

# COMPUTATION AND MANAGEMENT SUBJECT AREA

## 200 LEVEL COURSES

### **MGT 206 Human Resource Management (3 Credis)**

The course aims at providing students with a complete theoretical and operational approach to Human Resource Management. The course provides a full length analysis of the importance of HRM, organization and functions of HR department, HRM and environmental factors, historical development of HRM and current trends, human resource planning (projection of HR needs, labour market analysis, analyzing demand and supply, job analysis and job design, job description and employee specification, attraction, selection, recruitment and placement, process of selection, selection methods), HR development (technological change and employee development, compensation and protection, employee relations), and other functional areas of HRM.

### **MGT 207 Operations Management (3 Credis)**

This course provides students with a knowledge in manufacturing and service sector operations.

Course topics include: Nature and importance of operations management; Production engineering; Systems approach to operations management; Input-output relationship; Types of production; Introduction to work study; Production planning and control (PPC); Product design and development; Planning and control techniques; Critical path analysis and simulation models; Production control (control of value, quality control and inspection); Total quality management (TQM); Inventory controls models; Just-in-Time system; Plant location analysis; Plant and process layout; Plant housekeeping; Occupational health and safety; and Productivity and the 5's system.

### **MGT 208 Business Statistics (3 Credis)**

This is an introductory course in statistics. It will introduce computer applications to selected topics, and each student will spend a minimum of ten computer hours.

Course topics include: Introduction to business statistics; Types of data; Presentation of data; Analysis and interpretation of data; Exploratory data analysis; Theory of probability; Sampling techniques; and Index numbers.

### **MGT 209 Project Management (3 Credis)**

This course is complementary to Operations Management (MGT 207) but there are no prerequisites for it. This course aims at presenting a framework for evaluating and managing capital expenditure proposals, which have been developed by financial economists.

The subject area of the course consists of four phases: 1) Planning—feasibility study, elementary investment strategies, generation and screening of project ideas; 2) Analysis—market and demand analysis, technical analysis, financial analysis; 3) Selection—project cash flows, time values of money, cost of capital appraisal criteria, social cost benefit analysis, multiple projects and constraints, quantitative factors, strategic aspects, organization considerations; and 4) Management—project management, project review and administrative aspects.

### **MGT 211 Business Accounting for Decision Making (3 credits)**

This course enhances students the practical and functional nature of business decisions based on financial accounting. It provides a solid foundation for studies in both accounting and non-accounting disciplines.

The course includes: Regularity framework within which financial statements are produced with a special reference to SLASs and the Companies Act, preparation of financial statements of limited liability companies, financial statements analysis and computerized accounting systems covering the practical use of accounts in an information system and the financial control.

#### Recommended Text:

1. Wood, F., 1984, *Business Accounting*. Vol. 1 and 2 (4<sup>th</sup> ed.) London: Pitman Publishing
2. Jennings A. R. 1997, *Financial Accounting* (2<sup>nd</sup> ed.) London: ELBS
3. Relevant Journals and Books published by *CIMA*
4. The Institute of Chartered Accountants of Sri Lanka, Sri Lanka Accounting Standards Act No. 15 of 1995 together with subsequent amendments, Gazette, Democratic Socialist Republic of Sri Lanka
5. The Institute of Chartered Accountants of Sri Lanka web site: [icasrilanka.com](http://icasrilanka.com)

### **MT 221 Mathematics for Management Studies I (3 credits)**

Algebra and Advanced Calculus: Matrices, Determinants, Eigenvalues and Eigenvectors, Quadratic forms, Functions of several variables, Partial derivatives, Vector-calculus, Multi-variable Optimization.

Statistical Quality Control: SQC tools, Shewhart charts (Attributes and variables), Regression analysis.

Network Analysis: Graph theory, Minimum cost problem, Maximum flow problem, Critical path analysis.

Queuing Theory: Characteristics of queues, Simple queues, Queuing costs, Multiple-server queues.

### **CS 201 Data Structures (2 credits)**

(Prerequisites: CS 101, CS 102, CS 103)

Introduction: 1. Arrays, records, pointers, indices, 2. Recursion 3. Objectives: (I) Timing comparisons, (ii) Memory comparisons, Implementation: array/linked; ordered/unordered Searching: introduction to set abstract data type, Stacks and queues, Trees; Pointer implementation, traversal, Binary search; Definition, Searching, Creation and insertion, Good and bad trees, Deletion, B-trees, Hashing: initial hash, collisions, separate chaining, Graphs; Implementation of depth first search, breadth first search, topological numbering, connected, Sorting; Insertion sort, Quick sort, Heap as priority queue; Heap sort

Recommended Text:

1. Standish T. A.; *Data Structures in Java*; Addison-Wesley; 1998
2. Deitel, H. M.; Deitel, P. J.; *Java how to Program*; Prentice Hall; 1999

### **CS 202 Data Structures Practicals (1 credits)**

(Prerequisite: CS 201)

Implementation of data structures studied in CS 201 using C, C++ and Java.

Recommended Text:

1. Standish T. A.; *Data Structures in Java*; Addison-Wesley; 1998
2. Deitel, H. M.; Deitel, P. J.; *Java how to Program*; Prentice Hall; 1999

### **CS 203 Database Management Systems (2 credits)**

(Prerequisites: CS 101, CS 102)

Introduction, The entity-relationship model, Logical organization of databases; The relational model, Relational algebra, SQL, Physical organization of databases; Characteristics of disks and disk blocks, Storage of relations, Query processing and optimization, Concurrency control; Transactions, Serializability, Locking, Recovery, Distributed databases, Functional dependencies and normal forms.

Recommended Text:

1. Date, C. J.; *An Introduction to Database Systems*; Addison-Wesley; 2000
2. Loney, K.; Koch, G.; *Oracle 8i: The complete reference*; McGraw Hill ; 2000

### **CS 204 Programming using Database Management Packages (1 credits)**

(Prerequisites: CS 103, CS 202, CS 203)

Computer programming using database management packages such as Informix, Sybase, Oracle and FoxPro on PCs and workstations. Programming assignments: A variety of progressively more complex assignments.

Recommended Text:

1. Loney, K.; Koch, G.; *Oracle 8i: The complete reference*; McGraw Hill ; 2000

### **ECN 201 Intermediate Microeconomics (3 credits)**

This is an intermediate-level course in Microeconomic Theory. The basic approach will be partial equilibrium analysis. It is expected that during the course students would gain an understanding of the behaviour of individual economic agents such as consumers, producers and firms.

Course content: Theory of consumer behaviour; The cardinal utility theory. The indifference curves theory: The revealed preference hypothesis: applications of consumer theory: Theory of production and cost: Concept of production function: Types of production function: Production contours: Equilibrium of the firm: Laws of production (Theory of variable proportions and Theory of returns to scale): Modern theory of cost: Applications: Derivation of cost functions from production functions: Production function of a multi-product firm: Theory of firm: Perfect competition (a review): Dynamic changes and industry equilibrium: Monopoly (a review): Price discrimination: Monopolistic competition: Theories of oligopoly: Game theory applications to theory of firm: Factor markets (pricing and employment of resources): Factor price determination: Wage determination and Theory of profit.

### **ECN 202 Intermediate Macroeconomics II (3 credits)**

The main objective of this course is to offer a broad outline of the development of economic thought from the sixteenth century to the present. It relates the history of social and economic thought and the paradigm shifts and the coexistence in economics of intellectual trends of the different periods. Student who follow this course are expected to detect the genesis and development of the different categories they learn in economic theory so that they will be able to trace the evolution of different policy strands. The course will emphasize the simultaneous presence of diverse theoretical positions on which empirical analyses and policy formulations are based. It will also examine the different epistemological approaches to social and economic theory.

Course content: Classical political economy; Economic thought before Adam Smith; Adam Smith's *Wealth of Nations*; Robert Malthus; David Ricardo; Post-Ricardian economics; J.B. Say; J.R. McCulloch; The currency vs banking school; Nassau Senior; Sismondi; Contradiction in the system; John Stuart Mill Contradictions of modernity; Karl Marx and Max Weber; Post-Marxian economics; Neo-classicism and its critique; Marginalism; Jevons, Walras, and Menger; The Austrian school; Marshallian partial equilibrium analysis; Crisis of neo-classical theory and a paradigm shift; the political economy of development; Development economics; Modernization theory; Big push theories; Dependency theory; Neo-Marxian theories of development; Development economics-an opposite view: Bauer, Little and Deepak Lal.