## CURRICULUM AND SYLLABUS TRANSPORT & LOGISTICS MANAGEMENT

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FC – Field Core  
S – Second Semester  
J - Term
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FC – Field Core       S – Second Semester

FE – Field Elective       J - Term
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J - Term
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**F – First Semester**  

**FC – Field Core**  
**S – Second Semester**  

**J - Term**
Syllabus

Level 1

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Learning Objectives
To provide students with an overall understanding of the reasons for people and goods movement, patterns of travel and to gain knowledge of the evolution of transport technologies, and their features that fulfill the desire for travel. To obtain an understanding of the techniques and theories of studying traffic flow and transport demand and supply.

Outline Syllabus:

LECTURES
Functions of Transport
   Accessibility/Connectivity, Mobility

Inter-relations of Transport
   Economic- cost and trade, Geography and technology, Social, cultural and recreational, Development of Information & Communication Technology

Classification of Travel
   Features of a Trip; origin-destination, transport zones, trip generation, trip attraction; types of travel, travel by trip purpose, by commodity, by location, by distance, by comfort or convenience; variations over time and space

Impacts of Transport
   Economic, Social and cultural values, Environment

Theories of Transport Study & Traffic Flow

Historical Development of Transport
   Local economies and forms of early transport, Road networks, military conquest, trade and spread of cultures, Development of ocean transport, Railways, urbanization and the industrial age, Motor Vehicles and growth of personal transport, Growth of air transport and international travel.

Development of Transport in Sri Lanka
   Early transport & trade, Development of Sea ports, canal transport and the railways, Road building and motorization, Development of airports and air transport

Transport Networks
   Features of networks – nodes and links, Multi-modalism and choice in transport, Supply chain, Inter-modalism, Transport Infrastructure

TUTORIALS/ PRACTICALS/ASSIGNMENTS
### Outline Syllabus:

**LECTURES**

**Geometry**
- Basic geometric elements point, lines, planes and their space relations and transformations.
- Geometric solids and surfaces, Topographic surfaces geometry, i.e. real terrain.

**Statics**
- Determination of forces in assemblies of rigid bodies, Internal forces, Principle of superposition

**Dynamics**
- Fundamentals of dynamics, Kinematics of rigid bodies, Friction, Work, Force, Energy, Gravity
- Basic machine elements, Bearings, Couplings and Brakes.

**Fluid Mechanics**
- Hydrostatics, Stability of floating bodies

### TUTORIALS/ PRACTICALS/ASSIGNMENTS

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Learning Objectives
To provide an understanding of the core principles of basic economics, theories in Microeconomics and their applications.

Outline Syllabus:

LECTURES
Introduction to Economics: What is economics? Basic concepts of economics, scope of economics; positive economics, normative economics, micro economics scarcity, microeconomics, macroeconomics, methodology of economics.

Economic Systems: Market, command and mixed

Consumer Behaviour through Cardinal utility analysis: Cardinal utility versus ordinal utility, total utility, marginal utility, diminishing marginal utility, marginal demand price, consumer equilibrium, deriving a demand curve through cardinal utility analysis.

Consumer Behaviour through Indifference Curve Analysis: Indifference curve map, budget line marginal rate of substitution(MRS), consumer equilibrium, change in the consumer equilibrium, income effect and substitution effect of a change in price, income consumption curve (ICC), price consumption curve (PCC)

Price Mechanism: Demand and supply as market forces, Demand function , theory of demand, contraction and extension of demand, change in demand, individual demand and market demand, supply function, theory of supply, contraction and extension of supply, change in supply, individual supply and market supply.

Market Equilibrium and its changes: Determination of market equilibrium, market surplus and shortage, the changes in market equilibrium, dynamic change in the market equilibrium, static change in the market equilibrium, change in market price and quantity.

Application of Price Mechanism: Minimum price and maximum price and their effects on market equilibrium, commodity tax and producer subsidies and their effects on market equilibrium.

Elasticity Concepts: Price elasticity of demand , cross price elasticity of demand, income elasticity of demand, elasticity of supply

Production: Theory of production, production function in the short run, different stages of production , law of diminishing marginal returns, long run production function, production iso-quants, iso-cost curve, marginal rate of technical substitution, producer equilibrium point, production expansion path, laws of returns to scale.

Cost of Production: Theory of cost, cost of production in the short run, fixed cost and variable cost, law of diminishing marginal returns and short run cost of production, long run cost of production, laws of returns to scale and long run cost of production, relationship between short run and long run, economical returns and technological returns, economies and diseconomies.

Different Market models: Perfect competition , monopoly, imperfect competition

Theory of Distribution: Factor market equilibrium, determination of wage rate under different market conditions.

TUTORIALS/ PRACTICALS/ASSIGNMENTS

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<table>
<thead>
<tr>
<th>Module Code</th>
<th>TL 1070</th>
<th>Title</th>
<th>MACROECONOMICS</th>
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</table>

**Learning Objectives**

*To provide an understanding of the behaviour of macroeconomics indicators and the economic role of the government.*

**Outline Syllabus:**

**LECTURES**

**National Income:** Different methods of estimation of national income, circular flow of national income, different concepts of national income, theory of determination of national income, injections and withdrawals of national income, changes in national income,

**Employment and Unemployment:** Determination of employment, unemployment and their relationship with national income.

**Inflation:** Types of inflation, consequences of inflation and its relationship with the national income.

**Economic growth:** Measuring economic growth, Benefits of economic growth, Business Cycle, achieving higher economic growth.

**Money and interest rate:** Demand for money and supply of money, Determination of interest rate in the money market, interest rate and Monetary Policy.

**Government Economic Activities.** Role of the government, government policies with special reference to government fiscal policy

**International Trade:** Theory of comparative advantage, technical efficiency, specialization, resource allocation, Balance of payment and its implications, terms of trade, Protectionism in Trade, exchange, exchange rate, the rationale behind Trade blocks.

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
<table>
<thead>
<tr>
<th>Module Code</th>
<th>TL 1080</th>
<th>Title</th>
<th>LOGISTICS MANAGEMENT</th>
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</table>

**Learning Objectives**

*To provide basic knowledge on logistics systems*

**Outline Syllabus:**

**LECTURES**

**Logistics**
  - Definitions and Concepts, Inbound Logistics & Outbound Logistics, Relationships in the Supply Chain

**Material & Information Flow**
  - Material flow, Information Flow

**Competing through Logistics**
  - Competitive Advantage, Order winners & Order Qualifiers

**Strategies**
  - Defining ‘Strategy’, Aligning Strategies, Differentiating Strategies

**Serving the Customers**

**Value and Logistics Costs**
  - Where does Value come from?, How can Logistics Costs be represented?, Activity based Costing, Balanced Measures, The Performance Prism

**Managing Logistics Internationally**
  - Drivers & Logistics implications of Internationalisation, The trend towards Internationalisation’ The Challenge of International Logistics & Location, Organising for International Logistics

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
<table>
<thead>
<tr>
<th>Module Code</th>
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Learning Objectives

To provide an overall understanding of the evolution of international trade, changes of trading patterns, transport modes and influence of world trade organizations on trade facilitation.

Outline Syllabus:

**LECTURES**

Evolution of international trade and transport
- Geography, Demographics and evolution of early trade routes, Growth of trade routes, formulation of trading centres, major ports and airports, Commodities of trade, modes of freight transport and major freight carriers, Rise and fall of routes, trading centres and modes of transport.

Factors that influence trade
- Economic Factors, Political events, Geographical Factors, Technical reasons,

Trade Theories
- Introduction to Absolute and Comparative Economic advantage theories, Natural and Artificial trade barriers.

Role of Transport in Economic Growth.
- Reduction of transport costs, generated demand, economic contributions

Types of Trade Flows
- Intra industry trade, Inter industry trade, Multinational Company trade- international product cycle, Economies of scales and Product differentiation as source of trade advantage. Semi knock down (SKD), Completely knocked down (CKD).

Role of Trade organizations and international trading agreements
- WTO, GATT, UNCTAD, EU, ASEAN-AFTA and ICC
- SAARC- SAPTA. Free Trade, Protectionism, Quotas, Embargoes

Application of Custom Tariffs
- Custom Regimes, Documentation, Licensing, Fiscal Rules,
- Anti trust laws-USA, EU

**TUTORIALS/PRACTICALS/ASSIGNMENTS**

Examples & applications
# BUSINESS ORGANIZATION

<table>
<thead>
<tr>
<th>Module Code</th>
<th>Title</th>
<th>BUSINESS ORGANIZATION</th>
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<tbody>
<tr>
<td>TL 1100</td>
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<td><strong>Learning Objectives</strong></td>
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</table>

To provide a basic understanding of the underlying aspects of business.

<table>
<thead>
<tr>
<th>Credits</th>
<th>Hours/Week</th>
<th>Lectures</th>
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## Outline Syllabus:

**LECTURES**

**Nature and Purpose of Business**
- Concept of Business, Characteristics of Business, Objectives of Business, Role of Profit in Business

**Structure of Business**
- Classification of Business Activities, Classification of Industries, Meaning of Commerce, Classification of Commerce activities, Trade, Auxiliaries to Business Activity

**Social Responsibility of Business and Business Ethics**

**Factors to be considered for Starting Businesses**
- Identification of Business Opportunity, Market Assessment, Working Capital Requirement, Sources of Funds, Cost of Production, Cost Break Even point and Financial Break Even Point, Profitability

**Forms and Formation of Business Enterprise**
- Meaning, Forms and Characteristics of Private Sector Enterprises - Sole Proprietorship, Partnership.
- Co-operatives – Meaning, Features and Types, Company- Meaning, Features and Types.
- Objectives of Public Sector Enterprises, Forms of Public Enterprises, Changing role of Public Sector (Privatization), Reasons for government participation in Business

**Formation of a Company**
- Stages in formation of a Company, Stages in the Commencement of Business of a Company, Contracts, Certificate of Incorporation, Memorandum of Association, Articles of Association, Prospectus.

**Small-Scale businesses in Sri Lanka**
- Meaning, Characteristics and Significance of SMEs, Government Policy for Development of SMEs, Problems faced by SMEs Characteristics of Small Scale Units, Significance of Small Scale Industries.

**Banking and Insurance**
- What is Banking, Types and Functions of Banks, Other Financial Institutions, Structure of Sri Lankan Financial Institutions, Negotiable Instruments, Introduction to Risk and Insurance, Nature, purpose and Types of Insurance.

**Channels of Distribution**
- Meaning, Functions and Types of Channels, Factors influencing the choice of Channels of Distribution

**Sources of Business Finance**

**ASSIGNMENTS**
<table>
<thead>
<tr>
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<th>TL 1910</th>
<th>Title</th>
<th>OUTDOOR LIFE SKILLS TRAINING</th>
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</table>

**Learning Objectives**

*Increase self confidence & create positive attitude, reinforce sense of responsibility and determination to succeed. Confront their self imposed limits & barrier, Develop greater interaction & team work*

**Outline Syllabus:**

**PRACTICALS/ASSIGNMENTS**

Outdoor activities
Team problem solving activities
Activities to develop leadership
Activities on building trust
First aid
<table>
<thead>
<tr>
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**Learning Objectives**

To provide an introductory course on the English language pertaining to the transportation industry, in oral and written expression, that can be adapted to any level giving adequate working knowledge of English as well as an understanding and use of specific vocabulary.

**Outline Syllabus:**

**LECTURES**

Presentations (Introductory)
- Specific topic-/theme-related vocabulary, Key features of an effective presentation, Good introductions, Organisation of a presentation, The right kind of language, Use of visual aids, Ways of emphasising and minimizing, Effective endings, Handling questions and evaluation

Report Writing (Introductory)
- Purpose; Types of reports, Techniques; Overview of the process, Language and specific topic/theme-related vocabulary

Business Correspondence (Introductory)
- Letters, Emails, Faxes, Language and specific topic-/theme-related vocabulary

Communication Issues
- Taking messages; Handling information, Handling misunderstandings/complaints, Solving problems of miscommunication

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
<table>
<thead>
<tr>
<th>Module Code</th>
<th>TL 1960</th>
<th>Title</th>
<th>SURVEYS IN TRANSPORT &amp; LOGISTICS</th>
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**Learning Objectives**

To provide basic knowledge on taking measurements & conducting surveys to gather information

**Outline Syllabus:**

**LECTURES**
- Sampling techniques
- Counting & measurement techniques
- Household surveys
- Consumer surveys
- Opinion Surveys
- Data analysis & reporting

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
- Field data collection, Data analysis & reporting
<table>
<thead>
<tr>
<th>Module Code</th>
<th>MA Code</th>
<th>Title</th>
<th>Credits</th>
<th>Hours/Week</th>
<th>Lectures</th>
<th>Lab/Tutorials</th>
<th>Pre-requisites</th>
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</table>

**Learning Objectives**

To provide basic knowledge in Mathematics required to comprehend fundamental theories in transport & Logistics

**Outline Syllabus:**

**LECTURES**

**Discrete Mathematics**

Logic, Techniques of proof, Introduction to Boolean algebra, Integers, Set theory, Rational and irrational numbers, Real number system, Relations and functions.

**Univariate Calculus**

Functions of real numbers, Graph sketching, Implicit and Explicit functions, Limit of a function, Continuity, Differentiability, Determining the stationary points of a one variable function, Rolle's Theorem, Intermediate value theorem, L'Hopital rule, Taylor series, Integration, Functions of integers, Sequences and series, Simple tests for convergence.

**Multivariate Calculus**

Functions in several variables, Graph sketching, Limit of a several variable function, Partial differentiation, Total differentiation, Determining the stationary points of a two variable function, Gradient, Directional derivative, Jacobians, Lagrange multipliers, Double integration.

**Differential Equations**

Order and degree of a differential equation, Variable separable, exact, homogeneous and linear first order ordinary differential equations, Linear second order ordinary differential equations with constant coefficients without the use of D operators, Introduction to partial differential equations.

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
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<td><strong>Pre-requisites</strong></td>
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</table>

**Learning Objectives**

To provide the basic knowledge in Algebra, Numerical Analysis, Probability and Statistics required to comprehend fundamental theories in transport and logistics.

**Outline Syllabus:**

**LECTURES**

**Linear Algebra**

Vector operations, Vectors and Scalars as special cases of Matrices, Special Matrices, Matrix operations, Minors, Cofactors, Determinants, Adjoint Matrix, Inverse, Systems of linear equations, Elementary operations, Cremer’s rule, Linear dependence, Rank, Least square solution, Eigen values and Eigen vectors, Cayley Hamilton Theorem, Diagonalization of Matrices.

**Numerical Methods**

Roots of polynomial equations, Difficulty of obtaining analytical solutions.

Roots of non linear equations – Graphical, Bisection, Iterative and Newton Rapson methods

Interpolation by polynomials, Lagrange interpolation formulae, Regression, Numerical differentiation and Numerical Integration using the Lagrange polynomial.

Numerical solution of ordinary differential equations – Euler and Taylor series methods.

Solution of linear systems of equations – Jacobi and Gauss Siedel methods.

Numerical methods for several variables – Finding extremums of functions and roots of simultaneous non linear equations.

**Elements of Probability and Statistics**


**Elements of Graph Theory**

Vertex and Edge sets, Degree of freedom, Connectivity, Isomorphism, Paths and Cycles, Planarity, Euler’s Theorem, Eularian and Hamiltonian Graphs, Trees, Spanning trees, Shortest paths.

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
Learning Objectives
To provide the students with an adequate knowledge of the theoretical and empirical framework of organizational management required to perform with efficiency and effectiveness as an engineer/manager in modern organizations.

Outline Syllabus:

LECTURES

Introduction to Management & Development of Management Thought
Introduction, definition, objectives and functions of management; Development of management thought including classical, behavioural, and management science schools, systems theory and contingency approach; Modern management Techniques - Japanese management.

Environmental Context of Management
The Environment and Culture - External and internal environment, stakeholder groups; An overview to Corporate Social Responsibility and Ethics; Globalisation and Management – managers role in a global economy.

Planning and Decision Making
Importance of decision making, decision making process including steps and feedback systems, organizational hierarchy and decision making, individual decision making Vs group decision making. Vision, mission, values, goals, objectives, types of plans, barriers to planning, process of planning, types of strategies, Management by objectives.

Organizing
Introduction, basic elements of organizing, the principles of specialization of labour and its relationship with organizing function, other principles of organizing including span of control, power, authority responsibility relationship. Organizational design and structure - models and forms of structure and design.

Directing/Leading
Motivation and its importance, motivation theories, motivation strategies and reward systems Leadership, Leadership theories and various styles of leadership behaviour.

Controlling
The concept of control feedback and feed forward control requirements of effective control system and control techniques.

TUTORIALS/ PRACTICALS/ASSIGNMENTS
Module Code | CS 1010  
--- | ---  
Title | COMPUTER SYSTEMS  
Credits | 2  
Hours/Week | Lectures: 1, Lab/Tutorials: 3  
Pre-requisites | None  

Learning Objectives  
To understand the basic concepts of computer hardware, software and networking and have a practical knowledge in personal computer systems and in using popular operating systems and application software.

Outline Syllabus:

**LECTURES**

**Hardware:**
- History of Computing: development of computing techniques and machines, architecture of the computer, electronic computers, transistor, IC, microprocessor
- Structure of a computer: essential features and devices of a computer
- CPU and its architecture: stored program concept, sequential computers (SISD architecture), internal architecture, instructions, program execution, etc.
- Peripheral devices: input/output devices, storage devices, modems, etc

**Networking:**
- Basics of Networks: advantages of networks, types of networks, main network topologies, introduction to OSI model, communication media, networking devices such as bridges and routers
- The Internet: history of the Internet, how to connect to the internet, basic concepts of the internet, main applications of the internet
- Using the Internet: practical experience in using main applications of the Internet such as world wide web and e-mail

**Software:**
- What is software, system and application software, GUI and character based software
- Operating Systems: What is an operating system, parts of an operating system, features of an operating system, windows platform, UNIX platform
- Programming Basics: Basic concepts of programming, representation and manipulation of data, number systems, data structures, algorithms
- Visual Programming: GUI components, building a GUI, providing behaviour, implementing an application using a GUI
- Common Applications: Using word processors, spreadsheets, presentation software, etc.

TUTORIALS/ PRACTICALS/ASSIGNMENTS
INTRODUCTION TO PROGRAMMING

Learning Objectives
To prepare students to, Devise algorithms to solve given problems and write programs using them,
Understand and use the main features of a high level programming language such as C and
Have practical knowledge in using Integrated Development Environments (IDE)

Outline Syllabus:

LECTURES
Basics of computer programming: What is programming, computer operations, program development,
running a program
Basics of a high level programming language: Basic syntax, data types, variables, operators
Control flow: statement blocks, conditionals, loops, break and continue
Data Structures: arrays and structure
Pointers: basics of pointers, pointers to arrays and structures, dynamic memory allocation
Functions: defining and using functions, return values, arguments
Using multiple source files
Scope of variables
Recursion
String manipulation
File Handling
Error Handling
Macro substitution
Using Integrated Development Environments (IDE)

TUTORIALS/ PRACTICALS/ASSIGNMENTS
## Level 2

<table>
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<th>Title</th>
<th>MARKETING</th>
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<td>Pre-requisites None</td>
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### Learning Objectives
*To provide the students with knowledge of basic marketing concepts and applications*

### Outline Syllabus:

**LECTURES**
- Introduction to Marketing Concepts
- Marketing Environment
- Consumer Markets and Consumer Buying Behaviour
- Business Markets and Business Buying Behaviour
- New Product/Service Development
- Product Life Cycle
- Positioning, Segmenting and Targeting
- Pricing a New Product or Service
- Distributing a New Product or Service
- Promoting a New product or Service
- Forecasting and Budgeting
- Preparation of Marketing Plan
- Marketing Intelligence and Marketing Research

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
Module Code | TL 2040 | Title | QUANTITATIVE METHODS IN TRANSPORT & LOGISTICS
--- | --- | --- | ---
Credits | 3.0 | Hours/Week | Lectures 2.5 | Pre-requisites MA 1110, MA 1120
Lab/Tutorials | 3/2 |

Learning Objectives

To provide an understanding and appreciation of the role of basic quantitative techniques in the management of transport & logistics functions

Outline Syllabus:

**LECTURES**
- Probability Theory
  - Conditional Probability

**Statistics**
- Random variables, Discrete & Continuous Probability Distributions, Sampling distributions,
  - Hypothesis testing, Goodness of fit, Regression Analysis, Analysis of variance

**Decision Theory**
- Decision trees, Bayesian decision making,, Introduction to Game theory

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
Use of statistical computing packages
Module Code | TL 2050 | Title | SUPPLY CHAIN MANAGEMENT
--- | --- | --- | ---
Credits | 4 | Hours/Week | Lectures 3.5
Pre-requisites | TL 1100 | Lab/Tutorials 3/2

**Learning Objectives**
*To introduce concepts of supply chain management*

**Outline Syllabus:**

**LECTURES**

*What is Supply Chain?*
- Who are the Players?, How to sketch a Supply Chain?, Definitions, Supply Chain Activities: Strategic, Tactical & Operational levels

*Why is the Supply Chain important?*
- Supply Chain as a Competitive Rule, Using the Supply Chain to support Marketing
  - (Product, Price, Place, Promotion), Competitive Framework, (Service, Quality, Cost, Cycle Times)

**The Supply Chain Process**
- The Supply Chain Operation Reference Model (SCOR), Supply Chain Links, Decoupling Points, Factors Influencing Decoupling Point Positions, Lead Time, (Order cycle time, Process cycle time, Flow time, Acceleration time, Deceleration time), Relationships between Times

**How the Supply Chain Works in Material Flow**
- Forecast Gap, Forecast Error, Product Structure, Inventory, Cost and Value addition, Demand Amplification (Retailers, Wholesalers)

**How to Improve Supply Chains?**
- Supply Chain Performance Metrics, Seven Core Supply Chain Measures

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
<table>
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**Learning Objectives**

*To provide an appreciation of transport economic theory and practice as related to both national and international multi-modal environments*

**Outline Syllabus:**

**LECTURES**

Introduction to Transport Economics

- Normative and positive economics, Central v market economics, Public versus private ownership, Demand and supply, Concept of elasticity and price elasticity of demand,

The Location of Facilities

- Factors in the location of facilities, Transport networks, Modelling techniques

Transport Costing

- Types of cost and their behaviour- direct and indirect; fixed and variable, Treatment of assets and capital depreciation – infrastructure, vehicle/carrying unit and others, Transport costs – infrastructure; terminal; track access and facility charges; and operating costs, An approach to transport costing for single and multi-modal operations

External Transport Costs and their Containment

- Identification of externalities, Economic Efficiency, Market failures, Environmental factors, Valuation of externalities, Responsibility charges

Pricing of Transport Services

- The principles of pricing, Marginal cost pricing, ‘Second best’ situations, Price discrimination and yield management, Pricing with stochastic demand, Problems of demand peaks, Subsidies, operational objectives and pricing, Pricing and market conditions – monopoly v competition

Investment Criteria

- Investment objectives, Risk and return on investments, Private and public sector analysis, Sources of capital – internal and external, Alternative sources of funding

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
MODULE CODE: TL2090
Title: MANAGERIAL SKILLS DEVELOPMENT
Credits: 3.0
Hours/Week: Lectures 2.5, Lab/Tutorials 3/2
Pre-requisites: None

Learning Objectives
To provide the students with essential intrapersonal, interpersonal and people management skills necessary through a balanced integration of theory and application and to give an understanding of the key elements of successful negotiation and to help develop and enhance negotiation skills.

Outline Syllabus:

LECTURES

Intrapersonal Skills
Developing self awareness; Values, Cognitive style, Attitude towards change and interpersonal orientation: Managing stress; Major elements of stress, eliminating stress and temporary stress reduction techniques: Effective problem solving skills; to provide a framework for rational problem solving: Time Management & Delegation; importance, prioritization, advantage of delegation, when and whom to delegate and how to delegate effectively.

Interpersonal Skills
Supportive communication; Definition, principles of supportive communication, principles of supportive listening: Motivating employees; performance, diagnosing work performance problems and enhancing ability, creating a motivating environment: Managing change and conflict; definitions, importance, change agents, managing change, Interpersonal conflict management, conflict response alternatives and collaborative approach to conflict resolution.

People Management Skills
Leadership; characteristics of leadership, leaders vs. managers, modern day challenges for managers, women as leaders: Empowerment; inhibitors to empowerment, dimensions of empowerment and developing empowerment: Teamwork; developing teams and teamwork, advantages of teams and stages of team development.

Negotiation Skills

TUTORIALS/ PRACTICALS/ASSIGNMENTS
Module Code | TL 2100 | Title | PRESENTATION SKILLS II
---|---|---|---
Credits | 2 | Hours/Week | Pre-requisites
Lectures | | | TL 1950
Lab/Tutorials | | | |

**Learning Objectives**
To build on the earlier course and to provide an intensive course on the English language pertaining to the transportation industry, in oral and written expression, that can be adapted to any level giving adequate working knowledge of English as well as an understanding and use of specific vocabulary, through the medium of management skills training.

**Outline Syllabus:**

**LECTURES**
*Presentations: (Intensive)*
- Specific topic-/theme-related vocabulary, Key features of an effective presentation, Good introductions, Organisation of a presentation, The right kind of language, Use of visual aids
- Ways of emphasising and minimizing, Effective endings, Handling questions and evaluation

*Report Writing (Intensive)*
- Purpose; Types of reports, Techniques; Overview of the process, Language and specific topic/theme-related vocabulary

*Business Correspondence (Intensive)*
- Letters, Emails, Faxes, Language and specific topic-/theme-related vocabulary

*Customer Service*
- Understanding of customer service, Language and specific topic-/theme-related vocabulary, Use of language and tone in speaking and writing

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
Learning Objectives

To gather an understanding of the manner in which government policy has influenced the growth of transport historically and in different countries, the objectives of transport policy regulations and of the different policy instruments in use today.

Outline Syllabus:

LECTURES
Introduction to Policy
Evolution of Transport Policy
   Early travel, imperialism and international shipping, the introduction of rail; the decline of the railway and the rise of motorised travel; the consolidation of regulation and the expansion of state control in passenger transport, the breakdown of state control and the move to deregulation and decentralisation, growth in airlines and airports

Transport Policies: Some Case Studies
   U.S, Russian, China, UK, EU, India, Sri Lanka

Policy Alternatives
   Nationalisation, Regulation, Privatization, De-regulation

Issues for Policy Analysis

Selected Application of Transport Policy
   Urban Transport, Airports & Aviation, Ports & Shipping, Freight, Railways, Financing of Roads

TUTORIALS/ PRACTICALS/ASSIGNMENTS

Case studies for different sectors.
**Module Code** TL 2120 **Title** FINANCIAL ACCOUNTING

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<td>3/2</td>
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</table>

**Learning Objectives**

To provide students with an understanding of the key issues in financial Accounting in the context of a transport organisation. The emphasis will be on the application of international financial Accounting techniques to the transport environment.

**Outline Syllabus:**

**LECTURES**

**Accounting and Economic Decisions**

**Recording Business Transactions**
Accounts, Classification of Commonly used Accounts, The Double-Entry System: The Basis of Modern Accounting, Recording Transactions, Trial Balance

**Measuring Business Income**
Income Measurement, The Adjustment Process, Preparing Financial Statements from the Adjusted Trial Balance, Overview of the Accounting Cycle
The Worksheet: The Accountant’s Invaluable Tool, Using the Worksheet, Closing Entries, Post-Closing Trial Balance
Accounting for Manufacturing Cost

**Adjustments for Final Accounts**

**Fixed Assets**

**Liabilities**
Current Liabilities, Contingent Liabilities, Long-term Liabilities, Debentures Payable, Other Long-term Liabilities

**Shareholders’ Equity**
Share Capital, Dividends, Accounting for Share Capital, Preference Share Capital, Reserves, Earnings per Share

**Internal Control Systems, Cash and Receivables**
Internal Control Systems, Internal Control for Cash, Cash, Bank Reconciliation, Trade Debtors, Bills Receivable, More on Revenue Recognition, Financial Analysis of Trade Debtors

**Financial Statement Analysis**

**Statement of Cash Flows**

**Costing**
Cost Classification, elements of cost and cost behaviour in manufacturing and service organization, Direct and Indirect Cost classification and analysis, principles of appointment, absorption into cost centres and units, Marginal costing, the concept of contribution, break-even analysis, contribution/volume graphs, Budget and budget control, flexible budgets, preparation of functional budgets.

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
<table>
<thead>
<tr>
<th>Module Code</th>
<th>TL 2210</th>
<th>Title</th>
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**Learning Objectives**

The course is intended to provide an interdisciplinary approach to integrate issues of gender, ethnicity, class and culture, power, social and personal identities and explore how these can frame and influence human behaviour and broad social systems.

**Outline Syllabus:**

**LECTURES**

Understanding Human Behaviour
- Key concepts

Cultural Influences on Human Behaviour

Perspectives on Community:
- Introduction to Psychology
  - Physiological and Cognitive Psychology; Developmental, Social and Clinical Psychology

Social Being
- Personal and Social Identities

Power & Politics

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
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</table>

**Learning Objectives**

To provide understanding about the factors related to the successful functioning of facilities develop for transport & logistics related activities

**Outline Syllabus:**

**LECTURES**
- Function & Form
- Ergonomics & User needs
- Signage & Information
- Space requirement
- Access & Circulation
- Security & Safety

**PRACTICALS/ASSIGNMENTS**
- Group design project
<table>
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<tr>
<th>Module Code</th>
<th>TL 2230</th>
<th>Title</th>
<th>MANAGEMENT INFORMATION SYSTEMS IN TRANSPORT &amp; LOGISTICS</th>
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</table>

**Learning Objectives**

To provide skills and knowledge for the use and development of Management Information Systems for Transport & Logistics management

**Outline Syllabus:**

**LECTURES**

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.

**PRACTICALS/ASSIGNMENTS**
Module Code | TL 2240 | Title | ENVIRONMENTAL & SOCIAL IMPACTS OF TRANSPORT & LOGISTICS
--- | --- | --- | ---
Credits | 2 | Hours/Week | Lectures | 2 | Pre-requisites | None | Lab/Tutorials | -

**Learning Objectives**
To increase the awareness on environmental & social issues related to transport related activities and the possible mitigatory measures

**Outline Syllabus:**

**LECTURES**
Social considerations
Environmental impacts
Managing Spills & contamination
Waste management
Impact assessment techniques

**PRACTICALS/ASSIGNMENTS**
Module Code | TL 2250  
---|---
Title | HEALTH & SAFETY  
Credits | 2  
Hours/Week | Lectures 2  
Lab/Tutorials |  
Pre-requisites | None  

**Learning Objectives**

To make the students aware about health & safety problems & related regulations and to give basic understanding on how to anticipate potential problems or analyse existing situations.

**Outline Syllabus:**

**LECTURES**

Safety Regulations
Policy issues; safety and injury control programs

Accident investigations
Multidisciplinary approach to planning for safety and injury control - pre crash, crash, and post crash models; roles of vehicle, roadway, traffic, driver, and environment;
crash and injury causations;
vehicle and occupant dynamics;
Accident investigation, crash and injury control measures, Costs of injury and countermeasures

Occupational Health & Safety

Safety Audits

Statistical Analysis of Accidents

**PRACTICALS/ASSIGNMENTS**
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<td>COMMUNITY DEVELOPMENT PROJECT</td>
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**Learning Objectives**

For students to be involved in a real life community project in transport or logistics in order to identify social needs and to gather first hand experience in implementing a project and to develop an appreciation of different lifestyles of communities and also to experience the spirit of working as a team in a community development project.

**Outline Syllabus:**

TUTORIALS/ PRACTICALS/ASSIGNMENTS

Students will be engaged as groups in visiting and working in a community which has stated transport or logistics needs. During the first visit they will be engaged in the study of the problem, holding discussions, gathering of data. Practical classes at the university will provide for analysis of the problems and design of alternatives. A second visit will be made to discuss potential solutions and to gather further information from officials and potential solution providers. Practical classes back at the university would include the finalization of the designs, and selection of the best alternative and the preparation of documents and resources required for procuring the facilities or services required. A final visit to the community would be aimed at actually procuring the service and award of contract. It is envisaged that a sponsor for such a project who will monitor the project after implementation be found for each such community development project.
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<th>Title</th>
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</table>

**Learning Objectives**
To provide general research skills for approaching problems, including search skills and analytical skills and to make aware of the different resources and analytical skills available for solving a problem.

**Outline Syllabus:**

**LECTURES**

Principles and assumption in scientific research:
- Characteristics of scientific research; modes of inquiry and reasoning.

Design of Research:
- Statement of problems, hypothesis formulation, testing and validation processes.

Search Skills:
- Using the library & Internet for research; Research Problems & Hypotheses; Literature reviews, critical assessments and evaluations

Methodological Skills:
- Designing Quantitative Research, Qualitative Research

Reporting and presentation of research proposals and findings

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
Level 3

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<th>Module Code</th>
<th>TL 3110</th>
<th>Title</th>
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</table>

**Learning Objectives**

To provide an understanding of the principles of air transportation and related practices

**Outline Syllabus:**

**LECTURES**

Evolution of aviation – Pre-Wright Brothers Era, Wright Brothers and contemporaries, Use of aircraft in First and Second World War, Flight of aircraft in Post Second World era

Introduction to aviation industry- types of airline operations, types of aircraft and performance, Propeller and Jet aircraft, air navigation systems, route networks, hubs, airports and its functions.

Development of Commercial aviation – development of airline companies and their business, tariff formulation and competitive practices,

Convention on International Civil Aviation (Chicago Convention) and its impact on safety, security, efficiency, regularity and economical operation of international air transport – Chicago Convention and its Annexes, Sovereignty of airspace, Contracting States and their obligations, International Civil Aviation Organization, its objectives and working arrangements and principles, International Air Transit Agreement and International Air Transport Agreement and Freedoms of the Air, Bi-lateral, Multi-lateral and Pluri-lateral Air Services Agreements, Liberalization of right of market access (traffic rights) and “Open Skies” concept, Impact of General Agreement on Trade & Services (GATS) on civil aviation.


Aircraft Accident Investigation – Objectives, Parties involved in the accident investigation, Accident Investigation tools and procedures, Safety Recommendations.

Air Transport Consumer’s rights and protection - Liabilities of airlines for passengers and third parties, Passengers’ Rights and Compensation for Denied Boarding and other concessions available to passengers, Impact of GATS on Aviation.


**PRACTICALS/ASSIGNMENTS**
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<th>TL 3120</th>
<th>Title</th>
<th>PROCUREMENT MANAGEMENT</th>
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</table>

**Learning Objectives**

To provide the students with a sound knowledge of the theoretical framework and imparting knowledge and confidence required to perform procurement management functions, procurement procedures and processes, managing risk in procurement, performance measurement and control in procurement.

**Outline Syllabus:**

**LECTURES**

Introduction to Procurement:
- Why purchasing is important, Tactical purchasing and strategic purchasing, The evolution and development of purchasing, purchasing as a part of supply chain, Achieving competitive advantage through purchasing

The Procurement Process:
- Purchasing objectives, purchasing span of control, The purchasing cycle, purchasing documents, Types of purchases, Improving the purchasing process, Purchasing policy and procedures, Purchasing as a boundary spanning role, Measuring procurement processes

Purchasing and Strategic Development:
- Linking purchasing and corporate strategy, Bringing goals and objectives together(The purchasing strategy development process), Types of purchasing strategies, Evolving sourcing strategies, In sourcing and outsourcing

Supplier evaluation, selection and measurement:
- The supplier evaluation and selection process, Key supplier evaluation criteria, Developing an initial supplier evaluation and selection survey, critical supplier selection issues, supplier quality management, Supplier and development(creating a world class supply base) Supplier development(A strategy for improvements), Overcoming barriers to supplier development, negotiation, managing contracts, SRM systems

National Procurement Procedure:
- An overview of national procurement procedure

World Wide Sourcing:
- An overview of worldwide sourcing, The international sourcing process, organizing for worldwide sourcing

Strategic purchasing cost management:
- Value engineering/value analysis, Quantity discount analysis, price analysis(Types of market structures, economic conditions, pricing strategy and the seller, product specifications), cost analysis techniques, cost based price models, Total cost of ownership, collaborative approaches to cost management

Future trends in Purchasing

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
Module Code: TL 3130  Title: MARITIME TRANSPORT

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**Learning Objectives**

To provide an understanding of the principles of maritime transport & it also provides the student with an array of techniques for improving efficiency in maritime transport.

**Outline Syllabus:**

**LECTURES**

**Development of Maritime Transport**
- Trade, routes, ports, technology, economic development

**Organizations & Regulations for Maritime Transport**
- International maritime conventions: International conventions on collision and safe operation of sea going vessels, rules and recommendations
- Organizations and other stakeholders in maritime industry
- Documentation

**Types of Vessels**

**Shipping Market**
- Liner: conferences, Charter, Tramp

**Shipping Costs and Pricing Mechanism in Maritime Transport**

**Elements of Maritime Geography & Ports**
- Shipping routes and ports
- Role and function of seaports
- Container transport by sea

**Overview of Multi Modal Transport Systems**

**Introduction to Analytical Models in Maritime Transport**

**Introduction to Marine Pollution and Maritime Risk Management**

**PRACTICALS/ASSIGNMENTS**
**Module Code** TL 3140  **Title** URBAN TRANSPORT

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**Learning Objectives**

To provide an understanding of the principles of urban transport and the requirements of an efficient transport system for a city. It also provides the student with an array of planning management techniques for improving transport efficiency in a city and solving problems such as congestion.

**Outline Syllabus:**

**LECTURES**

**Urban Form and Mobility**
Types of cities and their transport systems; industrial development, motorization and, agglomeration of urban services and requirements of transport technology for city growth. Understanding urban travel purposes and traffic patterns, CBD and urban sprawl; social exclusion. Case studies from developing countries.

**Urban transport modes and networks**
Passenger transport: private transport, Para transit and public transport (Technology and attributes; capacity, speed, cost etc)
Fright Transport: logistics systems (private movement, Agents, public services)
Network: Types and characteristics (directness, transfer, park and ride, etc)
Public Transport: Bus and rail networks, Rapid transit systems (mass, light, bus)
Para Transit: Types, Regulation & Fare, integration with major modes.
Special systems: School buses, Ambulance service, fire and other emergency services.
Services and design features for persons with special needs-elderly, physically challenged.
Current issues and trends in use of different transport modes.

**Multi modal transport**
Terminals functions and types, Fare collection, park and ride facility, etc.

**Transport Demand Management**
Demand Management methods, capacity improvement methods, traffic restrain methods, public transport priority methods-dedicated bus lanes, traffic calming traffic in residential areas, parking limitations.
Transport User Pricing: Road Congestion costs, road user cost recovery methods, technology in toll collection, pricing of fuel, parking fees and public transport fares
Traffic Impact Assessments: purpose and guidelines

**Modernization and Technology:**
ITS applications: Priority measures, Automated Guideway Transit (AGT), Automated Vehicle Location (AVL), Signal priority for public transport, user information system, etc.

**Non-motorized transport (NMT)**
Pedestrian and bicycle use
NMT System design: segregated path way, crossing facility design, pedestrian rest area (Parks), bicycle parking facility, etc.

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
Module Code: TL 3150
Title: STRATEGIC MANAGEMENT & CORPORATE PLANNING

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| Lab/Tutorials | 3/2 |

Learning Objectives
To enable the students to: appreciate the value of strategic planning in corporate development; recognise the dynamics that influence strategic development in organisations; identify, analyse and evaluate external influences upon strategy development; identify, analyse and evaluate internal influences upon strategy development; recognise options in selecting strategic direction; understand and value the various corporate planning and control processes.

Outline Syllabus:

**LECTURES**

**Overview to strategic management** – Definition, evolution of strategic management, key terms, models of strategic management, strategic management process.

**Strategic planning and goal setting**: Vision, mission, goals, objectives of an organisation.

**Strategic Analysis** – Situational analysis; SWOT, external and internal environmental Audit: tools of strategic analysis.


**Strategy Implementation** – Management and operational issues in strategic implementation; policies, resource allocation, operational plans, matching structure and strategy, strategy and the culture: Functional strategy implementation; marketing, finance, MIS, R&D issues.

**Strategic Control** – Review, evaluation and control; framework for evaluation, budgeting, balanced score card.

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
Module Code: TL 4040  
Title: ANALYTICAL MODELLING IN TRANSPORT & LOGISTICS

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Learning Objectives
To provide knowledge for the application of analytical modelling techniques.

Outline Syllabus:

LECTURES
Mathematical Modeling
Problem formulation, construction of Mathematical models

Linear Models
Linear programming, Simplex method, Transportation problem

Integer Programming

Dynamic Programming
Characteristics, Deterministic Dynamic programming

Network Analysis
Maximum flow problem, Minimum spanning tree, Minimum paths

Queueing Models

Reliability Models

Simulation Models

PRACTICALS/ASSIGNMENTS
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</table>

**Learning Objectives**

*To provide an opportunity for students to prepare themselves for the world of work and select their prospective career paths.*

**Outline Syllabus:**

Lectures on Employment Opportunity in the main streams of Transport & Logistics conducted by Trade Associations & Major Employers – both private and State sector.

Lectures on Opportunities for professional accreditation and membership

Mock interviews and personality assessments by invited industry representatives.

This camp will be on an off-campus setting.

**PRACTICALS/ASSIGNMENTS**
<table>
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<th>TL 3990</th>
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**Learning Objectives**

The objective of undergraduate industrial training is to gain thorough practical experience, a sound appreciation and understanding of the theoretical principles learnt as an undergraduate at the university. Industrial training is oriented towards developing the skills knowledge and attitudes needed to make an effective start as a member of the Transport & Logistics profession.

Some of the many expected advantages to be gained by an undergraduate in going thought a program of industrial Training are:

1. Systematic introduction to the ways of Industry developing talent and attitude so that he/she can enjoy fully, a career in Transport & Logistics while recognizing his/her responsibilities as a professional Transport Industry in the future.

2. Understanding the real situations in the industrial organizations and there related environments and excoriating the learning progress of how his/her knowledge could be used in a realistic way.

3. Enabling to execute more informed judgment and accept responsibility for it.

4. Recognizing that financial and economic limitations play a more important role in all professional activities.

5. Understanding the formal and informal relationships in an industrial organization so as to promote favourable human relations and team work.

6. Appreciating that Transport & Logistics is an expanding field and that learning has no limitations.

7. Understanding that the problems encountered in the industry rarely have unique solutions and gaining experience to select the optimal solution from the many alternatives available.

8. Learning the appropriate safety requirements in the industry.

Level 4

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</table>

**Learning Objectives**

*To train the students to carry out an individual research project and present the outcome of the research in the form of seminars and a final dissertation.*

**Outline Syllabus:**

Self-study and individual research work by the student on a topic related to Transport or Logistics and approved by the head of Department on the recommendation by the assigned supervisions. Student should prepare a detailed project proposal, and have it-approved by the supervisor before proceeding with the project. On completion of the project within a stipulated time period, a dissertation on the project shall be submitted to the supervisor, as per specifications approved by senate.
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**Learning Objectives**

*To train student to undertake and manage a multidisciplinary project*

**Outline Syllabus:**

The students will work in groups (e.g. 6 groups of approx. 8 students) and each group will handle all the activities given below and:

1. Identification of objectives, requirements and nature of the project
2. Formulation of design alternative and analysis of feasibility of these alternatives considering environmental, social, economic and financial aspects.
3. Planning of design phase and preparation of work breakdown structure (WBS)
4. Project organization and team building
5. Pre-feasibility study
6. Detail project development
7. Management of stakeholders
8. Other work associated with procurement / implementation of the project

The groups will be supervise by a staff member, and will have access to consult other staff member for specialized input. Each group must submit project deliverable as a complete set of documents at the end of the project. Lectures by university staff and invited guest lecturers will be limited to areas where it is required to give specialized input and will be conduct only at the request of the staff member supervising the groups.
<table>
<thead>
<tr>
<th>Module Code</th>
<th>MN 4120</th>
<th>Title</th>
<th>HUMAN RESOURCE MANAGEMENT &amp; INDUSTRIAL RELATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credits</td>
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<td>Lab/Tutorials</td>
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</tbody>
</table>

Learning Objectives
To provide students with essential conceptual understanding and practices of human resource management and industrial relations that is needed in modern organisations.

Outline Syllabus:

LECTURES
Human Resource Management
- Role of the human resource function and practitioner
- Organization, jobs and roles
- Employee resourcing
- Performance Management
- Human Resource Development
- Rewarding People

Industrial Relations
- Labour – management relations in Sri Lanka
- Industrial disputes
- Trade unions
- EPF, ETF and Gratuity acts
- Work place health, safety and welfare
- Business Ethics

TUTORIALS/ PRACTICALS/ASSIGNMENTS
<table>
<thead>
<tr>
<th>Module Code</th>
<th>MN 4150</th>
<th>Title</th>
<th>PROJECT MANAGEMENT</th>
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<td>Lab/Tutorials</td>
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</tbody>
</table>

**Learning Objectives**

*Project Management Course will provide the student the necessary exposure in application of project management knowledge areas, skills, tools, and techniques to project activities in order to meet or exceed stakeholder needs and expectations from a project.*

**Outline Syllabus:**

**LECTURES**
- Definition of Project Management and relationship to other management disciplines
- Project Management Context
- Project Planning
- Key Management Skills
- Project Management Process
- Management of the Project Scope, Time, Cost, Quality, Risk and, Communications
- Project Integration Management
- Project Procurement Management
- Project Assessment and Stakeholder Marketing

Assignment with Individual Presentations

Note:

*Only the introduction of the assignment will be done in the class. Students will visit organisations, institutions, library etc. to gather information for the assignments.*

**PRACTICALS/ASSIGNMENTS**

Assignments and individual presentations
Module Code  MN 4160  Title  QUALITY MANAGEMENT

<table>
<thead>
<tr>
<th>Credits</th>
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<tr>
<td>Lectures</td>
<td>2</td>
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<tr>
<td>Lab/Tutorials</td>
<td>None</td>
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</tbody>
</table>

Learning Objectives
To present quality as a tool for competitiveness and to provide knowledge of the ways and means to achieve quality of the organizational output and to enhance the organizational effectiveness and efficiency.

Outline Syllabus:

LECTURES

PRACTICALS/ASSIGNMENTS
Module Code | TL 4220 | Title | E-COMMERCE & ICT APPLICATIONS
---|---|---|---
Credits | 3 | Hours/Week | Lectures 2.5 | Pre-requisites | None | Lab/Tutorials 3/2

**Learning Objectives**
To introduce students to the use and application of information and communications systems currently used in international trade and multi-modal transport operations.

To provide students with the knowledge of how to specify, select and manage the implementation of new IT and communications systems.

To appraise students of the developments taking place in the field of information technology and communications.

To promote in students the ability to recognise the potential for and implications of new developments

**Outline Syllabus:**

**LECTURES**

Introduction to IT and communications needs in trade and multi-modal transport
- Overview of the information and communications needs of the industry, The basis of existing, outmoded paper based systems

Data issues
- Data specification for financial, operational, evaluation, marketing and decision support, Data flow analysis, Data collection methods, manipulation and transfer, Data protection; legislation, corruption, viruses, etc.

Network overview
- LAN, WAN, VAN, Telecommunications networks, Internet, Connectivity and interoperability, Basic hardware requirements

General applications
- Databases and database management systems, Expert systems, Electronic Data Interchange (EDI), including EDIFACT standard, Electronic mail systems, Electronic Commerce – trading environment and current technology, Computer Aided Design (CAD)

Specific programme applications
- Customs and Excise, E-commerce in international trading and inter-modal transport, Advance consignment information, Terminal operations, Rail information, Routing and scheduling (load planning), Warehouse management, Barcodes and electronic article numbering (EAN), Fleet management, Asset management

Specification, selection and implementation of systems
- Identification and definition of the business need, Development of a functional specification, Surveying the software market, Package, tailored package and bespoke solutions, System evaluation
- The tendering process, Project planning and management of the implementation process

Internet
- Identification of, and familiarisation with, relevant websites, Effective use of the internet

Future developments
- New developments will be identified and included in the teaching programme

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
Module Code | TL 4230 | Title | BUSINESS LAW  
---|---|---|---
Credits | 3 | Hours/Week |  
| Lectures | 2.5 | Pre-requisites | None |
| Lab/Tutorials | 3/2 |  

**Learning Objectives**

*Provides a basic understanding of the judicial system and the requirements of the essential attributes of the legal environment within which business takes place.*

**Outline Syllabus:**

**LECTURES**

The Legal Systems:
- Types of Laws, Business Law, Judicial System, Torts & Liabilities

Contract Law:

Property Laws:

Employments Laws:

Company Law:

Cyber Law:

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
<table>
<thead>
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<th>TL 4240</th>
<th>Title</th>
<th>Credits</th>
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<td>TRANSPORT PLANNING &amp; DEMAND STUDIES</td>
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<td>2.5</td>
<td>3/2</td>
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</table>

**Learning Objectives**

To gain an understanding of the basic principles of planning transport systems and the approaches to the study of demand for goods and services and choice of alternatives

**Outline Syllabus:**

**LECTURES**

Theoretical Approaches:
- Land Use Theories, Economic Theories, Physical Theories

Types of Demand Studies:
- Demand Estimation, Variations & Trends, Demand Forecasting, Market Surveys, Mathematical Modelling, Simulation

Transport Models:
- Costing Models, Demand Models, Choice models

Planning Tools:
- Introduction to planning tools

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
<table>
<thead>
<tr>
<th>Module Code</th>
<th>TL 4030</th>
<th>Title</th>
<th>LAW &amp; INSURANCE IN TRANSPORT &amp; LOGISTICS</th>
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</thead>
<tbody>
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<td>Credits</td>
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<td>Lab/Tutorials 3/2</td>
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</table>

**Learning Objectives**

To introduce the principles and main components of the legal framework in which international multi-modal freight transport operates.

To provide an introduction to customs law and regulations in general and an understanding of: Its application to international movements of goods, Assessment of import duties and taxes, Release procedures applicable to imported merchandise.

To introduce to the students the principles of insurance and risk management in international transportation.

**Outline Syllabus:**

**LECTURES**

**Legislation**

Role of international organisations; e.g. United Nations Agencies, International Chamber of Commerce, inter-governmental organisation for the International Carriage by Rail, etc., Role of national governments, Role of other organisations; e.g. freight forwarders associations, freight transport associations, pressure groups, Overview of relevant UNECE and UNCTAD Agreements and other major Conventions, Terms and conditions of carriage by carriers and other service providers, Unilateral, bilateral and collateral contracts, Vicarious liability, Liability challenge for inter-modal transportation.

**Customs**

Historical background, Mission, Customs code and legal base for Customs service activities, Structure, Regulations, Merchandise value assessment systems (Production value, Home market value, Export invoice value, Third country value), Fraudulent invoicing, Customs entry procedure, documentation and duty collection system, Violations, fraud and penalty implications.

**Insurance**

Principles of insurance, Insurable risks; risk assessment; public & employers liability; cargo loss and damage; buildings and equipment ; other insurable risks, Claims handling and loss prevention, Risk management.

**TUTORIALS/PRACTICALS/ASSIGNMENTS**
Module Code | TL 3010 | Title | GIS & GEOMATICS APPLICATIONS IN TRANSPORT & LOGISTICS
--- | --- | --- | ---
Credits | 3 | Hours/Week | Lectures 2
Pre-requisites | None | Lab/Tutorials 3

**Learning Objectives**
To provide basic knowledge on acquiring and presenting geographic & demographic information

**Outline Syllabus:**

**LECTURES**

**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.

**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

**PRACTICALS/ASSIGNMENTS**
Analysis and interpretation of satellite images
Demonstration of a GIS
GPS data capturing
Module Code: TL 4310  
Title: AIRPORT PLANNING & MANAGEMENT

<table>
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<th>Credits</th>
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<th>Lab/Tutorials</th>
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</table>

**Learning Objectives**

To teach students the basic functions related to airport planning & operations

**Outline Syllabus:**

**LECTURES**

**Planning & Design**

Principles and problems of airport planning and forecasting, Airport design and operations aspects, airport layout and capacity, terminal design, environmental issues, scheduling, slot allocation, access to airports, security and airfield operations

**Terminal Operation**

Passenger service expectations, check-in and transfer times, walking distances and route finding, use of buses & air bridges, Optimal use of apron space, new aircraft types, holding lounge arrangements

**Regulations**

Passenger safety and segregation, Fire safety

**PRACTICALS/ASSIGNMENTS**
Module Code | TL 4320 | Title | AIRLINE BUSINESS MANAGEMENT
---|---|---|---
Credits | 4 | Hours/Week | Lectures 3.5 | Pre-requisites | None | Lab/Tutorials 3/2

**Learning Objectives**
*To introduce elements to be known in airline business management*

**Outline Syllabus:**

**LECTURES**
Airline service standards
Airline Operations, Scheduling & route network optimization, Franchising
Examining the marketing environment, airline product planning decisions, branding and corporate identity, yield management, distribution channels, advertising and promotion, airline market share analysis and marketing planning
Ticketing & sales, Customer loyalty schemes

**PRACTICALS/ASSIGNMENTS**
<table>
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<th>Module Code</th>
<th>TL 4330</th>
<th>Title</th>
<th>WAREHOUSING &amp; INVENTORY CONTROL</th>
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**Learning Objectives**

To provide the students with a sound knowledge of the theoretical framework of Inventory Control and be ready to manage a modern warehouse including the material handling equipment and racking systems after a short period of hands on training.

**Outline Syllabus:**

**LECTURES**

Introduction to Warehousing:

**Determine Product Handling Groups:** Define product characteristics, determine storage characteristics, and determine handling characteristics.

**Determine Warehouse Operating Areas:** Goods inwards area, bulk storage area, picking area and dispatch area.

**Determine the Flow Method:** Principles of Warehouse flow, characterise ‘Through’ flow, characterise ‘U flow’.

**Identify Layout Constraints:** Determine Short side handling and Long side handling, determine Health and Safety requirements and determine Fire Safety requirements.

**Determine the Size of the Operating Areas:** Size the goods inwards area, size the bulk storage area, size the picking area and size the dispatch area.

**Determine Methods for Goods Inwards; Determine Methods for Bulk Storage; Determine Methods for Order Picking; Determine Methods for Goods Outwards; Space Utilisation; Equipment Groups; Selecting Handling Equipment; Selecting Storage Equipment.**

**Inventory Control:**

**Forecast Demand:** forecast for short term, forecast for long term, forecast seasonality, improving forecast accuracy.

**Plan When to Order:** Calculate free stock level (stock on hand, stock on order; stock in transit from suppliers, stock allocated to customers and stock reserved for special purposes); Determine reorder point.

**Plan How Much to Order:** Plan fix order quantities, plan variable order quantities.

**Select Order Systems:** Select order system for fast moving items and select order system for slow moving items.

**Determine Control Requirements:** Determine stock holding targets and determine service level targets.

**Inventory Operations:** Input demand data, monitor review activity, produce orders, identify no usage items, create new item and maintain suppression list.

**PRACTICALS/ASSIGNMENTS**
<table>
<thead>
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<th>Module Code</th>
<th>TL 4340</th>
<th>Title</th>
<th>PROCUREMENT</th>
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<td>Hours/Week</td>
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<tr>
<td>Pre-requisites</td>
<td>None</td>
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**Learning Objectives**

**Outline Syllabus:**

**LECTURES**

To be decided later after consultation with the Industry experts

**PRACTICALS/ASSIGNMENTS**
<table>
<thead>
<tr>
<th>Module Code</th>
<th>TL 4350</th>
<th>Title</th>
<th>PORT OPERATIONS &amp; MANAGEMENT</th>
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<td>Lectures 3.5</td>
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<td>Lab/Tutorials 3/2</td>
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</tbody>
</table>

**Learning Objectives**

*To teach students the basic functions related to port operations & management*

**Outline Syllabus:**

**LECTURES**

**Introduction**
- Functions of Ports and Port Authorities, Brief history of Ports, Types of Ports (based on cargo and location)

**Port Planning & Design**
- Location and site selection, Competition, Current and future Port issues to consider, How to plan for present and future needs, Design and layout, Operating systems (hardware), Cost and finance

**The Intermodal Connection**
- Interfacing between water, land, and air transportation in the receipt, transport, and delivery of goods.

**Managing and Operating A Port**
- Services to be provided, Marketing, Port/client accountabilities, Management Structure, Employees and relations, Management systems, Budgeting, Control, Tariffs and Operating Agreements

**Port Performance Evaluation**

**PRACTICALS/ASSIGNMENTS**
Module Code | TL 4360 | Title | MARITIME ECONOMICS & POLICY
--- | --- | --- | ---
Credits | 4 | Hours/Week | Pre-requisites
Lectures | 3.5 | Lab/Tutorials | 3/2 | None

Learning Objectives

Outline Syllabus:

**LECTURES**

Economic Concepts relevant of the study of shipping
- Demand for shipping. The distinctive features of shipping/transport derived demand, their implication and the concept of elasticity
- The supply of Shipping with particular reference to recent trends in the world fleet, elasticity, cost and lay-up
- Economics of scale, the reason for specialization

Ship Registration and Ownership
Marine Insurance/Cargo Insurance
International Law of the Sea
Collision Law, Salvage and Towage Contracts
Law relating to liability and compensation for Marine Pollution Damage
Chartering Contracts, Lay time Calculation, Voyage estimation
Ship Management

**PRACTICALS/ASSIGNMENTS**
Module Code | TL 4370 | Title | PUBLIC TRANSPORT NETWORK PLANNING & OPERATIONS
--- | --- | --- | ---
Credits | 4 | Hours/Week | Lectures 3.5
Lab/Tutorials 3/2
Pre-requisites | None

**Learning Objectives**

*To gain an understanding of the elements of transport network planning of routes, nodes and links and the operational elements of timetables and schedules as applied to public transport*

**Outline Syllabus:**

**LECTURES**

**Institutional Features**
- Policies & Regulations, Regulators Role (Regulation of Competition), Role of Operators & Passengers, Stakeholder Interests

**Features of a Network**
- Origins, destinations, Nodes and links, Routes and transfers, Timetables, Speed and Capacity

**Pricing**
- Pricing Policies, Price determination, Concession agreements, Transport provision Contracts

**Planning Approaches**
- Demand Studies: Origin-Destination Matrices, Minimum paths (distance, time and cost), Route Planning, Special Services (schools, offices, rural, disabled, senior citizens etc), Application of Optimization Techniques to Operations (headways, route lengths, stops etc)

**Managing Network Infrastructure**
- Terminal and stops, Information Systems, Ticketing Systems

**Customer Care**
- Safety, Security, Lost Luggage, Complaints & Investigations

**TUTORIALS/ PRACTICALS/ASSIGNMENTS**
Module Code | TL 4380 | Title | FLEET OPERATION & MANAGEMENT
--- | --- | --- | ---
Credits | 4 | Hours/Week | Lectures 3.5 | Pre-requisites None
Lab/Tutorials 3/2

Learning Objectives
To provide a comprehensive knowledge of the day to day functions of a transport fleet

Outline Syllabus:

LECTURES
Vehicle Maintenance Systems
Facilities & equipment, procedures and record keeping

Vehicle Scheduling
Type of duties, crew assignment, run cutting, loss mileage, vehicle dispatching

Cost of Services
Identifying cost elements, Costing of services

Revenue Planning & Monitoring
Market Research, Demand Estimation, Types of Revenue, Fares, elasticity, competition and revenue projections, Ticketing Systems, ticket checking, discounts, travel passes etc

Monitoring of Operations
Procedures for Reporting & Record Keeping, Performance Indicators (operations, engineering, personnel & crew efficiency), Customer Feedback & Analysis, Vehicle Tracking Systems

Staffing Issues
Compiling job descriptions, Recruitment, Training, Assessment & Disciplinary matters

TUTORIALS/ PRACTICALS/ASSIGNMENTS