UNIVERSITY OF CALCUTTA

Notification No. CSR/ 32 /18

It is notified for information of all concerned that the Syndicate in its meeting held on 13.07.2018 (vide Item No.11) approved the Syllabus and Regulations of Two-Year / Three-Year Post Graduate Degree in Master of Business Administration (M.B.A.) Course of Study under this University, as laid down in the accompanying pamphlet.

The above shall be effective from the academic session 2018-2019.

(Debabrata Manna)
Deputy Registrar (Acting)

SENATE HOUSE
KOLKATA-700073
The 13th August, 2018

The amended CSR along with Annexure - A and Annexure - B

Regulations Relating to the Two-Year/Three - Year Post Graduate Degree in MASTER OF BUSINESS ADMINISTRATION (MBA)

1. General

1.01 The Programme of study leading to the Post-graduate Degree in MASTER OF BUSINESS ADMINISTRATION (MBA) of the University of Calcutta shall be conducted by the concerned Post Graduate Department/Constituent Colleges.

1.02 The University shall lay down from time to time such subsidiary rules of admission, Programmes of study and methods of examination as may be deemed necessary for the maintenance of adequate standards of University Education.

1.03 The medium of instruction of the Programme shall be in English and the candidate shall have to answer the examination course including admission test in English only.

2. Duration of the Programme

2.01 For Full Time Programmes (Day Session):
Two full academic years, which will include theoretical courses, project and dissertation work, divided into four semesters.
For Part Time Programmes (Evening Session):
Three academic years, which will include theoretical courses, project and dissertation work, divided into six semesters.

2.02 The classes may be held both in day session and evening session depending on the availability of the resources.

3. Admission

3.01 The minimum qualification for admission to the Programme is a Bachelor's Degree (10+2+3 system) with Honours in Arts/ Science/ Commerce/ Business Administration or Bachelor's Degree (10+2+4 system) in Engineering / Technology/ Medical Science / Law/ Professional Programmes/or its equivalent from any University recognized by the University of Calcutta.

3.02 The last date for the receipt of applications, the last date for admission, the date of commencement of classes of the MASTER OF BUSINESS ADMINISTRATION (MBA) Programme shall be fixed each year by the University/constituent colleges.

3.03 The applicants for the admission to the MASTER OF BUSINESS ADMINISTRATION (MBA) Programme shall be required to undergo UGC specified national entrance tests like CAT, MAT, XAT, JEMAT or any recognized University admission test etc. as decided by the concerned Department/constituent colleges each year.

3.04 The candidates short-listed on the basis of curtain cut-off marks in the above mentioned selection test shall be required to appear for Group Discussion and Personal Interview to be conducted by a Selection Committee consisting of i) all full time faculty members and ii) at least two external experts nominated by Departmental Committee /Advisory Board /Faculty Committee and approved by the Vice-Chancellor. The Head of the Department/Co-ordinator/Director shall be the ex-officio chairman and the Secretary; U.C.A.C. shall be an ex-officio member of the selection committee.

3.05 Each member present in the Selection Committee as stated in clause 3.04 will award each candidate marks on Group Discussion & Personal Interview separately. The final admission test scores will be computed on the basis of the average of the marks awarded by all the members present. Marks will be awarded on the basis of various criteria as set by the Selection Committee. The candidates will be selected from that list of final scores in order of merit.

3.06 Total number seats (excluding readmission) for the Programme would be as approved by A.I.C.T.E. and / or competent authority including reserved category as per University/Government rules and regulations.

3.07 Admission of reserved category students may be admitted as per existing University rules and regulations, if the test is conducted by the University / Constituent Colleges.

3.08 After the selection for the admission to the MASTER OF BUSINESS ADMINISTRATION (MBA) Programme, the candidate shall, within the date fixed by the Master of Business Management Department deposit the necessary fees prescribed for the purpose. If the candidate fails to deposit the fees within the stipulated time, his/ her selection shall automatically be cancelled. Such a candidate shall not be admitted to the Programme unless fresh order for selection is made or an extension of the date of payment is granted by the competent authority.

3.09 Admission to the MASTER OF BUSINESS ADMINISTRATION (MBA) Programme shall only be in the first semester of the first year of the two-year /three year academic programme.

4. Programme of Study

4.01 A candidate admitted to the MASTER OF BUSINESS ADMINISTRATION (MBA) Programme shall register himself/ herself as a student of the University of Calcutta/constituent college as the case may be.

4.02 The Programme of study for the MASTER OF BUSINESS ADMINISTRATION (MBA) Programme shall be two-year full time /three year part time Programme divided into four semesters/six semesters.

4.03 Students admitted to the two-year/three year MASTER OF BUSINESS ADMINISTRATION (MBA) Programme shall pursue the regular Programmes of lectures, and other academic arrangements made for the two-year academic term.

4.04 A student of the MASTER OF BUSINESS ADMINISTRATION (MBA) Programme shall not be permitted to seek admission concurrently to any other equivalent or higher degree Programme in this university.

4.05 A student shall be deemed to have pursued a regular Programme of study provided he/she has attended at least **75 per cent** of the lectures delivered in aggregate for each semester

Programme of study. If he/she has attended **65%** but less than **75%** of the total lectures delivered of his/her Programme of study treated as non-collegiate. Candidates attending less than **65%** of total lectures delivered in a semester Programme of study will be treated as dis-collegiate.

4.06 The attendance of a candidate shall be counted from the date on which the respective classes begin, or from the date on which he/ she is admitted which ever is later.

4.07 The University shall have the power to condone a deficiency in attendance, as per rule.

4.08 A student who fails to pursue a regular Programme of study as stated in **4.05** to **4.07** may be allowed to take re-admission to the same Programme the next year only. The re-admission fees to be decided by the respective departments/colleges (self-finance Programmes) to the same Programme next year only.

4.09 Students of the two-year/three years Post Graduate Degree MASTER OF BUSINESS ADMINISTRATION (MBA) Programme shall have to pursue a Programme of study of the courses distributed into four semesters or six semesters.

4.10 The MBA Programme adopts Choice Based Credit System (CBCS) and Grading System. Accordingly, the **Syllabus under CBCS is shown in Annexure – B and Grading System is provided in Annexure – A**.

Both Annexure- A and Annexure – B are amenable to changes by the Departmental Committee, Board of Studies and Faculty Council from time to time.

5. Examinations

5.01 Semester Examinations in MASTER OF BUSINESS ADMINISTRATION (MBA) shall be held every six months in Kolkata and at such other places as shall be determined from time to time by the University. The date of commencement of the examination shall be duly notified.

5.02 In each academic session two semesters Programmes will be simultaneously conducted i.e., I and III or II and IV for two different batches (for Day Session) and at the end of which corresponding semester examinations will be held. For the evening session, Programmes will be distributed throughout the entire three – year period and in six semesters. However, the students of the evening session will appear for four semester examinations and their first semester examination will be held in the second year of their study period along with the first semester examination of the full time Programme.

5.03 A student will be allowed to appear in a semester examination only after he/she completes his/her regular MASTER OF BUSINESS ADMINISTRATION (MBA) Programme of study for that semester.

5.04 40% marks in any course in any semester will be deemed as pass marks for that course. A candidate who fails to secure 40% marks in any course, or absent in any course will be allowed to appear in that course when the corresponding semester examination is held next. He / She will be allowed two such consecutive chances for each course.

5.05 Classes for the next semester Programme will start immediately as per notification by the concerned Department.

5.06 Students will have to specialize in a Major and a Minor Group of Courses in Semester – III and Semester – IV where Dual specialization is provided.

5.07 Semester (I + II+ III + IV) examinations will be held in **3200 marks** distributed in four/six semesters. 20% of marks in each theoretical course will be reserved for internal assessment.

5.08 A candidate who fails in the viva-voce examination/project/dissertation will have to reappear for the same when they are held next. He/she will be given two such consecutive chances.

5.09 A student will be declared to have passed the Programme on the basis of the results in semesters I, II, III, IV examinations. The minimum qualifying marks for this will be 40 % in all the courses. Students will be awarded Grades on the basis of credit weighted average grade points, where grade points for each course will be computed on the basis of percentage of marks as stated in Annexure – A.

A student will be declared to have passed a Semester if at least 40% marks (Grade P) is obtained in all the courses in that semester.

A student will be declared to have passed the program if at least 40% marks (Grade P) is obtained in all the courses of the program fulfilling total 130 credits.

5.10 Re-examination of only two courses per semester shall be allowed for the candidates appearing at a semester examination as a whole provided he/she has secured at least 50% marks in aggregate in rest of the courses of that semester examination.

5.11 The evaluation of field study, dissertation, project report and viva-voce shall be conducted as decided by the Board of Studies/Advisory Committee.

5.12 Candidates having passed as per **5.09** but scoring less than 60 per cent marks in the aggregate will be declared to have passed the examination in the 2nd class; those scoring 60 % or more in the aggregate will be declared to have passed in the 1st class. A student will also be declared to have been placed in the specified Grade based on his/her Final GPA as stated in Annexure – A.

5.13 A candidate who fails to appear in one semester examination or in any course in that examination may be allowed to appear for that examination /course along with other semester examination (based on the syllabus in force at the time of examination) or separately, when the corresponding examination is held next. He /She will be given next two consecutive chances.

5.14 On the completion of the results the University shall publish a list of successful candidates arranged in two classes and in order of merit.

5.15 Each successful candidate shall receive his/her degree of MASTER OF BUSINESS ADMINISTRATION (MBA) in the form of a certificate stating the year of passing and the class and Grade in which he/she is placed along with FGPA

5.16 In case any issue emerges in pursuance of this CSR or other wise related to the CSR, the matter will be decided by the Departmental Committee and Board of Studies with the approval of the Vice-Chancellor.

5.17 This CSR of Department of Business Management supersedes all other previous CSR of Department of Business Management existing in any form.

5.18 This CSR will be operative from **2018-2019 admitted batches of students** onwards**.**

Annexure – A: Grading System

A1: Grade for a course is specified as below:

Grade	Meaning	% of Marks
O	Outstanding	90 – 100
E	Excellent	80 – 89
A	Very Good	70 – 79
B	Good	60 – 69
C	Average	50 – 59
P	Pass	40 – 49
F	Fail	Below 40
Ab	Absent	

A2: Computation of Grade Point for a course and Grade Point Weighted Average for Semesters and the Programme:

$$\text{Grade Point} = GP = \frac{\%\ \text{of marks in the course}}{10}$$

Grade Point Weighted Average = GPA

= Weighted Average of GP of the courses where credit of the courses are the weights

$$= \frac{\text{Sum total of Credit Weighted GP}}{\text{Sum total of Credits}} = \frac{\Sigma\ CGP}{\Sigma\ C}$$

SGPA is the Semester GPA i.e., the GPA of all the courses in one semester

CGPA is the Cumulative GPA i.e., the GPA of all the courses up to the current semester.

FGPA is the Final GPA i.e., the GPA of all the courses of all the semesters of the Program

A3: (i) Results under Grading System (where no GP is less than 4 in any course)

SGPA/CGPA/FGPA	Grade	Meaning
9 – 10	O	Outstanding
8 to less than 9	E	Excellent
7 to less than 8	A	Very Good
6 to less than 7	B	Good
5 to less than 6	C	Average
4 to less than 5	P	Pass

(ii) Where GP is less than 4 in any of the courses, Grade will be F meaning Fail in Semester / Programme Results.

(iii) Where a candidate is absent in any of the courses, Grade will be Ab meaning Absent and result of the Semester / Programme will be FAIL.

Annexure B: The MBA SYLLABUS under CBCS

B1: The Course Structure of the MBA Programme

- 2 Year Programme: Total 32 Courses of 100 Marks each. Total Marks = 3200.
- All Courses except one on Project are divided into 2 Modules of 50 Marks per Module.
- For all Courses except two Courses on Project and Viva total hours (including Class, Tutorial and Practice): 40 hours per Module and 2 Credit Points per Module where every module consists of 40 Marks in Terminal Examination and 10 Marks for Internal Assessment.
- For the Course on Project: 2 months Internship and 6 Credit Points
- For the Course on Viva: 4 Credit Points
- Total Credit Points for the Course: 130
- Codes: C = Core Course
  GE = Generic Elective
  ES = Elective Course Operation Research & System Analysis
  EF = Elective Course Financial Management
  EM = Elective Course Marketing Management
  EH = Elective Course Human Resource Management
  EP= Elective Course Project
  EV= Elective Course Viva

First year: 2 Semesters: 14 Core Courses and 2 Generic Elective Courses.

8 COURSES FOR SEMESTER – I (JULY – DECEMBER)

COURSE NO.	TITLE	MODULES	MARKS	CREDIT
C – 101	Management Principles, Process.	I = Management Principles II = Management Process	100	4
C – 102	Organisation Behaviour and Management of	I = Organisation Behaviour II = Management of	100	4

	Change	Change		
C – 103	Managerial Economics – I (Micro)	I = Micro Economics - I II = Micro Economics – II	100	4
C – 104	Managerial Economics – II (Macro)	I = Macro Economics - I II = Macro Economics – II	100	4
GE – 105	Statistical Methods	I =Statistics for Managerial Decision – I II =Statistics for Managerial Decision – II	100	4
C – 106	Accounting for Managers	I = Financial Accounting II = Cost Accounting	100	4
C – 107	Ecology, Ethics and Business	I = Ecology & Business II = Business Ethics	100	4
C – 108	Fundamental of Computers	I = Introduction & Basics of Computer Hardware II = Programming Principles & Business Data Processing	100	4

8 COURSES FOR SEMESTER – II (JANUARY - JUNE)

COURSE NO.	TITLE	MODULES	MARKS	CREDIT
C – 201	Business Environment	I = Non Economic Environment II = Economic Environment	100	4
C – 202	Strategic	I = Strategic Management	100	4

	Management and Business Policy	II = Business Policy		
C – 203	Financial Management	I =Financial System II = Financial Decision Process	100	4
C – 204	Marketing Management	I = Marketing Management - I II = Marketing Management – II	100	4
C – 205	Production Management & Operations Research Techniques	I = Production Management II = Operations Research Techniques	100	4
C – 206	Human Resource Management	I = Human Resource Management – I II = Human Resource Management – II	100	4
GE – 207	Research Methodology & Econometrics	I = Research Methodology II = Econometrics	100	4
C – 208	MIS and Computers Applications	I = Management Information System (MIS) II = Business Communication	100	4

C101, C 102 and C 202 are offered as GE for the other Academic Departments of the University.

Second Year:

4 MAJOR SPECIALISATIONS:

MARKETING MANAGEMENT

OPERATIONS MANAGEMENT & SYSTEMS ANALYSIS

FINANCIAL MANAGEMENT

HUMAN RESOURCE MANAGEMENT

4 MINOR SPECIALISATIONS:

MARKETING MANAGEMENT

OPERATIONS MANAGEMENT & SYSTEMS ANALYSIS

FINANCIAL MANAGEMENT

HUMAN RESOURCE MANAGEMENT

- 2 Semesters: 4 Minor Specialisation Elective Courses, 10 Major Specialisation Elective Courses and 2 Elective Courses on Project and Viva.
- 2 Courses in each Semester are Elective Major Course for the same Major Specialisation and Elective Minor Course for other Major Specialisation.

(COURSES - 301 & 302 in 3rd Semester and Courses 401 and 402 in 4th Semester are Major Courses for the same Specialisation and MINOR Courses for other specialisations.)

8 COURSES FOR SEMESTER – III (JULY - DECEMBER):

6 Elective Courses in MAJOR SPECIALISATION & 2 Elective Courses in MINOR SPECIALISATION

MARKETING MANAGEMENT

COURSE NO.	TITLE	MODULES	MARKS	CREDIT
EM – 301	Consumer Behaviour	Module I = Consumer Behaviour- I	100	4

		Module II = Consumer Behaviour II		
EM – 302	Advertising Management – (I) & Sales Promotion – (I)	Module I = Advertising Management – I Module II = Sales Promotion – I	100	4
EM – 303	International Marketing	Module I = International Marketing & International Business Module II = Trans National Corporation in International Market	100	4
EM – 304	Sectoral Marketing Management	Module I = Non-profit Institutions Module II = Rural Marketing	100	4
EM – 305	Strategic Marketing & Services Marketing	Module I = Strategic Marketing Module II = Service Marketing	100	4
EM – 306	Industrial Marketing	Module I = Industrial Marketing Module II = Logistics in Marketing	100	4

2 Elective Courses in Minor Specialisation: EF/EH/ES 301 & 302

OPERATIONS MANAGEMENT AND SYSTEMS ANALYSIS

COURSE NO.	TITLE	MODULES	MARKS	CREDIT
ES – 301	Quantitative Techniques and Control – I	I = Linear Programming, Transportation and Assignment Problems II = Inventory Management and Game Theory	100	4
ES – 302	Application Software Development	I = Structured Systems Analysis and Design II = DBMS	100	4
ES – 303	Advanced Mathematics, Network Analysis & Project Management	I = Advanced Mathematics II = Network Analysis & Project Management	100	4
ES – 304	Reliability, Sequencing & RElacement Model	I = Reliability Theory II = Sequencing & RElacement Model	100	4
ES – 305	Principles of Operating Systems and Data Structure & Algorithms	I = Principles of Operating Systems II = Data Structure & Algorithms	100	4
ES – 306	E-commerce	I = E-commerce	100	4

	Programming Languages & Development of Internet Applications	Programming Languages II = Development of Internet Applications		

2 Elective Courses in Minor Specialisation: EF/EH/EM 301 & 302

FINANCIAL MANAGEMENT

COURSE NO.	TITLE	MODULES	MARKS	CREDIT
EF – 301	Accounting for Management	I = Management Accounting II = Management Control System	100	4
EF – 302	Indian Financial System	I = Financial Institutions in India II = Financial Market & Instruments	100	4
EF – 303	Financial Economics	I = Economics & Management of Financial Services II = Financial Derivatives	100	4
EF – 304	Cost Management	I = Advanced Costing II = Working Capital Management	100	4
EF – 305	Tax Management	I = Income Tax Laws II = Tax Planning	100	4
EF – 306	Project Management &	I = Project Management & Control – I	100	4

	Control	II = Project Management & Control – II		

2 Elective Courses in Minor Specialisation: EM/EH/ES 301 & 302

HUMAN RESOURCE MANAGEMENT

COURSE NO.	TITLE	MODULES	MARKS	CREDIT
EH – 301	Managing Interpersonal & Group Process	Module I = Interpersonal Relationship Module II = Group Dynamics	100	4
EH – 302	Human Resource Management	Module I = Man Power Planning Module II = Selection & Recruitment	100	4
EH – 303	Labour Economics	Module I =Wage Theory Module II=Characteristics of Labour in Less developed Countries	100	4
EH – 304	Management of Industrial Relations	Module I = Industrial Relations Module II = Trade Unionism	100	4
EH – 305	Cross & Global Human Resource Management	Module I = The Role of Culture Module II = HRM in the Modern Era	100	4
EH – 306	Human Resource Accounting & Compensation	Module I = Human Resource Accounting	100	4

	Management	Module II = Compensation Management		

2 Elective Courses in Minor Specialisation: EF/EM/ES 301 & 302

COURSES FOR SEMESTER – IV (JANUARY - JUNE): 4 Elective Courses in Major Specialisation, 2 Elective Courses in MINOR SPECIALISATION, 1 Elective Course on Project and 1 Elective Course on Viva

MARKETING MANAGEMENT

COURSE NO.	TITLE	MODULES	MARKS	CREDIT
EM – 401	Sales Management & Retail Management	Module I = Theories of Selling & Management Module II = Retail Management	100	4
EM – 402	Market research & Assessment	Module I = Market Research Module II = Market Assessment	100	4
EM – 403	Market Forecasting	Module I = Trends	100	4

	Techniques	& Forecast Module II = Box – Jenkins Models& other forecasting techniques		
EM – 404	Advertising Management – (II) & Sales Promotion – (II)	Module I = Advertising Management – II **Module II = Sales Promotion–II: Integrated Promotion & Public Relation**	100	4

2 Elective Courses in Minor Specialisation: EF/EH/ES 401 & 402

OPERATIONS MANAGEMENT AND SYSTEMS ANALYSIS

COURSE NO.	TITLE	MODULES	MARKS	CREDIT
ES – 401	Production and Operations Management Principles	I = Production Management Principles II = Operations Management Principles	100	4
ES – 402	Programming Languages & Computer Networking Principles	I = Programming Language C++ II = Computer Networking Principles	100	4

ES – 403	Quantitative Techniques and Control – II	I = Non Linear Programming, Integer Programming, Goal Programming, Stochastic Programming II = Queuing Theory	100	4
ES – 404	Structured Query Languages & Software Engineering	I = Structured Query Languages II = Software Engineering	100	4

2 Elective Courses in Minor Specialisation: EF/EH/EM 301 & 302

FINANCIAL MANAGEMENT

COURSE NO.	TITLE	MODULES	MARKS	CREDIT
EF – 401	Financial Management	I = Financial Decision Analysis II = Strategic Finance	100	4
EF – 402	Investment Management	I = Investment Environment II = Security Analysis	100	4
EF – 403	International Finance	I = International Finance-I II = International Finance-II	100	4
EF – 404	Portfolio Management	I = Bond Analysis & Management II = Portfolio	100	4

		Management		

2 Elective Courses in Minor Specialisation: EM/EH/ES 401 & 402

HUMAN RESOURCE MANAGEMENT

COURSE NO.	TITLE	MODULES	MARKS	CREDIT
EH – 401	Human Resource Development	Module I = Development & Training Module II = Evaluation & Appraisal	100	4
EH – 402	Human Resource Counselling & Discipline	Module I = Counselling Module II = Disciplinary Activities	100	4
EH – 403	Legal Framework Governing Human Relations	Module I = Industrial Law Module II = Labour Welfare Measures	100	4
EH – 404	Industrial Psychology	Module I = Industrial Psychology Module II = Industrial Sociology	100	4

2 Elective Courses in Minor Specialisation: EF/EM/ES 401 & 402

EP 405 = Project Work (Full Marks = 100; Credit Point=6)
EVP 406= Module I:Project Viva (50 marks, Credit Point = 2)
Module II: General Viva (50 marks, Credit Point = 2) (Full Marks = 100; Credit Point=4)
TOTAL MARKS = 3200; CREDIT POINT =130

B2: The Detailed Contents of the Syllabus

Semester – I

C 101: Management Principles, Process

Module – I Management Principles

1. Business and its objectives
2. Forms of Business Organization
3. Business Combinations
4. Corporate Governance
5. Taylor, Fayol
6. Human Relations School
7. Systems Theory
8. Contingency Theory
9. Contemporary Issues

Module – II Management Process

1. Nature of Functions of Management
2. Planning
3. Organization
4. Delegation and Decentralization
5. Controlling
6. Leadership
7. Motivation

C 102: Organization Behaviour and Management of Change

Module – I Organization Behaviour

1. Meaning and Concept of Organisational Behaviour.
2. Organisation System, Organisation Structure.
3. Individual Behaviour in the Organisation
   - Values, Attitudes, Personality, Emotion & Perceptions.
4. Group Behaviour in the Organisation.
   - Group Behaviour, Group Decision Making
5. Organisational Development
   - Organisational Change
6. Leading and Motivation.

Module – II Management of Change

1 Necessity of Change
   - Resistance of Change

2 Types of Change. Conflict in Management of Change.
3 Influence of Change in Organisational Behaviour, Innovations in Management Process.

C 103: Managerial Economics – I (Micro)

Module – I Micro Economics – I

1. Theory of production – Total, average and marginal product curves
2. Theory of cost – Total, average and marginal cost curves
3. Concept of revenue – Total, average and marginal revenue curves
4. Theory of firms – Traditional theory
5. Theory of Firms – Modern theory – Alternative goals of firms
6. Market morphology – Perfect completion – imperfect completion – monopoly, monopolistic competition, oligopoly,
7. Industrial organization - Product quality, non-linear pricing, advertisement, brand proliferation, principal agent model, entry deterrence.

Module – II Micro Economics – II

1 Utility theory
2 Theory of consumer behaviour – Indifference – preference analysis, derivation of demand curves – elasticities of demand – slutsky equation
3 Welfare theory – Pareto optimality

Books Recommended:

1. Henderson & Quandt – Macro Economics – A Mathematical Approach
2. Koutsoyiannis – Modern Micro Economics
3. Cohen & Cyert – Theory of Firm
4. Curwen – Theory of Firm
5. Curwen – Managerial Economics
6. K.Basu – Lectures in Industrial Organization
7. Hal Varian – Intermediate Microeconomics
8. Mankiew – Managerial Economics
9. David Kreps – A course in Microeconomics

C 104: Managerial Economics – II (Macro)

Module – I Macro Economics – I

1. National Income and its accounting; GNP deflator; different price indices & their relations; GNP & Welfare
2. Income determination in closed economy – saving investment equality – consumption function & effective demand – multiplier process – Lags
3. Determinants of demand for money; determinants of supply of money; instruments of monetary control – role of banks
4. Income determination in IS-LM framework – Fiscal policy vs. monetary policy – conflicts & compatibility

Module – II Macro Economics – II

1 Aggregate supply – Determinants of Labour market equilibrium

2 AD-AS model – Response to demand management policies – the fiscalist – monetarist debate – The free market argument – asymmetric self-adjustment process – role of & need of government intervention in the market process

3 Inflation as a self-liquidations process – demand-pull & cost-push factors – role of expectations – Phillips curve - Long run supply curve

4 Income determination in the open economy under fixed and flexible exchange rates – fiscal; monetary & foreign exchange policy at an interactive level

Books Recommended:

1. Samuel Son, Paul & Nordhans – Economics
2. Robert Gordon – Macro economic
3. Lipsy R. G. – Introduction to Positive Economics
4. Dornbusch & Fisher – Macro economics

GE 105: Statistical Methods

Module – I Statistics for Managerial Decision – I

Collection and presentation of data; Frequency Distribution; Measures of Central Tendency, Dispersion, Skewness & Kurtosis, Correlation & Regression, Time-series Analysis, Index Number Analysis.

Module – II Statistics for Managerial Decision – II

Probability Theory and Probability Distributions – Binomial, Poisson, Normal and Exponential; Linear Programming – basic Concepts, Model Formulation, Solution Methods, Duality; Introduction to some Basic Quantitative Methods Packages.

Books Recommended:

1. Chandha, N.K. *Staistics for Behavioral and Social Scientists*, Reliance Publishing House, Delhi, 1996
2. Gupta, S. P. and Gupta M. P. *Business Statistics*, new Delhi, Sultan Chand, 1997
3. Kazmier, L. J. and Pohn, N. F. *Basics Stastics for Business and Economics*. New York, McGraw Hill, 1988.
4. Levin Richard L. and Rbin David S. *Statistics for Management*. New jersey, Prentice Hall Inc., 1995.
5. Narag, A.S. *Linear programming and Decision Making*. New Delhi, Sultan Chand, 1995
6. Sharma, J. K. *Fundamentals of Operations Research,* Mac Millan Publishers, 1990
7. Terry, Sineich, *Business Statistics by Examples*. London, Collier Mac Millan Publishers, 1990.

C 106: Accounting for Managers

Module - I Financial Accounting

1. Accounting Concepts and conventions
2. GAAP & Industrial Accounting Standards

3. Uses of accounting information
4. Double entry system – P & L, B/ S, CFS
5. Inventory Valuation and Depreciation and their treatment in Balance Sheet.
   Corporate financial reporting India & Accounting standards.
6. Financial Statement Analysis.

Module – II Cost Accounting

1. Management Accounting Concepts.
   Need, Importance and Scope of Management Accounting.
2. Budgetary Control, Performance Budgeting Zero Base Budgeting.
3. Variance Analysis
4. Contribution Analysis – BE Analysis
5. Cost Sheet

C 107: Ecology, Ethics & Business
Module – I Ecology & Business

Basic Issues in Ecology, need for preservation, Environmental Management: Fundamentals-Sustainable Development, Implications of human population growth, Limits to growth, Environment and Business Schools; Energy Management: Fundamentals – Fossil fuels use, Energy production and trade, Energy balance; Ecosystem concepts: Basic Concepts and their application in Business, Industrial Ecology and Recycling Industry; Environmental Management System: EMS Standards, ISO 14000. Environmental Auditing. Clearance/Permissions for establishing industry; Environmental Management & Valuation: Environmental Accounting, Economics -–Environmetal Taxes Shifts, Green Funding, Corporate Mergers, Environmental Management Trade Debt and Environment, GATT/WTO Provisions; Environmental Laws: Acts, Patents, IPRS, Role of NGO's, PIL; Pollution & Waste Management – Air, Water, Land Pollution, Trade in Wastes; Water, Forest & Bio-diversity Management: Water Resources Dams and their role; Forest products and Trade. Role of Bio-diversity in International Trade.

Module – II Business Ethics

- Managerial myopia regarding ethical behaviour in business; Significance of Business Ethics; Ethics, morality and law; Contemporary ethical challenges in business
- Ethics as a strategic response in business; Values and vision in the strategic management process
- Qualities of Ethical Leadership; Approaches to Ethical Thinking: teleological, deontological, virtue-based, and holistic
- Ethical Dilemma: nature, levels and significance; Dilemma resolution process; Important areas of managerial dilemmas
- Ethical management tools: Whistle-blowing; ethical audits; ethics committees; ethics strategy

C 108: Fundamentals of Computers
Module – I Introduction & Basics of Computer Hardware

Information & Processing: Data, info, logical concepts of data-entities, attributes, relationships; physical concepts – record, file, data processing, different types of data processing, different types of reports, transaction processing, word and text processing, graphics, office automation.

Elements of Computer Processing Systems: Elements of a computer System, Hardware, Software and classification of computers.

Hardware features and use: CPU, I/O devices, storage devices and media, generations of computers, Analog & digital computers, development of personal computers – Super computing, parallel processing computers.

Computer arithmetic and Number system: Decimal nos. system, binary no. system, fixed point representation, floating point representation, octal and hexa decimal representation.

Basic concepts of codes, Boolean algebra and logic gates

BCD, Gray code, excess-3 code, Boolean algebra, switching algebra, de-morgan's theorem, shanmon's theorem, Minimization of switching functions using, K-map, Quine-mcelansky method, Iterative consensus method, design of half adder/half subtractor, full adder/full subtractor etc., logic gates, flip flops.

Computers and communication coordination: Need for data transmission over distances, methods of data transmission, band and band width, digital and analog transmission, serial and parallel data transmission, modem, communication protocols – synchronous and asynchronous, allocation of channels multiplexing – time division, space division. Frequency division, LAN, WAN, DDP, Real-time online systems.

Module – II Programming Principles & Business Data Processing

Task analysis – decision tables: Steps in programme development, division tables, flow charts, errors in programming.

Programming language classification: Machine language, assembly language, high level languages upto 4GL.

Programming techniques: Top-down and bottom up design and implementation; modular design and programming, structured design and programming, programming tools, program maintenance.

System software: Operating systems – its components; utility s/w packages – editor, sort, merge; compilers, interpreters, steps of compiler design.

Application packages: Single function – special purpose, general purpose; integrated function.

Books Recommended:

1. Tanenbaum – Structured computer orgs – PHI
2. Lee, S. C. – Digital circuits and logic design – PHI
3. Malvins & Leach – Digital circuit design – Mc Graw Hill
4. Operating System Concepts – Abraham Salbervsehatz
5. Davis Gries – Compiler construction for digital computers
6. Tanenbaum A. S. – Computer network – PHI
7. Hawryszkiewycz L. T. – Intro to SAD - PHI

Semester – II

C 201: Business Environment

Module – I Non Economic Environment (Socio Political Cultural Legal)

1. Nature of Industrial Sociology
2. Social Organization, Work Organization
3. Occupations in Indian Society
4. Human & Cultural variables in organizations
5. Cultural differences and managerial implications
6. Cultural research methodologies and Hoffstede's Hermes Study.
7. Cultural leadership and decision-making
8. Cultural communication and negotiation.
9. The Indian Contract act, 1872: Essentials of a valid contract, vold agreement, performance of contacts, Breach of contracts, Quasi Contracts
10. The Sale of goods Act, 1930: Formation of a contract, rights of an unpaid seller.
11. The Negotiable Instruments Act, 1881: Nature & Types, Negotiations and arbitration.
12. The Companies Act, 1956: Nature and types of companies, formation, memorandum and articles of association, prospectus, allotment of shares, share and share capital, membership, borrowing power, management and meetings, accounts and audit, compromise arrangements and reconstruction, prevention of oppression and mismanagement, winding up.
13. Consumer Protection Act.
14. Cyber Laws.

Books Recommended:

1. Avtar Singh. Company Law. 11th ed. Lucknow, Eastern, 1956.
2. Khergamwala, J S. The Negotiable Instrument Acts, N M Tripathi, 1980
3. Ramaiya, A. Guide to the Companies Act. Nagpur, Wardha, 1992.
4. Shah, S M Lectures on Company Law, Bombay N M Tripathi, 1990
5. Tuteja, S K Business Law for Managers. New Delhi, Sultan Chand 1998.

Module – II Economic Environment (National & International)

1. Indian experience in development & planning in post-independence period.
2. Industralisation in the pre-liberalisation era – policies & their impacts.
3. Industralisation in the post-liberalisation era – performance of the private sector under reforms.

4. Role & Performance of the public sector – disinvestment & restructuring.
5. Reforms in the financial & banking sector.
6. Reforms in the external sector – comparison of performances in the pre and post liberalization period.
7. International Business: An Overview – Types of International Business; The external Environment; The Economic and Political Environment, The Human Cultural Environment; Influence on Trade and Investment Patterns; Recent World Trade and Foreign Investment Trends; Balance of Payments Accounts and Macroeconomic Management: Theories and Institutions: Trade and Investment – Government Incluence on Trade Investment; Determination of Trading Partern's Independence, Interdependence and Dependence; World Financial Environment; Cross-national Co-operation and Agreements; Rariff and Non-Tariff Barriers, WTO, Regional Blocks; International Firms; World Financial Environment; Foreign Exchange Market Mechanism; Determinants of Exchange Rates; Euro-currency Market; Offshore Financial Competitiveness; Export Management; Licensing; Joint Ventures Technology and Global Competition; Globalisation and Human Resource Development; Globalisation with Social Responsibility; World Economic Growth and the Environment: *Country Evaluation and Selection; International Business Diplomacy*; Negotiating an International Business, Issues in Asset Protection: Multilateral Settlements; Consortium Approaches; External Relations Approach.

Books Recommended:

Uberoi, N. K. *Environmental Management*, Excel Books, A-rt, Naraine, Phase – 1, New Delhi – 2000

Pandey, G. N. *Environmental Management*, Vikas Publishin House, New Delhi, 1997

Gupta, N. Dass. *Environmental Accounting*, Wheeler Publishing, 19, K.G. Marg, New Delhi, 1997

Mohanty, S. K. *Environment & Pollution Law Manual*, Universal Law Publishing, G. T. Karnal Road, New Delhi, 1996

Harley, Nick. *Environmental Economics*, Macmillan India Ltd., Ansari Road, New Delhi – 1997

Kolstad, Charles D. *Environmental Economics*, Oxford University Press, 2000

Uma Kapila *India Since Independence*

Soumyen Sikdar *Contemporary Issues* in *Globalisation*

Autar Krishen Koul *The General Agreement on Tariffs and Trade (GATT)/ World Trad Organisation (WTO) Law, Economics and Politics*

C 202: Strategic Management and Business Policy

Module – I Strategic Management

1. Strategic Management: An Overview.
2. Analysis of External and Internal Environment.
3. Organisational Culture and Objective Setting.
4. Identifying Strategic Alternatives Strategy Alternatives.
5. Strategy Evaluation and Selection.
6. Matching Strategy and Organisation Structure.
7. Implementing Strategy.

8. Strategic Control Process.
9. Control System.

Module – II Business Policy

1. Objectives of Business Policy
   - Knowledge
   - Skill
   - Attitude
2. Importance of Business Policy.
3. Nature of Business Policy

Books Recommended:

1. Robert S. Kaplan and David P. Norton, The Strategy Focussed Organisaton, Harvard Business School Press.
2. Kazmi (jt author), Business Policy, Tata Mc Graw Hill.
3. Nitin Balwani, Strategic Management and Business Policy, Excel Books.
4. AIMA, Strategies for Competitiveness, Excel Books.
5. Dr. P. K. Gupta, Corporate Strategic Management, Everest Publishing.

C 203: Financial Management

Module – I Financial System

1. Aims and objectives of Financial Management
2. Environment of Financial Management

- Financial Instruments, Institutions and Markets in India (Primary & Secondary securities market), Financial Services

3. Sources of Corporate Finance

Module – II Financial Decision Process

1 Capital Structure and Cost of Capital
2 Investment Decision
3 Working Capital Management
4. Dividend Decision

C 204: Marketing Management

Module – I Marketing Management - I

1. Nature and Scope of Marketing.
2. Marketing Information System and Marketing Research.
3. Consumer and Industrial Marketing.
4. Market Segmentation.
5. Targeting and Positioning.
6. Product Decisions: Product Mix, Product Life Cycle, New Product Development, Branding, Packaging Decisions, Pricing Methods

Module – II Marketing Management – II

1. Promotion Decisions.

a) Promotion Mix, b) Advertising, c) Sales Promotion, d) Publicity/Public Relations, e) Personal Selling.

2 Channel Management

a) Selection, b) Co-operation & Conflict Management.

3 Evaluation & Control of Marketing Efforts.

4 New Issues in Marketing.

a) Globalisation, b) Consumerism, c) Green Marketing, d) Legal Issues.

Books Recommended:

1. Enis, B. M. *Marketing Classics: A selection of Influence Articles*, New York, McGraw Hill, 1991
2. Kotler, Philip and Armstrong. G. *Principles of Marketing*, New Delhi, Prentice Hall of India, 1997
3. Kotler, Philip, *Marketing Management: Analysis, Planning, Implementation and Control*, New Delhi, Prentice Hall of India, 1994
4. Ramaswamy, V. S. and Namakumari, S. *Marketing Management: Planning, Control*, New Delhi, MacMillan, 1990
5. Stanton, William, J. Fundamentals of Marketing, New York, McGraw Hill, 1994
6. Neelamegham, S. Marketing in India: Cases and Readings, New Delhi, Viakas, 1988

C 205: Production Management and Operations Research Techniques

Module – I Production Management

1 Nature and Scope of Production and Operations Management.

2. Types of Manufacturing Systems and Layouts.

3. Workshop Layout Planning and Analysis.

4. Material Handling.

5. Production Planning and Control.

a) Mass Production, b) Batch/Job order Production.

6. Capacity Planning.

7. Process Planning, Scheduling, Work Study, Method Study, Work Management.

8. Work Environment – Industrial Safety, Safety Management.

9. Materials Management, Purchase Management, Stores Management.

10.Quality Control, Total Quality Management, ISO 9000.

Module – II Operations Research Techniques

1. Linear Programming – basic Concepts, Model Formulation, Solution
2. Methods, Duality; Introduction to some Basic Quantitative Methods Packages.
3. Transportation, Assignment & Game Theory
4. Inventory Analysis, Queuing
5. Project Management (PERT, CPM)
6. Replacement Analysis

C 206: Human Resource Management
Module – I Human Resource Management – I

1. Human Resource Planning.
2. Job Analysis and Design.
3. Reinvestment and Selection.
4. Induction
5. Training & Development.

Module – II Human Resource Management – II

1 Performance Appraisal and Potential Evaluation.
2. Job Evaluation and Wage Determination.
3 Employee Welfare.
4 Industrial Relations and Trade Unions and Employee Empowerment.
5 Dispute Resolution and Grievance Management.

Books Recommended:

1. Aswathappa, K. *Human Resource and Personnel Management*, Tata McGraw Hill, New Delhi, 1997
2. De Cenzo, D.A. & Robbins S. P. *BUSINESS MANAGEMENT*, 5th ed. New York, John Wiley, 1994
3. Guy, V. & Mattock J. *The New International Manager*, London, Kogan Page, 1993.
4. Holloway, J. ed. *Performance Measurement and Evaluation*, New Delhi, Sage, 1995
5. Monappa, A. & Saiyadain M. *Personnel Management*, 2nd ed., New Delhi, Tata McGraw Hill, 1996
6. Stone, Lioyed and Leslie W. Rue. *Human Resource and Personnel Management*, Richard D. Irwin, Illinois, 1984

GE 207: Research Methodology & Econometrics
Module – I Research Methodology

Nature and Scope of Research Methodology; Problem Formulation and Statement of Research Objectives; Value and Cost of Information – Bayesian Decision Theory; Organisation Structure of Research; Research Process: Research Designs – Exploratory, Descriptive and Experimental Research Designs; Methods of Data Collection – Observational and Survey Methods; Questionnaire Design; Attitude Measurement Techniques: Motivational Research Techniques; Administration of Surveys;

Books Recommended:

1. Andrews, F. M. and S. B. Withey *Social Indicators of Well Being*. Plenum Press, N. Y., 1976.
2. Bennet, Roger: *Management Research*. ILO, 1993
3. Fowler, Floyd, J. Jr., *Survey Methods*, 2nd ed., Sage Publication, 1993
4. Fox, J.A. and P. E. Tracy, *Randomized Response: A Method of Sensitive Survey*, Sage Publication, 1986
5. Gupta, Sa. P. Statistical Methods, 3rd ed., Sultan Chand, New Delhi, 2001

6. Golden, Biddle, Koren and Karen D. Locke, *Composing Qualitative Research*, Sage Publication, 1997
7. Salkind, Neil J., *Exploring Research*, 3rd ed., Prentice Hall, NJ, 1997

Module – II Econometrics

1. The nature of Econometrics – Relationship between variables, Economics Model & Concept of Error in the World
2. Two variable models – Assumptions, Least Square Estimations and their properties, Correlation Coefficient, Analysis A Variance in Regression, Predictions, basic Concept of Orthogonal Estimates.
3. Extension of the two-variable linear model – Two variable non-linear Relationships
4. General Linear Model – Assumptions & their implications, least square estimations and the properties, Correlation matrix, Partial correlation. Co-efficient & programmes coefficients, significance test of the stimulates, ANOVA in programme
5. Multicollinearity – Concept, consequences of multicollinearity & its removal with special reference to demand analysis.
6. Sample Design; Selecting and Appropriate Statistical Technique; Field Administration of Surveys; Sample Design; Selecting an Appropriate Statistical Technique; Field Work and Tabulation of Data; Analysis of Data, Estimation, Testing & Inference:- Use of SPSS and other Statistical Software Packages; Advanced Techniques for Data Analysis – ANOVA,

Books Recommended:

1. Econometrics Method: J. Johnston
2. Theory of Econometrics: A. Koutsoyiannis
3. Econometrics: G. S. Maddala
4. Generalized Linear Regression Model

- Problems of Heteroscedasticity
- Auto correlation
- Use of Dummy Regression (Binary)
- Co-integration

4. Pyndricks & Ruben field – Econometrics
5. Maddala – Econometrics
6. Gold Burger– Applied Econometrics

C 208: MIS & Computer Applications

Module – I: Management Information System (MIS)

MIS: Definition, Concept, Characteristics, Factors of designing successful MIS, Steps involved in setting up MIS, Advantages of MIS, Problems involved in installing and

operating MIS, MIS growth stages theory in an organizations, Limitations of MIS, Status of MIS personnel. Dimensions of information need at different levels of management, Uncertainty absorption & planning, organizing and controlling.

Decision Support System: Its characteristics, Ingradients, Formulation of programmed decision rules.

Reporting: General principles, Types of reporting, Considerations of developing management reporting system.

Information Systems for Functional Areas: Accounting information system, Financial information system, Marketing information system, Personnel information system, Production information system, Materials Handling information system.

Database Management System: Introduction, Facilities of database, Database Administrator, Abstract architecture for a database system – External level, Conceptual level, Internal level, Schema and Sub-schema, DBMS in operational steps, DDL, DML.

Data structures and corresponding operations – Relational approach, Hierarchical approach, Network approach, Relational approach – Relations, Tuples, Attribute, Domains, Cardinality, Idea of Normalization. Enterprise Management System/ Enterprise Planning Business Process Re-engineering.

Introduction to E-Commerce.

Module – II Business Communication

Computer and communication: Basic Information Theory, The information technology, The concept of global village, On-line information services, Electronic Bulletin board systems; The Internet, Interactive video, Communications channels, Communications networks, local networks, Managerial issues related to telecommunications. Client/server computing, Communication servers, Digital networks, Electronic data interchange and its applications, Enterprise resource planning systems, Inter organizational information system, Value added network, Wireless networks. Managing in the market space, Electronic commerce and Internet, Applications of Internet, Internet and Extranet in business organization, Using internet for business EIS, Internet as a vehicle for transacting business.

Books Recommended:

1) Murdick & Ross – MIS – PHI
2) George M. Scot – Principles of MIS – McGraw Hill
3) Date C. J. – Database Management System
4) Basandra Suresh K. – Computer systems today – Wheeler.

Semester - III

OPERATIONS MANAGEMENT & SYSTEM ANALYSIS

ES –301(Minor) Quantitative Techniques and Control – I
Module I: Linear Programming, Transpiration & Assignment Problems

Linear Programming: Formulation of the problem, Graphical solution methods, General linear programming problem, Matrix formulation of general LPP, Simplex method, Fundamental properties of solutions, Simplex algorithm, Artificial variables, Charnes method of energies, Two phase simplex method, problem of degeneracy and cycling, Duality in linear programming, Fundamental properties, Dual simplex method, Revised simplex method, Standard form for revised simplex method, Bounded variables, Fusibility condition, Sensitivity analysis, Discrete changes in the different vectors, Structural change in LPP.
Transportation problem: Initial basic feasible solution by North-west corner rule, Matrix minima method, VAM approximation method, optimality test.
Assignment problem: Assignment algorithm, unbalanced assignment problem, traveling salesmen problem.

Module II: Inventory Management and Game Theory
Inventory Management - Introduction, Techniques of Inventory Control with known demand, Problem of EOQ with uniform demand, with finite rate of replacement, with shortage. Production instantaneous, multi-item deterministic problem, techniques of Inventory Control with uncertain demand, determination buffer stock, re-order level. Techniques of Inventory Control for stochastic problems, stochastic problem with uniform demand, discrete and continuous cases, problems of price breaks and other constraints.
Game Theory – Strategic and normal form representation of a game, Non cooperative game theory, Pure and Mixed strategies, Solution techniques of games: Iterated Dominance Method, Maximin minimax Method, Graphical Method, Nash's Technique, LP Method, Backward Induction, Introduction to Cooperative game theory.

ES – 302 (Minor) Application Software Development Systems
Module – I SSAD
Systems concept and its development, Structured analysis & Design, Systems development life cycle, Tools of structured analysis & design – Context diagram, E-R diagram, Data flow diagram, Data dictionary, Pseudo code, Decision tables, Decision trees. Data capacity, file organization, program design, system control and implementation, system documentation and standards.

Module II DBMS

Basic Concepts: Data modeling for a database; Records and Files, Data independence, Data obstraction and data integration, Thethree level architecture, Instances and Schemes, Data base Manager/Administrator/Users.

Data Models: Entity –Relation diagram, Relational data model, DBTG proposal, Data definition and manipulation languages.

File Organisation: Serial files, Sequential files, Index-sequential files, Direct file, Secondary key retrieval, Indexing using Tree structures, Logical & Physical pointers, Record placement.

Multivalued Dependencies: Decomposition, Integrity, protection, Security, Concurrency, Control, recovery.

Concept of Distributed Data bases: Introduction, Networks, Data distribution, object naming, consistency, concurrence control, Distributed commitment and recovery, Dead lock in distributed systems, Distributed Query Programming.

ES – 303 Advanced Mathematics, Network Analysis & Project Management

Module I: Advanced Mathematics

1. **Elements of Set Theory**: (a) Set operation, (b)Laws of set operations - Association; -- Commutative Law --- Distributive Law with respect to union intersection, (c) De Morgan's Theorem.
2. **Relation Algebra**: (a) - Inverse Relation, -- Composition of Relations, ---Relational Algebraic Rules: (i) Function Relation, (ii) Ordering Relation,
   (c) Equivalence Relation.
3. **Group, Reng, Field**: Basic concepts & illustrations.
4. **Vector Space**.
5. **Liner Transformation from**: Finite Vector, Space to finite vector space – Matrix Algebra. Characteristic value problem. Quadratic form. Negative / positive definite matrix.
6. **Maximisation overtime**: Calculus of variation: Euler – Lagrange Equations application.
7. **Graph Theory**: (a) Concept of Utilization of graph, nodes edge, walk, open walk, closed walk, path, circuit, tree, cut set, cut. (b) Application of graph theory.

Module II: Network Analysis and Project Management

1. Network: Basic Concepts, Activities, Nodes.
2. Network, Critical path.
3. Critical Path Method.
4. PERT, PERT calculation.
5. Probability of meeting of schedule time.

Books Recommended:

1. Kelly: General Topology
2. Hadley : Linear Algebra
3. Rudin: Principle of Mathematical Analysis
4. Gopal: Control Theory
5. Norsingh Deo: Graph Theory

ES– 304 Reliability, Sequencing & Replacement Model

Module I: Reliability

Reliability Theory: Introduction. Definition of reliability constituents of reliability, concept of failure and failure rate. The bath – tub – curve, failure law, reliability and exponential law. The mean time between failures, measuring the MTBF, reliability computation of components probability of failure, reliability of the system, reliability of series configuration, reliability of parallel configuration, reliability of prediction. Definition of maintainability. Maintainability prediction, definition of equipment availability, which is important reliability, maintainability or availability? Increasing equipment availability, Manufacturer's reliability and maintainability programme, reliability engineering birth to death.

Module II: Sequencing& Replacement Model

Introduction to sequencing problems. Terminology, notations, assumptions etc, problems with n jobs and two machines, optimum sequencing algorithm, problems of n jobs and three machines, problems of n jobs and m machines.

Introduction. Replacement of items that deteriorate with time, maintenance cost increases with time, the value of money remains same over period and change over period, replacement of items fail completely, individual replacement policy, group replacement policy. Application of renewal theory.

ES – 305 Principles of Operating Systems & Data Structure and Algorithms

Module – I : Principles of Operating System

1. **Overview :**

History and Evaluation of Operating System

Introduction (What is an Operating System, Simple batch systems ,Multi programmed batched systems ,Time sharing systems ,Personnel-Computer Systems, Parallel systems ,Distributed systems ,Real-time systems)

Computer-system structures (Computer system operation ,I/O structures ,Storage structure ,Storage hierarchy ,Hardware protection ,General system architecture)

Operating system structures (System components ,Operating system services , System calls ,System programs ,System structures ,Virtual machines ,System design & implementation ,System generation)

1. **Protection and security**

Protection (Goals of protection ,Domain of protection ,Access matrix , Implementation of access matrix ,Revocation of access rights , Capability based systems ,Language based protection)

Security (The security problems ,Authentication ,One-time passwords , Program threats ,System threats ,Threat monitoring ,Encryption ,Computer security classifications, Example of security model)

2. **Case studies: (The UNIX system, Windows NT)**
3. **Process Management:**

Process (Process concept ,Process scheduling ,Operation on process, Cooperating process ,Threads ,Inter process Communication)

CPU scheduling (Basic concepts ,Scheduling criteria ,Scheduling algorithms,

Multiple processor scheduling ,Real time scheduling ,Algorithm evaluation)
Process synchronization (Background ,The critical section problems Synchronization hardware ,Semaphores,Classical problems of synchronization Critical regions,Monitors ,Synnchronization in solaris2,Atomic transactions)
Deadlocks (System model,Deadlock characterization ,Methods of handling Deadlocks ,Deadlock prevention ,Deadlock avoidance ,Deadlock detection , Recovery from deadlock ,Combined approach to deadlock handling)

4. **Storage management :**

Memory management (Background ,Logical versus Physical address ,Swapping, Contiguous allocation, Paging ,Segmentation ,Segmentation with paging)
Virtual memory (Background ,Demand paging ,Performance of demand paging , Page replacement ,Page-replacement algorithms ,Allocation of frames Thrashing ,Other considerations ,Demand segmentation)
File system interface (File concept ,Access methods ,Directory structures, Protection ,Consistency semantics)
File system implementation (File system structure ,Allocation methods , Free space management, Directory implementation ,Efficiency and performance, Recovery)

5. **I/O Systems:**

I/O systems (Overview, I/O hardware ,Application I/O interface ,Kernel I/O Subsystem, Transforming I/O requests to hardware operations ,Performance)
Secondary storage structure (Disk structure, Disk scheduling ,Disk management Swap space management ,Disk reliability ,Stable storage implementation)
Tertiary storage structure (Tertiary storage device ,Operating system jobs, Performance issues)

6. **Distributed systems :**

Network structures (Background, Motivation, Topology ,Network types Communication ,Design strategies ,Networking examples)
Distributed system structures (Network operating systems, Distributed operating systems ,Remote Services ,Robustness ,Design issues)
Distributed file systems (Background ,Naming and transparency ,Remote file Access ,State full versus stateless service ,File replication ,Example Systems)
Distributed coordination (Event ordering ,Mutual exclusion , Atomicity, Concurrency control, Deadlock handling ,Election algorithms ,Reaching agreement)

Module – II: Data Structure & Algorithms

Algorithms: definition and characteristics, pseudo- codes. Design: incremental, divide- and-conquer, greedy.

Growth of functions: different notation and their usefulness; fundamental properties of "big O" notation; best, worst and average case behavior.

Program design: structured and modular programming; non- recursive and recursive design-study comparison with simple examples.

Data structure: definition, fundamental data types, ADT

Concept of storage allocation: sequential and linked.

Array: definition, types representation in memory address function; examples- Upper, lower triangular and tri-diagonal arrays. Representation and manipulation of polynomials.

Pointers and Linked Lists: concept and representation; singly and doubly linked lists; non circular and circular, application- polynomial representation and addition, sparse matrix-representation and basic operation, operation with large integers.

Stacks: Representation in sequential and linked form, basic operations, application procedure calls and recursion, infix to postfix conversion and evaluation.

Queues: Representation with linear and circular arrays, basic operations; simple example on application in simulation. Priority queues.

String: Representation, basic operations; pattern matching problem – brute – force and KMP algorithm.

Graphs: Representation-of directed and undirected graphs, properties and manipulation; applications – Kurskal's algorithms, MST, DPS, BFS, topological sort.

Trees: General, binary trees: terminology (nodes and branches, height and depth, levels) types (complete, full, skewed); representation (array, linked), properties nodes and branches, number of nodes in a level, maximum number of nodes, internal and external path length – (minimum and maximum values), traversal algorithms; threaded trees. Application: comparison tree, syntax tree and parsing, game tree, Huffman code.

Binary search trees: Definition and properties, search, insertion and deletion algorithms; height balanced trees – definition, rotations and restoring balance, 2-3 trees, B-trees.

Linear and binary search: Algorithms, complexity.

Hashing: Definition; advantage and limitations; hash functions – design consideration, types and selection, collision resolution, techniques –open addressing with linear probing, simple chaining, double hashing; value of load factors. Dynamic hashing, perfect hash functions.

Sorting algorithms: Basic parameters, comparison based – bubble, insertion, selection, quick, tree, heap, merge; by distribution- radix; performance of algorithms.

Storage management: garbage collection; dynamic memory management – first fit, worst fit, buddy system.

Books Recommended:

1. Tanenbum et al : Data Structures using C and C++ (PHI)

2. Corman et al : Introduction to Algorithms (selected topics only) (PHI)
3. Knuth : Art of Computer Programming (Vol. I & III) (A – W)

ES – 306: E-commerce Programming Languages & Development of Internet Applications

Module I: E-commerce Programming Languages

JAVA Programming & JAVA Database Connectivity

The Genesis of JAVA; Data types, Variables, Arrays, operators, Control statements, classes, Inheritance, Exception Handling, Multithreaded programming, String Handling, Event handling, Networking, The Applet class, Introducing the AWT: - Working with WINDOWS, graphics & Text. JAVA Database Connectivity.

Visual Basic:

Fundamental for Visual Basic 6.0: IDE, The elements of user interface, Event driven programming-properties, Methods, Events, Focus, Customizing the environment.

Visual Basic Projects: An application using different properties, An application with different forms, Project file, Form file, Executable file.

Visual Basic: The Language: Variables, Constants, Arrays, Collections, Procedure, Arguments, Function Return Values, Control flow Statements, Loop Statements, Nested Control Structures, The Exit Statement.

Different Forms: Appearance of forms, Designing Menus, Drag and Drop Operations.

Basic Active X Controls: The Text Box Control, The List Box and Combo Box Controls, The scroll Bar and Slider Controls, The file controls.

Drawing with Visual Basic 6.0: Graphic Control, Co-orditate system, Graphics Methods, Optimization Issues.

Advanced Active X Controls: The common dialogs control, the tree view and list view controls.

Advanced Active X Controls: The Rich text box control, The MS Flex Grid control.

Optimization of VB Application

VB Compiler, Optimization of VB Code, Case studies.

References:

1. Petrutsos Evangelos – Mastering VB 6.0 – BPB Publication
2. Gary Cornell – VB 6.0 from the ground up, TMH
3. Donald R. P. & Oancea G – VB 6.0 from Scratch - TMH
4. Schildt Navghton – The Complete Reference JAVA – 2. TMH

Module II: Development of Internet Applications

1. Introduction to the Internet

a) Client-Server Architecture
b) Associated protocols (TCP/IP, HTTP, Usenet News and electronic mail)
c) Related technology (names, address and Universal Resource Identifiers)
d) Browser Technology.

2. Basic features of the Web

a) Hypertext Markup Langup Language (HTML)
b) Limitations of HTML

c) Introduction of SGML and other Markup Language

3. Client-side processing

a) Forms
b) Scripting with Java Script and VB Script
c) Document Object Model (DOM)

4. Server-side Processing

a) Active Server Page (ASP)

5. Extensible Markup Language (XML)

a) XML in e-commerce
b) Document type definitions (DTDs)
c) XML schema
d) XML path language (Xpath)
e) Extensible stylesheet language (XSL)

6. Server-side Processing

a) Common Gateway Interface (CGI)
b) Server scripts
c) 3-Tier architecture and database connectivity

ES – 401 (Minor) Production and Operations Management Principles

Module I: Production Management Principles

1. Nature and scope of Production and Operation Management. Concept and importance.
2. Types of systems and Layouts; Production Capacity Planning and Management, Plant Location and Plant Layout
3. Production Planning and Control
   Demand forecasting for production, Product Development; Product and Process Analysis aggregate planning; production scheduling and control techniques and materials requirements planning
4. Project Management and Research Allocation
   Project Management Techniques, Line of Balance
   Resource Allocation – Linear Propagation and Computer application in Production and Operation Management

Module II: Operations Management Principles

1. Inventory Concepts, Functions and Costs, Basic Inventory Models, Inventory Systems, JIT Quality Management, Statistical Quality Control, Quality Assurance, Concept of Acceptance Sampling, Control Charts, Total Quality Management, ISO 9000/2000. Keizen, Six Sigma, etc
2. Elements of Work Study
   Introduction to work study: Principles and Methods of Study, Principles and Application of Time Study, Work Sampling and Development of Production Standard.
3. Maintenance, Value Analysis and Productivity
   Maintenance Management; Types of Maintenance; Cost Consideration in Management; Value Analysis and Engineering Productivity and its measurement.
4. Work Environment

Industrial Safety – Accidents, the Causes and Effects of Accidents, Responsibilities and Organization of Safety, Safety Management.

ES – 402 Programming Languages & Computer Network Principles

Module – I Programming Language C++

1) **C++: A bird's Eye View**
   a) Introduction
   b) What is new in C++
      i) Data encapsulation & abstraction
      ii) Inheritance
      iii) Polymorphism
      iv) Stream Handling
      v) Exception Handling
   c) Creating Applications
      i) Creating and editing source files
      ii) Compiling and linking
2) **Data Types, Operators, and Expressions**
3) **Programme Structure**
   a) Statements
   b) Blocks
   c) Control Statements
      i) IF statement
      ii) Switch Statement
   d) Loop Statements
      i) For Loop
      ii) Do While Loop
      iii) While Loop
4) **Functions**
   a) The Main Function
   b) Function prototyping
   c) Call by reference
   d) Return by reference
   e) Inline functions
   f) Default arguments
   g) Function overloading
   h) Friend and virtual functions
5) **Pointers**
6) **Arrays & Strings**
7) **Structures & Unions**
8) **Classes & Objects**
   a) Specifying a class
   b) Defining data members and Member functions
   c) Arrays in a class

d) Arrays of objects
e) Objects as function arguments
f) Returning objects
g) Local Classes

9) Constructors and Destructors
a) Parameterized constructors
b) Multiple constructors
c) Constructors with default arguments
d) Dynamic initialization of objects
e) Copy constructor
f) Dynamic constructor
g) Destructors

10) Operator Overloading and type conversion
a) Overloading
   i) Unary operators
   ii) Binary operators
b) Overloading binary operators using friends
c) Type conversions

11) Inheritance
a) Defining derived classes
b) Inheritance
   i) Single
   ii) Multiple
   iii) Hierarchical
   iv) Hybrid
c) Virtual base classes
d) Abstract classes

12) Polymorphism
a) Pointers to objects
b) THIS Pointer
c) Pointer to derived classes
d) Virtual Functions
e) Pure virtual functions

13) Generic Programming with Templates
a) Class Templates
b) Function Templates
c) Member Function Templates
d) Overloading of Template Functions

14) Stream Handling
a) Managing console I/O operations
   i) Unformatted I/O operations
   ii) Formatted console I/O operations
   iii) Managing output with Manipulators
b) Working with files

i) Classes for File Stream operations
ii) File pointers and their manipulations.
iii) Creating, opening, reading, writing and closing operations
iv) Sequential input and output operations
v) Random input and output operations

15) Exception Handling

a) Basics of exception handling
b) Exception handling mechanism

Books Recommended:

1. Schildt Herbert – C++ Complete reference – TMH
2. Balaguru Samy E – Orp. With C++ – TMH
3. Ravichandran D – Programming with C++, TMH
4. Hubbard John – Programming with C++ - McGraw Hill.

Module – II Computer Networking Principles

Computer Networks – Concepts, Uses, Network Structure, Network architectures, OSI reference model services, Physical Layer, Medium access sublayer, Data link layer, Network layer, Transport layer, Session layer, Presentation layer, Application layer.

Books Recommended:

1. Black Uyless – Computer Network – PHI
2. Bertsekas & Gallager – Data Network – PHI
3. Tanenbaum Andrews – Computer Networks - PHI

ES – 403 Quantitative Techniques and Control – II

Module – I Non Linear Programing, Integer Programming, Goal Programing, Stochastic Programmeing

Non-linear Programming: General NLPP, Problems of constraint maxima and minima, Necessary and sufficient condition for maximum (minimum) of objective function, Saddle point problems, Kuhn-Tucker conditions – non-negative constraints, Quadratic programming, Wolfe's modified simplex method and algorithm, Beale's method and algorithm, Piece-wise linear approximation.

Integer Programming: Gomoy's All-IPP method and algorithm, Branch and bound technique and algorithm, Either or constraints, K-out-of-N constraints must hold

Goal Programming

Dynamic Programming: The recursive equation approach, Characteristics of dynamic programming, Solution of LPP of dynamic programming

Stochastic Programming.

Books Recommended:

1. Budnik, Frank S., Dennis Mcleavey, Richard Mojena Principles of Operations Research, 2nd ed., Richard Irwin, Illinons-All India Travelller Bookseller, New Delhi, 1995

2. Gould, F J etc. Introduction to Management Science. Englewod Cliffs, New Jersey, Prentice Hall Inc., 1993
3. Taha, H A Operations Research – An Introduction, New York, Mc Millan, 1989

Module II: Queuing Theory

Introduction to Queuing Theory, Characteristics of queuing systems, input process, service mechanism, queue discipline, service channels, symbols and notations, distribution of inter-arrival times, service times, definition of transient and steady state, M/M/1 queuing system, MMC queuing systems, $M/E_k/1$ queuing system, M/G/1 queuing system

ES – 404 Structured Query Languages & Software Engineering

Module I : Structured Query Languages

Related Model: Relational database, Relational algebra, Relationaal Calculus, Functional Dependencies, Normal forms.

Query Languages: SQL – data definition, data manipulation, views; formal and commercial query languages.

Query Processing: General strategies for query processing, Transformation into an equivalent expression, Expected size of relations in the response, Query improvement, Query evaluation and optimization.

ORACLE: Table creation, SQL forms, Joining two tables, Report generation, Application.

Books Recommended:

1. C. J. Date – An introduction to Data base Systems Vol. I + II Addison, Wesley
2. Ulman, Jeffry D – Principles of Database System.
3. Korth & Silverschtz - DBMS
4. Robert Kruse – Data structure and program design – P.H.I.
5.Desai, Bipin C – An introduction to data base systems – Galgotin Publications Pvt. Ltd.
6. Oracle Manuals, Oracle corporation, USA.

Module II: Software Engineering

S/W Engineering: A preview; S/W: its nature and qualities, S/W Engineering principles, S/W design, S/W Verification, S/W production process, Management of S/W Engineering, S/W Engineering tools and environments.

References:

4. Hawryszkeiwycz I.T. – Introduction to SAD, PHI
5. Lee – Systems analysis & design – MCC publication
6. Senn, James A – Structured SAD
7. Processman – S/W Engg – A practitioner's approach – Mc Graw Hill
8. Ghezzi, Jozayeri, Mandrioli – Fundamentals of S/W Engg – PHI
9. Sommerville – S/W Engg – Adison Wesley

MARKETING MANAGEMENT

EM– 301 (Minor) : Consumer Behaviour

Module – I Consumer Behaviour-I

Preliminaries

1. Changing Profile of the Society and its Relevance of Consumer Marketing
2. Consumer Marketing & Non-Consumer Marketing Organisational / Industrial Marketing
3. Interdisciplinary Nature of Consumer Market Analysis
4. Characterising Consumer Market

- The Buyer or the Consumer
- The Seller
- The Product
- Institutional / Organisational Character – Market Network

Consumer Behaviour Analysis /Buyer in the Consumer Market

5. Interdisciplinary Nature of Consumer Behaviour Analysis

- Economic Paradigm of Consumer
- Behaviour Analysis – Economists Models
- Limitation of Economists Models in Market Management Analysis

6. Psychographic Analysis of Consumer
7. Behaviour

- Motivation
- Learning
- Perception
- Attitude
- Personality

Socio-graphic Analysis of Consumer Behaviour

8.Culture

9.Sub-culture

10.Social Class

11. Reference Group

12. Face of Face Group
13. Family
14. Individual / Person himself

15. Incorporating External and Internal Factors: Consumer Behaviour Models

-Howard & Sheth

-Nicosia

-Blackwel and Engel

-Others

16. Characterising Behaviour Models as

- Input Output System
- Inter-active System
- Feed Back Mechanism

17. Consumer Decision Process

- Pre-decision Analysis
- Decision and Action
- Post-decision and Action Analysis

18. Specifics

- Analysis of Dynamics of Purchase and Consumption of Consumer Durable
- Analysis of Dynamics of Purchase, Consumption and Post-consumption Behaviour of Consumer Perishables – Issues of Inventories of Consumables.

Module -II Consumer Behaviour- II

19. Port-Purchase Behaviour of Consumers.
20. Impact of Short Term and Long Term Memory on Consumer Behaviour.
21. Consumer Behaviour specifically to E-marketing.
22. Consumer Behaviour in Rural Marketing.
23. Environmental Awareness and Impact on Consumer behaviour.
24. Asian Cultures and Values.
25. Driving Forces in Asian Consumer Behaviour.

Books Recommended:

1. Leon G. Schiffman & Leslies Lazer Kankuk: Consumer Behaviour (Edition 6th) PHI – New Delhi
2. Loudon & Betta: Consumer Behaviour, McGraw Hill International, 2000
3. Glenn Walters and Blaise J. Bergiel: Consumer Behaviour, South Western Publishing Company, 1989.
4. Peter D. Benett and Harold H. Kassarjian: Consumer Behaviour, PHI, New Delhi, 1996

5. Assael, H. Consumer Behaviour Marketing Action. Ohio, South Western, 1995
6. Hawkins, D I. etc. Consumer Behaviour Implications for MarketingStrategy. Texas, Business, 1995

EM – 302 (Minor) : Advertising Management (I) & Sales Promotion – (I)

Module –1 Advertising Management – I

1. Introduction – The field of Advertising Management. Advertising Planning and Decision Making
2. Objectives Setting and Market Positioning – Integrated Market Communication. Setting Goals and Objectives. How Advertising Works.
3. Media Strategy and Tactics – Media Alternatives and Media Selection. Budgeting and Media Tactics.
4. Broader Environment – Advertising its relation with Society. Ethics in Advertising. Global Marketing and Advertising.

Module – II Sales Promotion

1. Introduction – Defining Promotion and its scope
2. Promotion Mix – Consumer Promotion, Trade Promotion. Promotional Strategies – Joint Promotions, Extra Benefit Offers, Charities, Sponsorships, Games and Competitions, Celebrity Promotion & Events Management
3. Devising a Promotional Strategy and its evaluation
4. Direct Marketing

Books Recommended:

1. George E. Belch & Michael A. Belch: Advertising & Promotion
2. Batra & Myers: Advertising Management, PHI
3. Scissors & Petray: Media Planning
4. A. D. Farbey: How to Produce Successful Advertising
5. Borden Marshall: Advertising Management
6. G. C. Beri: Marketing Research, TMH
7. R. Batra, J.G.Myers, D.A.Aaker: Marketing Management, PHI
8. F. Jefkins: Advertising, Macmillan
9. M. Mohan: Advertising Management, TMG
10. Kenneth. E. Clow and Baack Donald: Integrated Advertising Promotion & Marketing Communications - PHI
11. Hackley Chris, Advertising & Promotion – Sage

EM– 303 : International Marketing

Module – 1 International Marketing & International Business

Part – A

1. International Marketing vis-à-vis Domestic Marketing
2. Selection of Foreign Markets
3. Market Entry Strategies
4. Market Coverage Strategies
5. International Product Decisions
6. International Pricing
7. International Distribution
8. Promotion in the International Market

Part – B

International Firm & International Business

9. Introduction – (MNC / TNC – International Firm)
- Definition & Features

10. MNCs in Historical Perspectives
- Genesis of MNC
- MNCs in the late 20th Century
- Emerging Features of MNCs in the 21st Century

11. Network of MNC Operations and the Organisational Structure of the MNCs
12. Why the MNCs go abroad?
- Theory of Capital Transfer
- Products Cycle Theory in International Movement of Capital
- Export of Capital – Dynamics of Profit

13. The MNCs in the era of Globalisation of Capital
- Structural Adjustment Programme in Post Bretton Woods Regime
- Convertible Currency & Foreign Direct Investment in the era of liberalisation

Module – II Transnational Corporation in International Market

Part – A

14. Internalization of National Market
15. Operators in an International Market
- Transnational Corporations - an Operator

16. International Components in an International Market
17. Types of Operations of International Units in an International Market
18. Difference Forms of Trans National Corporation

- Transnational Manufacturing Corporations
- Transnational Trading Corporations
- Transnational Service Corporations

Part – B

Theories and Protections in International Trade

19. Rational of International Trade
20 Autarky & Trade
21. Adam Smith's Theory of Absolute Advantage
22. David Ricardo's Theory of Comparative Advantage
23. Hecksher – Ohlin Formulations
24. Gains from Trade
25. Free Trade vs. Restricted Trade
26. Forms of Protection
- Kinds of Tariff & Effects of Tariff
- Arrangements for Tariff
- Quotas, dumping & State Trading
- Exchange Control
27. Globalization & WTO

Books Recommended:

1. Warran J. Keegan: Global Marketing Management, PHI
2. Francis Cherunilam: International Business, Wheeler Pub.
3. Bo Sodersten: International Economics
4. Bhattacharya, B. Export Marketing. Strategies for Success. New Delhi, Global Business Press, 1991
5. Terpstra. Vem and Sarathy, R. International Business. New York, John Wiley, 1988
6. Onkvisit, Sak and Shaw, J J. International Marketing: Analysis and Strategy. New Delhi, Prentice Hall of India, 1995

EM – 304: Sectoral Marketing Management

Module – I Non-profit Institution

1. Non-profit Institutions in Indian Market Context, e.g. Police, Public Service, Hospitals etc.
2. Analysing Socio-cultural Environment Affecting Non-profit Organizations
3. Scope and Applications of Marketing in the Context of Non-profit Organization
4. Setting Marketing Objectives
5. Analysing Beneficiary Behaviour,
6. Market Segmentation, Targeting & Positioning
7. Planning of Marketing Strategy in a Non-profit Organization, Concept of Product Service Life Cycle & Related Issues.
8. Elements of Marketing Mix
   - Product
   - Pricing Decisions
   - Distribution & Delivery Strategy
   - Promotional & Public Relations Strategy
   - Role of Institutional Image
9. Monitoring & Review of Marketing Programme.

Module – II Rural Marketing

1. Rural Environment and its Dynamics

2. Marketing of Farm Products
3. Marketing of Farm Inputs
4. Marketing of Non-Farm Products and Non Farm Inputs
5. Roles and Strategies of Government, Cooperatives and Corporates in Rural Marketing
6. Globalization and Rural Marketing

Books Recommended:

1. Kotler, Philip and Andreasen Alan R. Strategic Marketing for non-profit organization. Englewod Cliffs, New Jersey, Prentice Hall Inc., 1987
2. Kolter Philip, etc. Cases and Readings for Marketing for Non-profit organizations. Englewod Cliffs, New Jersey, Prentice Hall Inc., 1983
3. Kolter, Philio and Roberto, Eduardo L. Social Marketing. New York, The Free Press, 1989
4. Lauffer, Armand. Strategic Marketing for Non-for-profit organization. New York, Free Press, 1984
5. Lovelock, Christopher H and Charles B. Weinberg. Marketing for Public and Non Profit Managers. New York, John Wiley, 1984
6. Singh Sukhpal: Rural Marketing Management – Vikas Publishing
7. Acharya S. S. & Agarwal N. L.: Agricultural Marketing in India, Oxford & I. B. H

EM– 305: Strategic Marketing & Services Marketing

Module – I Strategic Marketing

1. Marketing Planning
- Strategic Marketing
2. Product Planning & Life Cycle
3. Brand Management

Concept of Brand and Brand Extension
The Brand Equity Concept and Customer Based Brand Equity Model
Brand Positing and Values
Choosing Brand Elements to Build Brand Equity
Integrating Marketing Communication to Build Brand Equity
Methods of measuring Brand Equity

Module – II Services Marketing

1. Characteristics of Services, Classification of Services
2. Servqual Model
3. Services Mix
4. Internal Marketing, Interactive Marketing and External Marketing
5. Managing Quality
6. Managing Services
7. Customer Relationship Management

- Framework of Customer Relationship Marketing, Relationship through Loyalty, Loyal customer Ladder, Recovery of Lapsed Customer
- Introduction to Customer Relationship Management, Definition of Customer Relationship Management, Concept of Customer Interaction Management, Concept of Customer Retention, Stages of Retention in Customer Life Cycle

- e-CRM, The concept, Difference between CRM and e-CRM, Dimensions of e-CRM, Key requirement for e-CRM, e-CRM tools
- CRM process: Benefits of CRM process, Four C's of CRM process, Organisation of CRM Process, Implementing CRM – A Step-by-step process
- Integration of CRM with ERP systems

Books Recommended:

1. Cristopher.H. Lovelock; Services Marketing; Prentice Hall International, N.J(1996).
2. S. M. Jha; Services Marketing, Hinalaya Publishing, N. Delhi(1996).
3. Helen Woodruff; Services Marketing: McMillan of Indial,N.Delhi(1997)
4. M. J. Xavier; Strategic Marketing; Response Books, N. Delhi-(1999).
5. Subash C. Jain; Marketing Planning and Strategy; South Western Publishing(1990)
6. J. Neol Kapferrer; Strategic Brand Management; Free Press (1996)
7. Aikar; Leadership Brand; Free Press (2000)
8. Subroto Sengupta; Brand Positioning; Tata Mc Graw Hill Publishing, N. Delhi(1990).
9. Gupta P.K., Services Marketing, Everest Publishing House (2002)
10. Ravi Shankar, Services Marketing Excel Book, (2002)
11. Valarie A. Zeidhanul & Bitner, Services Marketing, Tata McGraw Hill, N. Delhi, (2^{nd} Edition)
12. Verma H. V. – Brand Management, Excel Book (2002)

EM– 306: Industrial Marketing

Module – I Industrial Marketing

1. Nature & Scope of Industrial Marketing
2. Differences between Industrial & Consumer Marketing
3. Nature of Demand of Industrial Marketing
4. Classification of Industrial Products
5. Organizational Buyer Behaviour

- Structure
- Process
- Content

6. Choice Criteria

- Factors Affecting Organizational Buyer Behaviour
- Life Cycle Costs

7. Organizational Sales Responsibilities and Preparation for it

- Objectives
- Key Concepts

8. Segmentation of Industrial Market

9. Product Decision and Strategies
10. Industrial Pricing
11. Distribution and Channel Relationship
12. Industrial Marketing Communication
13. Performance Appraisal

- Value Engineering
- Procedure
- Advantages
- Phases

Module – II Logistics in Marketing

1. Concept of Supply Chain Management, SCM
2. SCM in the Global Environment
3. The Role of Marketing in SCM
4. Supply Chain Sales Forecasting
5. Role of Logistics in SCM
6. Information System & SCM
7. Financial Issues in SCM
8. Customer Service & SCM
9. Measuring Performance in SCM
10. Managing SCM: Managerial and Research Implications

Books Recommended:

1. E. R. Corey, Prentice Hall:- Industrial Marketing – Cases & Concept
2. L. Fisher: Industrial Marketing, Business Books, London
3. F. Luthans, Mc Graw Hill: Organizational Behaviour
4. Geoffrey Lancaster, David Jobber & Macmillan: Selling & Sales Management
5. Carlos Falton, John Wiley & Sons: Value Analysis to Increase Productivity
6. Lawrence D Miles, McGraw Hill: Techniques of Value Analysis and Engineering
7. Christopher Bartlett & Sumantra Ghoshal: Managing Across Borders: The Transnational Solution, Harvard Business School Press
8. Donald J. Bowersox: The Strategic Benefits Logistics Alliances, Harvard Business Review
9. Sumantra Ghoshal: Global Strategy – An Organizing Framework, Strategic Management Framework
10. Manohar U. Kalwani & Narakesari Narayandas: Strategic Management Journal 8 (5) Long Term Manufacturer Supplier Relationship – Do they Pay off for Supplier Firms?, Journal of Marketing, 59 (January)
11. Havaldar K. Krishna, Industrial Marketing, Tata McGraw Hill Co. Ltd., N. Delhi, 2002

EM– 401 (Minor) : Sales & Retail Management

Module – I Theories of Selling & Management

1. Principles of Selling
2. Theories of Selling
3. Steps in Personal selling
4. Dyadic Interaction of Selling
5. Sales Organisational Structure
6. Relationship of Sales Department with other departments
7. Size of Sales Force
8. Motivation of Sales Force
9. Compensation and Recruitment of Sales Force
10. Quotas and Territory Management
11. Sales Force Control System
12. E- Marketing
13. Franchising
    -Concepts of Franchising
    -Types of Franchising
    -Modes of Operation
    -Steps in setting up a Franchisee Organisation
14. Physical Distribution
    -Objective of Physical Distribution
    -Importance of warehousing and transportation
    -Distribution Planning Principles
    -Designing a Distribution System

15. Marketing Channels
    -Strategies of Distribution
    -Role of Channel Members
    -Types of Retailing
    -Channel Relationship

Module – II Retail Management

12. Introduction to retailing; The Retail Environment, The Retail definition, Theory of retailing, Retailing and Marketing. Types of format retailing
13. The management of service and quality in retailing
14. The retail marketing mix: The Product, Retail Pricing, Retail Promotion, Place – Supply Chain Management
15. Merchandise Management, The concept, Methods of planning and calculating inventory levels, Merchandiser skills and profile, Range Planning, Merchandise assortment and support, Negotiating the purchase.
16. Retail location strategies and decisions
17. The management of retail brands
18. The applications of IT to retail marketing, the growing role of IT in retailing IT for competitive advantage, capturing data at the point of sale, data base marketing, data mining and business intelligence, electronic retailing

19. International retailing, International retail structures, motives and reasons for international retailing, market entry methods, development of international retailing.

Books Recommended:

1. Richard R.Still, Edward.W.Cundiff and A.P. Govoni, Sales Management, Prentice Hall of India, N.Delhi (2000).
2. E.L. Ansary (jt author), Distribution Management, Prentice Hall of India, N. Delhi (2000).
3. Anderson, R. Professional Sales Management Cliffs, New Jersey, Prentice Hall Inc, 1992
4. Buskirk, R. H and Stanton, W J Management of Sales Force. Homewood Illionois, Richard D. Irwin, 1983
5. Dalymple, D. J. Sales Management, Concepts & Cases, New York, John Wiley, 1989
6. Stanton, William J, etc. Management of a Sales Force Chicago, Irwin, 1995.
7. Gilbert David, Retail Management, F. T & Prentice Hall
8. Freathy Paul, The Retailing Book, F. T. & Prentice Hall
9. Evans, B. & Berman, Retail Management: The Strategic Focus, Prentice Hall India.

EM – 402 (Minor) : Market Research & Assessment

Module – I Market Research

1. Sampling Techniques
- Simple Random Sampling; with Replacement & without Replacement
- Stratified Random Sampling
- Sample size determination
- Estimation of different parameters and their standard error
- Different cases on sample survey in the context of marketing
2. Scales & Measurement in Marketing & Analysis
- Approaches in a survey relevant for Market Assessment
- Different types of scaling
- Data collection Methods
    - Variability Method: Ordered Category Sorting, Rating Method, Ranking Method, Paired Comparison (Thurstone Scale V)
    - Quantitative Judgment Method: Direct Judgement Method, Fractionation, Constant Sum
- Coefficient of Concordance
3. Tools used for Market Assessment
- Cluster Analysis, Factor Analysis, Discriminant Analysis & Conjoint Analysis

Module II: Market Assessment

1. Market Share

- Zero-order Method: Ehrenberg Model
- Markov Model: Markov Process, Transition Probability Matrix, Prediction of Market Share, Brand Preferences
- Models: Product class Sales Model, Market Share Model in a two Brand Market, Attraction Models:
  a) Multiplicative Competitive-interaction Model (MCI)
  b) Multinomial Logit Model (MNL)
- Parfill – Collins Model
  Consumer Brand Preference Model
- Different approaches to study the consumer brand preference & associated purchase behaviour
- Measurement of Brand preferences
  2. SERVQUAL
- Method and criticism
  3. New Product Decision Theory:
- Baysian approach in the context of launching of new product
  4. First Purchase Diffusion Model of New Product
- Innovative Diffusion Model: Fourt & Woodlock Model
- Imitative Duffusion Model: Mansfield Model, Fisher & Pry Model, Teece Model
- Roger's Model for classification & first Purchase consumers
- Bas Model: Derivation of the Model, Implication of the parameters & problems of Estimation

EM- 403: Market Forecasting Techniques

Module – I Trends & Forecast

1. Trends and Forecasts
- Linear
- Quadratic
- Exponential
- Modified Exponential
- Gompertz
- Log – Linear
2. Moving Average Models
- Exponential Smoothing Methods (Single, Double)
- Adaptive Response Rate
- Holts Trend – Smoothing (Single)
- Seasonal Models (Horizontal Seasonal, Adaptive Trend – Seasonal, Multiplicative Trend Seasonal)

Module II: Box – Jenkins Models & other forecasting techniques

1. Box – Jenkins Models
2. Special Techniques in Forecasting
- Lumpy Demand
- Cumulative Sum Techniques
- All Time Requirements
- Fast – Dropping Forecasts

Books Recommended:

1. Makridakis: Market Forecasting
2. Makridakis & Wheelwright: Interactive Forecasting
3. Pyndick & Rubenfield: Econometric Forecasting & Model Building

EM– 404: Advertising Management – (II) & Sales Promotion (II)

Module – I Advertising Management – II

1. Advertising Agency and its working – Creative, Account Servicing and Media
2. Theories of Advertising & Research
3. Message Strategy – Attention and Comprehension. Understanding Benefits Based Attitudes. Associating Felling with Brand. Group Insurance. Word of Mouth Advertising
4. Creative Strategy – Art of Copy Writing. Art and Copy. Art Direction. Elements of Design. Copy Testing and Diagnosis. Production and Implementation. Making a Creative Brief.
5. Global Advertising
6. Advertising for Small Business
7. Business to Business Advertising

Module – II Sales Promotion – II: Integrated Promotion & Public Relation

1. Integrated Promotion: Introduction, Designing an Integrated Promotion Strategy, Implementation and Control
2. Identifying & Describing Publics
3. Scope & role of Public Relations
4. Persuasion & Theory of Communication
5. Corporate Public Relations – Definition, Scope, Objectives & Strategies
6. Corporate Image & Public Relations
7. Public Relations & Marketing
8. Public Relations & Media
9. Ethics and Laws in Public Relations
10. Problem Solving Strategies in Public Relations
11. Evaluating Public Relations

Books Recommended:

1. Julian Cummins: Sales Promotion, Universal Publications, New Delhi

1. Ailloni and Charas, Dan. Promotion: A Guide to Effective Promotional Planning, Strategies and Executions. New York, John Wiley, 1984
2. Blattberg, Robert C and Scott, A Neslin. Sales Promotion: Concept, Methods and Strategies. Englewood Cliffs, New Jersey, Prentice Hall Inc., 1990

3. Schaltz, Don E and William, A Robinson. Sales Promotion Management. Chicago, Crain Books, 1982
4. Ulanoff, Stanley M Handbook of Sales Promotion, New York, McGraw Hill, 1985
5. Bahl Sushil, Making P. R. Work – Wheeler Publishing – 1997
6. New Som, Turk, Kruckebergy, This is P. R. – Wordsworth, Thomson Learning – 2000 (7th Edition)
7. Black Sam, Public Relations
8. Chaudhuri Arun, ITC Vs. BAT – Wheeler Publishing – 1998

FINANCIAL MANAGEMENT

EF– 301 (Minor) : Accounting for Management

Module – I Management Accounting

- Nature – objectives – role – relation with other accounting
- Changes in Financial Position.
- Financial Statement Analysis

Module – II Management Control System

- Budgetary Control & Performance Measurement (including zero base Budget, Balanced Score card, Bench Marketing, Theory of Constraint)
  Standard Costing
- Profit Centre and Transfer Pricing
- Divisional Performance Measurement and Control.

EF–302 (Minor) : Indian Financial System

Module – I Financial Institutions of India

- An overview of Indian Financial System
- Regulatory Bodies – RBI, SEBI
- Commercial Banks
- Cooperative Banks
- Insurance Companies
- UTI & MFS
- NBFCS

Module – II Financial Market & Instruments

- Money Market as part of Financial Market
- Money
- Call Money
- Treasury Bill
- Commercial Papers
- Report
- Discount Market
- Commercial Deposits
- Market for Financial Guarantees

- Capital Market as part of Financial Markets: Primary & Secondary
  - Gilt-edged Securities Market
  - Industrial Securities Market & Stock Exchanges
  - Bankers & Dealers
- Housing Finance
- Leasing
- Venture Capital
- Factoring
- Forfeiting
- Depositaries

Books Recommended:

1. The Economics of Money, Banking & Financial Markets – Frederic S. Mishkin, Columbia University Addison – Wesley.
2. Monetary & Financial Economics – James L. Pierce, John Wiley & Sons 1984
3. Raymond Goldsmith: Financial Institutions.
4. Money, Information & Uncertainty: C.A.E.Goodhart, 1989
5. The Financial System & The Economy: Principles of Money & Banking – Buston & Lombra, [South – Western College Publishing] Thomson Learning 2000
6. Commercial Banking – The Management of Risk – Fraser, Gup & Kolari South-Western College Publishing, Thomson Learning.

EF– 303: Financial Economics

Module 1 Financial Economics & Management of Financial Services

- Financial Systems: Introduction & Overviews
- Financial Intermediation
  - Role / Advantages
  - Financial Intermediaries & Institutions Nature, Function, Types of
- Asset & Liabilities
  - Structures of
  - Management of
- Interest Rates
  - Determination of
  - Structure of
- Bond
  - Price
  - Yields
  - Interest Rates
  - Maturity
- Economic Trend & the Yield Curve

Module – II Financial Derivatives

- Futures
- Options
- Other Financial Derivatives

EF – 304: Cost Management

Module – I Advanced Costing

- Cost Concept and Management Decisions
- Full Costing, Marginal Costing and Managerial Decision Making (under certainty and uncertainty)
- Strategic Cost Management
  - Activity Based cash management target cashing, lifecycle costing, JIT approach ERP, TQM, value chain analysis.

Module – II Working Capital Management

Concepts of Working Capital Management, Importance of Working Capital, Kinds of Working Capital, Factors Determining Working Capital, Estimating Working Capital Requirements, Management of Cash Receivable Management Programming Working Capital Management, Integrating Working Capital and Capital Investment Processes, Working Capital Control and Banking Policy in India.

EF– 305: Tax Management

Module – I Income Tax Laws

Computation of income and calculation of tax under income tax law
Procedural aspects of assessment and payment of tax and penalties

Module – II Tax Planning

- Concept of Tax Planning
- Tax implications of Planning in different corporate decision areas (Capital Structure, Lease Vs. Purchase, Amalgamation etc.)

EF– 306: Project Management & Control

Module – I Project Management & Control – I

Exploration and analysis of investment opportunities in projects, project viability appraisal

Market & Demand analysis
Technical analysis
Network analysis – CPM, PERT, crashing, resource allocation

Module – II Project Management & Control – II
Cost of Financing of projects
Projection of financial statements
Social cost benefit analysis
Project appraisal followed by financial institutions

Semester - IV

EF– 401 (Minor) : Financial Management
Module – I Financial Decision Analysis

- Fundamental Valuation Concept.
- Capital Budgeting.
- Risk Analysis of Capital Investments.
- Capital Structure (Leverage & Cost of Capital) and Dividend Policies.

Module – II Strategic Finance

- Core Competence, Diversification
- BPO
- Global Financing and Global Disclosure
- Financial Management of Sick Units.
- Corporate Restructuring.

EF– 402 (Minor) : Investment Management
Module – I Investment Environment

- Stock market
- New Issue Market
- Investment Companies

- Market Indexes
- Credit Rating

Module – II Security Analysis

- Fundamental Analysis
- Technical Analysis
- Efficient Market Theory

EF– 403: International Finance

Module – I International Finance- I

- The Foreign Exchange Market
  - Introduction
  - Spot and Forward Markets
  - Forward Premium
  - A typical Foreign Exchange Transaction
  - Triangular Arbitrage
- Central Banks and Exchange Rate Regimes
  - Fixed vs. Floating exchange rates regimes
  - India's exchange rate regimes over the years
- The Purchasing Power Parity principal
- The Covered Interest Parity principal
  - Investing on a covered basis
  - The covered interest parity condition
  - Deviations from covered interest parity (Transaction cost, cost of gathering and processing information, government intervention and regulation, financial constraints and capital market imperfections, non-comparability of assets)
  - Political risks and International money markets
  - Testing for covered interest parity
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Module – II International Finance- II

- An introduction to unit root and cointegration
  - The concepts of stationarity
  - The concept of unit root
  - Testing for unit roots (The Dickey & Fuller Tests)
  - Granger Causality
- Money: Role & Functions of Money – Evaluation of Classical Dichotomy
- Interest Rates & Issues Involved
- Critical Overview of Indian Banking System (*including Reserve Bank of India)*
- Non-Banking Financial Intermediaries
- International Monetary System: Its Impact on Indian Money & Capital Market
- Money Capital
  - Theoretical issues of perfect capital market

- Rational allocation of capital in uncertain world

EF – 404: Portfolio Management

Module – I Bond Analysis and Management

- Bond Valuation
- YTM
- Bond Attributes
- Bond Pricing Theorems
- Convexity
- Duration
- Immunization

Module – II Portfolio Management

- Risk and Return
- Markowitz: Portfolio Selection Model
- Sharpe: Single Index Model
- CAPM
- APT
- Portfolio Investment Process
- Investment Timing and Portfolio Performance Evaluation & Revision.

Books Recommended:

1. I.M. Pandey – Financial Management
2. Prasanna Chandra – Financial Management
   - Project Manageemnt
3. Bnearly & Myres – Principles of Corporate Finance
4. H. T. Spiro – Finance for non-financial Manager
5. Alan Shapiro – Multinational Financial Management
6. Jack Clark Francis – Investment – Analysis & Management
7. Bhalla & Tuteja – Investment Management
8. Brigham – Fundamentals of Financial Management
9. Khan – Indian Financial System
10. B. Banerjee – Financial Management
11. Jordon & Fisher – Investment
12. Alexander Baily & Sharpe: Investment
13. Horngren Charles – Principles of Financial Management Accounts
14. R. D. Kaplan – Advanced Management Accounting
15. Allan Upchurch – Advanced Cost Accounting
16. B. Banerjee – Cost Accounting
17. Asish Bhattacharya – Cost Accounting
18. Jawahar Lal – Managerial Accounting
19. V. K. Singhania – Indian Income Tax

20. V. K. Singhania – Tax Planning
21. L. M. Bhole – Financial Institutes and Markets
22. Khan & Jain – Financial Management
23. Avadhani – Marketing of Financial Services and Markets
24. C. Hull – Derivatives

HUMAN RESOURCE MANAGEMENT

EH– 301 (Minor): Managing Interpersonal & Group Processes
Module I: Interpersonal Relationships
Interpersonal Communication
Interpersonal Awareness and Feedback
Interpersonal Interaction Process

Module II: Group Dynamics

Group Behaviour
Group Dynamics & Cohesiveness
Interactive Behaviour and Conflict
Team Building

Books Recommended:
1. W.G. Bemies, Essay in Interpersonal Dynamics, Dorsey Press, USA 1979
2. D. Kolb, Organisational Behaviour, Pretice Hall, 1991
3. fred Luthans, Organisational Behaviour, McGraw Hill, 1985
4. Lauries J. Mullins, Management and Organisatinal Behaviours, Wheeler Publishing, 1992

EH– 302 (Minor): Human Resource Management and Policy
Module I: Man Power planning

1. Human Resource Management: Overview
2. Human Resource: Scope, Coverage and Functions
3. Man Power Planning
4. Forecasting Methods

Module II: Selection and Recruitment

1. Job Analysis, recruitment

2. Selection
3. Deployment, Redeployment
4. Job Evaluation, Job Rotation, Job Enlargement

Books Recommended:

1. E.B. Flippo, Personnel Management, McGraw Hill
2. A.f. Sikula & J.F. McKenna, Management of Human Resources, John Wiley, 1984
3. M.S. Saiyadain, Human Resource Management, Tata McGraw Hill, f1988
4. E.A. Ramaswamy, Management of Human Resources, Oxford, 1999

EH– 303 : Labour Economics

Module I Wage Theory

1. Wage theory under Perfectly Competitive Markets
2. Wage theory under Imperfectly competitive Markets
3. Elasticity of Factor Substitution, Technological Progress and Income distribution
4. Home-Production and the Allocation of Time
5. The theory of Search in Labour Markets

Module II Characteristics of Labour in Less developed Countries

1. Characteristics of Labour in Less Developed Countries
2. Work Environment – hours, absenteeism, shifts, fatigue
3. Dualism
4. Harris – Todaro model
5. Formal and Informal Sector employment
6. Implicit Contact Theory

Books Recommended:

1. Handerson and Quandt: Microeconomics
2. David Sapsford and Zafiris Tzannatos (ed) Current Issues in Labour Economics (Macmillan), 1990.

EH– 304: Management of Industrial Relations

Module I: Industrial Relations

1. Emerging trends in Industrial Relations
2. Industrial Relations machinery – Collective Bargaining, Conciliation, tribunals, Arbitration
3. Workers' Participation in Management
4. Industrial Relations & the State

Module II: Trade Unionism

1. Trade Union:- Evolution of Trade Union movement; in India; UK; USA and 3rd World Countries
2. Industrial Disputes
3. Role of Management & Trade Union
4. Theory of Strikes

Books Recommended:

1. M. Marchugton, Managing Industrial Relations, Mcgraw Hill, 1982
2. B.R. Patil, Collective bargaining, 1996
3. B.R. Virmani, Participative Management, Vision Books, 1988
4. C.S. Venkat Ratnam, globalization and Changes in Industrial Relations, Response Books, 2000

EH– 305: Cross & Global Human Resource Management

Module I: The Role of Culture

1. Human and Cultural Variables in global organisations
2. Cross Cultural Differences
3. Cross cultural Research methodology
4. Cross Cultural Leadership, Communication & Negotiation

Module II: HRM in the Modern Era

1. MNC and Human Resource Management
2. Human Resource Management in 21st Century
3. Human Resource Management and Technological Change
4. Technology transfer with a human face

EH – 306: Human Resource Accounting & Compensation Management

Module I: Human Resource Accounting

1. Human Resource Valuation and Accounting
2. Human Resource audit
3. Total Quality Management & Human Resource Development
1. Learning Process in Human Resource Development

Module II: Compensation Management

1. Compensation Packages
2. Fringe Benefits, Incentives, Refinement Plans.
3. Working of wage Boards, Pay Commissions etc.

EH– 401 (Minor): Human Resource Development
Module I: Development and Training

1. Human Resource Development
2. Designing Training Programms
3. Training Methods and Techniques
4. Evaluation of Training Programmes

Module II: Evaluation and Appraisal

1. Performance Appraisal
2. Appraisal Instruments
3. Career Planning and Succession Planning
4. Managing Diversity

Books Recommended:

1. K.K. Chaudhuri, Personnel management for Executives, Hemalaya Publishing House, 1998
2. Madhukar Shukla, Competing through knowledge, response Books, 1997

EH–402(Minor): Human Resource Counselling and Discipline
Module I: Counselling

1. Counselling Principles
2. Methods and Skills

Module II: Disciplinary Activities

1. Discipline in Industry
2. Positive and Negative Discipline

Books Recommended:

1. C.S. Venkat Ratnam and B.K. Srivastav, Personnel Management and Industrial Relations, S. Chand & Sons, 1999
2. Madhurendra K. Verma, Nurturing change through your human assets, Response Books, 2000.

EH– 403: Legal Framework Governing Human Relations
Module I: Industrial Law

1. Industrial Relations – Overviews
2. Industrial Dispute Act

3. Factories Act
4. Laws relating to Workmen's Compensation
5. Environmental Laws

Module II: Labour Welfare Measures

1. Payment of Wages Act
2. Minimum Wages Act
3. Payment of Bonus Act
4. Equal Remuneration Act
5. Provident Fund, Gratuity, Maternity Relief

Books Recommended:

1. S. L. Agarwal, Labour Relations Law in India, Macmillan, 1980
2. P.L. Malik, Industrial Law, Lucknow Eastern Book, 1999
3. O.P. Malhotra, The Law of Industrial Disputes, Tripathi, 1973
4. S.C. Srivastava, Industrial Relations and Labour Law, Vikas, 1994
5. S.D. Punekar, Deodhar & Sankaran, Labour Welfare, trade Unionism and Industrial Relations, Himalaya, 1990
6. S.C. Saxena, Labour Problems & Social Welfare

EH – 404 : Industrial Psychology

Module I: Industrial Psychology

2. Psychology of Trade Unionism
3. Working Conditions, ergonomics
4. Counseling

Module II: Industrial Sociology

1. Nature & Scope of Industrial Sociology
2. Industry & Society
3. Industry & Community
4. Industrial Social Stratification
5. Industrial & Family
6. Industrialism & Social Change

Books Recommended:

1. Kenith Davis, Human Behaviour at work, McGraw Hill, 1981
2. P. Mersey and K. Blanchand, Management of OB, Prentice Hall, 1985
3. Andre Beteille, Social Inequality, Persuin
4. S. N. Srinivasan, culture and Society