

University of Mumbai



**Revised Syllabus and Question Paper
Pattern of Courses
of
B.Com. (Transport Management)
Programme
at
Second Year Semester
III and IV**

Under Credit, Grading and Semester System

With Effect from Academic Year 2017-2018

Board of Studies-in-Transport Management, University of Mumbai

Board of Studies-Transport Management, University of Mumbai

**Revised Syllabus
of Courses of B.Com. (Transport Management)
Programme at
Semester III**

No. of Courses	Semester III	Credits
1	<i>Elective Courses (EC)</i>	
1,2,&3	<i>*Any three courses from the following list of the courses</i>	09
1	Production and Quality Management	03
2	Custom Procedures and Cargo Handling	03
3	Transport Project Management	03
4	Transport and Environment Management	03
5	Managerial Skill Development	03
2	<i>Ability Enhancement Courses (AEC)</i>	
4	Information Technology in Transport-I	02
3	<i>Core Courses (CC)</i>	
5	Service Marketing	03
6	Warehousing and Inventory Control	03
7	Transport Law	03
Total Credits		20

With effect from Academic Year 2017-2018

Programme at Semester III

Board of Studies-Transport Management, University of Mumbai

with effect from the Academic Year 2017-2018

3.1.1 Production and Quality Management

SN	Modules	No. of Lectures
1	Product and Production	15
2	Productivity and Quality	15
3	Total Quality Management	15
4	Quality Improvement Strategies and Certifications	15
	Total	60

SN	Modules/ Units
1	Product and Production
	<ul style="list-style-type: none"> • Product-Meaning, Objectives ,Need, Planning, Design, Development, Life Cycle. • Production Management- Meaning, objective, Characteristics, Need, Components, Manufacturing systems, Intermittent and continuous production systems, Decision making, problems. • Functions of Production Manager. • Plant Location and Layout- Objectives, principles of good product layout, types of layout, Importance of purchase management, product life cycle.
2	Productivity and Quality
	<ul style="list-style-type: none"> • Productivity: Meaning, concept, various ways and methods of calculating it. Ways to improve productivity. Partial productivity and total productivity. • Quality Management: Concept, Importance, Principles, factors affecting quality , characteristics, • Product and service quality dimensions- Physical aspects, reliability, personal interaction, problem solving and policy. • Quality Standards: Storage, packaging and material handling. • Quality Assurance. Quality circle.
3	Total Quality Management
	<ul style="list-style-type: none"> • Total quality management- definition, basics, Concept, importance, Principles, cost of quality, eight building blocks, seven stages and pillars of TQM, Seven deadly disasters. Factors affecting TQM • Philosophy and approach to quality: Edward Deming, J. Juran, Kaizen, P.Crosbys Philosophy. 7 Quality Control Tools and Advance Quality control tools.
4	Quality Improvement Strategies and Certifications
	<ul style="list-style-type: none"> • Lean thinking, Kerpner Tregor methodology of problem solving, 6 sigma, DMAIC/DMADV, TAGUCHI's Quality Engineering, ISO 9000, ISO 1400, QS 9000. Malcon Baldrige National Quality Award (MBNQA), Demings Application Prize, Poka Yoke, Work Methodology, Study methodology, National Productivity council, JIDOKA, KANBAN, ISHIKAWA, Mini, Mura, Muda, Ergonomics, SMED, Brainstorming, Delphi and nominal group techniques, Lateral thinking, Split brain theory, Benchmarking.

*Revised Syllabus of courses of B.Com. (Transport Management)
Programme at Semester III
with effect from the Academic Year 2017-2018*

3.1.2 Custom Procedures and Cargo Handling

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction	15
2	Role and Documentation	15
3	Cargo Handling	10
4	Procedure of Cargo Handling	10
	Total	50

SN	Modules/ Units
1	Introduction
	<ul style="list-style-type: none"> • Impact of custom procedure, Custom procedure for home consumption, role of customs, Procedure for clearance of import and export goods, import export restrictions and prohibitions, , transshipment of cargo, import/ export through post, re import and re export, custom clearance - seaport, airport, ICD
2	Role and Documentation
	<ul style="list-style-type: none"> • Role in Cargo Handling of various authorities -Custom cargo service providers, custom house agent, freight forwarders, CFS , ICD authority, MTO, NVOCC. • Cargo Documentation- Bill of lading, Bill of entry, Packing List, Invoice, others, types of Bond. Difference between airway bill, seaway bill and bill of lading. • Check System- 1st Check System, custom examination, Calculation of Custom Duty.
3	Cargo Handling
	<ul style="list-style-type: none"> • Cargo Handling – at airport, seaport, ICD. • CFS agent. • Equipment used in Cargo Handling. • Cargo rates and charges, Unitization, consolidation of cargo, world geography- geography and IATA 3 letter codes, Time difference, calculation of transportation time.
4	Procedure of Cargo Handling
	<ul style="list-style-type: none"> • Bulk loading limitation in railways, airways and shipment, cargo terminal facilities, special cargoes, Cargo booking procedures in India (railway, airways and shipment),online booking procedures, labeling and marking of cargo.

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3.1.3. Transport Project Management

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction to Project Management	15
2	Organization Structure and Project Manager	15
3	Project Planning and Budgeting	20
4	New Dimensions in Project Management	10
Total		60

SN	Modules/ Units
1	Introduction To Project Management
	<ul style="list-style-type: none"> • Introduction-Meaning, Features ,Need, Types, History • Project Management knowledge areas- deliverables typically provided for each knowledge areas, • Project Management-Project Life cycle, Phases of project management life cycle, Project Management Process, Project Stakeholders and Project Interface, Project champions, roles and responsibilities of various stakeholders in project management.
2	Organization Structure and Project Manager
	<ul style="list-style-type: none"> • Organization Structure- Types, forms, Work breakdown structure, master production scheduling, system integration, strategic business unit, change management. How to select a good project team, role and responsibilities of stakeholders. • Project Manager- Role (especially in planning), Importance, Selecting criteria of project manager, project and project manager, project manager and organization, location of project manager in organization, managing conflict by project manager, relationship of line- staff- project manager.
3	Project Planning and Budgeting
	<ul style="list-style-type: none"> • Project Planning (Detailed project plan, cost), Project Selection (dealing with risk and uncertainty), Project Feasibility Study (feasibility, technical, marketing, operational),SWOT Analysis, Project Selection Models (Numeric and Non numeric), budget and cost estimation (leverages, profitability statement, valuation of shares),scheduling, resource allocation, project communication and documentation, project monitoring and controlling, project close out, termination and follow up, project auditing.
4	New Dimensions in Project Management
	<ul style="list-style-type: none"> • Contract Management, Managing crisis in project, Modern development in project management- PMIS, Project Management Methodology, Continuous improvement, capacity planning, project management maturity model, managing multiple projects, competency models. • Live case studies:- dedicated freight corridor, bullet trains, monorails, pod taxis, metro projects.

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3.1.4. Transport and Environment Management

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction	15
2	Environment law and Remedies	15
3	Environment Audit and Waste management	15
4	Environmental impact	15
Total		60

SN	Modules/ Units
1	Introduction
	<ul style="list-style-type: none"> • Environment: Meaning, features, classification, components, objectives of environmental studies, factors influencing environment, 3R's. • Environmental degradation- meaning, types (extreme events and hazardous pollution) Interface between pollution and transport. Environmental impacts of transportation: air, water, noise, global diming, global warming, desertification, ozone depletion and others. Environment management issues • Environment externalities.
2	Environment law and Remedies
	<ul style="list-style-type: none"> • Green belt- meaning, encroachment on green belt. Green house gas- meaning , effect, causes and damages, measures to mitigate green house effect. Green logistics- meaning importance, paradoxes of green logistics, cases. Sustainable transportation- meaning, elements of sustainable transport, criticism. Fossil fuels, bio fuels, shift from fossil fuels to bio fuels. Transport and urban problems. Designing traffic system to reduce pollution, monitoring tools for environment management, Government incentives to reduce pollution, transport schemes and environment impact with cases. • Environment and law: Environment Protection Act, World Commission on environment and development report, 1987. International Earth Summit, 1992., Kyoto protocol, problems in implementing environment laws and order.
3	Environment Audit and Waste management
	<ul style="list-style-type: none"> • Corporate environment and business ethics: Role of stakeholders. Environment and health., Waste management meteorology. waste audit and waste minimization. Environmental audit- audit as per ISO 9011, roles and qualifications of auditor. Environment performance indicators, • Environmental impact of roads: noise and acoustical engineering, combustion by-products of gasoline and fossil fuels, habitat destruction, habitat fragmentation. Barriers to animal movement. Increased animal mortality due to traffic. Toxic effects on plants and animals. Poaching of flora and fauna. Curtailment of space for growth of forest. Problems of ill legal logging. Road Ecology: Hydrology: Storm water run-off as a source of pollution, storm sewers, air and noise pollution, Plant life, Effects on wild life, Increased human encroachment, • Mitigating efforts: Measures to reduce traffic noise, habitat construction and planting of trees
4	Environmental impact

Environmental impact of aviation: Increase in demand for air travel and related statistics of carbon emissions, acidification, photo-chemical air pollution, Impact in terms of noise and air quality, Greenhouse effect, Role of International Civil Aviation Organization (ICAO), Ban on noisy aircrafts, Enforcement of aircraft construction standards

Maritime and inland waterway transport: Atmospheric emissions of sea-going ships, Regulations for polluting emissions from inland waterway vehicles, Role of Inland Waterways Authority of India

Integration of environment and sustainable development into transport policy, Existing machinery for policy implementation in India Strategies to minimize environmental impact of transport: Promotion of public transport, intermodal and combined transport in urban areas, Elimination of negative effects of transport growth through land-use measures, Infrastructure charging, Promoting research to reduce CO₂ emissions and noise, Variation of tolls based on vehicle emission classes and time of day.

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3.1.5. Managerial Skill Development

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction to Management	15
2	Intra Personal skills	10
3	Inter personal Skills	10
4	Leadership Skills	15
5	Negotiation Skills	10
	Total	60

SN	Modules/ Units
1	Introduction to Management
	<ul style="list-style-type: none"> • Management – Definition, Features, Importance, Function, Functional Areas of Management, Levels of Management, Role and Skills of manager, Evolution of management thoughts, Contribution of F.W. Taylor, Henri Fayol and Contingency approach, PODSCORB.
2	Intra Personal skills
	<ul style="list-style-type: none"> • Self-awareness- Concept, The Johari Window. • Stress management-meaning, types, elements, stress management techniques, Causes and effects of stress. • Problems solving skills, Time management skills and techniques. • Delegation skills – Importance, Prioritization, Advantages of delegation & principles of delegation • Employability in transport- careers and challenges
3	Inter personal Skills
	<ul style="list-style-type: none"> • Supportive communication- Concept • Motivation-meaning, factors, types, theories of motivation –Maslow’s theory, theory X theory Y, McGregor theory, Hygiene theory (Herzberg theory) • Managing Change & Conflict-Definition, Importance, Change agents, Managing Change (process), Interpersonal conflict management.
4	Leadership Skills
	<ul style="list-style-type: none"> • Leadership Skills-Meaning , definition, Characteristics, leader V/s managers, Traits of leaders, leadership styles, Theories of leadership- Great Man, Trait Theory, Behavioural theory, Contingency (fielders contingency theory, Hersey blackhead situational leadership theory, vroom, mount and Blake theory) , Women as leader, Empowerment-dimensions, Teamwork- Meaning of team, stages of team development, problems & barriers • Groups- Groups in organization, group dynamic, group decision making
5	Negotiation Skills
	<ul style="list-style-type: none"> • Negotiation skills-approaches, self-assessment, strategies to influence people, group negotiation, how to deal with difficult negotiation • Controlling – Meaning, Techniques & prerequisite • TQM, Knowledge management, customers service management skills, DESCRIBED model.

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3.2.4 Information Technology in Transport

Modules at a Glance

SN	Modules	No. of Lectures
1	E-Commerce & ICT	12
2	Computer Organization & Internet	1
3	ICT soft Tools – Word Processor	15
4	ICT soft Tools – Spreadsheet	15
Total		60

SN	Modules/ Units
1	E-Commerce & ICT
	<ul style="list-style-type: none"> • <u>E-Commerce</u> • Introduction, Definition, Advantages & Disadvantages, Types of E-Commerce, Electronic Data Interchange, EDI Applications in Business, EDI implementation, E-Commerce: Its Impact on Transportation, Logistics, and Supply Chain Management, Types of Electronic Payment Systems, Smart Cards & Electronic Payment Systems, Credit Card-Based Electronic Payment Systems. • <u>Information & Communication Technology</u> • Introduction, Objectives, Advantages & Disadvantages, Use of ICT in day to day life, ICT Applications: Communication applications, measurement applications, booking systems, monitoring and tracking systems, satellite systems.
2	Computer Organization & Internet
	<ul style="list-style-type: none"> • <u>Computer Organization</u> • What is Hardware & Software?, Components of Computer System, Input devices and their uses, Output Devices and their uses, Primary Memory-RAM, ROM, PROM, EPROM, EEPROM, Secondary Memory- portable and removable hard drives, magnetic tape drives and magnetic tapes, memory cards, Optical storage media (CD/DVD/Blu-ray). • <u>Internet</u> • Defining and describing the Internet, Brief history, future of the Internet, Internet Resources- Email, Newsgroups, Conferencing, Types of Internet Access, Internet service providers, World Wide Web, Protocols: Uniform resource locator, File Transfer protocol, Internet Protocol, Web-browser: Returning to the home page, Changing the home page, Favourites and Bookmarks, Cookies, Search Techniques, Examples of search tools, Protecting the computer: Viruses, Virus protection software, Updating the software, Scanning files., Using Search Engine.
3	ICT soft Tools – Word Processor
	<ul style="list-style-type: none"> • Getting Started with Word 2010: Starting Word, Opening a saved Word document, Entering text in a document, previewing a document, saving a document, printing a document, Closing a document and

	<p>existing Word, Editing a Document: Navigate through a document, Scroll through text, Insert and delete text in a document, Select text, Undo and redo commands, Use drag and drop to move text, Copy, cut and paste, Formatting A Document: Format and align text, Line and paragraph spacing, Add bulleted and numbered lists, Add borders and shading, Using Editing and Proofing Tools: Document views, Spell and grammar check, Shortcut Menus, Find and replace text, Changing the Layout of a Document: Adjust page margins, Change page orientation, Create headers and footers, Set and change indentations, Insert and clear tabs, Inserting Elements to Word Documents: Insert and delete a page break, Insert page numbers, Insert the date and time, Insert special characters(symbols), Insert a picture from a file, Resize and reposition a picture, Using Words new picture tools, Working with Tables: Insert a table, Convert a table to text, Navigate and select text in a table, Resize parts of a table, Align text in a table, Format a table, Insert and delete columns and rows, Borders and shading, Merge table cells.</p>
4	ICT soft Tools – Spreadsheet
	<ul style="list-style-type: none"> • Learning Worksheet Fundamentals: Understand basic workbook concepts, Create a workbook, Select cells, Use undo and redo, Enter text, numbers and dates in a workbook, Enter a range of data, Edit cell contents, Save a workbook for the first time, Close a workbook and quit excel, Editing and Formatting Worksheets: Format numeric data, Adjust the size of rows and columns, Align cell contents, Create and apply conditional formats, Find and replace cell contents, Insert and delete row and columns, Cut, copy and paste, Formatting Worksheets: Format text and numbers, Create and modify styles, Use Format Painter, Add borders and shading to cells, Merge cells, Wrap text in a cell, Changing Print Options: Add a header and footer to a worksheet, Change the page orientation, Set and clear print areas, Set other print options, Worksheets & Workbook: Autocomplete, Use numbered series and AutoFill, Hide and unhide rows and columns, Freeze and unfreeze rows and columns, Add and delete worksheets, Rename worksheets, filtering Data, Sort data, Performing Basic Calculations: Formula basics, Create formulas using cell references, Create formulas using functions, Work with the formula tab, Link workbooks, Excel 2010 Charts: Chart basics, Create a chart, Chart & Axis Titles, Change the chart type & organize the source data, Update data and format the Axes, Add gridlines and arrows.

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3.3.5 Service Marketing

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction to Service Marketing	15
2	Key Element of Service Marketing Mix	15
3	Managing Quality in Service Marketing	15
4	Globalisation and Recent Trends in Service Marketing	15
	Total	60

SN	Modules/ Units
1	Introduction to Service Marketing
	<ul style="list-style-type: none"> Services Marketing Concept, Distinctive Characteristics of Services, Services Marketing Triangle, Purchase Process for Services, Marketing Challenges of Services, Role of Services in Modern Economy, Services Marketing Environment, Goods vs Services Marketing, Goods Services Continuum, Consumer Behavior, Positioning a Service in the Market Place, Variations in Customer Involvement, Service Recovery , Complain Handling, Type of Contact: High Contact Services and Low Contact Services, Sensitivity to Customers' Reluctance to Change
2	Key Element of Service Marketing Mix
	<ul style="list-style-type: none"> The Service Product, Pricing Mix, Promotion & Communication Mix, Place/Distribution of Service, People, Physical Evidence, Process-Service Mapping Flowcharting, Branding of Services – Problems and Solutions, Brand Positioning, Options for Service Delivery, STP in service sector.
3	Managing Quality in Service Marketing
	<ul style="list-style-type: none"> Improving Service Quality and Productivity, Service Quality – GAP Model, Benchmarking, Measuring Service Quality -Zone of, Tolerance and Improving Service Quality, The SERVQUAL Model, Defining Productivity – Improving Productivity, Demand and Capacity Alignment
4	Globalisation and Recent Trends in Service Marketing
	<ul style="list-style-type: none"> International and Global Strategies in Services Marketing: Services in the Global, Economy- Moving from Domestic to Transnational Marketing, Factors Favoring Transnational Strategy, Elements of Transnational Strategy, Recent Trends in Marketing Of Services in: Tourism, Hospitality, Transportation (Air, Water, Road, Rail) , Unethical Practices in Service Sector, Live Case Studies.

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3.3.6 Warehousing and Inventory Control

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction to Warehousing	15
2	Warehousing Operations	15
3	Warehousing Management	15
4	Inventory Management & Control	15
	Total	60

SN	Modules/ Units
1	Introduction to Warehousing
	<ul style="list-style-type: none"> • Evolution & History of Warehousing • Warehouse- Meaning, Definition, Importance, Need, Characteristics of warehouses, Uses of warehousing, Tasks, Warehousing Functions. • Issues Affecting Warehouses- Insufficient space, slow picking & discrepancies, Warehousing slotting problems, inaccurate quantities, Capacity, Damage etc. • Storage- Meaning, Reasons, Need for Storage. • Factors to be considered for selection of Warehouse. • Types of Warehouses- Private, Public, Government, Bonded, Co-operative, Cross Docking, Contract, Centralized & Decentralized warehouses. • Advantages and Disadvantages of different types of Warehouses. • Private & Public Warehouse Expenses. • Economic & Service benefits of Warehouses • Size and Number of Warehouse- Factors affecting Warehouse size and number, Warehouse size and material handling equipment, demand and warehouse size. • Characteristics of Ideal Warehouse. • Significance of Warehousing in Logistics. • Role of Warehouse Manager, attracting & retaining warehouse employees.
2	Warehousing Operations
	<ul style="list-style-type: none"> • Location Analysis- Meaning, Considerations for the location of a warehouse • Location of Warehouse- location analysis-market positioned- warehouses-production positioned-intermediately positioned warehouse positioned. • Setting up a warehouse, Determining Storage requirements, Warehousing Preparation Planning, Resource Requirements, Legal Considerations. • Warehouse Layout and Design- randomized storage, dedicated storage, warehouse redesign. • Storage System- Meaning, Types of storage systems, Benefits of storage systems, Factors influencing choice of storage system. • Warehouse Operations- Process of Warehousing operations, Monitoring warehouse operations, receiving and put away principles, pallet storage

	<p>retrieval system, case picking system, small item picking system, order picking operations, utilizing and shipping</p> <ul style="list-style-type: none"> • Warehouse Audit • Warehouse work force design.
3	Warehousing Management
	<ul style="list-style-type: none"> • Warehouse Handling Equipment- Types of material handling systems-manual system, automated systems & semi-automated, Merits & demerits of various handling systems • Warehouse Management System (WMS)- Meaning, Need of Warehouse Management systems, Master Production Scheduling, Material Requirement Planning (MRP), benefits of MRP, Closes Loop MRP, MRP II, Distribution Requirement Planning (DRP), EOQ, • Just in Time (JIT)- Meaning, Objectives, Benefits, JIT as a philosophy. • Comparison between Independent and Dependent demand system. • Packaging- Meaning, Purpose, Functions, Types, Factors influencing package design. • Technology for warehouse management- Bar code, RFID, Scanning Devices, EDI, ERP.
4	Inventory Management & Control
	<ul style="list-style-type: none"> • Inventory- Meaning, Necessity of Inventory, Types of Inventory- Based on physical form, Position in the supply chain, Inventory performance Cycle, Inventory Costs- Material Costs, Procurement costs, Inventory Carrying costs, • Inventory Management- Meaning, Importance of Inventory Management in Supply Chain Management, Functions of Inventory Management, Objectives & Importance of Inventory Management. • Inventory Control- Meaning, Objectives, Advantages, Limitations, Mechanism of inventory control. • Selective inventory control- ABC, HML, VED, SDE, GOLF, FSN, XYZ. • Concept of EOQ, Reorder Level. • Methods of controlling stock levels. • Role of Inventory Manager in Inventory Management & Inventory Control Operations.

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3.1.3. Transport Law

Modules at a Glance

SN	Modules	No. of Lectures
1	Laws relating to Roadways	15
2	Railways and Shipping Laws	15
3	Multimodal and Customs law	15
4	Laws relating to foreign trade	15
	Total	60

SN	Modules/ Units
1	Laws relating to Roadways
	<ul style="list-style-type: none"> • Motor Vehicle Act, 1988. • Road Transport Corporation. • National Highway Act.
2	Railways and Shipping Laws
	<ul style="list-style-type: none"> • Railway Act, 1989. • Merchant Shipping Act, 1958.
3	Multimodal and Customs law
	<ul style="list-style-type: none"> • Indian Contract Act, 1872. • Sale of Goods Act, 1930. • Multimodal Transport and Goods Act 1993. • Customs Act 1962.
4	Laws relating to foreign trade
	<ul style="list-style-type: none"> • Common Carrier Act 1965 • Role of ICAO • Indian Foreign Trade Act • FEMA & FERA

Revised Syllabus of Courses of B.Com. (Transport Management) Programme at Semester IV

No. of Courses	Semester IV	Credits
1	<i>Elective Courses (EC)</i>	
1,2,&3	<i>*Any three courses from the following list of the courses</i>	09
1	Procurement Management	03
2	Management Accounting	03
3	Transportation, Containerization and Distribution Management	03
4	Taxation and Transportation	03
5	Health and Safety and Facility Management	03
2	<i>Ability Enhancement Courses (AEC)</i>	
4	Information Technology in Transportation-II	02
3	<i>Core Courses (CC)</i>	
5	Multi Modal Transport	03
6	Surveys in Transport	03
7	Business Economics-II	03
Total Credits		20

Note: The Syllabus of Ability Enhancement and Core Courses are same at all SY

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4.1.1 PROCUREMENT MANAGEMENT

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction to Procurement Management	15
2	Purchasing Scope, Strategies & Policies	15
3	Sourcing Strategies, Relationships & Performance Measurement	15
4	Strategic Procurement & Quality Management	15
	Total	60

SN	Modules/ Units
1	Introduction to Procurement Management
	<ul style="list-style-type: none"> • Procurement:- Meaning, definition, objectives, functions, importance, challenges, purchase principles, evolution of procurement, procurement process, prerequisite of procurement, procurement skills. • Functional integration of procurement- production inventory and distribution, seven R's of procurement, procurement methods, • Purchasing cycle, purchasing document- quotation, purchase order, purchase release and other documents.
2	Purchasing Scope, Strategies & Policies
	<ul style="list-style-type: none"> • Types of purchases -: Raw material, semi-finished, products and components, finished products, maintenance repair and operating items, production support items, services, capital equipment, transportation and third party logistics. Factors affecting purchasing position, Organizational structure for purchasing function, centralized and decentralized purchases, SCM and procurement management. • Purchasing policy:- advantages, disadvantages, effective purchasing policy, policy hierarchy, components of purchasing cycle:- role of purchasing, code of conduct, social and minority business, objectives, operational issues, purchasing procedure, purchasing linkages:- internal and external linkages. • Purchasing strategy:- purchasing strategy development process, types of purchasing strategies. • Purchasing ethics:- types of unethical purchasing behavior. SIM code of ethics. Role of organization in supporting ethical behavior, laws affecting purchasing- warranties, transportation terms and risk of loss, sellers rights, buyers rights, cancellation of orders, breach of contract, acceptance and rejection of goods, patents and intellectual properties. • Purchasing transportation services:- decision making process for developing transportation strategies, trends affecting transportation.
3	Sourcing Strategies, Relationships & Performance Measurement
	<ul style="list-style-type: none"> • Concepts: Insourcing and Outsourcing, Backward Integration and Forward integration, Bidding, Tendering. • World-wide sourcing: meaning, need, barriers, international sourcing process, organizational structure for world-wide sourcing, organization structure for world-wide sourcing. • Buyer seller relationship:- advantages and obstacles to closer buyer- seller relationship, collaborative buyer seller relationship, strategic alliance, cross functional team approach, benefits and drawbacks, purchasing contribution to new product development. • Performance management- need, problems, performance measurement categories, developing performance measurement and evaluation system.

	<p>Performance benchmarking.</p> <ul style="list-style-type: none"> • Supply evaluation, selection and measurement process:- supply revaluation and selection process, key supply revaluation criteria. • Supplier measurement and evaluation:- what to measure, measurement techniques, measurement decisions.
4	Strategic Procurement & Quality Management
	<ul style="list-style-type: none"> • Supplier quality management:- meaning, importance, managing supplier quality, purchasing's role in suppliers quality. World class supplier quality performance. • Counter trade:- meaning, types, issues, processing from domestic to global sourcing, canalization. • Negotiation:- meaning, negotiation framework, powers in negotiation, negotiation techniques. • Contracts:- types of contract- fixed price, cost based, long term, unique type of contract. • Stock control and storage, Budgeting. • KPI's used by organization for successful procurement. • E procurement- B2B, new trends in procurement management, sustainable procurement.

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4.1.2 Management Accounting

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction	15
2	Budgets	15
3	Introduction to cost accounting	15
4	Marginal and Absorption costing	15
Total		60

SN	Modules/ Units
1	Introduction
	<ul style="list-style-type: none"> • Financial Analysis and Interpretation:- Comparative, Common size, Trend Analysis. • Working Capital Management • Ratio Analysis.
2	Budgets
	<ul style="list-style-type: none"> • Budget & Budgetary control. • Cash Budget • Fixed and Flexible Budget
3	Introduction to cost accounting
	<ul style="list-style-type: none"> • Introduction-Meaning, define, objectives & advantages, difference & relationship between cost, finance & management, accounting, essential of a good cost accounting system. • Cost concept & classification, Role of a cost accountant in an organization, • Preparation of cost sheet • Reconciliation of financial and cost sheet
4	Marginal and Absorption costing
	<ul style="list-style-type: none"> • Meaning, advantages and limitations • Cost volume profit analysis –meaning & computation of breakeven point, break even sales(units) ,break even sales (Rs), margin of safety • Managerial decision making (product mix decisions, make or buy decisions, operation or shut down decisions, accept-reject export orders) • Case Study: Study of balance sheet of various transport industries (eg:- port, road, rail, aviation industries, logistic companies, IRCTC, etc.)

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4.1.3 Transportation, Containerization and Distribution Management

Modules at a Glance

SN	Modules	No. of Lectures
1	Transportation	10
2	Containerization	20
3	Distribution	15
4	Distribution control and evaluation	15
	Total	60

SN	Modules/ Units
1	<p data-bbox="272 253 501 293">Transportation</p> <ul style="list-style-type: none"> <li data-bbox="325 309 1409 398">• Transport Terminal Function: terminal and location- port terminals- rail terminals-airport terminals- transport terminal governance. <li data-bbox="325 421 1409 622">• Four Stage Modeling Process: Conventional and four stage modeling process- trip generation models- trip distribution models and calibration- methods of trip assignment models- multi modal trip assignment-mode choice and modal split models <li data-bbox="325 645 1409 846">• Advance Travel Forecasting: Advanced travel demand forecasting methods- activity based modeling-comparison of conventional and activity based modeling- integration of system simulation modeling, transportation network planning sustainability
2	<p data-bbox="272 875 528 916">Containerization</p> <ul style="list-style-type: none"> <li data-bbox="325 931 1409 1021">• Meaning, Definition, features, benefits, constraints, Evolution of Containerization, classifications of containers, packing of cargo in containers. <li data-bbox="325 1043 1409 1189">• Freighting and size of containers: FCL and LCL cargo, Freighting of cargos, slot utilization strategies, estimation of optimum container fleet size, consolidation <li data-bbox="325 1211 995 1252">• Container leasing- types, terms and conditions. <li data-bbox="325 1274 1409 1420">• Multimodal transport and containerization : Alternate uses of containers, marketing of used containers, multimodal transport options for containers, insurance for containers, strategies for managing container imbalance <li data-bbox="325 1442 1409 1532">• Container manufacturing trends, maintenance and repairs of containers, tracking of container movement, container interchange <li data-bbox="325 1554 1409 1756">• Container terminal business, World's leading container terminals and location characteristics, container terminal infrastructure, container terminal productivity, container terminal profitability, inland container terminals, container freight stations, <li data-bbox="325 1778 1409 1924">• Inland container depot (ICD): roles and functions, CFS, Export clearance at ICD, CONCOR, ICDs under CONCOR, Chartering: meaning, kinds of charter, charter party and arbitration <li data-bbox="325 1946 852 1986">• Containerizations- global scenario.

3	Distribution
	<ul style="list-style-type: none"> • Meaning, importance, need, functions, evolution of distribution channels, market forces affecting distribution. • Organization for distribution:- distribution organization structure, private and public organization, rising cost and need for control, complexities for physical distribution, • Distribution channel management- meaning and need, channel partners- types roles and functions, choice of distribution system • Factors affecting choice of distribution channels • Factors affecting effective channel of distribution management- channel design, channel policy, channel conflict- meaning, types, reasons, resolution of conflict- methods, Kenneth Thomas five style of conflict resolution. • Training, selection, motivation of channel members
4	Distribution Control and Evaluation
	<ul style="list-style-type: none"> • Cost control of total distribution system- task and approaches, physical distribution cost analysis, elements of total cost in physical distribution system, physical distribution efficiency. • Order processing- definition, meaning, order acquisition, order entry, document processing, status reporting, factors affecting processing time, customer service. • Packaging- functions of packaging, cost of packaging, designing a package, packaging materials, choosing right materials, Concept of unitization and palletization. • Distribution control and evaluation: Distribution control stages, standards and goals, performance report, measurement monitoring, corrective actions. • Channel control- instruments of control, contract or agreement, budgets and reports, distribution audit. changing channel arrangements. • New trends in distribution management, Ethics in distribution management.

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4.1.4 Taxation and Transportation

Modules at a Glance

SN	Modules	No. of Lectures
1	Direct Tax	15
2	PGBP and TDS	15
3	Indirect Tax	15
4	Additional Taxes	15
Total		60

SN	Modules/ Units
1	Direct Tax
	<ul style="list-style-type: none"> • Definition: Assesse, Assessment Year, assessment, annual value, business, capital asset, income, person, previous year, transfer. • Basis of Charge: Previous Year, Residential Status, Scope of total income, deemed income, income deemed to accrue or arise in India. • Income from Salaries • Computation of Capital Gain
2	PGBP and TDS
	<ul style="list-style-type: none"> • Profit and Gains from Business and Profession (Special preferences to taxation and provision related to transportation) • TDS (194 C, 194J, 192, 194H)
3	Indirect Tax
	<ul style="list-style-type: none"> • Customs Act, GST Act
4	Additional Taxes
	<ul style="list-style-type: none"> • Road Tax, Vehicle Tax, Toll Tax, Octroi, Infrastructure Cess, Fire Tax, Municipal Tax.

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4.1.5 Health & Safety and Facility Management

Modules at a Glance

SN	Modules	No. of Lectures
1	Health and Safety	15
2	Safety Management Systems	15
3	Safety Regulations	15
4	Facility Management	15
Total		60

SN	Modules/ Units
1	Health and Safety
	<ul style="list-style-type: none"> • Introduction: Concept, Scope, Nature of Occupational Health and Safety, Key Elements of Health and Safety, Benefits and Problems Associated with Occupational Health and Safety Management, Role of National Government and International Bodies in formulating and frame work for regulation of Health and Safety, Health and Safety Training Programme. • Exposure to Risks – Physical work factors, Harassment and Violence, Work organizational factors, Working time. • Health Outcomes – Occupational Accidents, recognized occupational disease, occupational health problems, work related health problems. • Health and safety issues and guidelines at airport, shipping and railways.
2	Safety Management Systems
	<ul style="list-style-type: none"> • Overview and Understanding Safety • Factors for improving safety on roads – causes of accidents due to drivers and pedestrians-design, selection, operation and maintenance of motor trucks, • Responsibility for Management of Safety, Basics of Safety Management, • Risk Management • Hazards Management- Industry specific hazard, HNS Management Cycle. Hazard and Incident Identification and Reporting.
3	Safety Regulations
	<ul style="list-style-type: none"> • Policy Issues, Safety and Injury Control Programs, Multidisciplinary approach to Planning for Safety and Injury Control - pre crash, crash, and post crash, • Accident investigation- Objectives, Parties involved in the Accident Investigation, Accident Investigation Tools and Procedures, • Safety Recommendations, Safety Performance Monitoring, Safety Auditing, Safety Committee, Employee Participation in safety. • Rehabilitation Policy. • ILO conventions and recommendations for safety health and welfare.

4	Facility Management
	<ul style="list-style-type: none"> • Introduction- Meaning, Role, Scope, Job Description and Profile of Facility Manager • Skills required by Facility Manager, Responsibility of Facility Manager, Characteristics of a successful facilities manager, • Facility Management - 3P's, Outsourced and Insourced Facility Management- Advantages and Disadvantages, • Six stages of FM process, FM organizational models, FM principles and theories. • Facility- Core, Non Core, Basic facility. • Benchmarking- meaning, importance, tools and techniques. • Ergonomics and workplace. • Space requirement and asset management. • Customer Service and feedback. • Disaster management. • Energy Management and Sustainable technology.

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4.2.4 Information Technology-II in Transportation

Modules at a Glance

SN	Modules	No. of Lectures
1	Excel	15
2	Advanced Excel	15
3	Introduction to Remote Sensing & GPS	15
4	E Business	15
Total		60

SN	Modules/ Units
1	Excel
	<ul style="list-style-type: none"> • Lookup and Reference Functions: VLOOKUP, HLOOKUP, INDEX, ADDRESS, MATCH, OFFSET, TRANSPOSE • Logical Function: IF / ELSE, AND, OR, NOT, TRUE, NESTED IF/ELSE • Database Functions: DGET, DMAX, DMIN, DPRODUCT, DSTDEV, DSTDEVP, DSUM, DVAR, DVARP • Date and Time Functions: DATE, DATEVALUE, DAY, DAY360, SECOND, MINUTES, HOURS, NOW, TODAY, MONTH, YEAR, YEARFRAC, TIME, WEEKDAY, WORKDAY
2	Advanced Excel
	<ul style="list-style-type: none"> • Information Functions: CELL, ERROR.TYPE, INFO, ISBLANK, ISERR, ISERROR, ISEVEN, ISLOGICAL, ISNA, ISNONTEXT, ISNUMBER, ISREF, ISTEXT, TYPE etc • Math and Trigonometry Functions: RAND, ROUND, CEILING, FLOOR, INT, LCM, MOD, EVEN, SUMIF, SUMIFS • Statistical Functions: AVEDEV, AVERAGE, AVERAGEA, AVERAGEIF, COUNT, COUNTA, COUNTBLANK, COUNTIF, FORECAST, MAX, MAXA, MIN, MINA, STDEVA • Text Functions: LEFT, RIGHT, TEXT, TRIM, MID, LOWER, UPPER, PROPER, REPLACE, REPT, FIND, SEARCH, SUBSTITUTE, TRIM, TRUNC, CONVERT, CONCATENATE, DOLLAR
3	Introduction to Remote Sensing & GPS
	<ul style="list-style-type: none"> • Introduction to Remote Sensing • Spectral reflectance curves of earth objects. Electromagnetic energy transfer through atmosphere and digital data acquisition, earth observation satellite systems and energy bands; analysis of digital data; effective combination of energy bands for different purposes; production of colour composites; interpretation of satellite images.

	<ul style="list-style-type: none"> • GIS Techniques • Introduction to GIS, different forms of data such as vector raster and attribute data, development and use of a GIS. • GPS Applications • GPS & Communication Applications in Transport, Navigation & Fleet Management Using GPS
4	E Business
	<ul style="list-style-type: none"> • Management Information System in Transport - Introduction to management information systems, Types of Management Information systems; • Digital Firm and E Business - Management of software and hardware assets, Data analysis and database design for Management Information Systems, Computer systems include Scheduling systems, Estimating systems, Cost control systems and Accounting systems etc.; Use of general software such as MS-Access and MS-Excel for the development of Management Information systems.

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4.3.5 Multi Modal Transport

Modules at a Glance

SN	Modules	No. of Lectures
1	Multimodal Transport	15
2	Multi Modal Transport System In India	15
3	Regulatory Reforms In Multimodal Transport	15
4	Global Perspective Of Multimodal Transport	15
	Total	60

SN	Modules/ Units
1	MULTIMODAL TRANSPORT
	<ul style="list-style-type: none"> • Concept of Multi Modal Transport, Components of Multi Modal Transportation System, Benefits of Multi Modal Transport, • Multi Modal Transport Operator, Responsibilities and Liabilities of the Multi Modal Transport Operator, • Challenges of Multi Modal Transport System, Multi Model Transport Technology. Multi Modal Transport Documents. Difference between Multimodal and Intermodal.
2	MULTI MODAL TRANSPORT SYSTEM IN INDIA
	<ul style="list-style-type: none"> • Various Modes of Transport. Intermodal systems – road/rail/sea; sea/air; road/air; road/rail, sea/rail, sea/road. • Inland Container Depot (ICD) . Container Freight Station (CFS) Terminals, Roll-on/Roll-Off Service, • Development of multi modal transport system in Indian - Metro Rails, Light Rail Transit (LRT), Sub-Urban Trains, Ring Rail and Monorails, Bus Rapid Transit Systems, Bullet Trains. City Transport. Inland Waterways.
3	REGULATORY REFORMS IN MULTIMODAL TRANSPORT
	<ul style="list-style-type: none"> • Multimodal Transport of Goods Act- 1993, • Private Freight Terminals (PFT) Policy, • Draft Coastal Shipping Policy, Cabotage Policy, • Policy to permit Operators to move container trains on Indian Railways, • Foreign Direct Investment Regulatory Reforms.
4	GLOBAL PERSPECTIVE OF MULTIMODAL TRANSPORT
	<ul style="list-style-type: none"> • Intermodal in- India, China, Gulf, Europe, Australia, America. • Comparison between the above mentioned countries.

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4.3.6 Surveys in Transport

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction	15
2	Data collection and Processing	15
3	Data analysis and Interpretation	15
4	Advanced techniques in Report Writing	15
Total		60

SN	Modules/ Units
1	Introduction
	<ul style="list-style-type: none"> • Meaning of Survey. Types of Surveys. Instrument of Surveys. • Introduction to business research methods: Meaning and objectives of research • Types of research –a)Pure, Basic and Fundamental b) Applied, c) Empirical d) Scientific & Social e) Historical f) Exploratory g) Descriptive h)Causal • Concepts in Research: Variables, Qualitative and Quantitative Research • Stages in research process. • Characteristics of Good Research • Hypothesis- Meaning, Nature, Significance, Types of Hypothesis, Sources. • Research design – Meaning, Definition, Need and Importance, Steps in research design, Essentials of a good research design, Areas / Scope of research design and Types- Descriptive, Exploratory and causal. • Sampling – a) meaning of sample and sampling, b) methods of sampling- concept- unit, element, frame, universe, errors.
2	Data collection and Processing
	<ul style="list-style-type: none"> • Data collection and Processing: : Types of data and sources – Primary and Secondary data sources • Methods of collection of primary data <ul style="list-style-type: none"> a) Observation- i) structured and unstructured, ii) disguised and undisguised, iii)mechanical observations (use of gadgets) b) Experimental i) Field ii) Laboratory c) Interview – i) Personal Interview ii) focused group, iii) in-depth interviews - Method, d) Survey – Telephonic survey, Mail, E-mail, Internet survey, Social media, and Media listening. e) Survey instrument – i) Questionnaire designing. ii) Types of questions- a)structured/ close ended and b)unstructured/ open ended, c) Dichotomous, d) Multiple Choice Questions. f) Scaling techniques
3	Data analysis and Interpretation

	<ul style="list-style-type: none"> • Data analysis and Interpretation – types of data- nominal, ordinal, internal ,ratio. Measurement Scales. • Processing of data – <ul style="list-style-type: none"> i) Editing – field and office editing, ii) coding – meaning and essentials, iii) Transcription. tabulation – note • Analysis of data- Meaning, Purpose, types. • Interpretation of data- Essentials, importance and Significance of processing data • Multivariate analysis – concept only • Testing of hypothesis – concept and problems – <ul style="list-style-type: none"> i) chi square test, ii) Z and t-test (for large and small sample) iii) P-test.
4	Advanced techniques in Report Writing
	<ul style="list-style-type: none"> • Report writing – i) Meaning , importance, functions of reports, essential of a good report, content of report , steps in writing a report, types of reports, • Footnotes and Bibliography • Ethics and research • Objectivity, Confidentiality and anonymity in Research • Plagiarism

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4.3.7 Business Economics-II

Modules at a Glance

SN	Modules	No. of Lectures
1	Introduction to Transport Economics	15
2	Demand and Supply of Transport	15
3	Pricing of Transport	15
4	Growth and Development	15
	Total	60

SN	Modules/ Units
1	Introduction to Transport Economics
	<ul style="list-style-type: none"> • Meaning and Emergence of Transport Economics – Economic characteristics of transport – Transport infrastructure investment and economic productivity –Trade and transport strategy- The multiplier impacts of a transport investment-Concepts and case studies of price elasticity, income elasticity, cross elasticity and service elasticity of demand.
2	Demand and Supply of Transport
	<ul style="list-style-type: none"> • Demand for Transport- Transport as a derived demand - The notion of transport demand curve- Determinants of transport demand - Demand function: marginal benefits – Transport supply curve- Equilibrium with negative feed-back system – Disequilibrium with positive feedback system - Demand and budgets in transportation. • The Supply of Transport – Concepts and source of supply of transport – Fixed and variable costs — Specific, joint and common costs – Economies of scale and scope - Externalities – Supply function: marginal costs.
3	Pricing of Transport
	<ul style="list-style-type: none"> • The principles of pricing – Marginal cost pricing – Price discrimination – Geographical pricing- Indirect pricing- The problem of the peak- Second best situations- Transport subsidies.
4	Growth and Development
	<ul style="list-style-type: none"> • Transport and economic activity - Economics of sustainable transport in India - Theory of Transportation: Charles Horton Cooley – Trends in growth and development of transport – Transport reforms: transportation with smart cities.

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Reference Books

SN	<u>Reference Books</u>
1	Production and Quality Management
	<ul style="list-style-type: none"> • Production and Operations Management: R. Paneerselvam • Production (Operations) Management: L.C. Jhamb • K. Ashwathappa and K .Shridhar Bhatt ; Production and Operations management • Productivity Management: Concepts and Techniques, Sawhney S.C., Tata McGraw Hill • Srinivas Gondhalekar and Uday Salunkhe, “Productivity Techniques”, Himalaya Publishing House
2	Customs Procedure and Cargo Handling
	<ul style="list-style-type: none"> • Custom Manual • Handbook of procedure –DGFT. • Working paper of planning commission • Cargo handling manual
3	Transport Project Management
	<ul style="list-style-type: none"> • Project Management a managerial approach – Jack R. Meredith, Samuel J. Mantel. • Mcgraw Hill Project managment. • PMBOK Guide • Project Management Methodology Guidelines- Chandler, Arizona. • Project Management a systematic approach- Harold Kerzner.
4	Transport Environment Management
	<ul style="list-style-type: none"> • Energy, Transport and the Environment by Oliver Inderwildi and David King (Eds.)

	<ul style="list-style-type: none"> • Globalisation, Transport and Environment, O.E.C.D. • Handbook of Transport and Environment, by David A. Hensher and Kenneth J. Button • Central Pollution Control Board, Annual Reports • International Energy Agency (IEA) Reports on World Energy Outlook • United Nations Environment Programme (UNEP) Reports • Transport, the Environment and Sustainable Development, David Bannister, Kenneth John Button, Kenneth Button • Unsustainable Transport: City Transport in the New Century, David Bannister • Environmental Transport Processes, Bruce C. Logan • Air Transport and the Environment, Ben Daley • The Environmental Impact of Railways, T. G. Carpenter • Environmental Problems Caused by Railways, Charlie Higgins • Environmental External Costs of Transport, Rainer Friederich, Peter Bickel
5	Managerial Skill Development
	<ul style="list-style-type: none"> • Essentials of Management Koontz H & W McGraw Hill, New York • Principles of Management Ramaswamy Himalaya, Mumbai • Management Concept and Practice Hannagain T McMillan, Delhi • Basic Managerial Skills for All McGrath, E.H. Prentice Hall of India • Management-Text & Cases VSP Rao Excel Books, Delhi Assessment Pattern • Essentials of Management Massie Joseph Prentice Hall of India • Management: Principles & Guidelines Thomas N. Duening & John Ivancevich Biztantra • Management Concepts and OB P.S.Rao & N.V.Shah Ajab Pustakalaya • Management Concepts and Strategies J S Chandran Vikas Publishing House • principles Of Management Tripathi P.C. Tata McGraw Hill
6	Information technology in transport – I
	<ul style="list-style-type: none"> • ICT for transport, Edward Elgar publishing • ICT and future of transport- Ericsson, Pantheon Books • Innovative ICT Application in transport and logistics – Mark Goh and Kym Fraser • E- Commerce An Indian Perspective, P.T. Joseph

	<ul style="list-style-type: none"> • E- Commerce and the digital economy, Michael J Shaw
7	Service Marketing
	<ul style="list-style-type: none"> • Valarie A. Zeithmal & Mary Jo Bitner, Service Marketing, Tata McgrawHill, 6th Edition • Christopher Lovelock, Jochen Wirtz, Jayanta Chatterjee, Service Marketing People, Technology, Strategy – A South Asian Perspective , Pearson Education, 7th Edition • Ramneek Kapoor, Justin Paul & Biplab Halder, Services Marketing-Concepts And Practices, McgrawHill, 2011 • Harsh V. Verma, Services Marketing Text & Cases, Pearson Education, 2nd Edition • K. Ram Mohan Rao, Services Marketing, Pearson Education, 2nd Edition, 2011 • C. Bhattacharjee, Service Sector Management, Jaico Publishing House, Mumbai, 2008 • Govind Apte, Services Marketing, Oxford Press, 2004
8	Warehousing and inventory control
	<ul style="list-style-type: none"> • Essentials of Inventory Management- R Bhargava, Cybertech Publications. • John J. Coyle, Edward J. Bardi and C. John Langley Jr., 2003, The Management of Business Logistics, A Supply Chain Perspective, Thomson • Kee-Hung Lai and Edwin T.C. Cheng, 2006, Just-in-time Logistics An Introduction, McGraw Hill [ISBN: 007 - 125583 - 4] • Paul R. Murrhy Jr. and Donald F. Wood, 2004, Contemporary Logistics, Prentice Hall. • Ronald H. Ballou, 2004, Business Logistics / Supply Chain Management, Prentice Hall. • Inventory Control and Management- Willey, Donald Waters. Essentials of Inventory Management- R Bhargava, Cybertech Publications.

9	Transport law
	<ul style="list-style-type: none">• Multimodal transport law- marian hoeks.• Transport law in india- talat Fatima.• Carriage of goods by sea,land and air- unimodal and muti modal transport in 21st century- baris soyer and Andrew tettenborn.• Road traffic law• Road traffic act

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Reference Books

SN	<u>Reference Books</u>
1	Procurement management
	<ul style="list-style-type: none"> • Purchasing and supply chain management- Thomas publication by Monczka, Trent, Hand field • Purchasing and material management- p. gopalkrishnan • Purchasing and material management- N.K.Nair • Material management and purchasing- Dean SAMmer.
2	Management Accounting
	<ul style="list-style-type: none"> • KhannaPandey& Ahuja: Practical costing , Sultan Chand • K.S.Thakur: Cost Accounting , New century book house pvt. Ltd. • Jain and Narang: Cost Accountong , Kalyani Publishers • S. N Maheshwari: Cost accounting , Mahaveer Publishers • Horngreen : Cost accounting – A Managerial emphasis, Prentice Hall • Lectures on Costing by Swaminathan: S. Chand and Company (P) Ltd., New Delhi • Cost Accounting by C.S. Rayudu, Tata Mc. Graw Hill and Co. Ltd., Mumbai • Cost Accounting by JawaharLal and SeemaSrivastava, Tata Mc. Graw Hill and Co. Ltd.Mumbai • Cost Accounting by Ravi M. Kishore, Taxmann Ltd., New Delhi • Principles and Practices of Cost Accounting by N.K. Prasad, Book Syndicate Pvt. Ltd., Calcutta • Cost Accounting Theory and Practice by B.K. Bhar, Tata Mc. Graw Hill and Co. Ltd., Mumbai • Cost Accounting Principles and Practice by M.N. Arora, Vikas Publishing House Pvt. Ltd., New Delhi • Advanced Cost and Management Accounting: Problems and Solutions by V.K. Saxena and C.D. Vashist, S. Chand and Company (P) Ltd., New Delhi

	<ul style="list-style-type: none"> • Cost Accounting by S.P. Jain and K.L. Narang, Kalyani Publishers, Ludhiana • Modern Cost and Management Accounting by M. Hanif, Tata McGraw Hill Education Pvt. Ltd., New Delhi
3	Transportation, Containerization and Distribution
	<ul style="list-style-type: none"> • Containerization, Logistics Management and foreign trade- Indian perspective – Shipra Publication, Namita Pandey • The Docker Book: Containerisation is the new virtualisation, James Turrbuh • Intermodal Transportation and containerization , Hofstra.edu • Transportation management: Imperatives and best practices, S Jaya,Krishna, ICFAI, University Press, 2007 • Management of Transportation – Bardi Edward J, Cengage Learning • Dr. K V Hariharan, Containerization , Multimodal transport and infrastructure developmeny in Indi, Shroff publishers • Lee C Y Neng Q, Handbook of Ocean Container transport logistics Making global supply chain effective, Springer, 2015 • Kapoor Satish K and Kaushal Purv, Basics of Distribution Management: A logistical approach , Prentice hall of India • D. K . Agarwal , Distribution and logistics Managemnt : A Strategic Marketing Approach, Macmillan Publishers India • The Handbook of Logistics and Distribution Management: Understanding the Supply Chain Paperback – Import, 3 Jan 2014 • By Alan, Phil Croucher , Dr Peter Baker, The Handbook of Logistics and Distribution Management • A Nag, Sales and distribution Management, Mcgraw hill, 2013 • Krishna K Havaldar, Vasant M. Cavale, sales and Distribution Management- Text &Cases, Mcgraw Hill Education, 2011 • Dr. Matin Khan, Sales and Distribution Management, Excel Books, 1st Edition.
4	Taxation and Transport
	<ul style="list-style-type: none"> • Direct tax manual – Taxmann • Direct tax law –Bangar • Indirect tax law- Taxmann • Indirect tax manual – Bangar

	<ul style="list-style-type: none"> • Singhania VK & Singhania K, Direct Taxes – Laws and practices, Taxmann • Ahuja – direct taxes
5	Health& Safety and Facility Management
	<ul style="list-style-type: none"> • Phil Hughes & Ed Ferrett (2010). International Health and Safety at Work. Routledge Publisher. • Facility Management Handbook 3rd Edition- Cotts, David G.; Roper, Kathy O.; Payant, Richard P. • Facility Design and Management Handbook- Eric Teicholz • Kadiyali (1983). Traffic Engineering and Transport Planning. Khanna Publishers, New Delhi,. • Motor Vehicles Act, 1988, Government of India. • NSC (1982). Accident Prevention Manual for Industrial Operations. Chicago. • Pasricha (1999). Road Safety guide for drivers of heavy vehicle. Nasha Publications, Mumbai. • K.W.Ogden, “Safer Roads – A guide to Road Safety Engineering”. • Babkov, V.F. (1986). Road Conditions and Traffic Safety. MIR Publications, Moscow. • Popkes, C.A. (1986). Traffic Control and Road Accident Prevention. Chapman and Hall Limited. • Facility Management Handbook 3rd Edition- Cotts, David G.; Roper, Kathy O.; Payant, Richard P. • Facility Design and Management Handbook- Eric Teicholz
6	Information technology in transport – II
	<ul style="list-style-type: none"> • ICT for transport, Edward Elgar publishing • ICT and future of transport- Ericsson, Pantheon Books • Innovative ICT Application in transport and logistics – Mark Goh and Kym Fraser • E- Commerce An Indian Perspective, P.T. Joseph • E- Commerce and the digital economy, Michael J Shaw
7	Multimodal transport

	<ul style="list-style-type: none"> • Hugh M. Kindred & Mary R. Brooks (1997). Multimodal Transport Rules. Martinus Nijhoff Publishers. • Multimodal Transportation of Goods Act, 1993 Along With Allied Rules, Professional Book Publishers. • Slim Hammadi & Mekki Ksouri (2013). Multimodal Transport Systems. John Wiley & Sons. • Joseph S. Szyliowicz, Luca Zamparini, Genseric L.L. Reniers & Dawna L. Rhoades (2016). • Multimodal Transport Security: Frameworks and Policy Applications in Freight and Passenger Transport. Edward Elgar Publishing. • United Nations Economic and Social Commission for Asia and the Pacific (2004). • Manual on Modernization of Inland Water Transport for Integration within a Multimodal Transport System. United Nations Publications. • Jean-Paul Rodrique, Claude Comtois & Brian Slack (2013). The Geography of Transport Systems. Routledge. • Christos N. Pyrgidis (2016). Railway Transportation System: Design, Construction and Operation. CRC Press. • United Nations. Economic and Social Commission for Asia and the Pacific Secretariat (2003). • Training Manual on the Operational Aspects of Multi Model Transport. United Nations Publications. • Container and Multimodal Transport Management (2002). Shroff Publishers & Distributors.
8	Surveys in transport
	<ul style="list-style-type: none"> • Research for Marketing Decisions paul E. Green, Donald S. Tull • Marketing Research – text and cases Harper W. Boyd jr. , Ralph Westfall • Research methodology in social science, O.R.Krishnaswamy, Himalaya Publication • Bussiness Research Methods, Donald R Cooper, Pamela Schindler, Tata McGraw Hill • Marketing research and applied orientation, Naresh K Malhotra, pearson • Statistics for management, Levin and Reuben, Prentice hall. • Research methods for Management :S Shajahan, Jaico publishing

	<ul style="list-style-type: none"> • Survey Method for Transport Planning Anthony J. richandson, Elizabeth S. Ampf, Arnim H. Meyburg
9	Business Economics – II
	<ul style="list-style-type: none"> • Stuart Cole “Applied Transport Economics –Policy, Management and Decision Making, Third Edition, Indian Edition, 2010. • Transport Economics “Kenneth Button”, 3 rd edition. • Kenneth Boyer,”Transportation Economics”. • Andrew F Daugherty, “Analytical Studies in Transport Economics”. • Journal of Transport Economics and Policy. • Transport Market Monitor : Capacity and diesel indices grow while price index declines ,Edition: 30 (February 2017) • “Intermodal Transport”, compiled by Institute of Transport Studies, Cresnet Publication, Calcutta. • Private Sector Participation In The Transport Sector In India B.N. Puri , Transport and Communications Bulletin for Asia and the Pacific No. 73, 2003. • Planning Commission (1988) (GOI), Perspective Planning for Transport Development: Report of Steering Committee. New Delhi: Planning Commission. http://planningcommission.nic.in/reports/genrep/NTDPC_Vol_01.pdf. • “Transport Infrastructure in India”, Pravarkar Sahoo, V.R.F series No. 465, March 2011. • Ralph P. Hall, “Introducing the Concept of Sustainable Transportation to the U.S. DOT through the Reauthorization of TEA -21 “, University of Southampton, UK, 1999. • Sustainable Transportation, An International Perspective Projections, Volume 9, MIT Journal Of Planning. • Prof. L.H. Immers , and J.E. Stada,” Basics of Transport Economics , February 2004.