fisher's method, Relative methods, Tests of index number formulae: Time and Factor reversal tests, General index number, Chain base index number, Cost of living index number (CLI), Uses of CLI and its applications, Uses and limitations of index numbers</p> <p>Analysis of Time Series - Components of a time series, Adjustment in time series, Measurement of trend by moving average and least squares methods (linear and quadratic trends), Measurement of seasonal variation by simple average method, Forecasting, De-seasonalisation.</p>
IV	<p>Transportation and Assignment Problems Nature and scope of transportation and allocation models, different methods for finding initial solution - N-W Corner Rule, Least Cost Method and VAM. Unbalanced TP, Test for optimality – MODI method, AP a variant of Transportation model, Hungarian method, Restricted Assignment problems.</p> <p>Queuing Theory – Models – Simple Problem – Introduction to simulation</p>
V	<p>Probability and Sampling: Probability theory – concept and approaches; Probability rules – addition and multiplication theorem, Binomial, Poisson and Normal Distribution and their applications. Sampling – Purpose and Methods of Sampling, Merits and limitations of Sampling.</p>

Text & Reference Books:

1. Gupta and Gupta, Business Statistics. (Sultan Chand & Sons: New Delhi).
2. Chandan, J. Statistics for Business Economics. (Vikas: New Delhi)
3. Sharma, Shenoy and Srivastava, Quantitative Analysis for Managerial Decision Making,

21LGSC106 - MATERIALS MANAGEMENT

COURSE OBJECTIVES:

- To help Students to understand basic Principles and concept of material Management
- To orient students on contemporary development in the field of material management
- To develop competencies and knowledge of students to become effective professionals

LEARNING OUTCOMES:

- To apply the knowledge about material management in the real-life business situation
- Understand the contemporary practices followed in the field of Materials Management
- To enhance their managerial ability and professional skills

Unit	Topics
I	Introduction: Materials Management - Evolution, Importance, Scope and Objectives- Interface with other functions. -Supply Chain Management -Objectives- Components , Trade off Customer Service & Cost. Supply Chain Analytics.
II	Purchasing: purchasing and procurement activities under Materials management- Purchasing Methods- Purchasing and quality Assurance- Purchase Cycle – governmental purchasing practices and procedures - Negotiation & Bargaining – Vendor relations
III	Inventory - Need of Inventory -Types of Inventory - Basic EOQ Model - EOQ with discounts – Different types of Analysis . Forecasting –methods of forecasting-Material Requirement Planning (MRP) -Input and output of MRP system -BOM Explosion -MRP II.
IV	Quality control of material: Incoming material quality control- statistical quality control(Various control charts)- Inventory control & Cost Reduction techniques. Value Analysis & Value Engineering. Standardization – need and importance. Codification - concept, benefits.
V	Stores - Functions- Stores layout -documentation- Materials handling and storage systems, - Principles of Materials Handling system – Safety issues

Text & Reference Books:

1. Course Material Prepared by LSC
2. Materials management: procedures, text and cases - A.K. Datta
3. Materials management: An integrated approach - P. Gopalakrishnan
4. Introduction to Materials management - J.R. Tony Arnold & Stephen N. Chapman
5. Purchasing and Materials Management - K S Menon
6. Handbook of Materials Management – Gopalakrishnan

21LGSC107 - WAREHOUSING & DISTRIBUTION OPERATIONS

COURSE OBJECTIVES:

- To develop competencies and knowledge of students to become Warehouse professionals
- To help Students to understand Warehousing and distribution centre operations
- To orient students about contemporary practices followed in Warehousing & Logistics

LEARNING OUTCOMES:

- To apply the Basic knowledge of Warehousing and distribution centre operations in the real-life situation
- To enhance their ability and professional skills
- To Understand the contemporary Practices in the Industry

Unit	Topics
I	Introduction to Warehouse– Significance of Warehouses - Types of Warehouses - Broad functions in a warehouse - warehouse layouts - equipment requirement in ware house. Strategic Aspects of Warehousing.
II	Receiving of Goods – Advanced shipment notice (ASN)- Goods Receipt Note(GRN) -Stages involved receipt of goods- Visual inspection of goods unloaded - Formats for recording of goods unloaded from carriers-Procedure for Arranging of goods on dock -Put away of Goods- Put away list and its need - storage location codes and its application.
III	Procedure to Prepare Warehouse dispatches -Procedure to develop Packing list / Dispatch note- Packing- Importance of proper packing-Packing materials -Packing machines -Reading labels- quality parameters in packing-Significance of Quality parameters in packing- Cross docking method - Situations suited for application of cross docking
IV	Distribution – Definition – Significance of Physical Distribution(Need & Importance)– Channels of distribution -Factors affecting distribution. -Study on emerging trends in warehousing sector.
V	Warehouse Safety Rules and Procedures: The safety rules and ‘Procedures to be observed in a Warehouse - Hazardous cargo – Procedure for Identification of Hazardous Cargo - Instructions to handle hazardous cargo . - safety data sheet - Health, Safety & Environment - safety Equipment’s and their uses - 5S Concept on shop floor.

Text & Reference Books:

1. Course Material Prepared by LSC
2. Definitive Guide to Warehousing, The: Managing the Storage and Handling of Materials and Products in the Supply Chain (Council of Supply Chain Management Professionals) 1st Edition
3. Warehouse Management: A Complete Guide to Improving Efficiency and Minimizing Costs in the Modern Warehouse- III Edition-Gwynne Richards

21LGSC201 - LANGUAGE II

Unit - I

Effective Listening skills – Barriers to Listening Comprehension – paragraphs on Movies and Sports (Listen only) – Art of Listening Principles.

Unit – II

Sounds of English – Vowels & consonants – intonation and Stress – Art of speaking – Public speaking – Enriching Vocabulary – Derivatives, Antonyms, Homonyms, collocations.

Unit - III

Identify the meaning from paragraph – Techniques of Reading – Comprehension

Literary Components:

- (1) Money by Huppale Ranganaya .
- (2) Cartooning. – R.K.Lakshman.
- (3) Caged Bird – Maya Angelou
- (4) Wall – D.S. Dadhaka
- (5) Pygmalion- G.Bernard Shaw.

Unit – IV

Dialogue Writing – précis writing – Caption writing – Essay writing (short) Techniques, - News writing- Report writing – Types of Reports – Content of reports.

Unit – V

Parts of speech – common error in English – types of sentence – Transformation of sentences – Active voice and passive voice – Direct and indirect Speech.

21LGSC202 - BUSINESS COMMUNICATION

COURSE OBJECTIVES:

- To develop written and verbal communication skills for effective business communication.
- To identify various communication skills involved in the business organization.
- To develop business communication skills among the students.
- To improve language skills – reading, writing and listening

LEARNING OUTCOMES:

- Expose learners to variety of texts to interact with them
- Capability to increase learners to visualize texts and its reading formulas
- Develop critical thinking.
- Develop a more humane and service-oriented approach to all forms of life around them.
- Improvement in their communication skills for larger academic purposes and vocational purposes
- Critical participants in their everyday business life

Unit	Topics
I	Introduction to Business Communication-Characteristics of Effective Organizational Communication- Basic Forms of Communication-Process of Communication- Principles of Effective Business Communication-7 C's.
II	Academic Vocabulary and English for Business-Creative Writing Critical Thinking: Introduction to critical thinking – Benefits - Barriers – Reasoning —Arguments - Deductive and inductive arguments – Fallacies - Inferential comprehension Critical thinking in academic writing - Clarity - Accuracy – Precision – Relevance.
III	1. Business letters – layout of Business letters - types - Business enquiries and replies – offers – quotations – orders – complaints and adjustments – collection letters – circular letters – status enquiries. 2. Email Writing-The Process of Writing E Mails, breaking it Down – The PAIBO Technique, Structuring an E-Mail – The 3 T's – Introduction, Body and Conclusion, Effective Subject lines, Salutation and Signing off- Teleconferencing, video conferencing
IV	1. Communication in Business Environment: Business Meetings, Notice, Agenda, Minutes - Press Releases - Corporate Communication: Internal and External, Group Discussion, Seminars, Presentations. - Reporting of Proceedings of a meeting. Office Memorandum, Office Orders, Press Release 2. Listening: Active listening – Barriers to listening – Listening and note taking – Listening to announcements – Listening to news on the radio and television.
V	1. Reports and Presentations -Business reports and Proposals, Format, visual aids and contents, Oral Business presentations. 2. Job Application and Resume Writing

Text & Reference Books:

1. R.C. Bhatia. Business Communication.
2. R.K. Madhukar. Business Communication.
3. Shraf Ravi. Effective Technical Communication.
4. Marilyn Anderson, Pramod K Nayar and Madhu Chandra Sen. Critical Thinking,
5. Lesikar R.V & Flatley M V, Basic Communication Skills for empowering the internet generation, Tata-McGraw Hill, 2009. 2.
6. Sharma R C & Mohan K, Business Correspondence & Report Writing, TMH, 2009.

21LGSC203 - FREIGHT FORWARDING (OCEAN & AIR CARGO)**COURSE OBJECTIVES:**

- To develop competencies and knowledge of students to become freight forwarding professionals
- To develop competencies on documentation procedures
- To help Students to understand freight forwarding.

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of freight forwarding including ocean and air cargo in the real-life situation
- Students will be able to demonstrate their skill on documentation in their profession.
- This subject will enable them to enhance their ability and professional skills

Unit	Topics
I	Introduction to EXIM, Freight forwarding and custom clearance – types of custom clearances – Importance of custom clearance – certificate of origin, ICEGATE and insurance – custom Act – Regulations pertaining to custom clearance – different modes of freight forwarding — process of freight forwarding.
II	Multimodal transportation - Vendor management - bulk load handling - brief on transshipment - DG handling - customer acquisition and management - Customs clearance procedure - Documents and its importance - Stages of Documentations process and procedures - - DO's and DON'T's while handling different documents during Custom Clearance
III	Operation Procedures of Freight Forwarding - The procedures for Pre-Operating Checks and Operational checks to be performed for every shipment /consignment - List of basic handling of errors and the Operational errors that occur in common - Procedure for checking of shipping bill, Airway bill based on invoice and packing list received from department for Freight Forwarding.
IV	Cargo handling, INCO terms and terminologies used in Cargoes - Different Types of Cargoes for transportation– Importer and exporter Code (IEC), The registered PAN based Business Identification Number received from the Directorate General of Foreign Trade - Packaging requirement for the cargo during shipment from the shipper - Inspection procedure for the cargo while unloading - DO's and DON'T's while handling different cargo.
V	Documentation of Freight Forwarding process as per customer timelines and requirements - Carting, unloading, Stacking, Loading; and Stuffing - Procedure for dealing with loss or damage to goods - Different P.G.A and their roles. -Containers; Pallets; Palletization; Fumigation - Letters of Credit and payment Terms. Etc. - computer and its application in internal systems of documentation.

Text & Reference Books:

1. Course Material Prepared by LSC
2. J P Saxena, Warehouse Management and Inventory Control- Vikas Publication House Pvt Ltd, First Edition, 2003.
3. Warehouse Management: Automation and Organisation of Warehouse and Order Picking Systems [With CDROM], Michael Ten Hompel, Thorsten Schmidt, Springer verlag, First Edition, 2006.
4. Management Guide to Efficient Money Saving Warehousing, Stephen Frey, Gower, 1982.
5. Swapna Pillai, Export Import Procedures & Documentation, Sahitya Bhawan Publication, 2020.

21LGSC204 - FORECASTING AND INVENTORY MANAGEMENT

COURSE OBJECTIVES:

- To develop competencies and knowledge of students to become Forecasting and inventory management professionals
- To orient students in the field of Forecasting and inventory management
- To help Students to understand forecasting and inventory management

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of forecasting and inventory management in the real life situation
- It will enable them to enhance their ability and professional skills in inventory management

Unit	Topics
I	Forecasting: Meaning –Need -Types of forecasts –Demand Forecasting- Types of Demand Forecasting- -Importance - Demand planning v/s Forecasting-Sources of demand-Supply chain dynamics
II	Sales and Operations Planning- Goals and objectives of S&OP -Collaborative Planning-Types -Collaborative planning, forecasting and replenishment- Cyclic decomposition techniques. Short- term forecasting techniques- Technology Forecasting and Methodologies: Role of Technology Information Forecasting and Assessment Council (TIFAC).
III	Inventory: Purpose of Inventory- -Types of Goods -General Management of Inventory- Multi-Echelon Inventory Systems -Use of Computers in Inventory Management- Evaluation of Performance of Materials Function–Latest trends in Inventory Management
IV	Codification – Classification – Methodology–Requirement of codes – Coding Structure and Design –Advantages - International Codification – Right Quantity – Economic Ordering Quantity -Costs associated with Inventories- Models in logistics
V	Influence of production policy on inventory levels – inventories and customer service level – steps to improve inventory management – optimum inventory –Inventory management uncertainty (fixed order quantity model) - Calculation of safety stocks

Text & Reference Books:

1. Course Material Prepared by LSC
2. Sunil Chopra and Peter Meindl, Supply Chain Management Pearson Education Asia, 3rd edition, 2007
3. Chaman L Jain, “Fundamentals of Demand Planning & Forecasting”, Graceway Publishing Company 3rd edition.
4. Operations Research – Concepts, Problems & Solutions- Kapoor V.K.-Sultan Chand & Sons/2017- 978-81-8054-854-3 (TC-532)
5. Vijay Kumar Khurana, 2007, Management of Technology and Innovation, Ane books India, Chennai Further Reading Source 5. Simchi-Levi, David, “Designing and Managing Supply Chain”, Tata McGraw Hill, 3rd Edition, 2007. 6. David E Mulcahy, “Warehouse Distribution and Operations Handbook, McGraw Hill,6thEdition, 1993.

21LGSC205 - SURFACE TRANSPORTATION

COURSE OBJECTIVES:

- To help Students to understand basics of surface transportation including road and rail transport
- To develop competencies and knowledge of students to become transportation professionals

LEARNING OUTCOMES:

- Students will be able to apply the knowledge of surface transportation in the real-life situation
- Enhancement of professional skills with regard to the field.

Unit	Topics
I	Introduction to surface transportation -Need - functions of transportations in logistics -Types of transportations metrics -various land transport carriers and their Load capacities - types of temperature-controlled carriers- inter modal transport -verification of carriers and drivers -transit rules
II	Transportation Optimisation -Documentation for transportation – GST – E Waybill Filing - Importance of consignment number -Transportation Telematics -Vehicle tracking system - GPS systems -Procedure for downloading and reading tracking data from devices -Probable reasons for delay or any issues during transit -Solutions - re-routing
III	Organisation structure in a Transport organization- Incident management systems & Processes - hazmat goods rules -Importance of safety data sheet and labels -Procedure for Consolidation of consignments for optimal loads -Reporting discrepancies such as pilferages, loss or damage of goods in transit -Checking insurance and claims -steps to close deliveries.
IV	Benefits of efficient transportation systems-emerging trends in transportation sector-pricing in transportation sector-govt regulations on transportation in India. Safety procedures during transit and emergency response steps - List of good practices in driving.
V	Customer Management-Vendor coordination for return truck loads-DG Handling – features and facilities offered by railways – innovative schemes-facilities to popularize rail logistics in India

Text & Reference Books:

1. Course Material Prepared by LSC
2. J P Saxena, Warehouse Management and Inventory Control-Vikas Publication House Pvt Ltd, First Edition, 2003.
3. A Practical Guide to Logistics: An Introduction to Transport, Warehousing, Trade and Distribution -Jerry Rudd-Kogan Page publications
4. Management Guide to Efficient Money Saving Warehousing, Stephen Frey, Gower, 1982.
5. Kapoor Satish K., and KansalPurva, ‘Basics of Distribution Management: A Logistical Approach’, Prentice HALL of India

21LGSC206 - HUMAN RESOURCES MANAGEMENT

COURSE OBJECTIVES:

- To develop competencies and knowledge of students to become Human resource management professionals
- To enable the students to know on Contemporary practices in HRM
- To orient students on Human resource management in the field of Logistics

LEARNING OUTCOMES:

- Will be able to apply the basic knowledge of Human resource management in the real life situation
- Will get to know about the contemporary practices of the Industry
- It will enable them to enhance their ability and professional skills with regard to Logistics Industry

Unit	Topics
I	Introduction to HRM -Functions - of HR Manager-Qualities for a HR Professional-Roles & Responsibilities of HR Professionals. Human Resource Planning-Objectives -HR Planning Levels-Process
II	Job Analysis - Introduction-Uses -Methods of collecting Job Analysis Data-Job Description and specification. Job Design-Meaning-Methods. Recruitment and Selection-Meaning-Objectives of Recruitment- Sources of Recruitment-Selection- Steps & Procedure in selection.
III	Employee Training and Development-Meaning-Steps in Training Process -Training Methods -Areas of Training- Training Evaluation Performance Appraisal-Meaning-Uses- Performance Appraisal Process-Performance Appraisal Methods-Pitfalls.
IV	Compensation and Benefits- Meaning– Objectives of Compensation and Employee Benefits Job Evaluation-Meaning- Process of Job Evaluation-Techniques of Job Evaluation -Types of Incentive Plans. Career Planning & Career Development-Meaning-Need for Career Planning & Career Development
V	Occupational Safety and Health-Causes of Safety and Health problems at the work Place- Provisions to prevent Accidents in the work place. Stress and Consequences on Employee Performance. Grievance Handling- Causes of Grievance-Effective Grievance Redressal and - Grievance Redressal Procedures. Disciplinary Action- Objectives - Forms -Disciplinary Procedure-Types of Disciplinary Actions.

Text & Reference Books:

1. Gupta, S. K. (2011). Human Resource Management. First Edition, Kalyani Publishers, New Delhi,
2. Prasad, L. M. (2014). Human Resource Management. Third Edition, Sultan Chand & Sons, New Delhi,
3. Rao, P. S. (2019). Personnel and Human Resource Management. Fifth Edition, Himalaya Publishing House, New Delhi, India.
4. Tripathi, P. C. (2013). Human Resource Development. Fourth Edition, Sultan Chand & Sons, New Delhi,

21LGSC207 - MANAGEMENT AND COST ACCOUNTING**COURSE OBJECTIVES:**

- To develop competencies and knowledge of students to become Management and cost accounting professionals
- To orient students in the field of Logistics
- To help Students to understand Management and cost accounting

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of Management and cost accounting in the real-life situation
- This subject will enable them to enhance their ability and professional skills

Unit	Topics
I	Cost Accounting - Concept of Cost Centres - Cost Units - Classification of Cost – Overheads- Simple Cost Sheet – historical and estimated cost sheets. - Tenders and quotations - Contract costing- Activity based costing (ABC). Management Accounting: Meaning and Definition - Nature and Scope - Objectives of Management Accounting - Importance and Limitations - Management Accounting vs Cost Accounting.
II	Marginal Costing and Break even analysis: Marginal Costing and Cost-Volume-Profit (CVP) analysis: meaning, concept - assumptions and practical applications of Break-even analysis – decisions regarding sales mix - make or buy - limiting factor - export decision - plant merger - shut down of a product line- Du Pont Analysis.
III	Budgeting and Budgetary control: Budget and Budgetary Control: Meaning, - establishing a system of Budgetary Control - Preparation of Sales - Production - Cash Budget - Fixed and Flexible budgets, Master budget - Zero based budgeting (ZBB)-Performance budgeting
IV	Analysis of Financial Statements: Analysis and Interpretation of Financial Statements: Objects-importance-Types of financial analysis - Comparative statements - Common size statements, Ratio analysis - Preparation of Balance sheet using ratios Fund flow analysis: Fund flow statement-Preparation-Cash flow statement-cash flow analysis - Analysis of income statements of ports/shipping companies.
V	Standard Costing and Variance Analysis: Standard Costing and Variance Analysis: Meaning of Standard Cost- Relevance of Standard Cost for Variance Analysis – Significance of Variance Analysis – Computation of Standard Costs for Materials, Labour and Overhead Variances- Comparison between Budgeting and Standard Costing – Variance reporting- Responsibility Accounting – Meaning and Objects – types of Responsibility Centres- Management Reporting.

Text & Reference Books:

1. MAHESHWARI, S. N., (2013) Cost and Management Accounting. 14th edition
2. JAIN, S. P. & NARANG, K. L. (2014) Cost and Management Accounting. 14th Edition, Kalyani publishers: New Delhi.
3. TULSIAN, P.C. (2000) Practical Costing. Vikas Publications: New Delhi.
4. SAXENA, V.L. & VASHISHT (2014) Advanced Cost & Management Accounting- Problems & Solutions. Prentice Hall of India.
5. MAHESHWARI, S. N. (2014) Principles of Management Accounting. Sultan Chand & Sons.
6. MURTHY & GURUSAMY (2009) Management Accounting. Tata McGraw Hill: New Delhi.
7. REDDY T. S & HARI PRASAD REDDY (2014) Cost & Management Accounting. Margham Publications.

21LGSC301 - MIS FOR LOGISTICS**COURSE OBJECTIVES:**

- To develop competencies and knowledge of students to become MIS for logistics professionals
- To orient students in the field of Logistics
- To help Students to understand MIS for Logistics

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of MIS for Logistics in the real-life situation
- This subject will enable them to enhance their ability and professional skills in Logistics

Unit	Topics
I	Introduction- IT and management opportunities and challenges-Strategic planning and models - Information management & IT Architecture – IT Architecture & infrastructure, cloud computing and services, Virtualization and Virtual Machines.
II	Database Technology- Data warehouse- Data Mart Technologies- Data and Text mining- Business Intelligence & Analytics, Digital and physical document management. Networks, collaboration & sustainability: Business IT networks & components, communication technologies – Sustainability and Ethical issues - Internal control- Business Control and Auditing.
III	Dissemination of technology information- and strategic planning – Technology choice and evaluation methods – Analysis of alternative technologies – Implementing technology programmes - Intellectual Capital - An introduction to Intellectual Property Right - Patent -Copyrights - Trademarks and other issues.
IV	Functional Area & Compliance systems: Management levels and functional systems Enterprise Systems and applications: Enterprise systems, Enterprise Resource Planning (ERP), Supply Chain Management (SCM), Collaborative Planning, Forecasting, and Replenishment system (CPFR), Customer Relationship Management (CRM). Performance Management: Data visualization, Mashups, and Mobile intelligence, Fleet Management Information System.
V	Business Process and Project Management: - Architecture & IT design, System development, Software & Applications for management (Business software tools), Support system. ERP modules -sales and Marketing, Accounting, Finance, Materials and Production management etc.

Text & Reference Books:

1. Course Material Prepared by LSC
2. KENNETH C. L., JANE P. L., & RAJANISH DASS (2001) Management Information System - Managing the Digital Firm. Pearson Education: New Delhi.
3. RAVI, K., & ANDREW, B. W. Frontiers of Electronic Commerce. Pearson Education: New Delhi.
4. KENNETH, C. L., & JANEP, L. (2001) Essentials of MIS. Prentice Hall India: New Delhi.
5. SADAGOPAN, S. (2003) Management Information System. Prentice Hall India: New Delhi.
6. EFF, O.Z. (2003) Management Information Systems. Vikas Publishing House Pvt. Ltd.: New Delhi.

21LGSC302 - INTERNATIONAL LOGISTICS MANAGEMENT**COURSE OBJECTIVES:**

- To develop competencies and knowledge of students to become International logistics management professionals
- To orient students in the field of Logistics
- To help Students to understand international Logistics management

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of International Logistics management in the real-life situation
- This subject will enable them to enhance their ability and professional skills in Logistics

Unit	Topics
I	International Logistics: Definition, Evolution, Concept, Components, Importance, Objectives; Logistic Subsectors; The work of Logistics; Integrated Logistics; Barrier to Internal Integration.
II	Customer Focused Marketing; International Marketing: Introduction, Definition, Basis for International Trade, Process, Importance; International Marketing Channel: Role of Clearing Agent, Various Modes of Transport, Choice and Issues for Each Mode, Transport Cost etc.
III	Transportation Functionality and Principles; Multimodal Transport: Modal Characteristics; Modal Comparisons; Legal Classifications; International Air Transport; Air Cargo Tariff Structure; Freight: Definition, Rate; Freight Structure and Practice
IV	Containerization: Genesis, Concept, Classification, Benefits and Constraints; Inland Container Depot (ICD): Roles and Functions, CFS, Export Clearance at ICD; CONCOR; ICDs under CONCOR; Chartering: Kinds of Charter, Charter Party, and Arbitration.
V	International commercial documents - International contracts, terms of payments, international insurance, packaging for export, custom clearance and infrastructure: transportation, communication and utilities - Brokerage

Text & Reference Books:

1. Course Material Prepared by LSC
2. International Marketing by Gupta and Varshing, Publisher: Sultan Chand and Sons
3. International logistics by Pierre David, Publisher: Biztantra
4. Logistic Management and World Sea Borne Trade by Multiah Krishnaveni, Publisher: Himalaya Publication
5. Logistic and Supply Chain Management by Donald J. Bowerson, Publisher: Prentice Hall of India

21LGSC303 - MARKETING MANAGEMENT**COURSE OBJECTIVES:**

- To emphasize the importance of the marketing function in an organization.
- To understand the core concepts right from deciding the segment till customer satisfaction
- To impart knowledge with respect to latest trends in Marketing, Marketing Mix, Social responsibility and ethical issues in Marketing

LEARNING OUTCOMES:

- Differentiate the consumer and institutional buyer behavior.
- Justify the importance of products, branding and new product development
- Understand the importance of Channel of distribution.

Unit	Topics
I	Meaning and concepts of Marketing, Sales Concept, Marketing concept, Social Marketing concepts, Societal Marketing concept, Marketing Mix, 4 Ps of Marketing, Marketing Environment in India.
II	Consumer Behaviour – Factors influencing buying behaviour – consumer buying decision process – Buying motives – influences-Market segmentation – criteria - Bases of segmentation – benefits. Introduction to Marketing research:
III	Product Planning & Development -Definition, Classification of Product, Stages of Product Life Cycle (PLC) and Factors affecting PLC.-Product Development: Meaning, Principle of Product Development, Stages of New Product Development - Pricing-Meaning, Objectives, Price Policies and Strategies and Methods of fixing prices.
IV	Distribution Channel- meaning, Types of Distribution channel- Direct & Indirect. Role of intermediaries and distribution channel management. Channel Management Decisions, Promotion- elements of promotion mix- Advertising, sales promotion, personal selling and sales management. Public and customer relations, direct and online marketing,
V	An overview. Advertising, sales promotion, personal selling and sales management. Public and customer relations, direct and online marketing, multilevel marketing -Marketing and society-Social responsibility and ethical issues in marketing.

Text & Reference Books:

1. C.B.Gupta and N. Rajan Nair , Marketing Management, 19th Edition,2020,Sultan Chand & Sons.
2. Ramasamy V.S. and Namakumary S, Marketing Management-Global Perspective, Indian context,4th Edition,2009, Macmillan.
3. Rajagopal, Marketing Management-Text & Cases,2000,1st Edition, Vikas Publishing House Pvt., Ltd.,
4. S. Jayachandran, Marketing Management, 2004Excel Books India.
5. Rajan Saxena, Marketing Management, 4th Edition,2009 McGraw Hill Education.

21LGSC304 - RETAIL LOGISTICS AND E-COMMERCE

COURSE OBJECTIVES:

- To develop competencies and knowledge of students to become Retail logistics and E-commerce professionals
- To orient students in the field of Logistics
- To help Students to understand Retail logistics and E-commerce

LEARNING OUTCOMES:

- Students will be able to apply the basic knowledge of Retail logistics and E-commerce in the real-life situation
- This subject will enable them to enhance their ability and professional skills in Logistics and E commerce

Unit	Topics
I	Concept and Scope: Concepts of Retail Logistics and supply chain- Importance of Logistics in these days global Sourcing, Dimension of Logistics: Macro and Micro aspects-Supply chain contours: Backward and forward linkages
II	Logistics and Retail 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 and other relevant activities till transportation, preparation for dispatch and outbound documentation and customer facilitation tracking out-bound shipments.
III	Reverse Logistics: Basic of reverse logistics - concept, key activities , coordinating with carriers, route map optimization, collecting pickup and feedback - Types of reverse logistics –Roles and responsibilities -Best practices in reverse logistics
IV	E-Commerce: Introduction to E-commerce logistics including delivery and pickup models and the overall logistic setup – Order Processing – Activities in order processing - Types of order processing - - Procedures for generating plans and schedules through MIS
V	Types of Ecommerce- B2B-B2C and intra business. Retail Ecommerce – Retailing through internet, Direct Online Sales model and its types- Business Models for ecommerce. Electronic Payment system, Electronic CRM Applications. E-Security

Text & Reference Books:

1. John Fernie & Leigh Sparks ,”Logistics and Retail Management: Emerging Issues and New Challenges in the Retail Supply Chain “,Kogan Page 3rd Edition,2009
2. James B. Ayers & Mary Ann Odegaard , “Retail Supply Chain Management “taylor & francis, 2nd edition
3. Mr. Gibson G, “Retail Management: Functional Principles & Practices”, Jaico Publishing house, 6th Edition, 2003.
4. Ray, Supply Chain Management For Retailing, TMH, 2010.
5. James B. Ayers, Retail Supply Chain Management, Auerbach Publications,2007.

21LGSC302 - WORD & PRESENTATION TOOLS - PRACTICAL

COURSE OBJECTIVES:

- To introduce the student to the Word & Presentation tools and its applications and thereby empowering him to utilize e-sources for upgrading their knowledge base.
- To introduce the students with some basic tools and applications which will enable them in e-communicating effectively and analyse data for decision making using data of different kinds.

LEARNING OUTCOMES:

- Students will be able to apply the Word & Presentation tools in real-life application.
- Enable students to enhance their ability and professional skills in the Computer Application in MS-Word & Presentation

Unit	Topics
I	Windows 2000- working with windows – moving formation within windows arranging Icons Saving Window settings. MS Office Basics – Creating document – entering text-Selecting text giving instructions- Using tool bars- Menu commands- Keyboards shortcuts- Saving files Opening documents – Manipulating Windows – simple Editing- Printing Files.
II	Word Basics – Using Auto text – Using Auto Correct Word editing technique finding and replacing text – Checking spelling – using templates- formatting – Formatting with styles creating tables.
III	Power Point basics- Working in outline view- using a design template- Merging presentations in Slider sorter view applying templates – Adding graphs- adding organization Charts.
IV	MS-Word-Practical Type the text, check spelling and grammar bullets and numbering list items, align the text to left, right justify and centre. -Prepare a job application letter enclosing your Bio-Data-Perform Mail Merger Operation and Preparing labels. -Prepare the document in newspaper column layout.
V	MS POWER POINT-Practical Prepare a PowerPoint presentation with at least three slides for department Inaugural Function-Draw an organization chart with minimum three hierarchical levels-Design an advertisement campaign with minimum three slides-Insert an excel chart into a power point slide.

Text & Reference Books:

1. Office 2000 Complete Reference by Stepher L. Nelson.
2. PC Software for window made simplex by R.K Taxali – Tata McGraw Hill Publishers Pvt. Ltd.,

21LGSC306 - LIFE SKILL DEVELOPMENT - PRACTICAL**COURSE OBJECTIVES:**

- To develop competencies and knowledge of students to become Aviation & Air Cargo Professionals
- To Introduce Students with key Skills that are required to be Employable in the Corporate World in general and Aviation and Air Cargo Industry in specific

LEARNING OUTCOMES:

- Students will be able to apply these skills while transition from Campus to Corporate and acquire the much-needed employability skills

Unit	Topics
I	Soft Skills- What are Soft Skills, The Importance of Soft Skills during transition from Campus to Corporate
II	Soft Skills- Time Management, Stress Management, Grooming Skills, Listening Skills, Creative Thinking, Telephone Etiquette, Social Media Etiquette
III	Communication Skills- a) Non-Verbal- Types of Non-Verbal Communication, Essentials, Barriers b) Verbal- Types of Non-Verbal Communication, Essentials, Barriers
IV	Interview Handling & Preparation a) Types of Interviews- Face to Face, Videoconferencing, Skype, Telephonic b) Identifying job openings c) Applying for a job d) Preparing Cover letters e) Preparing a CV/Resume and Effective Profiling f) Group Discussions g) Behavioural Event Interviews
V	Leadership Skills a) Leadership Styles b) Decision Making c) Intrapersonal & Interpersonal Skills d) Problem Solving Skills e) Negotiation Skills f) Critical Thinking

Text & Reference Books:

1. Sizzling Soft Skills for Spectacular Success- P Ameer Ali- Publisher: Notion Press; First edition (2017)
2. Soft Skills: An Integrated Approach to Maximise Personality-Gajendra Singh Chauhan, Sangeeta Sharma- Wiley (2015)
3. Master of Business Etiquette: The Ultimate Guide to Corporate Etiquette And Soft Skills- Cyrus M Gonda- Embassy Books; First edition (2016)
4. How to Get That Job (A Guide for the Journey beyond Academics)- Jogesh Jain- Notion Press; First edition (2017)
5. The 21 Irrefutable Law of Leadership-John C. Maxwell- Maanu Graphics Publishers (2013)

21LGSC307 - LINER LOGISTICS**COURSE OBJECTIVES:**

- To develop competencies and knowledge of students to Liner logistics professionals
- To orient students in the field of Logistics
- To help Students to understand Liner logistics

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of Liner Logistics in the real-life situation
- This subject will enable them to enhance their ability and professional skills in Logistics.

Unit	Topics
I	Definitions of liner trades; tramp trades; containerization- Unitization - containerization, liner operations, port organization – Vessel loading and discharging , liner trade routes, The major ports, liner service options - Liner trade – ship types – Tonnages; basic ship layout, types of container ships, Ro-Ro barge carrying vessels, The refrigerated cargo ship conventional (Break bulk) vessels future vessel developments, economy of scale, shipboard handling equipment.
II	Cargoes & cargo equipment – Dangerous goods IMO special goods, cargo handlings other methods of lifting cargo port handling equipment, port terminals; port and terminal management; the role of ships officers - agent. Liner Shipping operations - Management and policy, ship management and operations, independent ship management, insurance, trade of commercial department, accounting, budgeting, freight collection and port disbursements agency duties.
III	Containerization unitization and inter-modalism - Growth in world trade unitization; container dimensions, types of container other container expressions container inventory, owning, leasing meeting the demand for containers tracking the container fleet, container control, FCLS LCLS & ICDS , legal & insurance implications in the container trade.
IV	The Bill of Lading and other Documentation - The Bill of Lading UK bill of lading Act 1855 and UK carriage of goods by sea Act 1992, The use of Bill of Lading in liner trades, Bill of Lading documentary credits, Bill of Lading clauses The printed clauses – The evidence of the contract, other forms of Bill of Lading other liner documents, Intl conventions relating to Bill of Lading, paperless trading
V	The Exchange of goods transfer - Transfer of funds from country to country, methods of payments in International trade who are the merchants, International contracts of sale INCO terms; Legal aspects of the liner trades - The carrier insurance the carrier's liability for the cargo the liabilities of the agent, legal aspects of the Bill of Lading, cargo claims general average (GA), security, ISPS code.

Text & Reference Books:

1. Course Material Prepared by LSC
2. Ship Operation Management, Fujita, N.H. Publisher, 1974.
3. Ship Operation Management, Bertrams Publication, 2010.
4. Handbook of Ship Calculations, Construction and Operation, Charles H. Hughes, Wexford College Press, 2008.
5. Ocean Shipping - Elements of Practical Steamship Operation, Robert Edwards Annin, Thompson Press, 2010.

21LGSC401 - PORT TERMINAL LOGISTICS**COURSE OBJECTIVES:**

- To develop competencies and knowledge of students to Port terminals logistics professionals
- To orient students in the field of Logistics
- To help Students to understand Port terminals logistics

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of Port terminals Logistics in the real-life situation
- This subject will enable them to enhance their ability and professional skills in Logistics

Unit	Topics
I	Difference between Major and Minor Ports - Ports in India - Natural Harbours - New Ports to be developed in India - Major Ports of the World - Largest Port in the world - Port Officials and their roles - Role of Ports - Who are Port users
II	Container Terminals - Privatisation of Terminals - Reason for Privatisation - Major Terminal Operators in India - Terminal Operators of the world - Privatisation the need of the hour - Agreement between and existing Port Terminal and the new operator
III	Import Cycle - Export Cycle - Positions and Places in a Terminal - Facilities in a Terminal - Container Monitoring and stacking - CFS inside a Terminal - Reasons for Congestion of a terminal - de-congesting the terminal - Window system in a terminal.
IV	Major Port Trust Act - Port as a custodian of the cargo - Transit sheds - Cargo receivers - Wharfs and Berths - Various berths in a Port - Meaning of Berth Restrictions - Port equipment's and damage - Extra services - Berth reservation schemes
V	Port Tariff - Pilots and their duties - Tugs and its usage - Night navigations - Light Dues - Tariff Authorities of Major Port - Revision of rates - Port Trustees - Safety Procedures - Introduction of ISPS - Damage to Port property by ships - Compensation and confiscation of cargo to adjust dues

Text & Reference Books:

1. Course Material Prepared by LSC
2. Major Port Trust Act – Government of India
3. Port Industry Statistics, American Association of Port Authorities
4. AP MOLLOR Guide book on Terminal
5. DUBAI PORT AUTHORITIES Manual

21LGSC402 - DATA ANALYSIS USING SPREAD SHEET**COURSE OBJECTIVES:**

This course is designed with the view of making the student skilful at

- Performing data analysis using spreadsheet (MS Excel)
- Creating pivot tables from a range with rows and columns in Excel.

LEARNING OUTCOMES:

- Support the E communication effectively with help of Spread Sheet
- Summarize data with data analysis, Pivot Tables, and Pivot Charts.
- Work with charts and the drawing tools.
- Import and export data from other applications.

Unit	Topics
I	Introduction to Excel, About Excel & Microsoft, Uses of Excel, Excel software, Spreadsheet windowpane, Title Bar, Menu Bar, Standard Toolbar, Formatting Toolbar, the Ribbon, File Tab and Backstage View, Formula Bar, Workbook Window, Status Bar, Task Pane, Workbook & sheets Columns & Rows
II	Selecting Columns & Rows, Changing Column Width & Row Height, Auto fitting Columns & Rows, Hiding /Unhiding Columns & Rows, Inserting & Deleting Columns & Rows, Cell, Address of a cell, Components of a cell – Format, value, formula, Use of paste and paste special Functionality Using Ranges. Using Ranges, Selecting Ranges, Entering Information into a Range, Using AutoFill
III	Creating Formulas, Using Formulas, Formula Functions – Sum, Average, if, Count, max, min, Proper, Upper, Lower, Using AutoSum, Advance Formulas Concatenate, Lookup, Lookup, Match, Count if, Text, moving between Spreadsheets, Selecting Multiple Spreadsheets, Inserting and Deleting Spreadsheets Renaming Spreadsheets, Splitting the Screen, Freezing Panes, Copying and Pasting Data between Spreadsheets, Hiding, Protecting worksheets
IV	Creating Charts, Different types of chart, Formatting Chart Objects, Changing the Chart Type, Showing and Hiding the Legend, Showing and Hiding the Data Table Data Analysis Sorting, Filter, Text to Column, Data Validation
V	PivotTables, Creating PivotTables, manipulating a PivotTable, Using the PivotTable Toolbar, Changing Data Field, Properties, Displaying a PivotChart, Setting PivotTable Options, Adding Subtotals to PivotTables Spreadsheet Tools, Making Macros, Recording Macros, Running Macros, Deleting Macros

Text & Reference Books:

Microsoft Excel 2016: Comprehensive, Freund, Starks, and Schmieder, Cengage Learning, 2017, ISBN: 9781305870727.

21LGSC403 - COMMERCIAL GEOGRAPHY**COURSE OBJECTIVES:**

- To acquaint the students about dynamic aspects of Commercial Geography.
- To acquaint the students about dynamic nature of Industrial field in India.
- To make the students of commerce aware about the relationship between the geographical factors and economic activities

LEARNING OUTCOMES:

- Acquiring Knowledge of Physical Geography
- Ability of Problem Analysis:
- Knowing the bases of commercial and marketing activities related to the earth.

Unit	Topics
I	Introduction to Geography Definition, nature and scope, relation with other branches. -Meaning of environment, physical or natural environment and cultural or manmade environment, -Commercial activities: Primary, secondary, tertiary, and quaternary activities, -Factors affecting commercial activities of man, Physical or natural factors: Location, climate, physiography.
II	Physical Factors Location of India in the World map, longitudes, latitudes and equator, Size of country including land mass, List of States their capitals, important cities and towns / Union Territories, -India's population size & distribution-India and the world, its neighbours-Exercise: Oxford school atlas Maps – India Political Map, Population Map, Locating states / cities on maps.
III	Transportation systems in India Inland & Overseas. Roadways -National Highway including Golden Quadrilateral, E-W corridor, N-S corridor, NH numbers. Railway junctions & connections. Airports international & domestic airport locations. Seaports- Industrial belts in India, Industrial Estates, SEZS, Export Processing zones, Textile zones, Leather zones, chemical zones, etc. {Oxford School Atlas provides for following maps with detailing: India – Road & inland waterways (pg. 51) / India – Railways (pg. 52) / India – Air and sea routes (pg. 53) -Exercise: Locating NHs, Junctions, Airports, Seaports on Maps}
IV	Introduction to World Time Zone Time Zones – Greenwich Mean Time-Calculation of time zone – by using longitude-Local Time-Standard Time-International Date Line -Exercise: Various exercises can be prepared around time zones including calculation / use of maps, Local time of Flight in origin country to Local time of flight in destination country etc. {Oxford School Atlas provides for following map: World Time Zone (pg. 122)}.
V	IATA Airport Codes & World Geography Introduction to IATA Airport Codes, its history importance and use in the air transportation business.- Continents of the world and the counties in these continents and regions-Capital of the countries, important and commercial cities in the world, -Currencies of the countries-Important commercial Airports, Travel time for shipments/ cargo to various countries from India and vice versa.-Trade lines to the world from India-Types of trade between the countries- {Oxford Atlas – World Political & Physical Map}

Text Books:

1. Course material from LSC
2. NCERT Class 6 / 9 / 10 Geography
3. Oxford School Atlas – Latest Edition should be used.

21LGSC404 - LOGISTICS NETWORK DESIGN

COURSE OBJECTIVES:

- To develop competencies and knowledge of students to become Logistics network design professionals
- To orient students in the field of design and configuration of the logistics network.
- To help Students to understand Logistics network design

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of design and configuration of the logistics network. in the real-life situation
- This subject will enable them to enhance their ability and professional skills in design and configuration of the logistics network.

Unit	Topics
I	<p>Introduction - Components of Logistics network: Facilities - Plants/Vendors - Ports - - Warehouse Retailers/ Distribution Centres - Customers - Raw materials and finished products that flow between the facilities.</p> <p>The three models of Network Design: 1. Logistics network design with differentiated delivery lead time 2. Logistics network design with price discount 3. Consolidated logistics network design using consolidation hubs</p>
II	<p>Key issues of Network design: Pick the optimal number, location, and size of warehouses and/or plants - Determining optimal sourcing strategy - Which plant/vendor should produce which product? - Determining best distribution channels - Which warehouses should service which customers?</p>
III	<p>Data required for Network Design: A listing of all products - Location of customers, stocking points and sources - Demand for each product by customer location - Transportation rates -Warehousing costs - Shipment sizes by product - Order patterns by frequency, size, and season, content - Order processing costs - Customer service goals</p>
IV	<p>1. Determining best distribution channels - Which warehouses should service which retailers - The objective is to design or reconfigure the logistics network so as to minimize annual system-wide costs, including Production/ purchasing costs Inventory carrying costs, and facility costs (handling and fixed costs) Transportation costs.</p> <p>2. Find a minimal-annual-cost configuration of the distribution network that satisfies product demands at specified customer service levels.</p>
V	<p>1. Data Collection -information on :a) Location of customers, stocking points and sources—location theory- b) A listing of all products - c) Demand for each product by customer location—forecast technique – d)Transportation Cost - Transportation rates by mode—information system, like rating engine - e)Mileage estimation— f) Warehousing costs (handling and fixed)—inventory management g) Service level requirement—probabilistic technique h) Shipment sizes by product</p> <p>2. Data Aggregation - The impact of aggregate demand - a heuristic to aggregate data.</p> <p>3. Data Validation and Model</p> <p>4. Optimization.</p>

Text & Reference Books:

1. Course Material Prepared by LSC
- 2 Supply Chain Management: Logistics Network Design by Donglei Du, Faculty of Business Administration, University of New Brunswick, NB Canada Fredericton.
3. Joseph D. Patton, Logistics Technology and Management, Soloman, 1986.
4. Philip T. Frohne, Quantitative Measurements for Logistics, McGraw Hill, 2007

21LGSC405 - LOGISTICS 4.0

COURSE OBJECTIVES:

- To develop competencies and knowledge of students to understand the revolution in Logistics Industry
- To orient students in the field of Logistics
- To help students to learn the recent technology changes and challenges in Logistics Industry

LEARNING OUTCOMES:

- Students will be able to apply the basic knowledge of technology and ITC development
- This subject will enable them to enhance their ability and professional skills in Logistic

Unit	Topics
I	First Three Industrial Revolutions: Industry 1.0–3.0 Introduction to Industry 4.0 Digitalisation and the Connected Economy Drivers, Enablers, Compelling Forces and Challenges for Industry 4.0 The Journey so far: Developments in USA, Europe, China, and other countries Comparison of Industry 4.0 Factory and Today’s SMART Factory Trends of Big Data (Evolution) along with the Maturity framework and Predictive Analytics for Smart Business Transformation
II	Evolution of Logistics Introduction to Logistics 4.0 Digital Transformation of Supply Chain Management Advanced robots, Augmented Reality, Digital Twins Simulation — Network simulation and optimization The Industrial Internet of Things Cloud Computing Cyber Security
III	Big data and analytics – Data Warehouse v/s Data Mart Digitalization of Logistics and Challenges in Logistics 4.0 Inventory Control Systems (ICS)-MRP-1-MRP-2-ERP-1 3.3 The Internet of Things Challenges of The Internet of Things Changes in Business Models and Production Processes Telematics Technology – Application in Logistics
IV	Technology in Procurement 4.0 (Consignor Inventory Model) Technology in Inventory Management 4.0 (Impact of Digital Technologies on the Inventory Management Techniques) Technology in Logistics and Warehousing 4.0
V	Logistics and Supply Chain Analytics Business issues in Logistics 4.0 Opportunities and Challenges Future of Works and Skills for Workers in the Logistics 4.0 Era Advantages and disadvantages of Logistics 4.0 Strategies for competing in a Logistics 4.0 world

Specialisation Module – Group A - Course I

21LGSC406 - INTRODUCTION TO AVIATION INDUSTRY & AIRPORT OPERATIONS

COURSE OBJECTIVES:

- To develop competencies and knowledge of students to become Aviation Professionals
- To help Students to understand Fundamentals of Aviation Industry & Airport Operations

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of Aviation and Airport Operations in the real-life situation
- This subject will enable them to enhance their ability and professional skills in the Aviation Industry & Airport Operations

Unit	Topics
I	History of Aviation & Key Organizations in the Aviation Industry a. History of Aviation through the ages-Origins in Greek Mythology- The Wright Brothers- Aviation in the era of World War 1 & 2- Commercial Aircraft Era- Modern Jetliners b. Key Organizations in the Aviation Industry- 1. ICAO- International Civil Aviation Organization, 2. IATA - International Air Transport Association 3. MoCA - Ministry of Civil Aviation, 4. DGCA - Directorate General of Civil Aviation 5. AAI- Airports Authority of India, 6.AAICLAS- Airports Authority of India Cargo Logistics Allied Services 7. AERA- Airport Economic Regulatory Authority 8. BCAS- Bureau of Civil Aviation Security
II	Freedoms of the Air & the Airline Business a. Freedoms of the Air- Overview- Nine Freedoms of the Air b. Airline Business- i Business Models- Legacy, Low Cost, Charter, Regional, Cargo & Hybrid ii Airplane Manufacturers- Primary Manufacturers- Boeing, Airbus and others iii Narrow Body v/s Wide Body- Definition & Features iv The Airline Industry as a Business- Key Functions in the Airline Business v Airline Codeshares & Alliances- a. Concept, b. Key Benefits, c. Major Airline Alliances vi Airline Cabin Classes- First, Business, Premium Economy & Economy
III	World Geography & Airline Communication Protocol Traffic Conference Areas, Time Zones, Codes- Country, City, Carrier, Currency, Aircraft Registration, Airline Phonetics
IV	Airport Operations a. Key Stakeholders, Airport Types, Airport Revenue Sources, Airport Functional Layout- Landside, Governmental Agencies at Airport, Baggage Handling, Airside Operations b. Airport as an Operational System- Infrastructure & Facilities, Airport Operations Control Centre (AOCC), Airport Collaborative Decision Making (ACDM), Key Information Technology Systems at Airports
V	Concessionaire Activities at Airports (terminology restricted to Indian scenario) a. Non-Aero Activities- Retail, Food & Beverage, Real Estate, Car Rentals Car Parking, Currency & Banking, Advertising b. Maintenance Repair & Overhaul (MRO)- Types of MRO Models c. Ground Handling i Concept, ii Self-Handling V/s Outsourced Handling iii IATA Standard Ground Handling Agreement

Text & Reference Books:

- 1 Course Material Prepared by LSC
2. Airport Operations- Norman Ashford, Pierre Coutu, John Beasley- McGraw-Hill Education; 3rd edition (16 December 2012)
3. Principles of Airport Economics- P.S. Sengupta- Excel Books (1 December 2007)
4. Managing Airports- An International Perspective- Anne Graham-Routledge; 5 edition (June 9, 2018)
5. IATA Airport Handling Manual- 40th edition- Year of Publication- 2020
6. IATA Ground Operations Manual- 9th edition- Year of Publication-2020

Specialisation Module – Group B - Course I
21LGSC406 - FIRST MILE OPERATIONS

COURSE OBJECTIVES:

- To understand the First Mile operational processes in e-commerce logistics.

LEARNING OUTCOMES:

THE STUDENTS WILL LEARN:

- Basics of First Mile operations.
- Shipment pickup operations.
- Different types of shipment processing operations at Processing Centers.
- Layout of a Processing Centre.
- Key challenges in First Mile operations and First Mile metrics.

Unit	Topics
I	Role of First Mile in E-Commerce Logistics Difference between First Mile, Line Haul and Last Mile operations. -First Mile Operations - Overview. -Why is First Mile operations important in e-commerce logistics-First Mile process flow.
II	Shipment Pickup Operations Shipment pickup process. -Pickup operations staff - roles and responsibilities. -Pickup coordination. -Safety and security of shipments during pickup-Pickup documentation.
III	Shipment Processing Operations Primary and secondary processing. -Bagging operations. -Manual processing operations-Automated processing operations
IV	Layout of A Processing Centre Inbound operations-Processing Operations-Outbound Operations-Safety and security-Processing Centre staff - roles and responsibilities
V	First Mile Analytics and Metrics Productivity-Pickup operations metrics-Processing operations metrics-First Mile dashboard. Tools and Applications Pickup tools and applications-Processing tools and applications-Exceptions in First Mile and impact on operations-Tools and communication to resolve exceptions.

Text & Reference Books:

1. Course Material Prepared by LSC

Specialisation Module – Group C - Course I

21LGSC406 - MULTI-MODAL TRANSPORTATION

COURSE OBJECTIVES:

- Introduce Multi-modal and Intermodal Transport concepts.
- Explain Regulatory framework and policies for Multi-modal transportation.
- Describe Indian Railways' initiatives to promote Multimodal Logistics in India.
- Overview evolution of infrastructure facilitating Multi-modal Logistics in India.

LEARNING OUTCOMES:

- After completing this Course, the student will have the following learnings:
- The importance and role played by Multi-modal transport in the efficient and cost-effective movement of cargo
 - Types of multi-modal movement and the role of containerisation for security and speed
 - The provisions and procedures for Exim trade and INCOTERMS
 - Indian Government's policies and vision R for development of seamless multi-modal transport.

Unit	Topics
I	Transportation Systems & Multi modal Transport –Concept of Multi modal & Intermodal Transport – introduction to Multi modal transport, the difference between Multi modal and Intermodal transport-Type of transport Modes – detail and characteristics of air, road, rail, water, pipelines, package carriers-Need, Aim and Key Issues of Multi modal transport.
II	How to organise Multi modal transport-Role of Containerisation in MMT- history, utility, types, ease of handling, cost saving-Types of Multi modal transport – combined container transport, rolling Road & forwarding of trailers, RORO & LASH transportation-National Multi modal Transport Committee (NMTC) and Logistics Policy of India – key features and importance
III	Multi modal Transportation Act & Procedures-MMTG Act of 1993-Custom procedures for Export & Import - Bill Of Lading – Hague Rules, Visby Rules, Hamburg Rules, Voyage by Sea-INCOTERMS – meaning, explanation, list, and types
IV	MMT and Indian Railways-PFT Policy – maintenance of rolling stock, cargo handling, customs, etc-Warehousing Policy – stuffing, de-stuffing, stacking, use of MHE, etc-Layout and design of Multi modal Logistics parks
V	Multi modal transport & Practice Today-India's growing conflict between Trade & transport – issues, policy, problems & pricing-Integrated Transport – Bharatmala, Sagarmala, IWT, DFC, the concept of ICP (International Check Posts-Scenario in India and neighbouring countries with a case study

TEXT BOOKS

- 1 Course Material Prepared by LSC

Specialisation Module – Group A - Course II

21LGSC407 - INTRODUCTION TO AIR CARGO INDUSTRY

COURSE OBJECTIVES:

- To develop competencies and knowledge of students to become Air Cargo Professionals
- To help Students to understand Fundamentals of Air Cargo Industry

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of Air Cargo Industry in the real-life situation
- This subject will enable them to enhance their ability and professional skills in the Air Cargo Industry

Unit	Topics
I	History of Air Cargo & Multi Modal forms of Transport a. History of Air Cargo & Mail, Air Freight, Air Express, Overnight Air Express & Air Mail b. Other Multi Modal forms of Transport- Rail, Sea & Surface Transport- Key Concepts
II	Key Organizations Facilitating Air Cargo International Air Transport Association (IATA), International Civil Aviation Organization (ICAO), International Federation of Freight Forwarders Association (FIATA), The International Air Cargo Association (TIACA)
III	Air Cargo Business Models Freighters, Charters, Integrators, Combination Carriers, Systems), Couriers, E-commerce, Postal mail a. Key Concepts- Brief Introduction to the Business Models b. Impact of various Business Models in relation to geography, size and scope
IV	Key Stakeholders & Key Terminologies a. Key Stakeholders- Airports, Airlines (Direct), Airlines through General Sales Agents (GSA) or General Sales & Service Agents (GSSA), Shippers, Freight Forwarders, Custom Brokers, Consolidators, Trucking b. Key Terminologies & Abbreviations
V	Training & Development in Air Cargo Industry a. Importance of Training in the Aviation & Cargo Industry b. Areas of Training in the Air Cargo Industry c. Key Organizations facilitating Training & Development in the Aviation & Air Cargo Industry.

Text & Reference Books:

1. Course Material Prepared by LSC
2. Air Cargo Management- Air Freight and The Global Supply Chain- Michael Sales- Routledge (2016)
3. Air Cargo and Logistics - Classics and Contemporary practice by Rico Merket and Jackie Walters- Academic Publishers (01 June, 2019)
4. Moving Boxes by Air - The Economics of International Air Cargo by Peter S. Morrell and Thomas Klein - Routledge; 2 edition (19 October 2018)

Specialisation Module – Group B - Course II

21LGSC407 - LAST MILE OPERATIONS

COURSE OBJECTIVES:

- To understand Last Mile Operations in E-Commerce

COURSE OUTCOME:

The students will be able to:

- Understand the basics concept of Last mile logistics in E-Commerce
- Understand the processes involved in Last mile logistics
- Understand various metrics and customer services processes to be followed in last mile logistics
- Explain the prospects of last mile logistics.

Unit	Topics
I	<p>Introduction</p> <p>What is Last Mile in Ecommerce? Importance of Last Mile in the supply chain Last Mile Delivery challenges for ecommerce Trends in Last Mile delivery Route optimization in Last Mile operations</p>
II	<p>Last Mile Processes</p> <p>Delivery Process & its challenges Reverse pickup process in Last mile operations Challenges in Reverse Pickup process Tools and applications in Last Mile operations Considerations for effective last mile logistics strategy</p>
III	<p>Metrics</p> <p>Metrics to measure in last file Automation and technology driving metrics.</p>
IV	<p>Customer service</p> <p>Customer service and its importance Good and bad customer service (Dos and Don'ts of customer service) Relationship between metrics and customer service.</p>
V	<p>Prospects of Last Mile Logistics- 5Hrs</p> <p>Innovations in Last Mile Logistics Technology Trends in Last Mile Delivery Last Mile Delivery Market Future Prospects</p>

Text & Reference Books:

1. Course Material Prepared by LSC

Specialisation Module – Group C - Course II

21LGSC407 - COMMERCIAL ASPECTS OF TRANSPORTATION

COURSE OBJECTIVES:

- To highlight vital part of commercial considerations in providing transport services for Freight and Passengers movement.
- To Understand the importance and need for marketing and strategies involved.
- To Describe the principles in fixing Railway Freight and Rates
- To evaluate Competition in rates of Road and Rail mode of transportation.

LEARNING OUTCOMES:

- Develop a clear perspective of various commercial aspects in transportation
- Distinguish between the Operational feasibility of a work and its commercial viability
- Know the issues involved in booking and reservation of passengers,
- Know the various types of costs involved and understand the concept of cost-of-service vs value of service

Unit	Topics
I	Commercial Aspects in Transportation – A Perspective-Role and importance of Commercial Aspects, relative strengths of rail vs road-Concept of commercial viability vis a vis operational feasibility-Issues/ functions included in the commercial aspects, organisational set up to handle these
II	Commercial Aspects involving Passenger transportation –Passenger Services on Indian Railways; Booking and Reservation of passengers, Various class of services, types of tickets, concessions etc-Passengers Services in Road Sector, A state subject- differences from State to state-Supplementary and related services such luggage, parcel, refunds, catering etc.
III	Commercial Aspects involving Goods / Freight transportation–Different components of freight traffic, Booking and delivery of freight traffic on Railways, Demurrage and Wharfage, sidings-Booking and delivery of goods in roadways, agencies involved and their role-Claims and liabilities, Organisational set-up and procedure for Claims' compensation,
IV	Pricing of Transport-Basic consideration in pricing; Different type of costs involved in computing price, Relativity index of passenger fares in Indian Railways; surcharges and discounts-Principles of classification and Rate fixation and routing of traffic-Cost of service vs value of service, Cross subsidisation etc
V	Marketing Strategies for Commercial growth –Need for marketing, Rail vs Road: Complementary and not competitive role, High profit yielding commodities-Incentive schemes, IT-enabled user-friendly solutions for Booking, payment, tracking consignments and trains, Passenger movement – PRS, etc-Future trends: technology-induced improvements in various aspects of commercial working

Textbooks

1. Course Material Prepared by LSC

21LGSE501 - WAREHOUSE AUTOMATION

COURSE OBJECTIVES:

- To familiarize the student with the basic concept of the most common automations from light to heavy
- To familiarize the student with the basic concept of the supply chain including Logistics, warehousing, IT as well as distribution and planning.

LEARNING OUTCOMES:

The students will be able to:

- Recognize the Knowledge of the common and latest automation solutions for ware-housing
- Understand and Recognize the costs and pre-requisites for each automation solution and the expected benefits of the different solutions
- Able to complete the analysis and to select the most appropriate solution for ware- house automation

Unit	Topics
I	Overview of the Traditional Warehouse Operations - Warehouse Automation Systems: Over- view, Applications, Costs, Benefits, ROI – Receiving Automation: PalletInverter - Palletizers
II	Storage and Retrieval Automation : Vertical and Horizontal Carrousel - Vertical Lift Module - Orbital Shuttle Systems - AS/RS Mini Load - AS/RS Unit Load - Garments on Hangers
III	Material Flow Automation - Conveyors - Lifts - Automated Guided Vehicles - Monorail
IV	Picking/Outbound Automation : Pick / Put To Light - A Frame - Automated Order Selection – Pick-N-Go - Outbound Sorters - Automatic Truck Loading .
V	Automating Data Collection : RFID - Automated Measurements Systems - Unique Solution Providers: Kiva Robot - Auto Store - Additional Automation Around the Warehouse Building Management System: Weight scales - Delivery Drones - Delivery Robots.

Text & Reference Books:

1. Course Material Prepared by LSC
2. Industrial Automation and Robotics: A.K.Gupta and S K Arora
3. Advanced Industrial Automation and its Application: Ravindra Sharma
Industrial Control Electronics Devices, Systems, & Applications 3D Edition Author: Terry Bartler Publisher: Delmar

21LGSE501 - BEST PRACTICES FOR TRANSPORTATION

COURSE OBJECTIVES:

- To familiarize the student with the information about transportation considerations for the import, export and domestic trade processes.

LEARNING OUTCOMES:

The students will be able to assess transportation operations towards increased logistics efficiency while discovering opportunities for saving time, expense and hassle.

Unit	Topics
I	Transportation Strategy Considerations: An Overview of the Import Process - An Overview of the Export Process - Bonding Issues for Exporters - Negotiating Rates - Insurance and Liability - E-Logistics and the Internet - UN Module regulation - introduction to carriage of dangerous goods.
II	Import And Export Documentation Requirements: An overview of commercial documents - Commercial Invoice - Consular Invoice - Packing List - Certificates of Origin - Permits of Export and Import of Goods - Cargo Control Documents - Other Commercial Documents - Distribution of Commercial Documents
III	Airfreight: Introduction - Documents - The Air Waybill (AWB) - Moving Goods by Air - Export Packaging - Air Cargo Handling, Delivery - The Role of IATA - Shipping Dangerous Goods by Air - Glossary of Airfreight Terminology. Oceanfreight: Documents - Containers - FCL/LCL - Handling the LCL - Handling the Ocean Freight Shipment - Shipping Dangerous Goods by Ocean
IV	Road Transportation: Introduction to Road Transportation - Trucking/Highway Regulations – Documents - The Truck Bill of Lading - Standard Trucks - Specialized Trucks - Lorry haul trucks - Heavy load haulage multi axle age multi truck - Service Options for Truck Transport - Shipping Dangerous Goods by Truck - LTL/FTL Shipments - Trucking Rates and Tariffs A Checklist of Trucking Considerations - Border Security Issues. Rail Transportation: Introduction - Shipping Goods by Rail The Railway Bill of Lading - Rail Equipment - Moving Dangerous Goods by Rail - Over Dimensional and Heavy Lift Cargo by Rail.
V	Intermodal Transport: Introduction - Shipping goods intermodally - Documentary Considerations - Other Considerations - Telematics - Routing – GPRS - Monitoring fuel economy - Driver practice – Indicators - Future prospectus growth of road - .Automation - INCOTERMS 2000 - Transfer of Liability - Incorporating INCOTERMS into the Contract of Sale - INCOTERMS Structures - Mode of Transport Relate to INCOTERMS. Advantages of multi module transport document.

Text & Reference Books:

1. Course Material Prepared by LSC
2. "Self-Compliance Strategies and the Administrative Monetary Penalty System", a Manual for Importers and Exporters : PF Collins Customs Broker Ltd., November 2002
3. OAG® Air Cargo Guide TM May 1997, published by OAG, a division of Reed Elsevier Inc., OAG, 2000 Clearwater Drive, Oak Brook Illinois.
4. International Air Transport Association (IATA) Dangerous Goods Regulations

21LGSE502 - INLAND WATERWAYS & COASTAL SHIPPING**COURSE OBJECTIVES:**

- To familiarize the student with the basic concept of Inland water ways and coastal shipping, their importance and future development of Indian water ways

LEARNING OUTCOMES:

- Recognize the impact of Inland water ways and coastal shipping
- Recognize the importance and future development of Indian water ways.

Unit	Topics
I	Basics of shipping- Introduction for shipping - Types of ship- sizes of ship – Basic terminology of ships- Sea transport and its importance- Roll of ports in sea transport - Coastal shipping and its importance.
II	Inland waterways: Introduction –Scope –Sources (lakes, Rivers, Canals, Back water, creeks, water courses inlets and bays)-Working principles -Impact - Inland waterways in India: locations
III	Roll and importance of inland waterways: Infrastructure facility required - Roll and importance of inland water ways in transportation- Transportation through creeks
IV	Inland waterways : Road connectivity – Availability of cargo (scarcity)-Navigation (night navigation)- Draft restriction
V	Inland waterways in other countries: Bangladesh – China - Vietnam - Europe Inland waterways in India : Network in India –upcoming inland waterways – Inland waterways authority – Government policies on inland waterways – National waterways Act

Text & Reference Books:

1. Course Material Prepared by LSC
2. Inland Waterway Transport: Challenges and prospects (Routledge Studies in Transport Analysis) Hardcover – Import, 12 Jul 2016 by Bart Wiegman (Editor), Rob Konings (Editor)
3. Inland waterways Transportation (IWT) in India – Machiraju presentation Pvt ltd

21LGSP503 - APPRENTICESHIP – I

The students would be onboarded in Logistics Processes of companies by the Logistics Sector Skill Council for Apprenticeship Training. The duration of Apprenticeship Training is 6 months. During Apprenticeship Training students would be assigned on-the-job-training by companies. Being a legal engagement, students would receive a monthly stipend during Apprenticeship Training as per the existing norms.

On completion of the Apprenticeship Training, students shall submit Apprenticeship Report in the form of Work Diary to the Collaborating Institutions. The Report would be evaluated and Viva conducted by the Collaborating Institution.

21LGSE601 - COURIER, EXPRESS & PARCEL**COURSE OBJECTIVES:**

- To develop competencies and knowledge of students to become Courier and Express
- Professionals
- To orient students in the field of Courier and Express
- To help Students to understand Courier and Express

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of Courier and Express in the real-life situation
- This subject will enable them to enhance their ability and professional skills

Unit	Topics
I	Types of consignments for shipment - Information on labels and handling instructions - consignee locations- consignments and destinations- consignment shipment operations – (loading, handling, scheduling and documentation) - Special instructions for safe handling of fragile consignments
II	Customer declarations – verification of customer declarations and consignment package - Clarification procedure in case of discrepancies noticed - Generation of bill of lading / shipping bill for export consignments – Coordination for import/export consignments clearance
III	Hub-Spoke Operations & Inbound and Outbound activities: Introduction – Hub spoke activities inbound and outbound activities. Types of consignments coming in the hub-spoke - layout of the hub-spoke - Areas to receive, sort and inspect - Documentation activities in hub-spoke - Inspection process of inbound sorted and outbound consignments
IV	Tracking and tracing; AWB –essential time of arrival delivery - Last mile delivery – LMD -First mile delivery
V	Customer satisfaction- quality, delivery time, costs (shortest cost, loss prevention) - Weightment rate, cube scan –diversions/LBW/Volumetric density of cargo

Text & Reference Books:

1. Course Material Prepared by LSC
2. Logistics and Supply chain management – Martin Christopher
3. Basics of Distribution Management; A Logistical Approach Prentice HALL of India - Kapoor Sathish
4. Ware house management and Inventory control - Vikas Publication House

21LGSE601 - INPLANT LOGISTICS

COURSE OBJECTIVES:

- To develop competencies and knowledge of students to become In-plant logistics professionals
- To orient students in the field of Logistics
- To help Students to understand In-plant logistics operations

LEARNING OUTCOMES:

- Students will be able to apply the Basic knowledge of In-plant operations in the real life situation
- This subject will enable them to enhance their ability and professional skills

Unit	Topics
I	Introduction to Logistics in a manufacturing setup - Manufacturing process - physical flow - Assembly line – OTIF (on time in full) - Basic activities of in-plant logistics : Loading, Unloading, Receiving, sorting, Storing, Picking and dispatch activities - process of coordination with assembly line
II	Job shop- work allocation - Production scheduling – selection of products/ models/parts/ Team table/Time table - Material flow – production line –feeding just in time inventory, Vendor management -
III	Inbound logistics- inventory management, importance, Value addition, stock counts, audits
IV	Out bound logistics – Finished goods (FG)- tooling, binding ,creating, input process, output - packaging, Kitting, far goods(FH), Spare parts, , After markets process, schedule of transport, vendor coordination
V	Timely supply – scheduling, vendor co ordination quality control, pre delivery Inspection, Quality assurance, on time in full (OTIF)

Text & Reference Books:

1. Course Material Prepared by LSC

21LGSE605 - EXPORT AND IMPORT DOCUMENTATION**COURSE OBJECTIVES:**

- To familiarize the student with the basic concept of formalities for export trade, and the documentation process required for import and export.

LEARNING OUTCOMES:

- Recognize the impact of information and communication technologies, especially of the internet in business operations.
- Recognize the fundamental principles of eBusiness and eCommerce.
- Explain the security protocols and the issues in internet security.

Unit	Topics
I	Introduction to Export and Import 12 Hrs Basics of Exports - Classification of goods - Preparation for Exports - Methods of Exporting - Export Marketing Organizations - Functions - Registration formalities IEC Number - Procedure of obtaining IEC Number - RCMC (Registration Cum Membership Certificate) –Export Credit Guarantee Council (ECGC) - Application for import and export of restricted items.
II	Documentation Framework and Contracts 15 Hrs Aligned Documentation System: Commercial Documents - Auxiliary Commercial Documents - Regulatory Documents - Documents related to goods - Documents related to Shipment - Documents related to Payments - Documents related to Inspection - Documents related to Excisable Goods - Types of Contracts - Export Contracts.
III	Payments and Finance 15 Hrs Factors - Methods of receiving Payment - Instruments of Payments-Letter of Credit Pre-shipment Finance - Post-shipment Finance - Post-shipment Credit in Foreign Currency - Negotiation of documents with bank - CENVAT - Duty Draw back
IV	Quality Control and Clearance of Cargo 15Hrs Objective of Quality Control - Methods - Procedure for Pre-shipment Inspection - Role of Clearing and Forwarding Agents – Role of Inspection Agents-Clearance of Cargo Central Excise Clearance Procedure - Central Excise Clearance Option - Shipment of Export Cargo.
V	Customs Clearance, Risk and Insurance Policy 15 Hrs Customs Clearance of Export Cargo - Customs Clearance of Import Cargo - Risk: Types - Types of cover issued by ECGC - Cargo Insurance. Processing of an export order - Major laws governing export contract.

Text & Reference Books:

- RAMA, GOPAL C. (2008) Export Import Procedures Documentation and Logistics. New Age International Publishers: New Delhi.
- KHUSHPAT, S. J. (2013) Export Import Procedures and Documentation. Himalaya Publishing House: New Delhi.
- PAWAN, KUMAR (2001) Export of India's Major Products Problems and Prospects. New Century Publications: New Delhi.
- KAPOOR, D. C. (2002) Export Management. Vikas Publications: New Delhi.
- CHERUNILAM, F. (2004) International Trade and Export Management. Himalaya Publications: New Delhi.

Websites:

- www.cbec.gov.in/customs/cs-act/cs-act-idx.htm (Central Board of Excise and Customs - Customs Act, 1962, Customs Tariff Act – 1975, Other Acts)
- www.epckenya.org/(Export Promotion Council)
- commerce.nic.in/MOC/index.asp (Ministry of Commerce and Industry)
- www.dgft.gov.in/ (Directorate General of Foreign Trade)

21LGSP603 - APPRENTICESHIP II

The students would be onboarded in Logistics Processes of companies by the Logistics Sector Skill Council for Apprenticeship Training. The duration of Apprenticeship Training is 6 months. During Apprenticeship Training students would be assigned on-the-job-training by companies. Being a legal engagement, students would receive a monthly stipend during Apprenticeship Training as per the existing norms.

On completion of the Apprenticeship Training, students shall submit Apprenticeship Report in the form of Work Diary to the Collaborating Institutions. The Report would be evaluated and Viva conducted by the Collaborating Institution.



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