ANNA UNIVERSITY OF TECHNOLOGY COIMBATORE

DIRECTORATE OF ONLINE AND DISTANCE EDUCATION

PG DIPLOMA
(Academic Year: 2007-08)

SYLLABUS

WITH CURRICULAM & REGULATIONS

ANNA UNIVERSITY OF TECHNOLOGY COIMBATORE

DIRECTORATE OF ONLINE AND DISTANCE EDUCATION

REGULATIONS: 2007-08

This regulation is applicable to all candidates admitted into PG Diploma Programmes from the academic year 2007-08 onwards.

1. PRELIMINARY DEFINITIONS AND NOMENCLATURE

In this Regulation, unless the context otherwise requires:

i) **"Programme"** means PG Diploma programme.

ii) **"Branch"** means specialization or discipline of PG Diploma programme.

iii) **"Course"** means a theory or practical subject that is normally studied.

iv) **"University"** means ANNA UNIVERSITY OF TECHNOLOGY COIMBATORE.

2. PROGRAMMES OFFERED

1. Animation and Multimedia
2. Bioinformatics
3. Business Administration
4. Business Process Outsourcing
5. Computer Applications
6. Enterprise Resource Planning
7. Environmental Management
8. Financial Management
9. Foreign Trade
10. Hospital Management
11. Human Resource Management
12. Industrial Safety
13. Information Technology
14. Intellectual Property Rights
15. Investment Management
16. Labour Management
17. Marketing Management
18. Materials Management
19. Networking
20. Petroleum Exploration
21. Petroleum Refinery and Petro Chemicals
22. Retail Management
23. Software Project and Quality Management
24. Software Quality Assurance
25. Supply Chain Management
26. Trade Mark and Patent Analysis
27. Transport Management

3. ADMISSION

1. Candidates seeking admission to the PG Diploma Programme should possess the degree from a recognized University.
2. The eligibility criteria shall be prescribed by the Syndicate of the University from time to time.

4. STRUCTURE OF PROGRAMME

1. Every Programme shall have a curriculum comprising of theory and practical courses, and a project work with well defined syllabi.
2. The medium of instruction, examinations and project report shall be in English.

5. DURATION AND PATTERN

A student is normally expected to complete the PG Diploma Programme in one year but in any case not more than 3 years from the admission.

6. INTERACTIVE LEARNING PROGRAMME

1. Interactive Learning Programmes are arranged on Saturdays and Sundays or on Public Holidays. University will arrange Tele Conference / Case Studies in different centres after due notification.
2. Students need to effectively use the ILPs where they can interact with the faculty. The schedule of ILP will be notified in the website. However attending the ILP classes are not mandatory for PG Diploma programmes.

7. SYSTEM OF EXAMINATION

1. Each course (theory and practical) and project work shall be evaluated for a maximum of 100 marks.
2. The University examinations of 3 hours duration shall ordinarily be conducted between December & January and between May & June.

8. REQUIREMENTS FOR APPEARING FOR UNIVERSITY EXAMINATION

A candidate shall normally be permitted to appear for the University examination of the current year if he/she satisfied the following condition requirement:

- Student is expected to attend all ILP classes and secure 100% attendance. However, in order to allow for certain unavoidable reasons, the student is expected to attend at least 50% of the ILP classes (Three pair of Saturday and Sunday). For PG Diploma programmes the attendance in ILP classes is not mandatory.
- Registration is mandatory for current semester / year examinations as well as arrears examinations. Student is expected to register for examination for all courses of that semester / year.

9. PASSING REQUIREMENTS

1. A candidate, who secures not less than 50% of total marks prescribed for all the courses, shall be declared to have passed the Examination. If a candidate fails to secure a pass / absent in a particular course, it is mandatory that he/she register and reappear for the examination in that course during the next examination is conducted in that course; he/she should continue the same till he/she secures a pass.

2. A candidate who opts for project work shall be declared to have passed in the Project work and Viva–voce examination, if he/she secures an overall minimum of 50% marks. If a candidate fails to secure a pass / absent in the Project work and Viva-voce examination may be permitted to resubmit a project and appear for the viva – voce for the second time if so recommended by the examiners. No candidate shall be permitted to submit the project work and appear for the Viva – Voce on more than two occasions.

   Note: -   If a student indulges in malpractice in any of the University examinations, he/she shall be liable for punitive action as prescribed by the University from time to time.

10. ELIGIBILITY FOR THE AWARD OF DEGREE

A student shall be declared to the eligible for the award of the PG Diploma Degree provided the student has

- Successfully completed the course requirements and passed all the prescribed examinations within a maximum period 3 years reckoned from the commencement of the course to which the candidates was admitted.

- The award of Degree must have been approved by the Syndicate of the University.

11. CLASSIFICATION OF THE DEGREE AWARDED

1. A candidate who qualifies for the award of the Degree having passed the examination in all the courses in his/her first appearance within a maximum period of 1 year (1 year from the admission) and securing an aggregate of not less than 75% of total marks shall be declared to have passed the examination in Distinction.

2. A candidate who qualifies for the award of the Degree having passed the examination in all the courses within a maximum period of 1 year reckoned from the commencement of study and securing an aggregate of not less than 60% of total marks shall be declared to have passed the examination in First Class.

3. A candidate who qualifies for the award of the Degree having passed the examination in all the courses not within a maximum period of 1 year reckoned from the commencement of study and / or securing an aggregate of less than 60% of total marks shall be declared to have passed the examination in Second Class.

4. All other candidates shall be declared as failed candidates.

12. **GRADING SYSTEM**

Marks	Grade	Grade Legend	Grade Points
95% - 100%	O	Outstanding	10.0
90% - 94%	E	Excellent	9.5
86% - 89%	A	Very Good	9.0
76% - 85%	B	Good	8.0
66% - 75%	C	Above Average	7.0
56% - 65%	D	Average	6.0
50% - 55%	S	Satisfactory	5.0
Below 50%	RA	Reappearance	-
-	RAI	Reappearance in Internal	-
-	RAX	Reappearance in External	-
-	RAB	Reappearance Both	-
-	W	Withheld	-
-	AB	Absent	-

*****

ANNA UNIVERSITY OF TECHNOLOGY COIMBATORE

DIRECTORATE OF ONLINE AND DISTANCE EDUCATION

PG DIPLOMA CURRICULUM

PG DIPLOMA IN BUSINESS ADMINISTRATION			
Branch Code - 301			
Course Code	**Course**	**Marks**	**Credits**
130101	PRINCIPLES OF MANAGEMENT	100	3
130102	HUMAN RESOURCE MANAGEMENT	100	3
130103	FINANCIAL MANAGEMENT	100	3
130104	MARKETING MANAGEMENT	100	3
130105	CORPORATE GOVERNANCE & BUSINESS ETHICS	100	3
	Total Credits		**15**

PG DIPLOMA IN BUSINESS PROCESS OUTSOURCING			
Branch Code - 302			
Course Code	**Course**	**Marks**	**Credits**
130201	BUSINESS PROCESS OUTSOURCING	100	3
130202	CALL CENTRE TECHNIQUES	100	3
130203	MEDICAL TRANSCRIPTION MANAGEMENT	100	3
130204	KNOWLEDGE MANAGEMENT	100	3
130205	CUSTOMER RELATIONSHIP MANAGEMENT	100	3
	Total Credits		**15**

PG DIPLOMA IN ENTERPRISE RESOURCE PLANNING			
Branch Code - 303			
Course Code	**Course**	**Marks**	**Credits**
130301	INTRODUCTION TO ERP	100	3
130302	OPERATIONS MANAGEMENT	100	3
130303	PROJECT MANAGEMENT	100	3
130304	ERP IMPLEMENTATION PROCEDURE	100	3
130305	ERP ENABLED SERVICES	100	3
	Total Credits		**15**

PG DIPLOMA IN ENVIRONMENTAL MANAGEMENT
Branch Code - 304

Course Code	Course	Marks	Credits
130401	ECOLOGY & ENVIRONMENT	100	3
130402	POLLUTION MANAGEMENT	100	3
130403	ENVIRONMENTAL INSTITUTIONS	100	3
130404	ENVIRONMENTAL LAWS	100	3
130405	MANAGEMENT AND COMMUNICATION	100	3
130406	PRACTICAL	100	3
		Total Credits	18

PG DIPLOMA IN FINANCIAL MANAGEMENT
Branch Code - 305

Course Code	Course	Marks	Credits
130501	MANAGERIAL FINANCE	100	3
130502	SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	100	3
130503	CAPITAL MARKET & FINANCIAL SERVICES	100	3
130504	FUTURES, OPTIONS AND DERIVATIVES	100	3
130505	BANKING & INSURANCE	100	3
		Total Credits	15

PG DIPLOMA IN FOREIGN TRADE
Branch Code - 306

Course Code	Course	Marks	Credits
130601	INTERNATIONAL BUSINESS	100	3
130602	INTERNATIONAL MARKETING RESEARCH	100	3
130603	EXPORT PROCEDURES AND DOCUMENTATION	100	3
130604	INTERNATIONAL LOGISTICS MANAGEMENT	100	3
130605	BRAND MANAGEMENT	100	3
		Total Credits	15

PG DIPLOMA IN HOSPITAL MANAGEMENT
Branch Code - 307

Course Code	Course	Marks	Credits
130701	HOSPITAL MANAGEMENT	100	3
130702	FACILITIES PLANNING IN HOSPITALS	100	3
130703	HOSPITAL INFORMATION SYSTEM	100	3
130704	FINANCIAL MANAGEMENT IN HOSPITALS	100	3
130705	HRM IN HOSPITALS	100	3
		Total Credits	15

	PG DIPLOMA IN HUMAN RESOURCE MANAGEMENT		
	Branch Code - 308		
Course Code	Course	Marks	Credits
130801	PRINCIPLES OF HUMAN RESOURCE MANAGEMENT	100	3
130802	HR PLANNING	100	3
130803	COMPENSATION MANAGEMENT	100	3
130804	TRAINING & DEVELOPMENT	100	3
130805	INDUSTRIAL RELATIONS	100	3
	Total Credits		15

	PG DIPLOMA IN INDUSTRIAL SAFETY		
	Branch Code - 309		
Course Code	Course	Marks	Credits
130901	SAFETY MANAGEMENT	100	3
130902	OCCUPATIONAL HEALTH AND SAFETY	100	3
130903	INDUSTRIAL SAFETY AND HEALTH	100	3
130904	FIRE PREVENTION AND CONTROL	100	3
130905	ENVIRONMENTAL SAFETY	100	3
130906	PRACTICAL	100	3
	Total Credits		18

	PG DIPLOMA IN INTELLECTUAL PROPERTY RIGHTS		
	Branch Code - 310		
Course Code	Course	Marks	Credits
130204	KNOWLEDGE MANAGEMENT	100	3
130405	MANAGEMENT AND COMMUNICATION	100	3
131001	IPR	100	3
131002	MANAGING IPR	100	3
131003	INNOVATION MANAGEMENT	100	3
	Total Credits		15

	PG DIPLOMA IN LABOUR MANAGEMENT		
	Branch Code - 311		
Course Code	Course	Marks	Credits
130803	COMPENSATION MANAGEMENT	100	3
130805	INDUSTRIAL RELATIONS	100	3
131101	CONFLICT MANAGEMENT & NEGOTIATION	100	3
131102	TEAM DEVELOPMENT & LEADERSHIP	100	3
131103	ORGANIZATIONAL CHANGE	100	3
	Total Credits		15

PG DIPLOMA IN MARKETING MANAGEMENT
Branch Code - 312

Course Code	Course	Marks	Credits
130104	MARKETING MANAGEMENT	100	3
131201	MARKETING RESEARCH & CONSUMER BEHAVIOUR	100	3
131202	SALES & DISTRIBUTION MANAGEMENT	100	3
131203	ADVERTISING & SALES PROMOTION	100	3
131204	STRATEGIC MARKETING	100	3
	Total Credits		15

PG DIPLOMA IN MATERIALS MANAGEMENT
Branch Code - 313

Course Code	Course	Marks	Credits
130101	PRINCIPLES OF MANAGEMENT	100	3
131301	PURCHASING MANAGEMENT	100	3
131302	INVENTORY MANAGEMENT	100	3
131303	LOGISTICS & SCM	100	3
131304	STOREKEEPING & WAREHOUSING	100	3
	Total Credits		15

PG DIPLOMA IN RETAIL MANAGEMENT
Branch Code - 314

Course Code	Course	Marks	Credits
130205	CUSTOMER RELATIONSHIP MANAGEMENT	100	3
131303	LOGISTICS & SCM	100	3
131401	RETAIL OPERATIONS & STRATEGIES	100	3
131402	RETAIL MARKETING & COMMUNICATION	100	3
131403	MERCHANDISING MANAGEMENT	100	3
	Total Credits		15

PG DIPLOMA IN SUPPLY CHAIN MANAGEMENT
Branch Code - 315

Course Code	Course	Marks	Credits
130604	INTERNATIONAL LOGISTICS MANAGEMENT	100	3
131304	STOREKEEPING & WAREHOUSING	100	3
131501	SUPPLY CHAIN MANAGEMENT	100	3
131502	PURCHASING & INVENTORY MANAGEMENT	100	3
131503	TOTAL QUALITY MANAGEMENT	100	3
	Total Credits		15

	PG DIPLOMA IN TRANSPORT MANAGEMENT		
	Branch Code - 316		
Course Code	Course	Marks	Credits
131601	TRANSPORT PLANNING SYSTEMS & TRAFFIC ENGINEERING	100	3
131602	AIR TRANSPORT	100	3
131603	ROAD & RAIL TRANSPORT	100	3
131604	ENVIRONMENTAL MANAGEMENT	100	3
131605	OPERATIONS RESEARCH	100	3
		Total Credits	15

	PG DIPLOMA IN BIOINFORMATICS		
	Branch Code - 317		
Course Code	Course	Marks	Credits
131701	BIOINFORMATICS METHODS AND APPLICATIONS	100	3
131702	BIO ETHICS & BIO SAFETY	100	3
131703	BIOINFORMATICS DATABASES, TOOLS & ALGORITHMS	100	3
131704	BIOINFORMATICS COMPUTING	100	3
131705	PERL PROGRAMMING FOR BIOINFORMATICS	100	3
131706	PROJECT WORK	100	3
		Total Credits	18

	PG DIPLOMA IN COMPUTER APPLICATIONS		
	Branch Code - 318		
Course Code	Course	Marks	Credits
131801	OBJECT ORIENTED PROGRAMMING WITH C++ AND JAVA	100	3
131802	DATA BASE MANAGEMENT SYSTEMS	100	3
131803	INFORMATION SECURITY	100	3
131804	COMPUTER GRAPHICS AND MULTIMEDIA	100	3
131805	WEB TECHNOLOGY	100	3
131806	PROJECT WORK	100	3
		Total Credits	18

	PG DIPLOMA IN INFORMATION TECHNOLOGY		
	Branch Code - 319		
Course Code	Course	Marks	Credits
131803	INFORMATION SECURITY	100	3
131901	SOFTWARE PROJECT MANAGEMENT	100	3
131902	INFORMATION TECHNOLOGY SERVICES	100	3
131904	E-COMMERCE	100	3
131905	DATA WAREHOUSING AND DATA MINING	100	3
131906	PROJECT WORK	100	3
		Total Credits	18

PG DIPLOMA IN INVESTMENT MANAGEMENT			
Branch Code - 320			
Course Code	**Course**	**Marks**	**Credits**
130502	SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	100	3
130504	FUTURES, OPTIONS AND DERIVATIVES	100	3
132001	FINANCIAL SERVICES	100	3
132002	CORPORATE FINANCE	100	3
132003	FINANCIAL INSTITUTIONS AND MARKETS	100	3
		Total Credits	**15**

PG DIPLOMA IN PETROLEUM EXPLORATION			
Branch Code - 321			
Course Code	**Course**	**Marks**	**Credits**
131604	ENVIRONMENTAL MANAGEMENT	100	3
132101	PETROLEUM GEOLOGY	100	3
132102	GEOGRAPHIC INFORMATION SYSTEMS	100	3
132103	OIL WELL DRILLING TECHNOLOGY	100	3
132104	OIL AND GAS FIELD DEVELOPMENT	100	3
132105	PROJECT WORK	100	3
		Total Credits	**18**

PG DIPLOMA IN PETROLEUM REFINERY AND PETROCHEMICALS			
Branch Code - 322			
Course Code	**Course**	**Marks**	**Credits**
130303	PROJECT MANAGEMENT	100	3
131604	ENVIRONMENTAL MANAGEMENT	100	3
132103	OIL WELL DRILLING TECHNOLOGY	100	3
132104	OIL AND GAS FIELD DEVELOPMENT	100	3
132201	PETROLEUM REFINING PROCESS	100	3
132202	PROJECT WORK	100	3
		Total Credits	**18**

PG DIPLOMA IN TRADEMARK AND PATENT ANALYSIS			
Branch Code - 323			
Course Code	**Course**	**Marks**	**Credits**
130605	BRAND MANAGEMENT	100	3
132301	TRADEMARK LAW	100	3
132302	PATENT LAW	100	3
132303	COPYRIGHT LAW	100	3
132304	TRADE SECRETS,UNFAIR COMPETITION AND GEOGRAPHICAL INDICATION	100	3
		Total Credits	**15**

PG DIPLOMA IN ANIMATION AND MULTIMEDIA			
Branch Code - 324			
Course Code	Course	Marks	Credits
131804	COMPUTER GRAPHICS AND MULTIMEDIA	100	3
132401	3D GRAPHICS	100	3
132402	ART OF MAYA	100	3
132403	MULTIMEDIA AND WEB DESIGNING	100	3
132404	VIRTUAL REALITY TECHNOLOGY	100	3
132405	PROJECT WORK	100	3
		Total Credits	18

PG DIPLOMA IN NETWORKING			
Branch Code - 325			
Course Code	Course	Marks	Credits
132501	DATA COMMUNICATION AND COMPUTER NETWORKS	100	3
132502	NETWORK PROGRAMMING	100	3
132503	NETWORK ADMINISTRATOR	100	3
132504	INTERNETWORKING WITH TCP - IP	100	3
132505	NETWORK MANAGEMENT	100	3
132506	PROJECT WORK AND VIVA-VOCE	100	3
		Total Credits	18

PG DIPLOMA IN SOFTWARE QUALITY ASSURANCE			
Branch Code - 326			
Course Code	Course	Marks	Credits
132601	SOFTWARE QUALITY MANAGEMENT	100	3
132602	SOFTWARE QUALITY ASSURANCE	100	3
132603	SOFTWARE RELIABILITY ENGINEERING	100	3
132604	SOFTWARE METRICS	100	3
132605	SOFTWARE TESTING TOOLS	100	3
132606	PROJECT WORK AND VIVA-VOCE	100	3
		Total Credits	18

PG DIPLOMA IN SOFTWARE PROJECT AND QUALITY MANAGEMENT			
Branch Code - 327			
Course Code	Course	Marks	Credits
131901	SOFTWARE PROJECT MANAGEMENT	100	3
132601	SOFTWARE QUALITY MANAGEMENT	100	3
132604	SOFTWARE METRICS	100	3
132702	SOFTWARE ESTIMATION AND COSTING	100	3
132703	MANAGING TESTING PROCESS	100	3
132704	PROJECT WORK AND VIVA-VOCE	100	3
		Total Credits	18

PG DIPLOMA SYLLABUS

COURSE CODE: 130101
PRINCIPLES OF MANAGEMENT

OBJECTIVE: To expose with the challenges of New Millennium and to increase the confidence level.

MODULE I

Management science: Definition - evolution of management Thought - contribution of F.W.Taylor - Henri Fayol - Elton Mayo - Mary Parker Follet - Rensis Likert - Chestard Bernard - Douglous McGregor - Peter Drcker - Mickel Porter and C.K. Prahalad - Functions of Managers - Scientific Approach - System Approach and Contingency Approach – Planning - Types - Steps- MBO – MBE – Strategies – Policies - Planning Premises - Decision Making - Risk and Uncertainty - Decision Trees.

MODULE II

Organisation: Formal and Informal - Span of Management - Organisation Structure – Departmentation - Line and staff relationship - Centralisation Vs Decentralisation - Organisational Culture - Cultural Diversity - Multi Ethnic Workforce - Organising Knowledge Resource.

MODULE III

Leadership: Leadership Styles – Motivation - Motivation Theories - Maslow-X-Y theory - Two Factor Theory - Equity theory - Vrooms Expectancy theory - ERG theory – Committees - Teams and Groups.

MODULE IV

Controlling: Process: Standards and Bench Marking - Core Competence - Competitive Advantage of Industries and Nation, Co-ordination-Principles of Co-ordination - Inter-dependence.

MODULE V

Knowledge Management - Creativity and Innovation - Quality Concepts - Business Process Outsourcing.

MODULE VI

Challenges in Management: Change Management - Timing of Change - Reaction to change - Planning organisational Change - Technological Change - Effective use of Communication Devices and IT.

TEXT BOOK

"Principles of Management", P.C.Tripathi, P.N. Reddy,Tata McGraw Hill, Third Edition, 2008.

REFERENCE

1.   Management – Rocky W. Griffin – Biztantra, 8th Edition, 2005

2.   Management: Tasks, Responsibilities, Practices – Peter F. Drucker- Harper Collins Publishers

3.   Modern Management – Samuel Certo – 9th edition –PHI

COURSE CODE: 130102
HUMAN RESOURCE MANAGEMENT

OBJECTIVE: To equip budding managers with a complete, comprehensive review of essential human resource management concepts and techniques.

MODULE I

Strategic role of HRM – Nature and scope of HRM – objectives of HRM – Job Analysis – HR Planning – HR Inventory.

MODULE II

Recruitment Process – Application Blank – Test and Interviews – Selection – Placement – Transfer – Training – Types of Training – Uses of Training – Designing effective Training – Evaluation and Training.

MODULE III

Compensation – Performance Appraisal – Pay structure – Incentives – Financial and Non-financial incentives – Executive Pay – Employee Benefits.

MODULE IV

HR Environment – Multicultural Environment in MNC's – Equal Employment Opportunities – Reservation System - Outsourcing – Hire and Fire System - Security in Services.

MODULE V

Employer and Employee relations– Collective bargaining- process–Unions-Ethics– Dominants of Ethical Behavior -Discipline – Protecting Safety &Health

MODULE VI

HRIS - HR Records – HR Accounting – HR Audit –- Maintaining International Employees.

TEXT BOOK

Gary Dessler -A Framework for Human Resource Management - Pearson - 3rd Edition - 2008.

REFERENCE BOOKS

1. Raymond A Noe, John R,Hollenbeck, Barry Gerhart and Patrick M.Wright – Human Resource Management – McGraw-Hill New Delhi-5th Edition - 2007.
2. Cynthia Fisher, Shaw - Human Resource Management – Wiley Dreamtech / Bistantra – 5th Edition – 2005.

COURSE CODE: 130103

FINANCIAL MANAGEMENT

OBJECTIVE: To Inculcate an Analytical approach to Financial Decision Making process focusing on various aspects of Capital and Money Markets.

MODULE I

Evolution of Financial Management - Risk Return Trade Off - Finance systems – Environment of Finance – Indian Financial System - Time value of Money – Value of an Annuity.

MODULE II

Risk and Return of a Single Asset, Portfolio – Market Risk – Relationship between Risk and Return – Valuation of Securities – Bond Valuation – Equity Valuation.

MODULE III

Capital Budgeting Process – Payback period, NPV, ARR, IRR Methods – Cost of Capital – cost of Debt and Equity – Weighted average Cost of Capital - Risk Analysis Sensitivity, Scenario, Breakeven Decision Tree Analysis – Concept of Leverage - Operating and Financial Leverages.

MODULE IV

Capital Structure Decisions – Net Operating income Approach – MM Model – EBIT EPS Analysis – Dividend Decisions – Theories of Dividend Policy – Share Buybacks.

MODULE V

Functions of Financial System – Financial Markets – Financial Intermediaries – Preference Capital – Term Loans – Debentures – Venture Capital – IPO steps – Rights Issue – Obtaining a Term loan – Indian stock Market.

MODULE VI

Working Capital Management – Operating Cycle and Cash Cycle – Cash Management – cash Budgeting – Credit Management – Credit Policy- Working capital Financing – Leasing, Hire Purchase and Project Finance.

TEXT BOOK

Prasanna Chandra, "Fundamentals of Financial Management," TATA McGraw Hill, Fourth Edition.

REFERENCE

I.M.Pandey. " Financial Management".

COURSE CODE: 130104

MARKETING MANAGEMENT

OBJECTIVES: To gain knowledge in the concepts of marketing and to acquire capability in strategies formulations and tactics development.

MODULE I

Introduction – Definition – Scope of marketing - demands situations – key customer markets – Market Environment – Marketing concepts – target market – marketing mix – tasks of Marketing Managers.

MODULE II

Marketing strategies - Value chain – strategic alliances – Marketing information System – Marketing organisations – Marketing resource - Assessing Market Demand – Creating consumer value – classification of markets.

MODULE III

Consumer behaviour – cultural, personal, psychological factors – Market Segmentation – geographic, demographic, psychographic, behavioural, volume and benefit buying process – Institutional marketing.

MODULE IV

Brands – Brand Equity – Products – Product life cycle – classification of products – product differentiation – Market positioning – Product line – New product development - Packaging, labeling, warranties and guarantees - Marketing of Services.

MODULE V

Pricing – Pricing objectives – Pricing strategies – Discounts and allowances impact of price change – distribution of networks and channels – wholesaling and retailing – Marketing logistics – modifying channels.

MODULE VI

Marketing Communication – Promotion – advertising – sales promotion – publicity and public relations – Direct marketing and personal selling – managing sales force – global markets – E-business.

TEXT BOOK

Philip Kotler, Kevin Lane Keller, Marketing Management PHI, 12th edition.

REFERENCE

1. Willam J. Stanton, Michael J. Etzel, Marketing Concepts and Cases, TMH 13th Edition.
2. Tapan K. Panda, Marketing Management, Text and cases, Excel books, 2nd Edition.

COURSE CODE: 130105

CORPORATE GOVERNANCE & BUSINESS ETHICS

OBJECTIVE: To highlight the value of Corporate Governance and Business Ethics this yields economic prosperity and social development.

MODULE I

Introduction of Corporate Governance – Concept – Nature and Purpose - Structure & Evaluation – Characteristics – Corporate Governance in India – International Governance.

MODULE II

Shareholders & their Role – Legendary Rights – Responsibilities and Accountability of Stock owner – Directors Role – Duties – Committee – Tenure of Director – Nature of Voting

MODULE III

Measurement of Board performance – Internal accountability – Economic and Non-Economic Objectives of Corporation – Brand function – Learning model – process of strategic Development & Implementations – Expectation from CEO – Social Responsibility.

MODULE IV

Ethics – Definition – Types of ethical dilemmas – Overcoming ethical dilemmas – Ethical challenges – Business and its product

MODULE V

Individuals, Individual values and the Business organization – Trust and employment – The ethics of confrontation – Individuals Rights – Sexual harassment.

MODULE VI

Diversity – Equal employment and Affirmative action – Benefits of Diversity – Human Rights Declaration and Company policies.

TEXT BOOK:

1. Kesho Prasad – Corporate Governance – Prentice Hall of India – First Edition - 2006
2. Marianne M. Jennings – Business Ethics – Cengage Learning

COURSE CODE: 130201

BUSINESS PROCESS OUTSOURCING

MODULE I

Introduction to BPO-drivers of BPO- BPO vs ITO-taxonomy of BPO services-BPO for Strategic advantage-BPO as global capability outsourcing-process centric organizations-Business process portfolio management-implications of BPO strategic partnering model

MODULE II

BPO and its stakeholders-business process management-capturing and sharing process knowledge-business process performance measurement-business process innovations-business process migration strategies

MODULE III

Managing BPO- lifecycle methodology for BPO-process due diligence-outsourcing management structure-BPO contract negotiation and monitoring-IT management competency-BPO IT infrastructure model-technology management practices-client organisation

MODULE IV

HR challenges for Indian BPO sector-HR practices-motivation and compensation strategies-relationship building in BPO-value creation in relationships-from relationships to partnership-maturity model for BPO relationships

MODULE V

Managing risk in Outsourcing-mitigation strategies-strategic BPO-characteristics of strategic outsourcing-analysing strategic outsourcing options-planning framework for strategic partnering

MODULE VI

BPO Industry in India- comparision of voice and nonvoice BPO-leading voice players in the global industry-atributes of successful leaders in BPO operations- cost of attritions-industry segregation-market size and opportunity-effect of platform on BPO

TEXT BOOK

KBC Saxena and Sangeetha Shah Bharadwaj, "Business Process Outsourcing",Excel Books 2007

COURSE CODE: 130202
CALL CENTRE TECHNIQUES

MODULE I

Understanding call centers-call centers – basis call center technology – call monitoring – evolution of the call center- evolution of the call center representative – character tics of a successful call centers representative

MODULE II

Creating a positive work climate - call center climate – the team – positive and negative behavior – handling interpersonal conflict -addressing the call: it's all attitude - the power of attitude – overcoming a negative attitude – creating a positive first impression – make every call a success

MODULE III

Voice : the instrument of communication – voice quality – rate of speech – diction – inflexion/tone – volume –customer rapport – the importance of good rapport – the greeting – using the customer name – communicating respect for the customer

MODULE IV

Matching the customer vocabulary – keeping the call flowing – overcoming speech idiosyncrasies – listening and questioning – effective listening – communicant through accents – questioning skills – managing the call – positive control – effective use of the hold features

MODULE V

Voice mail – using e-mail effectively – minimizing telephone tag – transferring calls effectively – saying no to customers – style flexibility – why is style flexibility important – a style assessment tool – characteristics of the six personality types – phase change and flexibility

MODULE VI

Managing stress and handling different types of customers – stress on the job – handling different types of customers – telephone sales – the role of sales in the call center - belief in your product or service – the selling process – outbound calls – final tips for successful sales calls

TEXT BOOK:

Jack A.Green, "Call Centers, Technlogy and techniques " Thomson

COURSE CODE: 130203

MEDICAL TRANSCRIPTION MANAGEMENT

MODULE I

Growth in MT - Employment opportunities - MT role in patient care - attributes of the Medical Transcriptionist -knowledge and skills – striving for accuracy – Ethical guidelines - Cultural diversity.

MODULE II

Transcription equipments - Earphones Foot Pedal - Voice recognition systems - Transcription Ergonomics – Medical Dictionary - DRNG book - medical style guide - Medical phrase- Abbreviations - Surgical words book - Eponym book - Online resources.

MODULE III

Transcription process - Editing documents form dictation - Jargon and clipped sentences - Styles of Writing –dictator accent - Proof reading methods – Medical record formats – Legal issues - Important components of medical records - History and Physical – Operative report - Discharge summary - Radiology, Pathology, Autopsy report -Managing medical records

MODULE IV

Medical Terminology - Root words and combining forms - Anatomic terms that map human body - Diagnostic terms to assess human body – Pain assessment - Medical imaging terms – Sonography - MRI repairing sentence fragments - Arrangement between pronouns and antecedents – Punctuations - Using modifiers – Using capitals –Numbers – Abbreviations.

MODULE V

Transcribing for specialists - Exploring Dermatology - Building Transcription skills - Assessing transcription skills - exploring Ophthalmology – Exploring ENT - Pulmonology – Cardiology - Gastroenterology - Obskrics and gynecology .

MODULE VI

Exploring, building, assessing transcription skills in urology – Nephrology – Orthopedics – Neurology - Hematology- Oncology - Immunology.

TEXT BOOK:

Blanche Ettinger & Alice g. Ettinger, ”Medical Transcription”, Second Edition new age International .

COURSE CODE: 130204
KNOWLEDGE MANAGEMENT

MODULE-I

External influences on organization- Workforce composition- Evolving work roles and responsibilities- Teamwork- Relationship building- Communication- Leadership- Decision making- Change management-Worker motivation- Types of organization- Creating strategic focus- Strategic values and corporate culture- Systems and policies- Employee capabilities-Knowledge as asset –organizational knowledge-Leadership and knowledge management.

MODULE-II

Learning organization-Knowledge systems- Knowledge workers- Phases of knowledge development- Knowledge management infrastructure-Harassing organizational knowledge –Five P's of knowledge management-Knowledge sharing as a core competency-Developing strategic knowledge community.

MODULE-III

Contribution of disciplines to knowledge Leadership –Librarianship-HRM-Strategic visionary – Motivator-Communicator-Change agent- Learning facilitator-Strategic knowledge leader- Self managed team- Virtual knowledge team- Leading a knowledge network Recruiting and selecting knowledge leaders.

MODULE-IV

Organization culture- Knowledge culture principles-Knowledge culture enablers-Knowledge culture during change- Existing knowledge culture – Enhancement planning-Implementing enhancement programs-Pilot testing Planned culture interventions- Maintaining the knowledge culture.

MODULE-V

Structured support for knowledge management –Organizational structure and staffing- Performance management- Rewards- Learning and development –Knowledge management systems- Subsystems- Phases of managing core knowledge- Developing core knowledge structure- Content authorship.

MODULE-VI

Effective knowledge repositions-Mapping content structure- Repository quality control –Knowledge services-Models of service provision-Learning in a knowledge environment –Working with technology-Knowledge strategy evaluation – Successful knowledge management-Mergers ,acquisition and downsizing integrated knowledge development.

TEXT BOOK:

Shelda Debowsks ,"Knowledge Management," Wiley 2007

COURSE CODE: 130205

CUSTOMER RELATIONSHIP MANAGEMENT

MODULE I

Changing Nature of Marketing and Customer Service – Marketing – An Introduction –The Marketing Orientation – Factors Necessitating a Re-look at Marketing Methods – Changing Social Trends – Lesser Government Controls Rising Income Levels – Threats from New Forms – Character tics of the Empowered Customer – Increased Demand –Easy Access to Information – Emerging Trends in Marketing –Shorter Product Life Cycles.

MODULE II

Emergence of Permission Marketing – Experimental Marketing – Offering Complete Solution – Rewarding Loyal Customers- Disruptive Innovations – The Changing Nature of Customer Service – Challenges In Modern Day Customer Service -Emerging Trends in Services Marketing Mix – Customer Experience –The New Differentiator – Managing Service Better – Emergence of CRM – Economics of Building Customer Relationship – Customer Lifetime Value – Benefits of Customer Loyalty – Benefits of Choosing The Right Customers – Customer Value and Customer Satisfaction :Precursors to CRM – Customer Value.

MODULE III

Enhancing Value of Products and Services – Customer Satisfaction – CRM and Customer Satisfaction – Delighting the Customer – Measuring Relationship at Risk Effects on Customer Loyalty – Role of CRM on Various Stages of the Studies – The Customer Lifecycle – Role of CRM in Pre-purchase Stage – Role of CRM in Purchase Stage – Role of CRM in Usage Stage - Role of CRM In Re-purchase Stage – Role of CRM in Winning Back Lost Customers – CRM – The Basis Concepts – Consideration to Decide the Key Customers – Strategies for Key Customers

MODULE IV

Segmentations Campaign Management – Cross-selling and Up-selling – Multi – Channels – Sales Force Automation – Operational and Analytical CRM – Planning for CRM – Building Customer Centricity – Setting CRM Objectives – Defining Data Requirements – Planning The Requirements - Elements in the CRM Plan – Revalant Issues in the CRM Plan - CRM Strategy – Strategic Orientation for CRM - Extending the Concept of Relationship

MODULE V

The Technology Orientation - A Strategic F5rame work for CRM - Planning for Success - Change Management – Selling Change –Training – Role of IT and Tools for CRM – CRM Strategy and Technology – Capturing Data – Steps in Preparing the IT Systems for CRM – Choosing The CRM Tool – Using IT Systems for Better CRM – Isuses for Consideration In CRM Tools Selection – Tools for CRM – e CRM – Basic Concepts of e CRM – Benefits of e CRM.

MODULE VI

Steps in e CRM – Success Factors in e CRM – Establishing Customer Relationship on the Internet – Complete Information for Customers – CRM Implementations – Preparing for CRM Implementation – Dimensions of CRM Implementations – Technology Issues in CRM Implementation – Steps in CRM Implementations – Expected Benefits of CRM Implementations – CRM Implementations –Best Practices -   Guarding against CRM Failures – A Clerly defined CRM Stratergy – Creating the Right Culture – Proper use of Knowledge Management – Ensuring that the CRM Implementation is Done Right – CRM In Practice – CRM In Manufacturing –CRM in Insurance – CRM In Airlines – CRM IN Hotels – CRM in Telecom – CRM in SMB Segment

TEXT BOOK:

Kaushik Mukerjee, "Customer Relationship Management", PHI, New Delhi, 2007.

COURSE CODE: 130301

INTRODUCTION TO ERP

MODULE I

Business functions – Functional areas of operations – Business processes – Processes of very small business – marketing and sales – SCM – accounting and finance – Human resources – Functional Information Systems

MODULE II

Evolution of information systems – Software and Hardware – manufacturing roots of ERP – Management inputs – ERP software SAP and R/3 – Directions in ERP – SAP R/3 software implementation – ERP for midsized companies – best of breed approaches – Choosing Consultants and vendors – benefits of ERP software and systems – continuing evolution of ERP – additional capabilities – internet

MODULE III

Sales and Distribution in ERP – Presales – sales order processing – inventory sourcing – delivery – billing – payment – taking order in SAP R/3 – discount pricing – integration of Sales and accounting – CRM – core CRM activities – SAP's CRM software – benefits of CRM

MODULE IV

SAP R/3 approaches to production planning – sales forecasting – sales and operations planning – demand management – MRP – SAP R/3 MRP records – detailed scheduling – Production data to accounting – ERP and Suppliers – Traditional Supply Chain – Measures of success

MODULE V

Accounting activities – credit management – product profitability analysis – management – reporting in ERP systems – using document flow – Human Resource with ERP – Time management – Pay roll – travel management – Training and Development mobile time management – family and medical leave – long term incentives – personnel cost planning

MODULE VI

Flow charting process models – extensions of process mapping – event process chain diagrams – evaluating process improvement – ERP workflow tools – ERP system costs and benefits – implementation tools – B2B e-commerce – ERP and E-Commerce – Net weaver tools and capabilities – Accessing ERP systems over the internet XML – RFID

TEXT BOOK

Ellen Monk, Bret Wagner, "Concepts in ERP",   Cengage Learning 2nd Edition.

COURSE CODE: 130302

OPERATIONS MANAGEMENT

Objective: To understand the operation functions in manufacturing and service industry and to achieve knowledge in new concepts development in this domain.

MODULE I

Nature of Production and Operations – System Approach to Operation management – Factors – Types of Production and Production Systems- Productivity and Competitiveness –Operation Strategy.

MODULE II

Designing Products and Services – Process Planning and Process Design in Services– Production Processes – Production Technology.

 MODULE III

Manufacturing facility Planning – Long range Capacity Planning – Facility Location – Facility layout.

MODULE IV

Master Production Scheduling –Service Operations Planning and Scheduling - Detailed Scheduling – Facility Loading – Sequencing operations – Priority Sequencing Techniques – Line Balancing – Line of Balance - Work Study – Time Study – Motion Study – Work Sampling.

MODULE V

Purchasing and Stores Management - Inventory Management – Functions – Information Systems – Warehousing – Waste management – Maintenance Management - Just in Time (JIT) -Enterprises Resources Planning (ERP) – Lean Manufacturing System.

MODULE VI

Inspection and Quality Control – Statistical Quality Control Techniques (Control Charts and Acceptance Sampling – Quality Circles – Introduction to Total Quality Management.

TEXT BOOK:

Norman Gaither And Greg Frazier – Operations Management – Thomson – 9th Edition – 2007

REFERENCE BOOKS:

1.Martin K Start - Production and Operations Management – Biztantra – 2004

2. Chase, Jacobs, Aquilano - Operations Management for Competitive Advantage – Tata McGraw Hill – 10th Edition 2007

COURSE CODE: 130303

PROJECT MANAGEMENT

OBJECTIVE: To identify how business regularly uses Project Management to accomplish unique out comes with limited resources under critical constraints.

MODULE I

Project Definition – Project Life Cycle – Project objectives – purpose of Project Management – Project Management Maturity – Project Selection and Choice – Types of Project – Selection Models – Analysis under Uncertainty and Rise – Project Portfolio Process.

MODULE II

Functional Manager vs. Project Manager – Project Responsibilities – Demands on the Project Manager – Project Manger Selection – Culture and the Project impact of Institutional Environments – Need for Multicultural Communications.

MODULE III

Project Organization – Pure Project Organization – Matrix – Mixed Organizational Systems – choosing a Firm – Risk Management – Project Management Office – The Project Team – Human Factors and the Project Team – Sources of Conflict.

MODULE IV

Project Planning and Coordination – Systems Integration – Action Plan – Work Breakdown Structure – Partnering - Chartering – Categories of Conflict – Principles of Negotiation – Top Down and Bottom Up Budgeting – Activity vs. Program Budgeting.

MODULE V

Network Techniques PERT and CPM – Precedence Programming – Resource Loading – Leveling – Goldratts' Critical Chain – Monitoring System Design – Reporting Process – Project Management Information Systems (PMIS).

MODULE VI

Project Control – Purposes, Types – Three Types of Control Processes – Post Control – critical Ratio and Control Charts – Balance in Control System – Project Auditing – Purpose of Evaluation – use of Audit Report Product Audit Life Cycle – Measurement – varieties of Project Termination.

TEXTBOOK

Jack.R Mexdith and Samuel J.Mantel Jr, "Project Management, A Managerial Approach", Willey, Fifth Edition.

COURSE CODE: 130304

ERP IMPLEMENTATION PROCUDURE

MODULE-I

Introduction to ERP – Benefits of the ERP system – Challenges for SMES – Manufacturing strategies – MRPI & MRP-II – Conceptual framework of ERP

MODULE-II

ERP modules – Finance module – HR module – MM module – Sales and distribution module – Issues in ERP software selection – criteria – methods – cost benefit analysis – ERP software selection process

MODULE-III

ERP implementation approaches – perspectives in implementation – minimizing customization – Characteristics of ERP systems – Critical success factors – ERP implementation strategy – phases in ERP implementation – Benefits realization – Change management issues

MODULE-IV

Functions of operating system – UNIX and LINUX – ERP users in LINUX environment – ERP migrating – managing new ERP environment – impact of OS – Computer integrated SCM – CAD and CAM – Impact of ERP on SCM – SCM and IT

MODULE-V

CRM introduction – Need – Components – dimensions of CRM – CRM environment – data warehousing and data mining in CRM – dynamic CRM – features of CRM from SAP

MODULE-VI

.NET technology – fusion of .NET on ERP SAP – ORACLE – JD Edwards – Baan – pearel soft – Marshal - QAD – Compiere – Business modeling with the UML – UML class and sequence diagrams

TEXT BOOKS:

S. Parthasarathy, "Enterprise Resource Planning", New Age International Publishers.

COURSE CODE: 130305
ERP ENABLED SERVICES

MODULE – I

Definition of ERP and enabled services – ERP enabled business transformation – enterprise potential of ERP – ES – reasons for high demand – evolution – modules of ERP – evolution of ERP-II – emerging standards – ERP adoption model – managing Asset implementation – tangible and intangible benefits

MODULE – II

ERP project life cycle – Pre implementation and post implementation stages – Global **best** business processes and business practices – global IT infrastructure – competitive environment analysis – strategic need analysis – feasibility analysis – GAP analysis

MODULE – III

Client-server computing architecture of ERP-ES – Evolution of business processes and IT architecture – ERP market – SAP – SSA Global Baan – IFS – Magic quadrant

MODULE – IV

Evaluation of ERP solutions – Technical and Strategic solution – ERP systems evaluation RFI – FRS – RFP – role of management consultants – evaluation procedure

MODULE – V

BPR – Need, characteristics – ERP and BPR – ERP in modeling business processes – work flow management systems – Steps to BPR – five stage model of AS-IS / To-BE Analysis

MODULE – VI

Lean manufacturing – cellular structure – vendor managed inventory – condition based maintenance – need for systems integration – system integration layers – business benefits of ES – Measuring benefits – system architecture – system software application software – data management software tools

TEXT BOOK

 Mahadeo Jaiswal & Ganesh Vanapalli   "Enterprise Resource Planning", McMillan 2007

COURSE CODE: 130401

ECOLOGY AND ENVIRONMENT

OBJECTIVE: To understand the environmental problems and to protect the environment from the natural disasters.

MODULE - I

Ecology – Meaning - Environmental Science – History of Ecology – Ecology Today – Scope of Ecology – The Subdivisions of Ecology – Models in Ecology – Fundamental Concepts – Environmentalism – Conservation Ethics – Air pollution- Water pollution -Noise pollution - Radioactive pollution - Solid waste pollution - Land pollution

MODULE - II

Origin of Atmosphere – Vertical Structure of the Atmosphere – Ecological Significance of Air – Horizontal Motion of Atmosphere – vertical Movements – Upper Air Circulation (Jet Streams) – Air Masses – Important Properties of the Atmosphere – Acid Rain

MODULE - III

Zonal Structure of the Earth – The Geologic Cycle – Minerals and Rocks – Soil – Pedogenesis – Soil Types – Soil Classification – Types of Rocks and Minerals – Soil profile – Soil Erosion in India – Soil Conservation – Biota of the Soil – Soil Adaptations in Animals

MODULE - IV

Hydrologic – Water Budget – Fresh Water Environment – Lakes – Eutrophication of Lakes – Reservoirs – Running Water – The Open Ocean – Physico-chemical Aspects of Marine Environment – Wetlands and Coastal Environment – Antarctic Research Programme – Coral Reef – Exclusive Economic Zone (EEZ) – Estuaries – Biosphere -Introduction – concept of Biome – Evolution and Diversity in Biomes – Major Biomes of Earth – Landforms

MODULE - V

Ecosystem Biodiversity – Species Diversity – Genetic Diversity – Global Diversity – The Value of Biodiversity – Biodiversity and Ecosystem function – Biodiversity – Hot Spots – Bio-wealth – Biotic Impoverishment – Biodiversity conservation – Biotechnology and Biodiversity – Milestones of Convention of Biodiversity (CBD) – Main Players in CBD.

MODULE - VI

Resource Cycle – Mineral Resources – Marine Resources – Mineral Resources of Antarctica – Energy Resources – Renewable Sources of Energy – Energy from Biomass – Non-renewable Sources of Energy – Nuclear Energy – Geothermal Energy – Ocean Thermal Energy – Energy for the Future – Forest Resources – Deforestation – Water A Vital Resources – India's Water Budget

TEXT BOOK: S.V.S.Rana – Essentials of Ecology and Environmental Science – Prentice-Hall of India – Third Edition – 2007.

COURSE CODE: 130402

POLLUTION MANAGEMENT

OBJECTIVE: To expose the students the need for understanding the implication of ecological devastation and its impact on Human Race.

MODULE I

Meaning – Objectives – Importance – International efforts – India's efforts – Factories Act 1948 – Industrial Development and Regulation Act 1951 – Mines and Minerals Act 1957

MODULE II

Land management – Land use and Degradation – Management problem – Strategies for sustainable Land Management

MODULE III

Soil Pollution – Agricultural chemicals as soil pollution – wetland conservation programme – Ramson convention

MODULE IV

Water pollution – Demand and Supply – Core issue – Cen Act 1977 – The River Boards Act 1956 – Indian scenario in water Legislation

MODULE V

Drinking water supply and sanitation – water pollution – Management issues – Integrated water resource development and management – National water policy – River pollution

MODULE VI

Marine Environment – Core issues – Management issues – Oil spills – India's marine Environment.

TEXTBOOKS:

N.K Uberoi – "Environmental Management" – Excel Books –Second Edition – 2005

<div align="center">

COURSE CODE: 130403

ENVIRONMENTAL INSTITUTIONS

</div>

OBJECTIVE: To scrutinize the effectiveness of the existing machinery.

MODULE I

Environmental Crisis – Environmental Imperatives in the Development Process – Crying Need for Sustainable Development – Constitutional Response to International Urge - Protecting the Fragile Environmental.

MODULE II

Industrial Pollution: Causes and Consequences **–** Magnitude of the Problem: A Retrospect – Hazardous Industries and Environmental Pollution – Industrial Pollution and Health Hazards – hazardous substances – water pollution – air pollution

MODULE III

Corporate environmental liability- Pollution accidents and Victims – Rules of strict and absolute liability- Responsibility of executives- Quantification of compensation- Mass port and interim compensation –Bhopal act: Its constitutionality- Statutory relief for pollution victims.

MODULE IV

Public liability insurance act: A measure to redeem hardship of pollution victims –Liability of the owner: No faculty liability basis- Settlement of claims-Environment relief fund- Limitation and scale of relief- Regulatory and penal provisions-Advisory committee.

MODULE V

Administrative efforts to combat Hazards – Central Pollution control board – State Pollution control board - Supreme Court decisions and Directions.

MODULE VI

Pollution Control in highly polluting industries – Coordination activities of control boards – Penal provisions and effectiveness of enforcement machinery – National Environment Tribunal.

TEXT BOOK:

Dharmendra S.Sengar – Environmental Law – Perentice Hall of India – First Edition – 2007.

<div align="center">

COURSE CODE: 130404

ENVIRONMENTAL LAW

</div>

OBJECTIVE: To suggest measures to make the system of regulatory environmental management more effective and proactive.

MODULE – I

Legal Control of Hazardous Substances and processes – Proliferation of Chemicals: A survey – Law Relating to Hazardous Substances – Legal Control of Hazardous Processes – Rules on Hazardous Substances.

MODULE – II

Law Relating to Water Pollution – Water Pollution – Menacing Proportions – Civil Law Actions – Legislative Measures – The Water (prevention and Control of Pollution)

MODULE – III

Industrial Air Pollution and Law – Industrialization and Air Pollution – Civil Law Actions – Statutory Provisions – Orient Gas Company Act 1857 – Indian Penal code – Enforcement Machinery-Administrative efforts to combat the hazards

MODULE – IV

Central pollution control board- State pollution control boards- Supreme court decision and the directors- Pollution control in highly polluting industries-coordination activities of pollution control boards- Penal provisions and effectiveness of enforcement-Financial constraints and assistance- The national environment

MODULE – V

Environmental issues and judicial trend- Public nuisance as environmental hazards- Right to wholesome environment and ecological balance- Right to carry on trade-Right to information about hazardous installation.

MODULE – VI

Doctrine of mass justice emergence of public interest litigation- Public interest litigation and access to environmental justice- Environmental concerns of the Indian high courts- Public interest pollution-Public interest Petitions.

TEXT BOOK:

Dharmendra S.Sengar – Environmental Law – Prentice-Hall of India – First Edition – 2007.

COURSE CODE: 130405

MANAGEMENT AND COMMUNICATION

OBJECTIVE: To synergies both Management and Communication in order to excel.

MODULE I

Management Science - Definition - Evolution of Management Thought - Contribution of F.W.Taylor,- Henri Fayol – Planning - Types – Steps – MBO – MBE – Strategies – Policies - Planning Premises - Decision Making - Risk and Uncertainty - Decision Trees.

MODULE II

Organisation: Formal and Informal - Staffing - Span of Management-Organisation Structure -Departmentation - Line and staff relationship - Centralisation Vs. Decentralisation - Organisational Culture - Cultural Diversity

MODULE III

Leadership: Leadership Styles -Motivation-Motivation Theories -Controlling: Process-Standards and Bench Marking-Core Competence-Competitive Advantage of Industries and Nation – Budgeting.

MODULE IV

Objectives of Communication - Communication process - Media of Communication - Principles of Communication - Types of Communication - Interpersonal Communication - Gateway to effective interpersonal Communication.

MODULE V

Organizational Communication - Communication Problems of the organization - Informal Communication system - Approaches to Organisational Communication - Non-Verbal Communication - Written Communication –Processes - Business Letters – Memos - E-Mail – Agenda - Technological Aids.

MODULE VI

Report Writing - Business and Academic Report writing – Methodology – Procedure – Bibliography - Communication Networks – Intranet – Internet – SMS – Teleconferencing – Videoconferencing.

TEXT BOOK:

Heinz Weihrich, Mark.V.Cannie, Harold Koontz.- Management:– Tata McGraw Hill Publication- 12th Edition- 2008

REFERENCE

1. Rocky W. Griffin -Management –– Biztantra, 8th Edition, 2005
2. Samuel Certo - Modern Management –– Prentice Hall India -9th Edition
3. Krizan, Merrier, Jones Business Communication - Thomson Learning - 6th Edition

COURSE CODE: 130501
MANAGERIAL FINANCE

OBJECTIVE: To understand the theories, concepts and techniques of financial management for prudent decision making.

MODULE I

Nature and Scope of Financial Management - Objectives of Financial Management, Finance Functions, Structure of finance department, Emerging role of the Finance Managers.

MODULE II

Techniques of Financial Statement Analysis - Trend Analysis, Common Size Statements, Ratio Analysis: Classification of Ratios – Liquidity Ratios, Leverage Ratios, Activity Ratios- And Profitability Ratios.

MODULE III

Working Capital Management: - Management of cash and Marketable Securities receivables management – Inventory Management- working capital financing.

MODULE IV

Sources of Finance: Sources of Long Term & Short Term finance-Financing decisions: Cost of capital – Hybrid Financing Instruments – Lease financing - and hire purchase – Venture Capital

MODULE V

Capital Budgeting: Nature and Significance - Techniques of Capital Budgeting - Pay Back Method - Accounting Rate of Return - Net Present Value and profitability index.

MODULE VI

Management of Profits: Dividend policy - Determinants of dividend policy, bonus shares and stock splits - Corporate Restructuring.

TEXT BOOK

M Y Khan and P K Jain - Financial Management, Tata McGraw-Hill, 5th Edition 2007

REFERENCE BOOKS

1. Prasanna Chandra - Financial Management,Tata McGraw-Hill,6th Edition 2004.
2. I M Pandey - Financial Management, Vikas Publications, 9th Edition, 2005.

<div align="center">

COURSE CODE: 130502

SECURITY ANALYSIS & PORTFOLIO MANAGEMENT

</div>

OBJECTIVE: To provide comprehensive information about investing in securities.

MODULE I

Valuation of securities – bond and fixed income instruments valuation – bond pricing theorems, durations of bond and immunization of interest risk, term structure of interest rate, determination of yield curves, valuation of equity and preference shares (Dividend capitalization & CAPM).

MODULE II

Analysis of risk & return, concept of total risk, factors contributing to total risk, systematic and unsystematic risk, default risk, interest rate risk, market risk, management risk, purchasing power risk. Risk & risk aversion. Capital allocation between risky & risk free assets – Utility analysis.

MODULE III

Fundamental & Technical Analysis of equity stock. Concept of intrinsic value. Objectives and beliefs of fundamental analysis. Economy-Industry-Company framework, points and figures chart, bar chart, contrary opinions theory, confidence index RSA,RSI, Moving average analysis, Japanese Candlesticks.

MODULE IV

Behaviour of stock market prices – The market mechanism, testable hypothesis about market efficiency, implications of efficiency market hypothesis for security analysis and portfolio management. Asset pricing theories, CAPM & Arbitrage pricing theories.

MODULE V

Modern portfolio theory – Asset allocation decision. Dominant & Efficient portfolio – Simple diversification, Markowitz diversification model, selecting an optimal portfolio – Single index model, Treynor – Black model. Determination of corner portfolio. Process of Portfolio Management – International Diversification.

MODULE VI

Portfolio performance evaluation – Sharp & Treynor & Jemsen's measure. Portfolio revision – Active and passive strategies & formula plans in portfolio revision. Mutual funds – types, performance evaluation of mutual funds, functions of Asset Management Companies

TEXT BOOK: Donald E.Fischer and Roanal J.Jordan – Security Analysis and Portfolio Management – Pearson – Third Edition - 2008

<div align="center">

COURSE CODE: 130503

CAPITAL MARKET AND FINANCIAL SERVICES

</div>

OBJECTIVE: To inculcate Knowledge on Capital Markets and Financial Services.

Module – I

Money Market – Indian Capital Market – Evolution and Growth – Constituents of Indian Capital Market – New Financial Institutions – New Financial Instruments – Capital Market Doldrums – Measures of Reactivation – Measures of Investor Protection – Recent Initiatives in the Indian Capital Market – Indian Capital Market – Major Issues – Rebound in Indian Capital Market

Module – II

Capital market instruments **-** Meaning – Types – Preference Shares – Equity shares – Non-Voting Equity Shares – Convertible Cumulative Preference Shares (CCPS) Company Fixed Deposits – Warrants – Debentures and Bonds – Global Debt Instruments

Module – III

Regulation of Indian capital market **-** Genesis – The Factors – The Regulatory Framework – Committees on Regulatory Frame work – Primary Market – NIM and Secondary Markets – An Interface – Services of NIM – NIM Vs. Secondary Market – Methods of New Issue **–** Methods of Marketing Securities – Stock Option or Employees Stock – Option Scheme (ESOP) – Bought – Out Deals Vs. Private Placements

MODULE-IV

Introduction – Financial Sector Reforms –Money Market-Institutional Structure-Money Market Instruments-Discount and Finance House OF India (DFHI)-Capital Markets-Importance of Capital Market-Financial Instruments- Bonds   Vs Equity.

MODULE-V

NSE-Objective of NSE- Operational Highlights-Bombay Stock Exchange (BSE)- A Dynamic Body-Book Building Transactions –BOLT Transactions –Trade Guarantee Fund (TGF) - Securities Trading Corporation of India(STCI)- Stock Holding Cooperation of India (SHCIL) - Over the Counter Exchange of India (OTCEI)-Promoters.

MODULE- VI

Mutual Fund Industry in India- Importance of Mutual Funds – Classifications of Mutual Funds –- Advantages - Venture Capital- Origin and Concept- Importance –Advantages of Venture Capital- Regulatory Structure – Venture Capital Industry in India- Indian Scenario- Issues and Challenges.

TEXT BOOK:
1. Dr. S. Gurusamy - Capital Markets - Vijay Nicole Imprints – First Edition – 2006
2. Nalini Prava Tripathy – Financial Services – Prentice Hall of India – First Edition – 2007.

<div align="center">

COURSE CODE: 130504

FUTURES, OPTIONS & DERIVATIVES

</div>

OBJECTIVES: To understand the concepts of Options, Futures & Derivatives and to familiarize the students about its usage.

MODULE I

Futures – Meaning – Specification – Types of Traders & Types of orders – Regulation – Forward Vs Future contracts – Basic Principles – Basic Risk – Cross Hedging – Rolling the Hedge forward.

MODULE II

Investment Assets Vs, Consumption Assets – Valuing forward contracts - Future contract on currencies – Futures on Commodities-Mechanics of interest rate swaps – Nature of Swap rates -Currency Swaps – Other Types of Swaps.

MODULE III

Options – Types – Trading Commissions – Margin – Regulation – Taxation – Warrants – Over the counter markets – Factors – Assumption and notations – Put-Call Parity – Effect of Dividend - Strategies involved in single option – Spreads – Combination – Other payouts.

MODULE IV

Dividend yield – Option pricing formula – Option on stock indices – Currency options – Future options – Binomial Trees – Drift of Future – Exotic options – Packages – Forward start options Types – Option involving one Asset Vs. Several Assets.

MODULE V

Credit Derivatives – Swaps & Indices – Valuation of Credit Default Swaps – CDS forward & option – Convertible Bonds – Equilibrium models – No arbitrage models-Option on Bonds – Volatility
Structures.

MODULE VI

Heath, Jarrow &   Morton Model – LIBOR market model – Mortgage-backed securities - Experience of all user of Derivatives, Financial Institution and Non Financial Institutions Corporation.

TEXT BOOK:

John.C.Hull – Options, Futures & Other Derivatives – Prentice-Hall of India – Sixth Edition – 2008

COURSE CODE: 130505
BANKING AND INSURANCE

MODULE I

Business of banking – Banker customer relationship – Structure of Indian Banking System – RBI – Commercial Banks – Public Sector and Private sector banks – Local area banks – Indian and foreign banks – Co-Operative Banks

MODULE II

Developments in banking industry – Banking Corporate and retail banking – International banking – NBFC – electronic banking – automated teller machine – ECS and Electronic fund transfer – credit, debit and smart cards – methods of granting advances – secured advances

MODULE III

priority sector lending – Preshipment credit – EXIM Bank – ECGC – balance sheet of a commercial bank – project finance – project appraisal – working capital – RBI Act 1934 – Banking regulation Act 1949 – Non performing Assets

MODULE VI

Importance and concept of risk management – meaning of business risks – nature of risks – causes and types of business risks – methods of handling risk – insurance purpose and need – functions of insurance – Principles of insurance – Types of insurance Contracts – Classification of insurance

MODULE V

Life insurance – essential features – advantages – Fire insurance – marine insurance – motor vehicle insurance – Health insurance – types of health insurance policies – Health insurance schemes in India

MODULE VI

Miscellaneous insurance – property, building, earthquake and flood insurance – burglary – Types of reinsurance – double insurance – over insurance – insurance pricing – premium calculation – payment of premium – underwriting – lost polices – duplicate policy – claim settlements insurance in India – reforms in the Indian Insurance Sector – Macro insurance

TEXT BOOK

Jyotsna Sethi & Nishwan Bhatia, "Elements of Banking and Insurance", PHI

COURSE CODE: 130601

INTERNATIONAL BUSINESS

MODULE I

Growth of international business: Globalisation, its Effects, Benefits & Costs, Multinationals; Firm-specific and location-specific advantages, Role of MNC's in developing countries. Environment of international business: economic, political, legal and cultural environment, Scenario analysis & country-wide-risks of investments decisions.

MODULE II

International business Competitive strategies: Porter's model; Prahalad and Doz's strategy model, Foreign Direct investment, Joint Ventures, Foreign Institutional Investment.

MODULE III

International organisation and control: Organisational structures; Control procedures; Location of decision-making, Role of Subsidiaries, Organisational Control, Bartlett & Ghoshal's Model of TNCs.

MODULE IV

International Trade: Theories of International Trade- Absolute Advantage Theory, Comparative Cost Theory, Opportunity Cost Theory, Hecksher-Ohlin Theory., Vernon's Theory of International Product Life Cycle.

MODULE V

Balance of trade and balance of payments: Constituents of Capital Account and Current Account, Reasons and remedies for Adverse Balance Of Payment. Convertibility of Capital Account.

MODULE VI

Foreign exchange; Theories of Foreign Exchange rate determination-Mint Parity Theory, Purchasing Power Parity Theory, Balance of Payment Theory, Interest Rate Parity Theory, Role of world bodies like World Bank, IMF, IBRD and WTO in International Trade, Critical issues in trade.

TEXT BOOK

Aswathappa- International Business –Second Edition - Tata McGraw-Hill, 2008.

REFERENCES

1. Daniels- International Business (Pearson Education) 2004.
2. Paul J- International Business (Prentice-Hall, 2004)
3. Deresky H- International Business (PHI, 2003)
4. Hill C W- International Business (Tata McGraw-Hill,2002.)

COUSRE CODE: 130602

INTERNATIONAL MARKETING RESEARCH

OBJECTIVE: To highlight the significance and necessity of International Marketing Research besides providing a comprehensive in depth view on it.

MODULE I

Nature and scope of International Marketing Research (IMR) – important national differences – culture – classification of IMR – Challenges – Ethics – IMR – in practice – Globalization and Complexity.

MODULE II

IMR process – Objective – problem analysis – data availability – research design – qualitative methods – surveys –Sampling – interpretation and presentation – information requirements – Market and Strategic orientation

MODULE III

Secondary data: Need, uses, advantages and disadvantages – Syndicated data sources-IMR and internet – agents and research engines – Types of Primary Research – Sources – Problems in data collection.

MODULE IV

Qualitative Research – Types – Observational Methods – Cultural Influences – Survey research – Type of Surveys – advantages and disadvantages – measurement and scaling – Types of Scales – attitude measurement.

MODULE V

Questionnaire design and development – Sampling design, frame, process, types – determining sample size – data analysis – hypothesis testing – analysis of variance – regression and correlation analysis – multivariate data analysis.

MODULE VI

Report writing and presentation – regional characteristic of Asia-Pacific, Europe, Latin America, Middle East and Africa, North America – a brief overview.

TEXT BOOK

Kumar. V International Marketing Research PHI

COURSE CODE: 130604

INTERNATIONAL LOGISTICS MANAGEMENT

MODULE – I

International trade volume – Historical development – International Logistics definition – Components – Economic Importance – method of entry into foreign markets – Indirect exporting – active exporting - Marketing subsidiary - foreign sales corporation – Contract manufacturing – Licensing – Franchising – Parallel Imports – Foreign trade zone.

MODULE – II

International sales contracts – Agencies and Distributorship – Contract Law – Home country Restrictions – Elements of distribute contract – Force Majeure – Profitability or commission – Understanding Inco-terms – Ex-works – delivery, free carrier (FCA) – FAS – FOB – CFR – CIF – DDV – DDP.

MODULE – III

Terms of payment – Country risk – Commercial risk – Cash in advance – Factoring – Letter of Credit – Sight draft – Time draft – Trade Card – Basic Guarantee – Payment of Currency – Exporters, S – Third party – Theories of Exchange Rate – Power Party – Fisher effect – Exchange Rate – Forecasting – Market fledging – IMF – World Bank EXIM Bank.

MODULE – VI

Commercial Invoice – Performa Invoice – export Licenses – Suppliers declaration – Export Taxes and quotas – Certificate of Origin – Consumer Invoice – Bill Lading – Airway Bill – Packing list – Shippers letter of Instruction – Shipment of dangerous goods – EDI – SWIFTS Bolero System.

MODULE – V

International Insurance – Cargo movements – water damage – Theft – Pivacy – pilferage – Other risk – perils with air shipments – Risk Retention – Risk Transfer – Marine Cargo Insurance – Coverage A,B,C classes – Elements of air freight Policy – Commercial Credit Insurance – Size of Vessels, Tonnage, Types of vessels- Container, Combination ships – Non vessel operating carriers.

MODULE – VI

International Air transportation – Types of aircrafts – Air cargo Regulations – Truck and Rail Transportation – Inter model – pipe lines – Packaging objectives – TCL,LCC – Refrigerator – goods – customs duty – Non Traffic barriers – customs cleaning process – International logistics Infrastructure.

TEXT BOOK:

Pierre David, "International Logistics",   Biztantra.

COUSRE CODE: 130603
EXPORT PROCEDURE AND DOCUMENTATION

MODULE I

Foreign Trade in India – foreign Trade Policy – EXIM Policy 2005-07 – Trade and BOP of India – Institutional infrastructure for Exports – Institutions for financing exports Commodity Boards – Indian Council of Arbitration – Export Development Authority – Agricultural and Processed Foods Export Development Authority.

MODULE II

Export Promotion – Duty Drawback – Eligibility, Conditions, Types – Special Economic Zones – EPZ/EOU – The Customs Act 1962 – Definitions – Appointment of Customs Port – Air Port – Warehousing Station.

MODULE III

Notified and Specified Goods – Prohibition on Importation and Exportation of Goods – Levy of and Exemption from Customs Duties – Preparation of Invoices – Advance Rulings – Surveillance on Conveyances – Clearance of Goods – Goods in Transit – Warehousing – Baggage, Postal Parcels and Stores – Coastal Goods

MODULE IV

Searches – Seizures and Arrest – Confiscation of Goods and Conveyances etc – Settlement Commission – Appeal and Revision – Miscellaneous.

MODULE V

Export Procedure and Documentation – Registration, Pre-shipment, Shipment, Post-Shipment and Pre-shipment Inspection – Claiming Exemption – Excise Clearance – Shipping and Customs Formalities – Marine Insurance – Import – Pre-import procedure – Legal Documentation of Import Procedure Requirement of import Documents – Customs Clearance.

MODULE VI

Customs Valuation –Determination of Price of Imported Goods Rules 1998 – Customs and Central Excise (Drawback) Rules 1995 – The Baggage Rules 1995 – The Customs Tariff Act 1975 – Classification – Interpretive Rules – Import-Export Tariff Structure – Classification – Judicial Principles

TEXT BOOK: Dr.Khushpat S. Jain, Export Import Procedures and Documentation, Fifth Revised Edition, Himalaya Publishing House, August 2007.

COUSRE CODE: 130605

BRAND MANAGEMENT

OBJECTIVE: To understand and appreciate the significant influence of Brand and their reach **in** ensuing customer retention and continued loyalty.

MODULE I

Brand definition, nature, scope and significance economics – competition – differentiation – customer loyalty – Brand and trust – Different Brand perspectives – Anatomy of a Brand

MODULE II

Brand knowledge pyramid – Benefits and promises – norms and values – identity and self expression – emotion and love – Evolution of a brand – Brand levels – Value hierarchy – Brand evolution – Poor, Hollow and power brands

MODULE III

Brand positioning – USP – Brand image and personality – 3 C^s of positioning – Competitive positioning and strategy – Brand success – Core Benefits

MODULE IV

Buying decision – Consumer perspectives – Consumer decision making – Post purchase behavior – Brand selection – building superior brands – Key drives of buying

MODULE V

Brand equity – definition and dimensions – brand awareness and customer loyalty – Brand report card – Brand identity levels and perspectives – Brand image – Brand check – Brand association – Brand extensions: reason and Types

MODULE VI

Managing brand image – concept management – functional brands – symbolic brands – forces affecting brands – Brand revitalization – Brand recall and elimination – product branding, line branding umbrella branding – Brand endorsement – Brand valuation methods.

TEXT BOOK

Harsh V Verma   "Brand Management"   Excel Books

<div align="center">

COURSE CODE: 130705

HRM IN HOSPITALS

</div>

OBJECTIVE: To provide greater insight into the role of Human Resource Management in Hospital administration in the era of technologically driven hospitals

MODULE I

Definition of Hospital – History of Indian Hospitals – Clasification – Hospital Organisation – Health services through five year plans – national health policy – Hospital administration – Principles of HRM – Human Resource utilization – functions, Significance, Importance of human resources

MODULE II

Use of Hi-tech machines, HR manager's role – HR accounting, auditing and research – perspective of HR – evolution of HRM in India – Perspectives of HRM – HRM as a profession in Hospitals – HR plan, Philosophy and objectives – HR inventory

MODULE III

Manposer planning – Need – Nature and Scope – Objectives – deciding work-load ratio – recruitment and selection – definition of training – Training guidelines – purpose of training – developing a training programme – wage and salary administration – Employee performance appraisal – good appraisal system registers

MODULE IV

Working Conditions,, Safety, welfare and health services – Counseling nature and scope – Types of counseling – effective listening – techniques and functions of counseling – collective bargaining in hospitals

MODULE V

HR audit – nature and scope – Goals of organisation development – characteristics and phases of OD – Limitations of OD – MBO in Hospitals – Practice of MBO – Transactional analysis – TA as a tool

MODULE VI

Human relations in hospitals – Team work in Hospitals – Team building – use of Computers and Information Systems in various departments - The Patient and Consumer Protection Act 1986

TEXT BOOK

R.C. Goyal "Hospital Administration and Human Resource Management" PHI.

COURSE CODE- 130702
FACILITITIES PLANNING IN HOSPITALS

MODULE-I

Planning the Hospital - Hospital of Yesteryear - Technology Advances - High Health Care Costs - Planning for New Hospitals - High Quality Patient Care - Community Orientation – Economic Viability - Preliminary Survey - Study of existing Hospital Facilities - Required Staff and Services - Operating Funds - Financial Assistance - Equipment Planning - Permanent Hospital Organization.

MODULE-II

Facility Master Plan - Design Team - Hospital Consultant – Architect – Engineer - Hospital Administrator - Production Document - Tender Document - Hospital Site - Bed Distribution - Space Requirement - Planning the Hospital Building - General Principles and Building.

MODULE-III

Building Contract and Contract Documents- Furnishing and Equipping the Hospital- Purchase of Capital Equipment-Role of Engineering Department- Guidelines for Purchasing Hospital Equipments- Suppliers Check List- ready to operate stage –before operating the Hospital –Commissioning and Inaugurating.

MODULE-IV

Planning and Designing a Hospital – Business Plan – Facility Master Planning – Infrastructure and Functioning of Hospital –Successful Architecture Process.

MODULE-V

Hospital Organization Structure- Governance- Duties and Responsibilities of the Governing Board- Conflict of Interest- Committee Organization , Duties, Responsibilities and Functions of CEO-CEO and his Management Team - Organizational Charts.

MODULE-VI

Facilities Planning and Management of Sars – Symptoms and Signs of Sars-Reading of Sars-Strategies for Sars Treatment-Facilities-Sars only- Emergency Room ORE- Isolated Sane Site Facilities-Hospitals Internal and Staff Setting-General Public Settings-Design of future Hospitals.

TEXT BOOK

Gd Kunders-"Hospitals"Tata Mcgraw Hill

<div align="center">

COURSE CODE - 130701

HOSPITAL MANAGEMENT

</div>

MODULE – I

Introduction – two lines of authority in Hospital – conflict between systems – propensity to break rules – conflict at top management level – professional management of the Hospital – recruitment and selection – orientation training and development

MODULE – II

Planning and designing administrative services – executive suite – Functions – Location – design – Professional service unit – functions – financial management unit – nursing service administration unit – Public relations department

MODULE – III

Outpatient services emergency services – clinical laboratories – radiological services – diagnostic radiology – radiation therapy department – nuclear medicine – surgical department – physical therapy – occupational therapy.

MODULE – IV

General nursing unit – paediatric nursing unit – Obstetrical nursing – psychiatric nursing isolation rooms – ICU^s and CCUs – newborn nurseries

MODULE – V

Admitting department – medical records department – Central sterilization and supply department – pharmacy – materials management – food service department – laundry and linen service – House Keeping – volunteer department

MODULE – VI

Public areas of Hospital – Staff facilities – maintanenance management – clinical engineering – electrical system – air conditioning system – water supply and sanitary system – centralized medical gas system – communications systems – environmental control – solid waste management – safety and security in the Hospital

TEXT BOOK

GD Kunders, "Hospitals"   Tata McGraw Hill

COURSE CODE - 130704

FINANCIAL MANAGEMENT IN HOSPITALS

OBJECTIVE: To Develop Financial skills and learn to mange money in Health Care Industry Efficiency and Effectively.

MODULE I:

Meaning of Financial Management – Healthcare Finance – Flow of Funds in Healthcare – Financing Mix and Provision of Service – Financial and Management Accounting – Budget Cycle.

MODULE II:

Costs – Definition – Measurement – Types – Costing Process – Pricing – Influencing Factor – Approaches to Pricing – Break even Analysis.

MODULE III:

Pricing Process – Contract Pricing – Budgeting –Role of Budgeting – Approaches – Budgeting and Control – Variance Analysis – Balanced Analysis.

MODULE IV:

Introducing to Financial Accounting – Need – Accounting Principles –Income Statement – Balance Sheet – Link between Balance Sheet and Income Statement.

MODULE V:

Cash Flow Statement – Net Cash Flow – Working Capital Management – Importance – Managing Working Capital – Performance Ratio – Working Capital Ratio.

MODULE VI:

Financial and Management Reporting Systems – Strategic Reporting – Cash Mix Management – Integration Financial Management Information – Financial Control.

TEXTBOOK:

Reinhold Gruen and Anne Howarth," Financial Management in Health Science", Tata Mcgraw Hill, First Edition, 2006.

COURSE CODE: 130703
HOSPITAL INFORMATION SYSTEM

MODULE I

Information – System-MIS definition – Concept of subsystems- Trends in information system- MIS as a communication process – MIS planning – Components of MIS- Open systems Vs closed systems-Role and importance of MIS – MIS Organization.

MODULE II

Definition of computer – Importance – Classification – Operating system- Types- Hardware and software –Classification of software- Types of computer languages – Windows- A GUI – application software – Information technology- Trends in IT – Limitations of computer.

MODULE III

Data and information – Definition of database – Objectives of database – Database management system – Levels of database – Data storage and retrieval - Data languages – Structured query language(SQL) – Object oriented database and distributed database.

MODULE IV

Overview of Hospital information system – work flow in a hospital setup – benefits of unified system – evolution of Hospital information system – computerization – Hardware – software – database – management tools – common mistakes in selecting IT systems – Trends and advances – cost of computerization

MODULE V

HIS solution a model – siemens model – comprehensive HIS – registration, admission, discharge and Transfer – Patient consultation – nursing – operation theatre – Blood bank – Laboratory information system – drug information system – stores and purchase – medical records – executive information system

MODULE VI

Videoconferencing –Teleconferencing-Internet- Common uses of internet- Functioning of the internet and www-Intranet –Extranet- Commercial benefits of internet- Process on bouring –Medical coding – Medical transcription-Medical bathing

TEXT BOOK

1. Gd Kunders-"Hospitals"Tata McGraw hall.
2. Ashok arora, An shaya Bhatic, "MIS" Excel.

<div align="center">

COURSE CODE: 130801

PRINCIPLES OF HUMAN RESOURCE MANAGEMENT

</div>

OBJECTIVE: To equip budding managers with a complete, comprehensive review of essential human resource management concepts and techniques.

MODULE I

Strategic role of HRM – Nature and scope of HRM – objectives of HRM – Job Analysis – HR Planning – HR Inventory.

MODULE II

Recruitment Process – Application Blank – Test and Interviews – Selection – Placement – Transfer – Training – Types of Training – Uses of Training – Designing effective Training – Evaluation and Training.

MODULE III

Compensation – Performance Appraisal – Pay structure – Incentives – Financial and Non-financial incentives – Executive Pay – Employee Benefits.

MODULE IV

HR Environment – Multicultural Environment in MNC's – Equal Employment Opportunities – Reservation System - Outsourcing – Hire and Fire System - Security in Services.

MODULE V

Employer and Employee relations– Collective bargaining- process –Unions - Ethics – Dominants of Ethical Behavior - Discipline – Protecting Safety &Health

MODULE VI

HRIS - HR Records – HR Accounting – HR Audit –- Maintaining International Employees.

TEXT BOOK

Gary Dessler -A Framework for Human Resource Management - Pearson - 3rd Edition - 2008.

REFERENCE BOOKS

1. Raymond A Noe, John R,Hollenbeck, Barry Gerhart and Patrick M.Wright – Human Resource Management – McGraw-Hill New Delhi-5th Edition - 2007.
2. Cynthia Fisher, Shaw - Human Resource Management – Wiley Dreamtech / Bistantra – 5th Edition – 2005.

COUSRE CODE: 130802
HR PLANNING

OBJECTIVE: To acquire knowledge and skills in HR planning for meeting the legal and Organizational requirements.

MODULE I

Meaning – Importance – Long Range and Short Range HR planning – Job Analysis – Techniques – Competency Based Approaches – HR Management Systems

MODULE II

HR Forecasting Process – Benefits – Factors – Types of Forecasting – Qualitative and Quantitative Forecasting – HR Budgets.

MODULE III

HR Supply – Replacement Analysis – Markov and Vacancy Model – Retention Programs – Succession Management - Evolution – Process – Employee role in Succession management.

MODULE IV

Downsizing – Definition – Reasons – Common Process – Decisions – Consequence and Strategies – HRM Issues.

MODULE V

Environmental Scanning Sources and Methods – Sources of Information – Techniques and Challenges – Environmental factors.

MODULE VI

Outsourcing – Management of Outsourcing – Mergers and Acquisitions – Urge to Merge – Cultural Issues – HR Issues.

TEXT BOOKS:

Monica Belcourt and Kenneth J.McBey , ”Strategic Human Resources Planning“,

Thomson , Second Edition ,2006.

REFERENCE BOOK:

M. Sudhir Reddy, P. Murali Krishna, K . Ramakrishna Reddy and K. Lal Kishore Human Resource Planning-. New Delhi, Discovery Pub., 2005.

COURSE CODE: 130804
TRAINING AND DEVELOPMENT

OBJECTIVE: To make the student to understand the role of Training and Development in enriching the Capabilities.

MODULE I

Definition – Scope – Objectives and , Benefits of training – The role of Training in Organizations – Place of Training in Organizational structure – A training process Model – Difference between training and development.

MODULE II

The framework for conducting a Training Needs Analysis : - Organizational Analysis, Operational analysis, Person Analysis – Gathering Training Needs Data – Approaches to Training Needs Analysis Business – TNA and Design.

MODULE III

Training Design – Factors – Organizational constraints – Developing objectives-Facilitation of learning – Focus of Trainee – Design – Organizational intervention – Design theory – Outcome of design.

MODULE IV

Training Methods and Aids – Lectures and Demonstrations – Discussion Methods – Computer – Based Training – Programmed Instruction - Intelligent Tutoring Systems, Interactive Multimedia and Virtual Reality – Games and Simulations.

MODULE V

Approaches to Management Development – Overview of the Managerial Job - Management Development implications - Sources of knowledge and skills - Special needs of Technical Manager –Training for Executive Level Management.

MODULE VI

Validation concepts – Types and methods – Rationale for Evaluation - Types of Evaluation Instrument - Types of Evaluation Data - Evaluation Designs - Training Audit – Meaning, Features, Approaches – Functions, Model and Steps.

TEXT BOOK:

Dr.B.Janakiraman – Training and Development – Biztantra/Wiley Dreamtech - 2005

COURSE CODE: 130803

COMPENSATION MANAGEMENT

MODULE – I

Compensation and Organisational Strategy – Lifestyle and Compensation – Pay and Social Class – Reward System – Compensation System – Compensation Dynamics – Rates of Pay – Compensation Program – Jobs and Pay in India

MODULE – II

Strategic and Tactical Compensation Issues – Employees - a Critical Resource – Division of Labour – Pay Relationships – Legislation and Compensation – Indian Legal System – Minimum Wages Act, Employee Compensation Act, Apprenticeship Act, Bonus Act

MODULE – III

Job Analysis – Gaining Employee Acceptance – Collecting and Describing Job Data – Job Facts – Job Contract – Elements of Job Descriptions – Job Requirements and Pay – Job Evaluation – Job Ranking – Market Pricing Approach – Maturity Curve Method.

MODULE – IV

Polit Factor Method of Job Evaluation – Job Evaluation Committee – Determining the Need for a Survey – Preparing for the Survey – Identifying Survey Methods – Designing the Survey – Using Third Party Surveys

MODULE – V

Pay Structure Architecture – Pay for Performance – Application of Motivation Theories – Merit Pay –Performance Appraisal Issues and Opportunities – Designing a File Content – Short Term Incentives – Premium and Differentials – Individual Based Bonus and Rewards

MODULE – VI

Long Term Incentive and Deferred Compensation Plan – Executive Compensation – International Competition – Benefits Administration – Employee Benefits – Qwl and Pay Administration

TEXT BOOK:

Richard I. Derson, "Compensation Management", Pearson Education

COURSE CODE: 130805
INDUSTRIAL RELATIONS

OBJECTIVE: To inculcate the changes in the Industrial relation policies and economic policies.

MODULE - I

Impact of Industrial Revolution – Industrial Relations: Concept – Importance of Industrial Relations – Scope and Aspects of Industrial Relations –Factors Affecting Industrial Relations – Perspectives/Approaches to Industrial Relations – Organisation of Industrial Relations – Dimensions of Industrial Relations Work – Prerequisite Successful Industrial Relations Programme.

MODULE - II

Evolution of Industrial System – Anatomy of industrial conflicts - Genesis of Industrial Conflicts – Industrial Conflicts/Disputes – Concept and Essential of a Dispute – Classification of Industrial Disputes – Impact of Industrial Disputes – Cause of Industrial Conflicts –Strikes – Typology of Strikes — Lockouts.

MODULE - III

Changing Scenario of Industrial Unrest – Dispute by Results – Cost Causes of Industrial Dispute – Striking Features of Industrial Conflicts – New Dimensions in Industrial Conflicts – The Ways of Industrial Peace – National Commission on Labour and Industrial Relations – New Policy and Industrial Relations

MODULE - IV

The state and industrial relations policy - Evolution of Industrial relations policies – Industrial Relations Policy During the plan Period – The Plan Period – Recognition of Unions Machinery for solving the Dispute - Standing Orders –Grievances – Procedure for Settlement –Essence of Model Grievance Procedure.

MODULE - V

Ethical codes and industrial relations - The Code of Discipline – Evolution of the code – Principles of the Code – Objectives of the Code of Discipline

MODULE - VI

The Industrial Disputes Act, 1947 - Wage Legislations - The Payment of Bonus Act, 1965 - The Factories Act, 1948

TEXT BOOK

Mamoria,Mamoria and Gankar, "Dynamics of Industrial Relations",Himalaya Publishing House,Sixteenth Edition, 2008.

COUSRE CODE: 130901

SAFETY MANAGEMENT

MODULE I

Origin of Safety movement — planning for safety and its benefit - Line and staff functions for safety - Budgeting for safety-safety policy -Techniques-Incident Recall Technique (IRT) – Safety analysis – Safety survey – Safety inspection – Safety lab.

MODULE II

Safety organization – Safety programme – Safety promotion – Safety committee – Safety Department – Safety Process – Measuring Safety .

MODULE III

Industrial accident – Reportable and non reportable accidents – reporting to statutory authorities – Principles of accident prevention – accident investigation and analysis – records for accidents – Role of safety committee – Cost of accident.

MODULE IV

Calculation of accident indices – Frequency rate – Severity rate – Frequency severity incidence – Incident rate – Accident rate – safety "t" score – Problems.

MODULE V

Importance of training-identification of training needs-training methods - Seminars – Conferences – Competitions – Motivation – Communication - Role of Government agencies and private consulting agencies in safety training – Awards and celebrations.

MODULE VI

Safety audit – Review of inspection – Perusal of accident and safety records– implementation of audit indication - Liaison with departments to ensure co-ordination – check list – Identification of unsafe acts of workers and unsafe conditions.

TEXT BOOKS

A.M. Sarma Industrial Health and Safety Management – Himalaya Publishing House – First Edition – 2002.

COUSRE CODE: 130902

OCCUPATIONAL HEALTH AND SAFETY

MODULE I

Recognition, evaluation and control of physical hazards – Noise and vibration – effects and control measures – thermal stress – parameter control, radiation – types – source – effect and control – illumination and lighting.

MODULE II

Concept and spectrum of health-functional units and activities of occupational health services-occupational and work related disease-Levels of prevention of diseases – notifiable occupational diseases, their effects and prevention –Industrial toxicology – local and systemic and chronic effects temporary and cumulative effects – carcinogens entry into human system.

MODULE III

Man as a system component-allocation of functions-efficiency-occupational work capacity-aerobic and anaerobic work-steady state- work organization – stress-strain-fatigue-rest pauses-shift work-audiometric test-eye test-vital function test-pre employment and periodic employment medical examinations.

MODULE IV

Hygiene concepts-correct and clean dresses-clean body – washing – good habits-oral and stomach hygiene-cleaning –compressed air and degreasing agents-dermatomes-long hair and nails and torn and loosely hanging clothes-smoking-lavatories maintenance - living in unhygienic area, first aid concept – first aid boxes – legal requirements.

MODULE V

Various contrivances used by housewives-irons-kettles-grinders-mixies-hair dryers-TV antenna-washing machines – electric ovens-micro ovens-stoves-inflammable substances in shelves- sharp tools-switches-water pumps-ladders-heavy utensils-eye-ear injuries-insect bites-chemical sprays-earth and circuit breakers-burglar alarms-house keeping.

MODULE VI

Safety apparels during cooking-stairs and steps-fire works-bath room safety-CO poisoning-use of mosquito coil and mats – light of match stick. Hand torches and emergency lights – slippery floors – handling hot utensils – cookers – oil – kerosene spillages in kitchen – training of house wives – first aid box – maintenance of domestic appliances.

TEXT BOOKS

A.M. Sarma Industrial Health and Safety Management – Himalaya Publishing House – First Edition – 2002.

REFERENCES

1. Encyclopedia of "Occupational Health and Safety", Vol.I and II, published by International Labour Office, Geneva, 1985.

2. Clayton & Clayton, Patty's "Industrial Hygiene and Toxicology", Vol.I, II and III, Wiley Inter science, 1986

3. Encyclopedia of Occupational Safety and Health" ILO Publication, 1980.

4. Terry Brimson, "The health and safety guide", Mc Graw Hill Book Company, Europe-England.

5. Peter, P., "Occupational health hazards- A practical Industrial Guide (Second Edition) "Safety and good house-keeping", NPC, New Delhi, 1985

COUSRE CODE: 130903

INDUSTRIAL SAFETY AND HEALTH

MODULE I

Factories Act 1948 -Objectives – inspecting staff - Health, safety, provisions relating to hazardous processes - working hours and employment of young persons – special provisions – penalties and procedures.

MODULE II

Environment Act 1986 - General Powers of the central government, prevention, control and abatement of environmental pollution.

MODULE III

Air Act 1981 and Water Act 1974 - Central and state boards for the prevention and control of air pollution-powers and functions of boards – prevention and control of air pollution and water pollution – fund – accounts and audit, penalties and procedures.

MODULE IV

Manufacture, storage and import of hazardous chemical rules 1989 - Definitions – duties of authorities – responsibilities of occupier – notification of major accidents – information to be furnished – preparation of offsite and onsite plans – list of hazardous and toxic chemicals – safety reports – safety data sheets.

MODULE V

Indian Boiler Act 1923, static and mobile pressure vessel rules (SMPV), motor vehicle rules, mines act 1952, workman compensation act, rules – electricity act and rules – hazardous wastes (management and handling) rules, 1989, with amendments in 2000-the building and other construction workers act 1996., Petroleum rules, Gas cylinder rules.

MODULE VI

International acts and standards - Health and safety acts of USA – occupational safety health act & UK-ISO 18000 – ISO 14000 – American National Standards Institute – No Objection certificate from statutory authorities like pollution control board.

TEXT BOOKS

A.M. Sarma Industrial Health and Safety Management – Himalaya Publishing House – First Edition – 2002.

COURSE CODE: 130904

FIRE PREVENTION AND CONTROL

MODULE I

Physical and chemical properties of fire. Fire properties of solid, liquid and gases, fire spread, toxicity of products of combustion, theory of combustion and explosion – vapour clouds – flash fire – jet fires – pool fires – unconfined vapour cloud explosion, shock waves, auto-ignition – boiling liquid expanding vapour explosion.

MODULE II

Fire prevention and protection - Sources of ignition – fire triangle – principles of fire extinguishing – active and passive fire protection systems – various classes of fires – A, B, C, D, E – types of fire extinguishers – fire stoppers – hydrant pipes – hoses – monitors – fire watchers – lay out of stand pipes – fire station-fire alarms and sirens – maintenance of fire trucks – foam generators – escape from fire rescue operations.

MODULE III

Industrial fire protection systems - Sprinkler-hydrants-stand pipes – special fire suppression systems like deluge and emulsifier – selection criteria of the above installations – reliability – maintenance –evaluation and standards – alarm and detection systems. Other suppression systems – CO_2 system - foam system – dry chemical powder (DCP) system – halon system – need for halon replacement – smoke venting. Portable extinguishers – flammable liquids – tank farms – indices of inflammability-fire fighting systems.

MODULE IV

Fire safety in buildings - Fire load, fire resistant material and fire testing – structural fire protection – structural integrity – exists and egress –fire certificates – fire safety requirements for high rise buildings – snookers.

MODULE V

Principles of explosion - detonation and blast waves-explosion parameters-explosion venting-inert gases-plant for generation of inert gas-rupture disc in process vessels and lines explosion, suppression system based on carbon dioxide (CO_2) and halons-hazards in LPG.

MODULE IV

Indian explosive act and rules-static and mobile pressure vessel (SMPV) rules-Indian gas cylinders rules-petroleum act.

TEXT BOOK:

R.S Gupta, "A Hand book of Fire Technology", Orient Longman,

COUSRE CODE: 130905

ENVIRONMENTAL SAFETY

MODULE I

Air pollutants – Pollution sources - automobile pollution-hazards of air pollution-concept of clean coal combustion technology, fly ash-control of combustion in combustion chambers- ultra violet radiation, infrared radiation, radiation from sun-hazards due to depletion of ozone - deforestation-ozone holes-automobile exhausts-chemical factory stack emissions - CFC.

MODULE II

Water pollutants-health hazards-sampling and analysis of water-water treatment - different industrial effluents and their treatment and disposal -advanced wastewater treatment - effluent quality standards and laws - chemical industries, tannery, textile effluents-common treatment.

MODULE III

Hazardous waste management in India-waste identification, characterization and classification-technological options for collection, treatment and disposal of hazardous waste-selection charts for the treatment of different hazardous wastes-methods of collection and disposal of solid wastes-health hazards-toxic and radioactive wastes-incineration and vitrification - hazards due to bio-process-dilution-standards and restrictions – recycling and reuse.

MODULE IV

Sampling and analysis – dust monitor – gas analyzer, particle size analyzer – lux meter-pH meter – gas chromatograph – atomic absorption spectrometer.

MODULE V

Gravitational settling chambers-cyclone separators-scrubbers-electrostatic precipitator - bag filter – maintenance - control of gaseous emission by adsorption, absorption and combustion methods- Pollution Control Board-laws.

MODULE VI

Pollution control in process industries like cement, paper, petroleum-petroleum products-textile-tanneries-thermal power plants – dying and pigment industries - eco-friendly energy.

TEXT BOOKS   N K Uberoi, Environmental Management, Second Edition, Excel Books, New Delhi-2007.

COUSRE CODE: 130906

INDUSTRIAL SAFETY LAB

1. NOISE LEVEL MEASUREMENT AND ANALYSIS
2. FRICTION TEST
3. IMPACT TEST
4. EXHAUST GAS MEASUREMENT AND ANALYSIS
5. ENVIRONMENTAL PARAMETER MEASUREMENT
6. STUDY OF THE FOLLOWING:
7. PERSONAL PROTECTIVE EQUIPMENT:
8. FIRE EXTINGUISHERS

COUSRE CODE: 131001

INTELLECTUAL PROPERTY RIGHTS

MODULE I

Intellectual Property Law basics – Types of IPR agencies – International organizations, agencies and treaties importance – Introduction, Propose and function of trade marks – Types of marks – Acquisition of Trademark rights – Common law rights – lanham act – Categories of marks – Tradenames – exclusions from Trademark protection.

MODULE II

Trade mark selection and searching – Trademark registration process – Preparing the application – Filing – Docketing – Examination process – Post examination procedure – Registration – Post registration procedures – affidavit – Renewal and Docketing requirements – Compliance policies.

MODULE III

Inter parts proceedings – Infringement of trademarks – Dilution – Trademark claims – New developments in trademark law – Cyberspace trademark issues. NAFTA and TRIPS – International associations.

MODULE IV

Copyright law foundations – Originality of material – Fixation – Works of authorship – exclusions – completions – Collections and Derivative works - Rights to prepares perform and derivative works - Rights to prepares perform and display work – Publicity – Limitations of exclusive rights - Ownership issues - Transfers of copyrights – Duration – Copyright registration - Process - Deposit materials – Notice.

MODULE V

Foundations of Patents law patentability - Design patents-double patenting - Orphan drug act - Patent searching - Prosecuting the application - Term and maintenance of Patents - Disputes over Inventorship -   Licensing of patent rights - Patent infringement – Claims and defenses – Resolving dispute - International patent protection - Paris convention - Patent law treaty - Foreign filing licenses.

MODULE VI

Trade Secrets Law - trade secret status – Determination - Liability and Misappropriate of Trade Secrets – Employer Employee Relationships-Defenses-Remedies for Misappropriation-Trade secret Litigation – Protection Programs – Unfair competition passing off right of Publicity – False Advertising – Product disparagement – Intellectual Property Audits – Conducting - Postaudit activity.

TEXTBOOK:

Deborah E. Bouchoux, "Intelectual Property Rights", Cengauge learning 2005.

COURSE CODE: 131002
MANAGING IPR

MODULE I

Intellectual property background – economic value-motivation-emerging issues-IPR governance – IP system institutions WIPO,WTO-Drivers of IP management-IP value chain – Frameworks – Development - Market watch – IP exchange and protection – IP strategies – Ever greening – out licensing – Exclusive control – Switching barriers – Commercialization.

MODULE II

Indian IPR scenario – Patents – Trademarks – Copyrights – Designs – Legal use of IP – Global vs Indian IPR landscape – Indian patent Act 1970 - Opposition – Compulsory license – patents for software – patent Co-Operation Treaty – Trademarks registration in India - Electronic records – Refusing of registrations – Indian copyright Act 1957- Information Technology Copyrights.

MODULE III

Trade secret – under TRIPs – Types Trade secret protection in India – Evaluation of Trade secrets – guarding trade secrets – Lawsuit and protection strategy - Protection of industrial design - Geographical indications Geographical indications Act 1999 - Protection of Geographical indications on international level .

MODULE IV

Semiconductor – Integration - Circuit layout design Act – Protection of plant varieties and formers' rights (PPVFRA 2001) Salient features – Plant grouping and types. Stakeholders' rights – Central and State Government rights compulsory licensing – Control over seed production – International convention – Biodiversity – Traditional knowledge – Traditional cultural expressions – Protecting biodiversity.

MODULE V

IPR in Cyber space – Packets for digital technologies - Software patents - Enforcement of rights - Copyrights in digital space – IT Act 2000 – Tampering, Hacking, Publishing unacceptable information - Trademarks online - Mouse Trapping – Linking and Framing – Territorial Rights - IPR in pharma sector – Indian Pharma Industry – Pharmaceutical patents – Dunkel proposal – New patent act known substance – parallel imports – data exclusivity – bolar provisions – Para IV filing – Strategic packeting – Bio-Technology patents – New developments – IPRs and Regulatory aspect.

MODULE VI

IP licensing – Advantages and Disadvantages – Types of licensing Agreements – Technology Licensing – Joint Venture licensing – franchise of trade mark license – copyright license – Contractual agreements – IP Insurance – Scope of protection – Insurance products – Asset valuation and Audit – IPR securitization – Transfer of IP assets – Future of IPR.

TEXT BOOK:

Vinod V.sople, " Managing Intellectual Property", Prentice Hall India, 2006.

COURSE CODE: 130405

MANAGEMENT AND COMMUNICATION

OBJECTIVE: To synergies both Management and Communication in order to excel.

MODULE I

Management Science - Definition - Evolution of Management Thought - Contribution of F.W.Taylor,- Henri Fayol – Planning - Types – Steps – MBO – MBE – Strategies – Policies - Planning Premises - Decision Making - Risk and Uncertainty - Decision Trees.

MODULE II

Organisation: Formal and Informal - Staffing - Span of Management-Organisation Structure -Departmentation - Line and staff relationship - Centralisation Vs. Decentralisation - Organisational Culture - Cultural Diversity

MODULE III

Leadership: Leadership Styles -Motivation-Motivation Theories -Controlling: Process-Standards and Bench Marking-Core Competence-Competitive Advantage of Industries and Nation – Budgeting.

MODULE IV

Objectives of Communication - Communication process - Media of Communication - Principles of Communication - Types of Communication - Interpersonal Communication - Gateway to effective interpersonal Communication.

MODULE V

Organizational Communication - Communication Problems of the organization - Informal Communication system - Approaches to Organisational Communication - Non-Verbal Communication - Written Communication –Processes - Business Letters – Memos - E-Mail – Agenda - Technological Aids.

MODULE VI

Report Writing - Business and Academic Report writing – Methodology – Procedure – Bibliography - Communication Networks – Intranet – Internet – SMS – Teleconferencing – Videoconferencing.

TEXT BOOK:

Heinz Weihrich, Mark.V.Cannie, Harold Koontz.- Management:– Tata McGraw Hill Publication- 12th Edition- 2008

REFERENCE

1. Rocky W. Griffin -Management –– Biztantra, 8th Edition, 2005
2. Samuel Certo - Modern Management –– Prentice Hall India -9th Edition
3. Krizan, Merrier, Jones Business Communication - Thomson Learning - 6th Edition

COUSRE CODE: 131003

INNOVATION MANAGEMENT

MODULE – I

Innovation – Characteristics – Components – Types – Methods of Innovation Process – Innovation Management – Scope – Characteristics of Innovation Management – Systems Approach – Originators of Innovation – Factors Influencing Innovation – Innovation Outcomes – Sources of Innovation – Forecasting Tools.

MODULE – II

Traits of Innovative Organization – Current Trends – Developing Innovation Strategy – Managing Innovation – Need for Creative Organization – Characteristics – Fostering Innovation Climate and Culture

MODULE – III

Innovation and Entrepreneurship – Entrepreneurship – Research and Development – Management – Objectives – Technology – Prerequisites – R&D Process – Management of R&D – Innovation a New Perform ana Metric – Disruptive Vs Incremental Innovations – Innovation Cycle

MODULE – IV

Managing Creative Employees – Traits of a Creative Person – Beliefs – Motivation to Creativity – Blocks to Creativity – Strategies for Unblocking – Group Creativity – Creativity Training – Need and Objectives – Designing Training Proframs – Communication Skills.

MODULE – V

Thinking Process – Left and Right Brain Thinking – Linear Thinking – Creative Thinking – Influition – Creativity Process – Principles Behind Directed Creativity – Heuristics – Inner Creativity Techniques – Changing Mind Sets – Creativity Methods – Writing Techniques

MODULE – VI

Process Innovation – Design Approaches – BPR – Total Quality Control – Benchmarking – Product Innovations – New Product Development Process – Packing Innovations – Positioning Innovations – New Product Failures – Diffusion – Types – Innovation Diffusion Theory – Innovations and Opinion Leaders – IPR – Trademarks – Copy Rights – Patenting – Innovation for Social Development

TEXT BOOK: Dr. C.S.G Krishnamachergalu & Dr. R. Lalita,   "Innovation Management",   Himalaya Publishing Houses

COUSRE CODE: 130204

KNOWLEDGE MANAGEMENT

MODULE-I

External influences on organization- Workforce composition- Evolving work roles and responsibilities- Teamwork- Relationship building- Communication- Leadership- Decision making-Change management-Worker motivation- Types of organization- Creating strategic focus- Strategic values and corporate culture- Systems and policies- Employee capabilities-Knowledge as asset –organizational knowledge-Leadership and knowledge management.

MODULE-II

Learning organization-Knowledge systems- Knowledge workers- Phases of knowledge development- Knowledge management infrastructure-Harassing organizational knowledge –Five P's of knowledge management-Knowledge sharing as a core competency-Developing strategic knowledge community.

MODULE-III

Contribution of disciplines to knowledge Leadership –Librarianship-HRM-Strategic visionary –Motivator-Communicator-Change agent- Learning facilitator-Strategic knowledge leader- Self managed team- Virtual knowledge team- Leading a knowledge network Recruiting and selecting knowledge leaders.

MODULE-IV

Organization culture- Knowledge culture principles-Knowledge culture enablers-Knowledge culture during change- Existing knowledge culture – Enhancement planning-Implementing enhancement programs-Pilot testing Planned culture interventions-Maintaining the knowledge culture.

MODULE-V

Structured support for knowledge management –Organizational structure and staffing-Performance management- Rewards- Learning and development –Knowledge management systems- Subsystems- Phases of managing core knowledge- Developing core knowledge structure- Content authorship.

MODULE-VI

Effective knowledge repositions-Mapping content structure- Repository quality control – Knowledge services-Models of service provision-Learning in a knowledge environment – Working with technology-Knowledge   strategy evaluation – Successful knowledge management-Mergers ,acquisition and downsizing integrated knowledge development.

TEXT BOOK: Shelda Debowsks ,"Knowledge Management," Wiley 2007

COUSRE CODE: 130805

INDUSTRIAL RELATIONS

OBJECTIVE: To inculcate the changes in the Industrial relation policies and economic policies.

Module - I
Impact of Industrial Revolution – Industrial Relations: Concept – Importance of Industrial Relations – Scope and Aspects of Industrial Relations –Factors Affecting Industrial Relations – Perspectives/Approaches to Industrial Relations – Organisation of Industrial Relations – Dimensions of Industrial Relations Work – Prerequisite Successful Industrial Relations Programme.

Module - II
Evolution of Industrial System – Anatomy of industrial conflicts - Genesis of Industrial Conflicts – Industrial Conflicts/Disputes – Concept and Essential of a Dispute – Classification of Industrial Disputes – Impact of Industrial Disputes – Cause of Industrial Conflicts –Strikes – Typology of Strikes — Lockouts.

Module - III
Changing Scenario of Industrial Unrest – Dispute by Results – Cost Causes of Industrial Dispute – Striking Features of Industrial Conflicts – New Dimensions in Industrial Conflicts – The Ways of Industrial Peace – National Commission on Labour and Industrial Relations – New Policy and Industrial Relations

Module - IV
The state and industrial relations policy - Evolution of Industrial relations policies – Industrial Relations Policy During the plan Period – The Plan Period – Recognition of Unions Machinery for solving the Dispute - Standing Orders –Grievances – Procedure for Settlement –Essence of Model Grievance Procedure.

Module - V
Ethical codes and industrial relations - The Code of Discipline – Evolution of the code – Principles of the Code – Objectives of the Code of Discipline

Module - VI
The Industrial Disputes Act, 1947 - Wage Legislations - The Payment of Bonus Act, 1965 - The Factories Act, 1948

TEXT BOOK: Mamoria, Mamoria and Gankar – Dynamics of Industrial Relations – Himalaya Publishing House – Sixteenth Edition – 2008.

<div align="center">

COUSRE CODE: 131101

CONFLICT MANAGEMENT AND NEGOGIATION

</div>

OBJECTIVE: To improve Negotiation Expertise both Personal and Organizational Context.

MODULE - I

Conflict- Approach to Negotiation and Conflict- Sociological Schools of thought on Conflict-Constructive and Destructive Conflict- Conflict Chaos and Complexity Theories-a System Approach to Conflict Diagnosis-Conflict Diagnosis Managing and Resolving Conflict through Negotiation.

MODULE - II

Defining Negotiation and its Components- the Personal Nature of Negotiation- Conscious and Unconscious Determinants - Components of Negotiation Performance- Negotiation Style- Assessing Negotiation Styles- Four Major Negotiation Styles- Choosing the Appropriate Styles-Learning Creativity-Dynamic Interaction among Personality, Interest, Goals, Context, and Others.

MODULE - III

Key Negotiation Temperaments- Four Main Alternative Preferences- - Four Key Negotiating Temperaments-Other Indicative and Related Facets of Personality- Assessing Your Primary Negotiating Temperament- Communicating in Negotiation-the Communication Process-Rules for Effective Listening in Negotiation-Rules for Effective Speaking in Negotiation- Body Language-Electronic Communication-Reflection and Practice.

MODULE - IV

Interests and Goals in Negotiation-Types of Goals- Evaluating and Ranking Goals-Changing Goals- Prospective Goals-Retrospective Goals- Goals and Your Negotiation Strategy-The Negotiation Process and Preparation –Negotiating Terminology-Strategy-Style-Counterparts-Tactics- Gambits-Techniques-Stages of the Negotiation Process- the Preparation Stage-Preparation Evaluation.

MODULE - V

Alternative Styles, Stratergics and Techniques of Negotiation-Negotiation- The Stages of Negotiation- Different Styles and Ethics-Team Negotiation –Additional Complexities of Teams- Group Dynamics- Negotiation in Leadership and Public Relation- Meaning - Skills are Necessary to Lead- personality Character Tics affect Leadership Behavior-Key Concept of Mass Communication for Leading Public Relations.

MODULE - VI

Using Personal Negotiation Power- Developing a Personal Negotiating Strategy-Quiz-the Individual Nature of Negotiation-Matching Personality and Temperament to Style and Tactics- Predicating Behavior- the Problem Counterpart- Negotiating in Competitive Systems- Post –Negotiation Evaluation-Assessment Tools-Check your Personal Excellence Progress (PEP).

TEXT BOOK: Barbara A.Budjac Corvette – Conflict Management – Pearson – First Edition – 2007.

COUSRE CODE: 131103

ORGANISATIONAL CHANGE

OBJECTIVE: To evaluate the understanding importance of any organization to adopt itself to an ever changing environment.

MODULE – I

Change definition – Significance – Imperative of charge – force of change – models of change – Lewins force field, internal and external – Planned and unplanned change and Transition management.

MODULE – II

Change and its Impact – reasons for people resisting change – overcoming resistance change and the Person – Change and the Manager – Corporate Culture – Key factors in Change Management – Culture Change – designing change.

MODULE – III

Organizational Development (OD) definition – Characteristics – Evolution of OD – Assumptions and model of OD – Action Research as a process – diagnostic models – diagnostic skills – Change agent – rules of change agent – client – consultant relationship.

MODULE – IV

Power politics issues in organization – Concept and dimensions – Types of Power ethics in OD – OD intervention techniques – interpersonal, Team development and group intervention strategies.

MODULE – V

Knowledge management (KM) definition – Need for KM – road blocks – History of KM what is KM – dynamics of Knowledge creation – types of knowledge various approaches to KM.

MODULE – VI

Implementing on KM – Knowledge networking – building external networks - organizational learn up – Senge, Nonaka and Takeuchi"s Approach – Steps in Organization Learning.

TEXT BOOK

Kavita Singh "Organisation Change and development" Excel Books.

COURSE CODE: 131102
TEAM DEVELOPMENT AND LEADERSHIP

MODULE I

Team work – Introduction- Meaning– Differences between team and group –Scope and Significances– Synergy and Diversity – Classifications– Advantages and Disadvantages– Team work as a OD Intervention – Content and Processes– Team work as a learning experiences – Character tics of effective teams- Team performances curve.

MODULE II

Team development stages –Group norms – Facilitation scheme– Feedback– Team decision making approaches – Conflict resolution and collaboration in teams – Role of organization culture in team work – Selection and development of team members.

MODULE III

Self Managed Work Teams (SMWT) – Meaning and scope of SMWT - Advantages and disadvantages of SMWTs – Virtual teams – Meaning and scope and objectives – Advantages and disadvantages – Barriers of communication and the challenge of supervision in virtual teams.

MODULE IV

Leadership – Meaning – Definition – Role and significance of leadership in organization – Theories of leadership – Types of leaders – Transactional and transformational leadership.

MODULE V

The challenges of globalization and technology to leadership development – Change management and leadership – Leadership function – Development of People – Processes and results.

MODULE VI

Strategic Leadership – Leadership succession – Political power and strategic leadership.

Text book

Lussier, "Effective Leadership", Cengage

COUSRE CODE: 130803

COMPENSATION MANAGEMENT

MODULE – I

Compensation and Organisational Strategy – Lifestyle and Compensation – Pay and Social Class – Reward System – Compensation System – Compensation Dynamics – Rates of Pay – Compensation Program – Jobs and Pay in India

MODULE – II

Strategic and Tactical Compensation Issues – Employees - A Critical Resource – Division of Labour – Pay Relationships – Legislation and Compensation – Indian Legal System – Minimum Wages Act, Employee Compensation Act, Apprenticeship Act, Bonus Act

MODULE – III

Job Analysis – Gaining Employee Acceptance – Collecting and Describing Job Data – Job Facts – Job Contract – Elements of Job Descriptions – Job Requirements and Pay – Job Evaluation – Job Ranking – Market Pricing Approach – Maturity Curve Method.

MODULE – IV

Polit Factor Method of Job Evaluation – Job Evaluation Committee – Determining The Need for a Survey – Preparing for the Survey – Identifying Survey Methods – Designing the Survey – Using Third Party Surveys

MODULE – V

Pay Structure Architecture – Pay for Performance – Application of Motivation Theories – Merit Pay –Performance Appraisal Issues and Opportunities – Designing a File Content – Short Term Incentives – Premium and Differentials – Individual Based Bonus and Rewards

MODULE – VI

Long Term Incentive and Deferred Compensation Plan – Executive Compensation – International Competition – Benefits Administration – Employee Benefits – QWL And Pay Administration

TEXT BOOK:

Richard I. Henderson, "Compensation Management in a Knowledge based World", Pearson Education, 10th Edition

COURSE CODE: 130104

MARKETING MANAGEMENT

OBJECTIVES: To gain knowledge in the concepts of marketing and to acquire capability in strategies formulations and tactics development.

MODULE I

Introduction – Definition – Scope of marketing - demands situations – key customer markets – Market Environment – Marketing concepts – target market – marketing mix – tasks of Marketing Managers.

MODULE II

Marketing strategies - Value chain – strategic alliances – Marketing information System – Marketing organisations – Marketing resource - Assessing Market Demand – Creating consumer value – classification of markets.

MODULE III

Consumer behaviour – cultural, personal, psychological factors – Market Segmentation – geographic, demographic, psychographic, behavioural, volume and benefit buying process – Institutional marketing.

MODULE IV

Brands – Brand Equity – Products – Product life cycle – classification of products – product differentiation – Market positioning – Product line – New product development - Packaging, labeling, warranties and guarantees - Marketing of Services.

MODULE V

Pricing – Pricing objectives – Pricing strategies – Discounts and allowances impact of price change – distribution of networks and channels – wholesaling and retailing – Marketing logistics – modifying channels.

MODULE VI

Marketing Communication – Promotion – advertising – sales promotion – publicity and public relations – Direct marketing and personal selling – managing sales force – global markets – E-business.

TEXT BOOK: Philip Kotler, Kevin Lane Keller, Marketing Management PHI, 12th edition.

REFERENCE
1. Willam J. Stanton, Michael J. Etzel, Marketing Concepts and Cases, TMH 13th Edition.
2. Tapan K. Panda, Marketing Management, Text and cases, Excel books, 2nd Edition.

COUSRE CODE: 131201

MARKETING RESEARCH AND CONSUMER BEHAVIOUR

OBJECTIVE: To address all the issues concerned with understanding of marketing research and consumer behavior.

MODULE –I

Role of marketing research – Marketing intelligence and MR – Applications of MR – limitations – Secondary and Primary Research – Ethical considerations –Research design : Exploration descriptive and casual –Research methodology –Sampling methods and analysis.

MODULE-II

Sources of Secondary Data – qualitative research techniques – Questionnaire design – Structured and unstructured   Types of questions – Sample size- Sampling technique – sampling errors –field work design –Selection of respondent and organizing –Data compilation and preparation.

MODULE –III

Statistical analysis –Hypothesis testing – Univariate and Bivariate analysis – one waqy and two way ANOVA – correlation and regression – Discriminant and con-joint analysis – Factor analysis – Cluster analysis – perceptual mapping – Report Preparation.

MODULE – IV

Consumer market – Model of Consumer behaviour – characteristics affecting consumer behaviour – opinion leaders – Social strata – Personality and self concept – Complex buying behaviour – hatritual buying behaviour.

MODULE – V

Buyer decision makeup process – Motives Post Purchase digssnance – decision process for new products – adoption process – Global buyer behaviour – Howard – Seth model – business buying behaviour – Types of buying situation.

MODULE – VI

Participants in organizational buying process – influences – buying process – e procurement.

TEXT BOOK:

Suja Nair, Marketing Research and Consumer Behaviour, Himalaya Publishing House.

COURSE CODE: 131202
SALES AND DISTRIBUTION MANAGEMENT

OBJECTIVE: To acquire knowledge in sales management and Distribution domain.

MODULE – I

Evolution of Sales Management – nature and importance – Sales Objective - selling process, Strategies and tactics – Emerging Trends – Buying Decision Process – Situations – Role of Marketing and Selling – Sales forecasting techniques – Sales Budgets.

MODULE – II

Sales quota – Sales Territory – Designing – assigning Sales people - managing-Concepts of Sales organization- Specialization – Size of the sales force – recruiting and selecting-sales force – training- motivating-compensating and reading the sales force – controlling sales force.

MODULE – III

Sales force expenses – Marketing Audit – Sales force Audit- evaluation of effectiveness of Sales organization –Distribution management – need for distribution channel – channel levels.

MODULE –IV

Retailing – retailer as salesman – Global rebilling scheme – Types of retailers – role of retailer – retailing strategies – store design – franchising – e-tailing – wholesaler – functions – classification – limitations of wholesalers.

MODULE –V

Channel design factor – ideal structure –Selecting channel partners – Training up, Motivating and evaluating channel members – Channel design implementations – Channel power – Channel design – Channel conflict.

MODULE –IV

Principles of Channel management – policies – Distribution of services – elements of channel information systems – logistics –Definition – origin – Key activities focus areas of SCM – IT as enabler of SCM – selling in international markets

TEXTBOOK: Krishna K Havaldar and Savant M Cavale, "Sales and Distribution Management, TMH

COURSE CODE: 131203

ADVERTISING AND SALES PROMOTION

OBJECTIVE: To understand the role and nature of advertising concepts, agencies, markets and to create cutting edge global communications strategies.

MODULE I

Evaluation of integrated marketing communication – reasons- role of IMC in branding – promotional mix – IMC planning process – marketing strategy and analysis – target – marketing process – product decisions – price decisions – distribution channel decisions – push and pull strategies.

MODULE II

Organizing for advertising and promotion – clients role – centralized system – in house – agencies – ad agency role – agency compensation – specialized services – model of communication – process – response models – traditional and alternative response hierarchies – Foote cone & Belding (FCB) grid.

MODULE III

Persuasion matrix – source factors – message factors – channel factors – promotional objectives – communication objectives – DAGMAR – problems in selling objectives – budgeting approaches – promotional budget.

MODULE IV

Advertising creativity – perspectives –planning creative strategy – creative process – creative strategy development - advertising appeals – creative tactics – media planning – media objectives – media strategies – media mix scheduling – reach versus frequency – broadcast media – print media – support media.

MODULE V

Direct marketing – direct selling – internet advertising – sales promotion personal selling in internet – measuring effectiveness of the internet – scope and role of sales promoting – consumer oriented sales – promotion techniques – public relations – definition – process – publicity – corporate advertising –personal selling – advantages.

MODULE VI

Reasons to measure Effectiveness – conducting research – the testing process – program for measuring – importance of international markets – international adverting and promotion- global versus local advertising – role of other promotional mix international marketing – self regulation by advertisers and agencies – advertising council of India – deceptive advertising – advertising and promotion ethics – economic effects   of advertising.

TEXTBOOK:

George E.Belch & Michael A.Belch, "Advertising and Promotion", Tata McGraw Hill, Sixth Edition.

COURSE CODE: 131204

STRATEGIC MARKETING

OBJECTIVE: To provide exposure in global marketing strategies and build strategic marketing capabilities.

MODULE I

Strategy – Definition - Components – Hierarchy – Corporate Strategies – Business level strategy – Marketing strategy – Market oriented management – Formulating and implementing marketing strategy – Market opportunity analysis.

MODULE II

Marketing Plan – Firm's vision, mission and Objectives – Criteria - Formulating objectives – Social values and ethical standards – Gaining competitive advantage – Michel Porters model –Ansoff Product matrix – BCG Matrix – Portfolio models.

MODULE III

Sources of Synergy – Knowledge based synergies – Corporate identity and corporate brand – Corporate branding strategy – Generic business level corporate Strategies –SBU level strategy – Strategic fit – Understanding market opportunities – Segmentation strategy – Niche market strategy – Mass market strategy.

MODULE IV

Products mix strategies –Differentiation and positioning strategies – Strategy for new markets – Product life cycle strategies – Market leader strategy – Follower strategy – Offensive and defensive strategies – Pricing strategies.

MODULE V

Strategies for growth markets – Market leader strategies - Market share growth strategies – Strategic choices for mature market - Strategies for declining market.

MODULE VI

Strategic for new economy markets – Strategic alliances – Strategic Brand Management – Promotion Strategies – Designing marketing metrics – Strategic information systems for marketing.

TEXT BOOK: Walker Mullins and Boyd Larreche, "Marketing Strategy ", TMH

COURSE CODE: 130101

PRINCIPLES OF MANAGEMENT

OBJECTIVE: To expose with the challenges of New Millennium and to increase the confidence level.

MODULE I

Management science:Definition-evolution of management Thought-contribution of F.W.Taylor, Henri Fayol, Elton Mayo, Mary Parker Follet, Rensis Likert, Chestard Bernard, Douglous McGregor, Peter Drcker, Mickel Porter and C.K. Prahalad- Functions of Managers - Scientific Approach, System Approach and Contingency Approach.Planning-Types -Steps-MBO-MBE-Strategies-Policies-Planning Premises - Decision Making - Risk and Uncertainty - Decision Trees.

MODULE II

Organisation: Formal and Informal-Span of Management-Organisation Structure-Departmentation-Line and staff relationship -Centralisation Vs. Decentralisation-Organisational Culture-Cultural Diversity-Multi Ethnic Workforce -Organising Knowledge resource.

MODULE III

Leadership: Leadership Styles -Motivation-Motivation Theories-Maslow-X-Y theory, Two Factor Theory-Equity theory-Vrooms Expectancy theory-ERG theory-Committees-Teams and Groups.

MODULE IV

Controlling: Process:Standards and Bench Marking-Core Competence-Competitive Advantage of Industries and Nation, Co-ordination-Principles of Co-ordination-Inter-dependence.

MODULE V

Knowledge Management - Creativity and Innovation - Quality Concepts-Business Process Outsourcing.

MODULE VI

Challenges in Management: Change Management -Timing of Change-Reaction to change-Planning organisational Change-Technological Change-Effective use of Communication Devices and IT.

TEXT BOOK

Heinz Weihrich, Mark.V.Cannie, Harold Koontz, Management, 12th Edition , TMH Publication.

REFERENCE

1   Management – Rocky W. Griffin – Biztantra, 8th Edition, 2005

2   Management: Tasks, Responsibilities, Practices – Peter F. Drucker- Harper Collins Publishers

3   Modern Management – Samuel Certo – 9th edition –PHI

<div align="center">

COURSE CODE: 131301

PURCHASING MANAGEMENT

</div>

MODULE I

Purchase policy- Rate and Running Contract – Subcontracting- Systems Contract – Stockless purchase –Buying seasonal items – Forward Buying – Hedging – Purchasing Activities – Indent Status – A to Z of Purchase Order –Transportation – Incoming Inspection – Bill settlement –Documentation.

MODULE II

Meaning of Right Price – Price Analysis – Determination of Right Price – Influencing Factors on Pricing – Classification of Pricing – Price Forecasting - Right Place – Purchase Budgets – Budgetary control – Need Identification Problems – Definition of lead time Elements- Cost Reduction and Lead time.

MODULE III

Right Source – Relevance of Right source – Identification of Right Source – Source Selection – Source Registration Information on choice of Sources – Source Development –Right Buyer – Sellers Relation – Evaluation of Suppliers – The Buyer's Role – Role of the Vendor – Tips for Improvement- Interviews – Vendor Rating .

MODULE IV

Relevance of Good Supplier – Need for Vendor Evaluation- Goals of Vendor Rating- Advantages of Vendor Rating – Computer and Vendor Rating –Categorical Plan- Weighted Point Plan – Cost-ratio Method –Forced Decision Matrix – Key Question Approach.

MODULE V

Negotiations – Objectives of Negotiations Process – Price Factor – Other Parameters – Strategy and Tactics - Qualities of a Negotiator –Guidelines for Negotiation – Negotiations Techniques- Theory fo Bargaining – Precautions in Negotiations.

MODULE VI

Legal Aspects of Buying –Relevance of Legalities – Law of Agency – Power of Attorney – Sale of Goods – Transit Damages – Inspections and Acceptance – Law of Carriage of Goods - Bailment –Transfer of Title – Negotiable Instrument – Arbitrations – sales-tax laws – Octroi Formalities – Excise Duty – Purchase Conditions .

TEXT BOOK:

P. Gopalakrishnan – Purchasing and Materials management – Tata McGraw Hill – 23rd Edition – 2008.

COURSE CODE: 131302

INVENTORY MANAGEMAENT

MODULE I

Role of Material Management – Classes of Materials – Materials and Profitability – Profit Center Concept- Contribution to Profits –Policy Manual– Organization of Material Function – Organization Structure – Internal Interface - External Environment- Centralized Purchasing – Decentralization – Delegations of Powers.

MODULE II

Material Planning – Definition - Influencing Factors –Materials Requirement Planning – Use of Standard Deviation – Exponential Smoothing – Importance of Material Research- Advantages of MIS – Techniques of Materials Intelligence – Environment Conditions – Source of Information.

MODULE III

Relevance of Computers – The Computer Relevance – Software and Hardware – Material Information System- Reports and Information Needs – Identification – Evaluation of Code – Names of a Pin – Classification –Methodology of Codification – Coding Structure Design – Advantages of Codification – International Codification .

MODULE IV

Relevance of Standardization – Definition of Standards – Specification – Indian Standards – ISI Certification Marks Scheme- Company Standardization – Techniques of Standardization – Problems and Constraints – Value Analysis and Cost Reduction – Techniques– Brain Storming – Steps for Value Analysis – Matrix Method – Road Block to Value Analysis .

MODULE V

Learning Curve –Uses– Learning Factor –Drawing the Curve – Interpretation – Pitfalls – Creating Learning Conditions – Role of Finance – Materials Holding Costs – Acquisition Cost – Settlement of Bills – Accounting- Audit in Materials Management – Internal Audit – Operational Audit

MODULE VI

Inventory Management and EOQ – Cost and Consequences – Right Quantity Example – Economic Ordering Quantity – Derivations of EOQ – Staggered Deliveries – Ready Reckoner

TEXT BOOK: P. Gopalakrishnan – Purchasing and Materials management – Tata McGraw Hill – 23rd Edition – 2008.

COURSE CODE: 131303

LOGISTICS AND SCM

OBJECTIVE: To present the vision of the future of business logistics and supply chain management and their role in enterprise competitiveness.

MODULE I

Logistics - Importance –Value Generation and Proposition – Service Benefits – Cost Minimizations – Functions – Logistics Design and Operational Planning - Planning Methodology –Design Decisions – Design Logic –Transportation Decisions – Freight Lane Analysis – Inventory Analysis

MODULE II

Procurement and Manufacturing - Quality Imperative – Dimensions– Total Quality Management – Quality Standards – Procurement – Procurement Perspectives – Procurement Strategies – Purchase Requirement Segmentation - E-Commerce– Manufacturing – Manufacturing Perspectives – Manufacturing Strategies – Total Cost of Manufacturing – Logistical Interfaces – Just-in-Time.

MODULE III

Transportation Infrastructure - Transport Functionality, Principles, and Participants – Transport Functionality – Transport Principles – Transport Participants – Transportation Regulation – Transportation Structure – Transportation Operations - Logistical Integration – Documentation – Bill of Lading – Freight Bill – Shipment Manifest.

MODULE IV

Strategic Warehousing –Benefits – Warehouse Operations – Handling – Storage – Warehouse Decisions – Site Selection – Design – Product-Mix Analysis – Expansion – Materials Handling – Layout –Warehouse management Systems – Accuracy and Audits – Security – Safety and Maintenance

MODULE V

Global Supply Chain Integration – Managing the Global Supply Chain – Supply Chain Security – International Sourcing – Rationale– Challenges for Low-Cost-Country Sourcing –Total Cost Network – Formulating Logistical Strategy – Threshold Service – Service Sensitivity Analysis – Finalizing Strategy.

MODULE VI

Information System Functionality – Comprehensive Information System Integration – ERP or Legacy Systems –Global Data Synchronization – Internet – Extensible Markup Language – Rationale for ERP Implementation –ERP System Design – Supply Chain Information System.

TEXT BOOK: Bowersox, Closs and Cooper – Supply Chain Logistics Management – Tata McGraw Hill – Second Edition – 2008.

COURSE CODE: 131304
STOREKEEPING AND WAREHOUSING

OBJECTIVE: To familiarize the concept of Storekeeping and warehousing.

MODULE I

Warehousing Management - Objectives of Stores – Location and Layout – Prevention – Management of Receipts – Issue Control – Stores Documentation

MODULE II

Stock Valuation And Verification **-** Need for Valuation – Methods of Valuation – FIFO – LIFO – Average Price – Weighted Average – Standard Cost – Replacement Price – Stock Verification – Process of Verification

MODULE III

Disposal of Obsolete and Scrap items **-** Management of SOS – Categorization of Obsolete/Surplus – Reasons for Obsolescence – Control of Obsolescence – Control of Scrap – Responsibility for Disposal – Disposal Methods

MODULE IV

Insurance: Risk Management - Buyer's Interest – Marine Insurance – Inland Transit Insurance – Stores Insurance – Contractors All Risk Insurance – Miscellaneous Insurance – A to Z Claims Procedure – Loss Minimization

MODULE V

Spare Parts Management **-** Salient Features of Spares – Inventory Control of Spares – Categorization of Spares – Provisioning of Spares – Pricing of Spares – Relevance of Maintenance – Maintenance Costs

MODULE VI

Ethics In Materials Management **-** Importance of Ethics – Business Ethics – Ethics in Buying – Code of Ethics – Problems in Ethics – Backdoor Selling – A to Z Tips for Ethical Buying – Professionalization.

TEXT BOOK:

P. Gopalakrishnan – Purchasing and Materials management – Tata McGraw Hill – 23rd Edition – 2008.

<div align="center">

COURSE CODE: 131303

LOGISTICS AND SCM

</div>

OBJECTIVE: To present the vision of the future of business logistics and supply chain management and their role in enterprise competitiveness.

MODULE I

Logistics – Importance – Value Generation and Proposition – Service Benefits – Cost Minimizations – Functions – Logistics Design and Operational Planning – Planning Methodology – Design Decisions – Design Logic – Transportation Decisions – Freight Lane Analysis – Inventory Analysis

MODULE II

Procurement and Manufacturing – Quality Imperative – Dimensions – Total Quality Management – Quality Standards – Procurement – Procurement Perspectives – Procurement Strategies – Purchase Requirement Segmentation – E-Commerce – Manufacturing – Manufacturing Perspectives – Manufacturing Strategies – Total Cost of Manufacturing – Logistical Interface – Just-in-Time.

MODULE III

Transportation Infrastructure – Transport Functionality, Principles and Participants – Transport Functionality – Transport Principles – Transport Participants – Transportation Regulation – Transportation Structure – Transportation Operations – Logistical Interaction – Documentation – Bill of Lading – Freight Bill – Shipment Manifest.

MODULE IV

Strategic Warehousing – Benefits – Warehouse Operations – Handling – Storage – Warehouse Decisions – Site Selection – Design – Product-Mix Analysis – Expansion – Materials Handling – Layout – Warehouse management Systems – Accuracy and Audits – Security – Safety and Maintenance.

MODULE V

Global Supply Chain Integration – Managing the Global Supply Chain – Supply Chain Security – International Sourcing – Rationale – Challenges for Low-Cost – Country Sourcing – Total Cost Network – Formulating Logistical Strategy – Threshold Service – Service Sensitivity Analysis – Finalizing Strategy.

MODULE VI

Information System Functionality – Comprehensive Information System Integration – ERP or Legacy Systems – Global Data Synchronization – Internet – Extensible Markup Language – Rationale for ERP Implementation – ERP System Design – Supply Chain Information System.

TEXT BOOK:

Bowersox, Closs and Cooper, "Supply Chain Logistics Management", Tata McGraw Hill ,Second Edition, 2008.

COURSE CODE: 130205

CUSTOMER RELATIONSHIP MANAGEMENT

MODULE I

Changing Nature Of Marketing And Customer Service – Marketing – An Introduction –The Marketing Orientation – Factors Necessitating A Re-Look At Marketing Methods – Changing Social Trends – Lesser Government Controls Rising Income Levels – Threats From New Forms – Character Tics Of The Empowered Customer – Increased Demand – Easy Access To Information – Emerging Trends In Marketing –Shorter Product Life Cycles – Emergence Pf Permission Marketing – Experimental Marketing – Offering Complete Solution – Rewarding Loyal Customers

MODULE II

Disruptive Innovations – The Changing Nature Of Customer Service – Challenges In Modern Day Customer Service -Emerging Trends In Services Marketing Mix – Customer Experience –The New Differentiator – Managing Service Better – Emergence Of CRM – Economics Of Building Customer Relationship – Customer Lifetime Value – Benefits Of Customer Loyalty – Benefits Of Choosing The Right Customers – Customer Value And Customer Satisfaction

MODULE III

Precursors To CRM – Customer Value – Enhancing Value Of Products And Services – Customer Satisfaction – CRM And Customer Satisfaction – Delighting The Customer – Measuring Relationship At Risk Effects On Customer Loyalty – Role Of CRM On Various Stages Of The Studies – The Customer Lifecycle – Role Of CRM In Pre-Purchase Stage – Role Of CRM In Purchase Stage – Role Of CRM In Usage Stage - Role Of CRM In Re-Purchase Stage – Role Of CRM In Winning Back Lost Customers

MODULE IV

CRM – The Basis Concepts – Consideration To Decide The Key Customers – Strategies For Key Customers – Segmentations Campaign Management – Cross-Selling And Up-Selling – Multi – Channels – Sales Force Automation – Operational And Analytical CRM – Planning For CRM – Building Customer Centricity – Setting CRM Objectives – Defining Data Requirements – Planning The Requirements - Elements In The CRM Plan – Revalant Issues In The CRM Plan

MODULE V

CRM Strategy – Strategic Orientation For CRM - Extending The Concept Of Relationship – The Technology Orientation -   A Strategic Frame Work For CRM - Planning For Success -   Change Management – Selling Change –Training – Role of It And Tools For CRM – CRM Strategy And Technology – Capturing Data – Steps In Preparing The It Systems For CRM – Choosing The CRM Tool – Using It Systems For Better CRM – Isuses For Consideration In CRM Tools Selection – Tools For CRM – E CRM – Basic Concepts Of E CRM – Benefits Of E CRM – Steps In E CRM – Success Factors In E CRM

MODULE VI

Establishing Customer Relationship On The Internet – Complete Information For Customers – CRM Implementations – Preparing For CRM Implementation – Dimensions Of CRM Implementations – Technology Issues In CRM Implementation – Steps In CRM Implementations – Expected Benefits Of CRM Implementations – CRM Implementations – Best Practices - Guarding Against CRM Failures – A Clerly Defined CRM Stratergy – Creating The Right Culture – Proper Use Of Knowledge Management – Ensuring That The CRM Implementation Is Done Right – CRM In Practice – CRM In Manufacturing – CRM In Insurance – CRM In Airlines – CRM In Hotels – CRM In Telecom – CRM In SMB Segment

TEXT BOOK: Kaushik Mukerjee, "Customer Relationship Management", PHI, New Delhi, 2007.

COURSE CODE: 131402
RETAIL MARKETING AND COMMUNICATION

MODULE – I

Retail – definition – functions – rise of the retailer – consumerism – private label – technology – Global retail market – challenges – emergence of new markets – empowered consumer – rise of e-age – Retail as a career – buying and merchandising – marketing – store operations – visual merchandising – LSCM

MODULE – II

Evolution of retail formats – social developments – Theories of retail development – Retail lifecycle – Retail business models – on the basis of ownership – other formats – non store retailing – direct selling – direct response marketing – vending machine – cash and carry – airport retailing – services retail

MODULE – III

Retail consumer – factors influencing retail shopper – range of merchandise – convenience of shopping – family life cycle – customer decision making process – market research for setting up a retail store – international expansion – export – franchising and licensing – mergers and acquisitions – retail value chain

MODULE – IV

Concept of franchising – evolution – types – advantages and disadvantages of franchising – royalty – legal issues – types of retail store locations – isolated store – steps involved in choosing – a retail location – market identification – Herfindahl – Herschman Index – index of retail saturation – Reillys Law of retail gravitation – central place theory

MODULE – V

Organisation structure in retail – HRM in retail – retail economics – measures of performance evaluation – strategic profit model – retail marketing mix – STP approach – retail image – retail communication mix – pop – customer service in retail – customer loyalty strategies – CRM in retail

MODULE – VI

Importance of store design – interior and exterior – types of lay out – visual merchandising – methods of display – retail management information system – stocking of merchandise – factors affecting use of technology – applications of technology EDI – RFId

Text Book
Swapna Pradhan, "Retailing Management", TMG Second Edition

COURSE CODE: 131401
RETAIL OPERATIONS AND STRATEGIES

MODULE – I

Retail environment – world stage – retail environment – changing consumer – retail response – Theories of retail change – cyclical theories – environmental theories – conflict theory – combined theory

MODULE – II

Retail strategy – Strategy planning process – corporate strategy and objectives – environmental analysis – resource audit analysis – strategic choice – location strategy

MODULE – III

Retail marketing – environment – marketing strategy and objectives – market segmentation – retail branding – service marketing mix – role of the retail buyer – principal buying activities – buying function

MODULE – IV

Retail logistics – retail supply chain – efficient consumer response – logistics culture in international markets – customer service definition – characteristics – improving quality of customer service

MODULE – V

Retail selling and product – classification – types of buying decision – shopping motives – buying process – scale of retail crime – types of retail crime – retail loss prevention

MODULE – VI

Internationalization of retailing – sourcing of products and services – store development – reshaping of global retail market – growth of e-commerce – online store attributes – E-fulfillment – B2B market

TEXT BOOK

John Fernie, Suzanne Fernie and Christoper moore, "Principles of Retailing", Elserier 2007

COURSE CODE: 131403
MERCHANDISING MANAGEMENT

MODULE – I

Merchandising – definition – evolution – factors affecting merchandising function – role and responsibility of a buyer – function of buying for different types of organizations – independent store – chain store – non-store retailers – concept of lifestyle merchandising

MODULE – II

Merchandise planning concepts – implications of merchandise planning – merchandise planning process – sales forecast – merchandise requirements – merchandise control – assortment planning – range plan – model stock plan – tools for merchandise planning

MODULE – III

Merchandise sourcing – method of processing merchandise – identification of supply sources – vendor evaluation – negotiation – analyzing vendor performance – concept of private label – evolution and advantages – category management components and business process – role of category captain

MODULE – VI

Retail pricing – concept and elements of retail price – Break even units – markup pricing – maintained markup – market skimming and penetration strategies – price bundling – leader pricing – multiunit pricing – every day low pricing – single and multiple pricing

MODULE – V

Merchandise performance evaluation – comparison of markups and mark downs – merchandise allocation – ABC analysis – sell through analysis – multiple attribute method – concept of Gross – Margin return on investment (GMROI)

MODULE – VI

Merchandising mix decision – on shelf and visual merchandising – shop displays Benefits types – online retailing – features – suitability of the electronic channel – online retailing and pricing – non store retailing – web based marketing

TEXT BOOK

1. Swapna Pradhan, "Retailing Managament", Tata McGraw Hill
2. Meenal Dhotre, "Channel Management and Retail Marketing" Himalaya Publishing

COURSE CODE: 130604

INTERNATIONAL LOGISTICS MANAGEMENT

MODULE – I

International trade volume – Historical development – International Logistics definition – Components – Economic Importance – method of entry into foreign markets – Indirect exporting – active exporting - Marketing subsidiary - foreign sales corporation – Contract manufacturing – Licensing – Franchising – Parallel Imports – Foreign trade zone

MODULE – II

International sales contracts – Agencies and Distributorship – Contract Law – Home country Restrictions – Elements of distribute contract – Force Majeure – Profitability or commission – Understanding Inco-terms – Ex-works – delivery, free carrier (FCA) – FAS – FOB – CFR – CIF – DDV – DDP

MODULE – III

Terms of payment – Country risk – Commercial risk – Cash in advance – Factoring – Letter of Credit – Sight draft – Time draft – Trade Card – Basic Guarantee – Payment of Currency – Exporters, S – Third party – Theories of Exchange Rate – Power Party – Fisher effect – Exchange Rate – Forecasting – Market fledging – IMF – World Bank EXIM Bank

MODULE – VI

Commercial Invoice – Performa Invoice – export Licenses – Suppliers declaration – Export Taxes and quotas – Certificate of Origin – Consumer Invoice – Bill Lading – Airway Bill – Packing list – Shippers letter of Instruction – Shipment of dangerous goods – EDI – SWIFTS Bolero System

MODULE – V

International Insurance – Cargo movements – water damage – Theft – Privacy – pilferage – Other risk – perils with air shipments – Risk Retention – Risk Transfer – Marine Cargo Insurance – Coverage A,B,C classes – Elements of air freight Policy – Commercial Credit Insurance – Size of Vessels, Tonnage, Types of vessels- Container, Combination ships – Non vessel operating carriers

MODULE – VI

International Air transportation – Types of aircrafts – Air cargo Regulations – Truck and Rail Transportation – Inter model – pipe lines – Packaging objectives – TCL,LCC – Refrigerator – goods – customs duty – Non Traffic barriers – customs cleaning process – International logistics Infrastructure

TEXT BOOK:

Pierre David, "International Logistics", Biztantra.

<div align="center">

COURSE CODE: 131501

SUPPLY CHAIN MANAGEMENT

</div>

OBJECTIVE: To assess and understand the strategic importance of SCM along with quantitative models.

MODULE I

Supply Chain definition – Objectives – Types – Various definitions – Drivers – Need for SCM – SCM as a profession – SCM decisions and skills – Strategy formulation in SCM – Value in Supply Chain – Tradeoffs – CRM Strategy relationship matrix

MODULE II

Strategic Sourcing – Source evaluation – collaborative perspective – Buyer-Supplier Relationship – Partner Selection – develop of Partnership – importance of inventory – imbalances – uncertainties – inventory costs – inventory turnover ration

MODULE III

Transportation Selection – Tradeoff – modes of transportation – models for transportation and distribution – factors affecting network effectiveness – 3 PL advantages – Indian transport infrastructure – IT solutions – EDI, e-Commerce, e-Procurement – Bar Coding and RFID technology

MODULE IV

Critical business processes and information systems – DBMS – benefits of ERP – information system and bull whip effect – SCM software packages – modeling concepts – Traveling Salesman Problem – Vendor analysis model – Coordinated SCM – Simulation modeling

MODULE V

Reverse Vs forward supply chain – types of reverse flows – collaborative SCM's and CPFR – agile systems – sources of variability – characteristics – supplier interface – internal processes

MODULE – VI

Supply Chain Management and profitability – quality management – mass customization and globalization – ethical Supply Chains – e-business and SCM –Balanced Score Card – Benchmarking, Performance measurement

TEXT BOOK

R.P Mohanty, S.G Deshmuki "Supply Chain Management" Biztantra, New Delhi

COURSE CODE: 131503

TOTAL QUALITY MANAGEMENT

OBJECTIVE: To understand the Total Quality Management perspective this is mission critical.

MODULE I

Total Quality Management Evolution – Definition of Quality – Dimensions –QC- QA – QP Concepts –Quality Management – Cost of Quality Failure Cost – Reducing Costs – Juran's model – Analysis of COQ for improvement .

MODULE II

Definition of TQM – Elements – Deming's 14 points – TQM tools and techniques – Planning phase of TQM – Barriers to TQM implementations.

MODULE –III

Service quality – Features- customers delight – Kano model – Perceived Quality – Employee Involvement –Employee Motivation –Team work – Effective Communication – Training and Motivation -Performance Appraisal.

MODULE IV

Continuous process improvement – Juran's Trilogy – Kaizen – BPR and TQM – supplier importance Selections. Standards – Quality audit –supplier rating systems –Balanced score card.

MODULE V

Process Control –Flow Charts – Scatter Diagram –Pareto Chart – Control Chart – Central Limit Theorem – Six Sigma , Definitions, Origin ,Process Models – Benchmarking – Type, Process Models- Benchmarking – Type, Process – QFD – Taguchi's Loss Function – Total Productive Maintenance.

MODULE VI

Quality systems – ISO 900 – QMS – Management responsibility – Environmental management systems 14001 –Quality awards – Deming price European and Indian quality awards.

TEXT BOOK:

 Dale H. Besterfield, Carol Besterfield, Glen Besterfield and Mary Besterfield – Total Quality Management – Prentice Hall of India – Third Edition – 2007.

<div align="center">

COURSE CODE: 131502

PURCHASING AND INVENTORY MANAGENMENT

</div>

MODULE I

Purchase policy- Rate and Running Contract – Subcontracting- Systems Contract – Stockless purchase –Buying seasonal items – Forward Buying – Hedging – Purchasing Activities – Indent Status – A to Z of Purchase Order –Transportation – Incoming Inspection – Bill settlement –Documentation.

MODULE II

Meaning of Right Price – Price Analysis – Determination of Right Price – Influencing Factors on Pricing – Classification of Pricing – Price Forecasting - Right Place – Purchase Budgets – Budgetary control – Need Identification Problems – Definition of lead time Elements- Cost Reduction and Lead time.

MODULE III

Relevance of Good Supplier - Advantages of Good Relations –Prerequisites –Evaluation of Suppliers – The Buyers Role – Role of the Vendor –Relevance of Good Suppliers – Need for vendor evaluation – Goals of Vendor Rating – Advantages of Vendor Rating – Parameters of Vendor Rating.

MODULE IV

Role of Material Management – Classes of Material – Materials and Profitability – Profit Center Concept – Material Objective – Organizational Structure – Internal Interface – External Environment –Centralized Purchasing- Decentralizing – Delegation of Powers – Material and User Department – Manpower Planning.

MODULE V

Introduction to Planning –Advantage of Planning –Definition of Material Planning –Bill of Material – Material Requirement Planning – Importance of Material Research- Definition – Advantages of Materials Information System.

MODULE VI

Codification – Classification – Methodology–Requirement of codes – Coding Structure and Design –Advantages - International Codification – Cost and Consequences – Right Quantity – Economic Ordering Quantity – Derivations of EOQ.

TEXT BOOK:

P. Gopalakrishnan – Purchasing and Materials management – Tata McGraw Hill – 23rd Edition – 2008.

COURSE CODE: 131304
STOREKEEPING AND WAREHOUSING

OBJECTIVE: To familiarize the concept of Storekeeping and warehousing.

MODULE I

Warehousing Management - Objectives of Stores – Location and Layout – Prevention – Management of Receipts – Issue Control – Stores Documentation

MODULE II

Stock Valuation And Verification **-** Need for Valuation – Methods of Valuation – FIFO – LIFO – Average Price – Weighted Average – Standard Cost – Replacement Price – Stock Verification – Process of Verification

MODULE III

Disposal of Obsolete and Scrap items **-** Management of SOS – Categorization of Obsolete/Surplus – Reasons for Obsolescence – Control of Obsolescence – Control of Scrap – Responsibility for Disposal – Disposal Methods

MODULE IV

Insurance: Risk Management - Buyer's Interest – Marine Insurance – Inland Transit Insurance – Stores Insurance – Contractors All Risk Insurance – Miscellaneous Insurance – A to Z Claims Procedure – Loss Minimization

MODULE V

Spare Parts Management **-** Salient Features of Spares – Inventory Control of Spares – Categorization of Spares – Provisioning of Spares – Pricing of Spares – Relevance of Maintenance – Maintenance Costs

MODULE VI

Ethics In Materials Management **-** Importance of Ethics – Business Ethics – Ethics in Buying – Code of Ethics – Problems in Ethics – Backdoor Selling – A to Z Tips for Ethical Buying – Professionalization.

TEXT BOOK:

P. Gopalakrishnan – Purchasing and Materials management – Tata McGraw Hill – 23rd Edition – 2008.

131601 - TRANSPORT PLANNING SYSTEMS AND TRAFFIC ENGINEERING

OBJECTIVE: To make the students to understand the principles and practices of transport policy and planning, traffic surveys and management, and road design.

MODULE 1:

The road –railways –bicycles and motorcycle-impact on public transport –market segmentation for public transport- impact on the environment –transport administration –central and state governments-local authorities

MODULE 2:

Transport planning- normal, generated and induced traffic- integrated transport study- economic assessment-environmental assessment –transport policy- formalities objectives- qualifies objectives and targets- indicators for different transport policy- infrastructure measures – management measures –pricing

MODULE 3:

Economic efficiency and markets- valuing costs and benefits –transport efficiency- generated traffic- environmental effects-economic regeneration considerations appraisal of pricing policy- role of models in the planning process- utility maximization –population estimates.

MODULE 4:

Time series model- averaging and smoothing- regression analysis-matrix estimation models- elasticity models- simulation models –current trends in modeling- traffic planning strategic-do-minimum approach-land use planning approach

MODULE 5:

Public transport oriented approach- demand management approach- transport packaging – parking policy –town centre parking- park and ride- planning for pedestrian, cyclists and disabled people-characteristics and requirements-ramp gradient- role of passenger transport systems in urban and non-urban areas- inter urban travel.

MODULE 6:

Bus based systems-track based systems- metro- monorail commercial services-trends in freight transport-traffic surveys –public transport user surveys-traffic flow theory- road capacity- road accidents-engineering and road safety-signt distance requirements-basic and ancillary cross section elements –intersection design –roundabouts- over bridges- moss-off-street parsing=road lighting.

Text Books:

CAO' Flaherty,"Transport planning and Traffic engineering," Elsevier Publishers, 2006

131602 - AIR TRANSPORT

MODULE 1:

History, methods and mode of Transportation – model competition – economic importance – Transport as a factor of production – international transportation – Importance of international transportation – Logistics – Freight distribution

MODULE 2:

Concepts and types of aviation – History of civil aviation industry – aviation technology transportation – aviation economics or management – Aircraft manufactures – Airbus industrie – Boeing – New generation aircraft Airbus 380 – Boeing Technology

MODULE 3:

Air transport and the economy – world air transport overview – benefits of air transport – size of the industry – air transport and travel in dues by international tourism – Air transport and FDI

MODULE 4:

Aviation management structure – operational management – Air freedom rights – Air alliance and mergers – price competition – open sky policy – airline operating costs – Airline pricing – Domestic airline industry – Low cost carrier

MODULE 5:

Infrastructure management – Airport management – airport functions – airport terminals – airport planning management – runways – taxiway – airport capacity management – Terminal management and Apron management – civil aviation policy

MODULE 6:

Air space management – air traffic control facilities – airports and airspace congestion issues – international civil aviation organization – objectives – IA7A – UFTAA – federal aviation administration – DGCA India – Strategic alliance in airline industry airport privatization India

Text Books:

P S Senguttuvan- "Fundamentals of Air Transport Management" – Excel Books

131603 - ROAD AND RAIL TRANSPORT

OBJECTIVE: To provide a complete knowledge on design concepts and construction practices about road and rail transport.

MODULE 1:

Road Transport – Definition – Advantages and Disadvantages – Role of Roads in India's Economy – Road Development Plan – Highway Administration and Finance – Long Term Highway and Transport Planning – Surveys – Design, Drawings, Estimates and Project Report – Tenders, Contracts and Specifications.

MODULE 2:

Highway Maintenance – Need for Maintenance – Maintenance of Roads – Maintenance of Surfaces – Maintenance of Shoulders – Maintenance of Bridges and Culverts – Hill Road Maintenance – Maintenance Practice in India – Maintenance Management System - Highway Safety – Road Accidents and Highway Design – Road Signs – Road Markings – Traffic Signals – Road Making Machinery – Role of Labours in Road Construction

MODULE 3:

Highway Economics – Economics of Pavement Types – Economic Evaluation of Highway Projects – Financial Analysis of Highway Projects – Road Pricing – Road Construction Programming and Management – Quality Assurance in Highway – Highway and the Environment – Trends in Highway Engineering – Road Development Plan: 2021 – NHDP - Institutional Issues

MODULE 4:

Rail Transport – Basics – Future of Railways – Indian Railways – Railway Surveys – Reasons for Laying a New Railway Line – Factors Influencing – Categories – Project Report and Drawing – Construction of New Lines – Train Resistances – Rolling Stock – Locomotives – Coaches – Wagons – Train Brakes – Rail Gauges.

MODULE 5:

Rails – Basic Requirements – Functions – Types – Weight and Section of Rails – Length of Rail – Welding and Wear of Rails – Renewal and Failure of Rails – Maintenance – Necessity for Track Maintenance – Maintenance of Track, Railway Bridges and Rolling Stock – Accidents – Signaling during Maintenance – Tools Required during Maintenance.

MODULE 6:

Stations – Definition – Purposes – Site Selection – Features – Types – Platforms – Yard – Definition – Types – Level Crossing – Station Machinery - Signaling – Objectives – Types – Typical Layout – Control of Movements of Trains – Telecommunication - Materials Management.

Text Books:

1. Dr. L.R. Kadyali, Dr. N.B. Lal, "Principles and Practices of Highway Engineering", 5th Edition, Khanna Publishers, 2008

2. Rangwala, "Railway Engineering", 20th Edition, Charotar Publishing House, 2008

131604 - ENVIRONMENTAL MANAGEMENT

OBJECTIVE: To understand the implication of Environment damage and resource depletion and to upgrade the Environment

MODULE 1:

Meaning – Importance – Selected concepts of ecology – Ecological services – International efforts for environmental protection.

MODULE 2:

Global warming – Effects – Measures to control – Ozone depletion – Ozone depletion and Business –Green freeze Refrigerator

MODULE 3:

Environmental management system – Installation – Certification – Standards – Actual conduct of Audit – Indian Scene – Green Rating Project

MODULE 4:

Key function of the Government Agencies – Environmental impact assessment – Environmental compliance status in India – Constraint – Small scale industries

MODULE 5:

Bio-diversity – Bio-diversity in south – Acquisition of biological Health – Formers Right – The patent and Intellectual Property Rights – Indigenous Knowledge – Convention of Biological diversity

MODULE 6:

Business strategy – Green Marketing – Eco-labeling - Criteria for Eco-mark – Environmental accounting - Environmental ethics – Indian situation – Deep ecology

Text Books:

N.K Uberoi, "Environmental Management", Excel Books, 2nd Edition, 2005

131605 - OPERATIONS RESEARCH

MODULE 1:

Decision-making environments: Decision-making under certainty, uncertainty and risk situations; Uses of Decision tree, Uses, scope and applications of Operation Research in managerial decision-making

MODULE 2:

Linear programming: Mathematical formulations of LP Models for product-mix problems; graphical and simplex method of solving LP problems; sensitivity analysis; duality Transportation problem: Various method of finding Initial basic feasible solution and optimal cost Assignment model: Algorithm and its applications

MODULE 3:

Game Theory: Concept of game; Two-person zero-sum game; Pure and Mixed Strategy Games; Saddle Point; Odds Method; Dominance Method and Graphical Method for solving Mixed Strategy Game Sequencing Problem: Johnsons Algorithm for n Jobs and Two machines, n Jobs and Three Machines, Two jobs and m Machines Problems.

MODULE 4:

Queuing Theory: Characteristics of M/M/I Queue model; Application of Poisson and Exponential distribution in estimating Arrival Rate and Service Rate; Applications of Queue model for better service to the customers

MODULE 5:

Replacement Problem: Replacement of assets that deteriorate with time, replacement of assets which fail suddenly.

MODULE 6:

Project Management: Rules for drawing the network diagram, Application of CPM and PERT techniques in project planning and control; Crashing and resource leveling of operations Simulation and its uses in Queuing theory & Materials Management

Text Books:

Vohra- Quantitative Techniques in Management (Tata McGraw-Hill, 2nd edition), 2003.

References:

1. Peter C Bell- Management Science/ Operations Research (Vikas)
2. Taha Hamdy- Operations Research- An Introduction (Prentice-Hall, 7th edition), 1996, 5th ed.

<center>

COURSE CODE: 131701

BIOINFORMATICS METHODS AND APPLICATIONS

</center>

OBJECTIVE: To provide a strong foundation on the various approaches to the study of Genomics, Proteomics and the drug discovery process.

MODULE 1

Introduction to Bioinformatics – Information Search and Data Retrieval – Genome Analysis and Gene Mapping – Alignment of Pairs of Sequences – Alignment of Multiple Sequences and Phylogenetic Analysis

MODULE 2

Tools for Similarity Search and Sequence Alignment – Profiles and Hidden Markov Models – Gene Identification and Prediction – Gene Expression and Microarrays

MODULE 3

Protein Classification and Structure Visualization – Protein Structure Prediction – Proteomics – Computational methods for Pathways and Systems Biology

MODULE 4

Introduction to Drug Discovery – Drug Discovery: Technology and Strategies – Cell Cycle: Key to Drug Discovery

MODULE 5

Structural Biology and Virtual Screening for Drug Discovery – Emerging Role of Biomarkers in Drug Development

MODULE 6

G-Protein Coupled Receptors as Drug Targets – Ion Channels and Aquaporins as Potential Drug Targets – Computer Aided Drug Design

Text Book: -

S.C. Rastogi, N. Mendiratta, P. Rastogi, "Bioinformatics-Methods and Applications", Prentice Hall India – 3rd Edition.

COURSE CODE: 131702

BIOETHICS AND BIOSAFETY

OBJECTIVE: To get a broader view of the uses and their ethical aspects of the different technological developments made in the biotechnology field and to provide the clear idea about the Bioethics and Biosafety protocols and their implementation.

MODULE 1

Introduction to Bioethics and Biosafety – Human Genome Project and its Ethical Issues – Molecular Detection of Pre-Symptomatic Genetic Diseases and its Importance in Healthcare – Prenatal Diagnosis, Genetic Manipulations and their Ethical Issues – Ethical, Legal and Social Implications of Human Genome Project

MODULE 2

Genetics Studies on Ethnic Races - Biosafety Guidelines and Regulations – Legal and Socio-economic Impacts of Biotechnology – Use of Genetically Modified Organisms and their Release in the Environment

MODULE 3

Hazardous Materials used in Biotechnology – Good Laboratory Practice and Good Manufacturing Practice – Public Education of Producing Transgenic Organisms – Intellectual Property Rights – Intellectual Property Rights and Agricultural Technology – International Organizations and Intellectual Property Rights

MODULE 4

Introduction to Patent and Process Involved in Patenting – Patenting Living Organisms – Traditional Knowledge, Commercial Exploitation and Protection – Bioethics in Biodiversity and Resource Management

MODULE 5

Ethical Issues in Genetically Modified Organisms - Labeling of Genetically Modified Food and Crops – Stem Cell Research – Use of Animals in Research – Animal Cloning, Human Cloning and their Ethical Aspects

MODULE 6

Testing of Drugs on Human Volunteers – Organ Transplantation and Ethical Issues – Public and Non Governmental Organizations Participation in Biosafety and Protection of Biodiversity – Indian Biodiversity Act

Text Book: -

M.K. Sateesh,, "Bioethics and Biosafety", I.K. International Publishing House Pvt. Ltd.

BIOINFORMATICS DATABASES, TOOLS AND ALGORITHMS

OBJECTIVE: To understand the methods used to store, retrieve and analyze data using various tools and to give idea on database clusters and relevant software tools.

MODULE 1

Introduction - Bioinformatics Definition – Bioinformatics Applications and Research – Bioinformatics Databases – Characteristics – Categories – Navigating Databases – Information Retrieval System – Sequence Databases – Nucleotide Sequence Databases – Secondary Nucleotide Sequence Databases – Protein Sequence Databases – Secondary and Specialized Protein Sequence Databases - Information Retrieval System: Entrez and SRS

MODULE 2

Structure Databases – Structure File Formats – Protein Structure Database Collaboration – PDB – MMDB – CATH – FSSP – DALI – SCOP – Other Databases – Enzyme Databases – MEROPS – BRENDA – Pathway Databases: CAZy – Disease Database – Literature Database – Other Specialized Databases

MODULE 3

Tools – Need for Tools – Knowledge Discovery – Industry Trends – Data mining Tools – Data submission Tools – Nucleotide Sequence Submission Tools – Protein Submission Tools – tbl2asn: Command Line Tool for GenBank

MODULE 4

Data Analysis Tools – Tools for Nucleotide Sequence Analysis – Tools for Protein Sequence Analysis – Prediction Tools – Phylogenetic Trees and Phylogenetic Analysis – Gene Prediction – Protein Structure and Function Prediction

MODULE 5

Modeling Tools – Tools for 2D Protein Modeling – Tools for 3D Protein Modeling – Algorithms – Classification of Algorithms – Implementing Algorithms – Biological Algorithms – Bioinformatics Tasks and Corresponding Algorithms – Algorithms and Bioinformatics Software

MODULE 6

Data Analysis Algorithms – Sequence Comparison Algorithms – Substitution Matrices Algorithms – Sequence Alignment Optimal Algorithms – Prediction Algorithms – Gene Prediction Algorithm – Phylogenetic Prediction Algorithm – Protein Structure Prediction

Text Book: -

Orpita Bosu, Simminder Kaur Thukral, "Bioinformatics-Databases, Tools and Algorithms", Oxford University Press.

COURSE CODE: 131704

BIOINFORMATICS COMPUTING

OBJECTIVE: To provide a roadmap to the diverse field of Bioinformatics computing.

MODULE 1

The Central Dogma – The Killer Application – Parallel Universes – Watson's Definition – Top Down Vs Bottom Up – Information Flow – Convergence – Databases – Definitions – Data Management – Data Life Cycle – Database Technology – Interfaces – Implementation

MODULE 2

Networks – Geographical Scope – Communications Models – Transmissions Technology – Protocols – Bandwidth – Topology – Hardware – Contents – Security – Ownership – Implementation – Management

MODULE 3

Search Engines – The Search Process – Search Engine Technology – Searching and Information Theory – Computational Methods – Search Engines and Knowledge Management

MODULE 4

Data Visualization – Sequence Visualization – Structure Visualization – User Interface – Animation Vs Simulation – General Purpose Technologies – Statistics – Statistical Concepts – Microarrays – Imperfect Data – Basics – Quantifying Randomness – Data Analysis – Tool Selection – Statistics of Alignment – Clustering and Classification

MODULE 5

Data Mining – Methods – Technology Overview – Infrastructure – Pattern Recognition and Discovery – Machine Learning – Text mining – Tools – Pattern Matching – Fundamentals – Dot Matrix Analysis – Substitution Matrices – Dynamic Programming – Word Methods – Bayesian Methods – Multiple Sequence Alignment – Tools

MODULE 6

Modeling and Simulation – Drug Discovery – Fundamentals – Protein Structure – Systems Biology – Tools – Collaboration – Collaboration and Communications – Standards - Issues

Text Book: -

Bryan Bergeron, "Bioinformatics Computing", Prentice Hall India.

COURSE CODE: 131705

PERL PROGRAMMING FOR BIOINFORMATICS

OBJECTIVE: To provide introductory concepts about PERL Scripting language for implementing real world problems faced by Bioinformatics and Biologists.

MODULE 1

Introduction to PERL – The PERL Interpreter – Working of PERL Interpreter – PERL Variables – Scalar Values – Calculations – Interpolation and Escapes – Variable Definition – Special Variables – Sample PERL Programs

MODULE 2

Arrays – Array Manipulation – Hashes – Maintaining a Hash – Control Structures – Choices – Loops – Intermediate Loops – Loop Exists

MODULE 3

Subroutines – Creating a Subroutine – Arguments – Return – Scope – Passing Arguments with References – Sort Subroutines – String Manipulation – Array-Based Character Manipulation – Regular Expressions – Patterns

MODULE 4

Input and Output – Program Parameters – File I/O – Interprocess Communications – PERL Modules – PERL Packages – Combing Packages and Modules – Included Modules – The CPAN

MODULE 5

References – Creating References – ref () – Anonymous References – Object Oriented Programming – Introduction to Objects – PERL Objects

MODULE 6

Bioperl – Sequences – SeqFeature – Annotation – Sequence I/O – Cool Tools – Example Bioperl Programs – Bioinformatics File Formats – GenBank – ASN.1 – EMBL – PDB – Fasta – BLAST – ACEDB

Text Book: -

D. Curtis Jamison, "PERL Programming for Bioinformatics & Biologists", Wiley, First Edition 2004

COURSE CODE: 131801

OBJECT ORIENTED PROGRAMMING WITH C++ AND JAVA

OBJECTIVE: To present the concept of Object Oriented Programming and discuss the important elements and features of C++ and JAVA.

MODULE 1

Fundamentals of C++ and JAVA – Tokens – Keywords – Identifiers and Constants – Basic Data types – User Defined Data Types – Derived Data Types – Type compatibility – Declaration and Initialization of Variables – Bit Field Integer – Operators – Expressions – I/O Statements in C++ / JAVA – Control Structures – Storage Classes – Programming Structure of C++ / JAVA – Sample Programs

MODULE 2

Object Oriented Programming Concepts – Objective of OOP – Benefits and Applications of OOP – Different Paradigms in OOP – Data Abstraction – Function and Operator Overloading – Information Hiding – Friend Function - Memory Management in C++ - Introduction – Constructor – Dynamic Memory Management – Default Constructor – Overloading Constructor – Copy Constructor – Constructor and Information Hiding - Destructor

MODULE 3

Inheritance – Data and Code Sharing – Class Derivation – Types of Inheritance – Ambiguity in Class Member Access – Virtual Base Class – Class Initialization – Arguments for the Base Class – Bindings in C++ - Polymorphism – Concept of Generic Facility – Generic Function – Overloading a Generic Function – Generic Classes – Concept of Stream in C++ - File Positioning Functions – Error Handling During File Operations

MODULE 4

Java Programming Paradigm – Advantages of Java – Tools Available for Java Programming – Building Java Applications – Building Java Applets – Differences Between Applet and Applications – Class Definition in Java – Constructors – Inheritance – Polymorphism in Java – Access Specification in Java – Interfaces and Packages in Java – Exception Handling in Java

MODULE 5

Threads and Multithreads in Java – Application Development in Java – Java I/O and Networking – Java Multimedia – The Java Applet Package – The Java Language Package

MODULE 6

The Java Utility Package – The Abstract Window Toolkit (AWT) Package – The AWT Image Package – The AWT Peer Package – The Java I/O Package – The Java Networking Package

<u>**Text Book: -**</u>

Samanta D, "Object Oriented Programming with C++ and JAVA"- Prentice Hall India

COURSE CODE: 131802

DATABASE MANAGMENT SYSTEMS

OBJECTIVE: To provide a Strong foundation in database technology and an introduction to the current trends in this field.

MODULE 1:

Database Systems Vs File Systems - Purposes of Database Systems - View of Data - Database Languages – Data Storage and Querying - Transaction Management - Database Systems Architecture – Database Users and Administrator - History of Database Systems - Database Systems Applications – Overview of Network and Hierarchical Models

MODULE 2:

Relational Model – Structure of Relational Databases – SQL – Data Definition – Basic Structure - Set Operations – Aggregate Functions – NULL Values – Nested Sub Queries - Complex Queries – Views – Modification of the Database - Joined Queries – Integrity Constraints – Authorization - Embedded SQL - Dynamic SQL - Other SQL Functions - Query by Example - Triggers

MODULE 3:

Database Design – Overview of the Design Process – ER Model – Constraints – ER Diagrams – ER Design Issues – Reduction to Relational Schemas – Relational Database Design – Features of Good Relational Designs – Atomic Domains - Functional and Multivalued Dependencies – Normal Forms - 1NF – 2NF-3NF-BCNF – 4NF-5NF

MODULE 4:

Storage & File Structure – Overview - Disks – RAID – Storage Access - File Organization - Indexing &Hashing – Basic Concepts - B+ TREE - B Tree - Static and Dynamic Hashing - Multiple Key Access - Query Processing - Selection Operation –Sorting - Join Operation - Evaluation of Expressions - Query Optimization – Transformation of Relational Expressions – Materialized Views

MODULE 5:

Transaction Concept – Transaction State – Implementation of Atomicity and Durability - Concurrency Control – Protocols - Deadlock Handling - Recovery Systems – Failure Classification - Recovery with Concurrent Transactions – Shadow Paging – Log Based Recovery - Buffer Management – Remote Backup Systems – Advanced Recovery Techniques

MODULE 6:

Current Trends – Centralized and Client Server Architectures - Distributed Databases – Types of Distributed Databases – Distributed Data Storage – Distributed Transactions – Distributed Query Processing – Object Oriented Databases – Need for Complex Data Types – Structured Types and Inheritance – OO Data Model – XML – Motivation - Structure and Storage of XML Data - XML Document Schema – XML Query Processing – XML Applications – Data Warehousing – Data Mining

Text Books:
H. Korth, A. Silberchafz, "Database System and Concepts", McGraw Hill, 5th Edition, 2006

References: Ramez Elamassri, Shankant B-Navathe, "Fundamentals of Database Systems", Pearson, 3rd Edition

COURSE CODE: 131803

INFORMATION SECURITY

OBJECTIVE: To provide a Comprehensive Introduction to the Fundamental aspects of Information Security

MODULE 1

Overview of Information Security and Cryptography – Classical Encryption Methods – Transposition Ciphers – Substitution Ciphers – Caesar Ciphers – Mono alphabetic Substitution – Homophonic Substitution – Polygram Substitution – Playfair Ciphers - Hill Ciphers – Poly alphabetic Substitutions - Vigenere Ciphers – Compound Vigenere – Auto-key Cipher – Running-key Cipher – Vernam Cipher – One-time Pad – Cryptographic codes – Machine Ciphers – Jefferson Cylinder – Rotor-based Machines

MODULE 2

Symmetric Key Cryptography – Symmetric Cipher Model – Types of Attacks – Block Ciphers Vs Stream Ciphers – Synchronous Stream Ciphers – Asynchronous Stream Ciphers – Block Ciphers – Criteria for Evaluating Block Ciphers – Modes of Operations – Cascades of Ciphers and Multiple Encryption – DES – AES

MODULE 3

Public Key Cryptography – Introduction – Basic Principles – The Chinese Remainder Theorem – RSA – Integer Factorization Problem – Discrete Logarithm Problem – Knapsack Public Key Encryption – Probabilistic Public Key Encryption – Elliptic Curve Cryptography – Quantum

MODULE 4

Information Hiding – Evolution of Steganography – Steganography System – Other Techniques – Modern Techniques – Some More Techniques – Audio – Video – Textual Steganography – Real-time Steganography – Steganalysis – Applications – Digital Watermark – Data Integrity – Introduction – Preventing Unauthorized Manipulation – Types of Hash Functions – Essential Properties of Cryptographic Hash Functions – The Birthday Attack – Estimate of Probability of Finding a Collision – Hash Function Design Issues – Cryptanalysis and the Security of Hash Functions – Attacks on Hash Functions – Standard Hashing Algorithms

MODULE 5

Authentication – Objectives of Identification Protocols – Entity Authentication Techniques – Applications of Identification Protocols – Properties of Identification Protocols – Authentication Mechanisms – Challenge-Response Identification – Digital Signature – Digital Certificates – X.509 Protocol – RFC 2459 – RADIUS – CAPTCHA – Introduction to Biometrics – Definition – Features – Applications – Technological Issues in Biometric Systems – Face Recognition – Fingerprint Recognition – Iris Recognition – Voice – DNA as a Biometric Identifier – Multimodal Biometric Systems

MODULE 6

Virus and Malware – Introduction – Virus and Worms – Virus Structure and Operation – Defenses Against Viruses – Virus Writers and Antivirus Development – Generic Decryption Technology – Adware and Spyware – Mitigating Malware Risks – Web and Network Security - Introduction to SSL – SSL Operations and Layers – The SSL Record Protocol – The Alert Protocol – The Change Cipher Spec Protocol – SSL Handshake Protocol Specification - Errors – Introduction to Network Security – IPSec Security Architecture – Authentication Header – Encapsulating Security Payload – Security Associations – Key Management – Introduction to Firewalls – Design Goals – Types of Firewalls – Firewall Configurations – Online Electronic Voting Systems (E-Voting)

Text Book: -

Dhiren R. Patel, "Information Security", Prentice Hall India, 2008

COURSE CODE: 131804

COMPUTER GRAPHICS AND MULTIMEDIA

OBJECTIVE: To impart the fundamental concepts of Computer Graphics and Multimedia.

MODULE 1

Introduction – Graphical Input and Output Devices – Raster Scan Video Principles – Random Scan Devices – Graphic Accelerators and Graphics Co-Processors – Scan Conversion – Polynomial Method – DDA Algorithms – Bresenham's Algorithms – Midpoint Methods – Problems of Scan Conversion – Solid Areas or Polygons – Inside-Outside Test – Solid Area Filling Algorithms

MODULE 2

2D Geometrical Transformation – Basic Transformations – Homogenous Coordinate System – Other Transformations – Combined Transformations – Inverse of Combined Transformations – Display File – Segments – Algorithms for Segment Table and Display File – 3D Geometrical Transformation – Basic Transformations – Other Transformations – Parallel Projection – Perspective Projection – Image Formation Inside a Camera

MODULE 3

2D Viewing and Clipping – Windows and View ports – Viewing Transformation – Clipping of Lines in 2D – Concepts of Parametric Clipping – Generalized 2D Line Clipping – Polygon Clipping – Clipping Against Concave Windows – 3D Viewing and Clipping – Viewing Transformation Matrix in 3D – Clipping of Lines in 3D – Clipping in Homogenous Coordinates – Clipping Using Normalized Windows – Curve Design

MODULE 4

Hidden Surface Elimination – Modeling Illumination – Shading – Shadow – Assigning Intensity Levels to Gray Shades – Concepts of Colors – CIE Color Standard

MODULE 5

Multimedia Basics – Concepts of Multimedia – Digital Video – MIDI – Image Compression Standards – Video Compression and Encoding – Hypertext and Hypermedia – Virtual Reality – Basics – Virtual Reality Markup Language (VRML) – Building a VRML World

MODULE 6

Image File Formats – BMP Format – JPEG and JFTF – GIF Format – TIFF File – Animation and Flash Overview – Development of Animation – Non-Computer and Computer Based Animation – Flash Basics – The Flash Work Environment – Drawing Overview – Using Layers – Creating Text Boxes – Creating Animation – Publishing and Exporting

Text Book: -

Malay K. Pakhira, "Computer Graphics-Multimedia and Animation", Prentice Hall India, New Delhi

COURSE CODE: 131805
WEB TECHNOLOGY

OBJECTIVE: Providing lucid explanation about the Idea of Inputs Output Streams on Both Client and Server side programming and Transaction Filtering.

MODULE I

Computer Networks - Basics – Topologies – Layers in Networking - Switching - Bridges - Routes and Gateways – Internet – Basics - Web Objects – Sits – WWW - File Transfer –Telnet – Gopher - Veronica.

MODULE II

Web server – Proxy server - Web Browser - IE Opera, Firefox – Firewalls – Phasing – Cookies – Creating – Website - HTML Document features and structuring – Tags – DHTML –XML - Search engines – Search Tools.

MODULE III

Java Programming - Classes - Constructors – Objects and Creation - Inherits - Interfacing methods - Abstract - Class - Data Encapsulation – Multiple Threads.

MODULE IV

Java Input Streams and Output Streams – File Related classes – Human Computer Interface and Windows environment – GUI - Applets – Event Handling in components and Applets - Java Streams.

MODULE V

CGI - Server Browser, Interaction, CGI Script - Server side and Client Side Applets – Servlets - Servlets - API Handling GET and POST Request – Cookies - Session Tracking.

MODULE VI

Java Server Pages – Advantages – Components of JSP- JSP File – JSP Sessions – Disabling Sessions – ASP Advantages – Variables and Contracts – Subordinates – ASP Cookies – ASP Objects – Connecting data with ASP.

Text Book: -

Raj Kamal, "Internet and Web Technology", Tata McGraw Hill.

COURSE CODE: 131901

SOFTWARE PROJECT MANAGEMENT

OBJECTIVE: To inculcate the fundamental practices of good project management needed by software industry.

MODULE I:

Meaning – Software projects versus other types of project – Contract Management – Activities – Problems with software projects – Project Planning – Steps.

MODULE II:

Programme management – Strategic Programme management – Evaluation –Choosing technologies for a selection of a project – Structure versus speed of Delivery – Waterfall Model – V-processes Model – Spiral Model – Prototype – Dynamic System Development method.

MODULE III:

Estimation – Problems – Basis – Techniques – Activity planning – Schedules – Scheduling Activities – Activity float – Identifying Critical Activities – Activity-on arrow networks.

MODULE IV:

Risk Management – Framework – Evaluating risk to the schedule – Monte Carlo Simulation – Critical Chain Concepts – Resource allocation – Identifying resource requirements –Scheduling resources – counting the cost.

MODULE V:

Monitoring and Control – Creating the framework – Collection of data – Change Control – Managing Contracts – ISO 12207 approach – Types of Contract – Contract Management.

MODULE VI:

Managing People – Understanding Behaviour – Motivation – Oldham - hackman Model – Decision Making Influence of Culture – Stress – Software Quality – Meaning and importance – Product versus process quality management.

Text Book: - Bob Hughes, Mike Cotterell, "Software Project Management ", Tata McGraw Hill – 4th Edition – 2006.

COURSE CODE: 131902

INFORMATION TECHNOLOGY SERVICES

OBJECTIVE: To make people to learn enough about Information Technology and to play an active role in managing IT services.

MODULE I

Using IT to transform organizations - IT in workplace - IT and manager - major trends shaping today's IT field - the nature of information - interpreting information - information to knowledge - types of decisions - role of IT decision making process - frameworks of IT -processing transactions - interorganisational systems - basics and technologies of information systems.

MODULE II

Modern organizations – flexibility - structure and design - building T - form organization - integrating IT with business environment - impact of IT on value chain - IT initiatives - IT infrastructure - existing global IT investments and practices - managing IT internationally - virtual firms and IT - business models and IT management

MODULE III

Fundamentals of computer-components-memory-advancements of chip technology-software systems and application-high level languages-operating system-free source and business applications-middleware technologies – database – architecture – networking - enterprise software packages - dedicated applications.

MODULE IV

Building systems-system development lifecycle – pitfalls - spiral model of development - data collection for analysis and design - structured versus object oriented design - costs and benefits of new systems - feasibility study - client server computing – GUI - designing websites - concepts of object oriented analysis and design - computer aided software engineering (CASE) tools-RAD - distributed system architecture and design – data warehousing and datamining - OLAP and OLTP - high level design tools

MODULE V

Implementing IT based change in organizations - reengineering and the role of IT - knowledge workers - knowledge management - decision support systems - multimedia for business - digital convergence applications - artificial intelligence and neural networks - business applications.

MODULE VI

IT enabled services - definition, scope, growth - Indian IT services business environment - business process outsourcing - knowledge and design outsourcing - call centre management and technology - software packages - medical and legal transcription technology deployment and industry outlook - India as emerging software development vendor-manpower availability -training-social responsibility of IT sector - ethics and IT - Indian IT Act and its impact.

Text Book: -

Henry C.Lucas, Jr, "Information Technology for Management", Tata McGraw Hill, 7th Edition.

COURSE CODE: 131803

INFORMATION SECURITY

OBJECTIVE: To provide a Comprehensive Introduction to the Fundamental aspects of Information Security

MODULE 1

Overview of Information Security and Cryptography – Classical Encryption Methods – Transposition Ciphers – Substitution Ciphers – Caesar Ciphers – Mono alphabetic Substitution – Homophonic Substitution – Polygram Substitution – Playfair Ciphers - Hill Ciphers – Poly alphabetic Substitutions - Vigenere Ciphers – Compound Vigenere – Auto-key Cipher – Running-key Cipher – Vernam Cipher – One-time Pad – Cryptographic codes – Machine Ciphers – Jefferson Cylinder – Rotor-based Machines

MODULE 2

Symmetric Key Cryptography – Symmetric Cipher Model – Types of Attacks – Block Ciphers Vs Stream Ciphers – Synchronous Stream Ciphers – Asynchronous Stream Ciphers – Block Ciphers – Criteria for Evaluating Block Ciphers – Modes of Operations – Cascades of Ciphers and Multiple Encryption – DES – AES

MODULE 3

Public Key Cryptography – Introduction – Basic Principles – The Chinese Remainder Theorem – RSA – Integer Factorization Problem – Discrete Logarithm Problem – Knapsack Public Key Encryption – Probabilistic Public Key Encryption – Elliptic Curve Cryptography – Quantum

MODULE 4

Information Hiding – Evolution of Steganography – Steganography System – Other Techniques – Modern Techniques – Some More Techniques – Audio – Video – Textual Steganography – Real-time Steganography – Steganalysis – Applications – Digital Watermark – Data Integrity – Introduction – Preventing Unauthorized Manipulation – Types of Hash Functions – Essential Properties of Cryptographic Hash Functions – The Birthday Attack – Estimate of Probability of Finding a Collision – Hash Function Design Issues – Cryptanalysis and the Security of Hash Functions – Attacks on Hash Functions – Standard Hashing Algorithms

MODULE 5

Authentication – Objectives of Identification Protocols – Entity Authentication Techniques – Applications of Identification Protocols – Properties of Identification Protocols – Authentication Mechanisms – Challenge-Response Identification – Digital Signature – Digital Certificates – X.509 Protocol – RFC 2459 – RADIUS – CAPTCHA – Introduction to Biometrics – Definition – Features – Applications – Technological Issues in Biometric Systems – Face Recognition – Fingerprint Recognition – Iris Recognition – Voice – DNA as a Biometric Identifier – Multimodal Biometric Systems

MODULE 6

Virus and Malware – Introduction – Virus and Worms – Virus Structure and Operation – Defenses Against Viruses – Virus Writers and Antivirus Development – Generic Decryption Technology – Adware and Spyware – Mitigating Malware Risks – Web and Network Security - Introduction to SSL – SSL Operations and Layers – The SSL Record Protocol – The Alert Protocol – The Change Cipher Spec Protocol – SSL Handshake Protocol Specification - Errors – Introduction to Network Security – IPSec Security Architecture – Authentication Header – Encapsulating Security Payload – Security Associations – Key Management – Introduction to Firewalls – Design Goals – Types of Firewalls – Firewall Configurations – Online Electronic Voting Systems (E-Voting)

Text Book: -

Dhiren R. Patel, "Information Security", Prentice Hall India, 2008

<div align="center">

COURSE CODE: 131904

ECOMMERECE

</div>

OBJECTIVE: To learn the advancements of electronic commerce this has become a compelling necessity in the present day communication based commerce which is happening in the digital space.

MODULE 1:

Introduction to Electronic Commerce – Definition, Categories, Growth and Development, Key Characteristics, Advantages and Disadvantages – Economic Forces – Identifying E-Commerce Opportunities – Technology Infrastructure – The Internet and WWW – Packet Switched Networks – Internet Protocols – Markup Languages – Intranets and Extranets – Internet Connection Options – Semantic Web

MODULE 2:

The Legal Environment – Use and Protection of Intellectual Property – Online Crime, Terrorism, and Warfare – Ethical Issues – Taxation – Setting on the Web – Revenue Models – Revenue Models in Transition – Revenue Strategy Issues – Creating an Effective Web – Web Site Usability – Connecting With Customers

MODULE 3:

Marketing on the Web – Web Marketing Strategies – Communicating with Different Market Segments – Customer Behavior – Advertising on the Web – E-Mail Marketing – Creating and Maintaining Brands on the Web – Search Engine Positioning – Electronic Data Interchange – EDI on the Internet – SCM using Internet Technologies – Electronic Marketplaces and Portals

MODULE 4:

Overview of Auction – Online Auctions – Virtual Communities and Web Portals – Web Server Hardware and Software – Basics of Web Server – Software for Web Servers – Electronic Mail – Web Site and Internet Utility Programs – Web Server Hardware

MODULE 5:

E-Commerce Software – Web Hosting Alternatives – Basic Functions – Advanced Functions – E-Commerce Software for Small and Midsize Companies, Midsize to Large Businesses - E-Commerce Security – Overview of Online Security Issues – Security for Client Computers – Communication Channel Security – Security for Server Computers

MODULE 6:

Payment Systems for E-Commerce – Basics of Online Payment – Payment Cards – Electronic Cash – Electronic Wallets – Stored-Value Cards – Internet Technologies and the Banking Industry – Planning for E-Commerce Initiatives – Strategies for Developing E-Commerce Web Sites – Managing E-Commerce Implementations

Text Books: Gary P. Schneider, "E Commerce", Cengage Learning 2007

COURSE CODE: 131905

DATA WAREHOUSING AND DATA MINING

OBJECTIVE: Enhance the traditional information presentation technologies by bringing the data for their creation into a single source.

MODULE 1

Data Warehouse – definition and characteristics – Data Warehouse Architecture – Clinent / Server computing model – Server Functions – Server Hardware Architecture – RISC Versus CISC – Distributed memory – Cluster Systems – Server OS, Unix, Windows NT, OS/2, NetWare

MODULE 2

RDBMS Architecture for Scalability – Types of Parallesim – Advanced RDBMS Features and Administration – Oracle - System Management, Informix – Features - Sybase - SYBASE SQL Server - IBM – DB2- Microsoft – MS SQL Server.

MODULE 3

Data Warehouse Database, Sourcing, Acquisition, Cleanup and Transformation Tools – Access Tools - Query and Reporting Tools, OLAP – Data Marts – Information Delivery System

MODULE 4

Building a Data Warehouse – Approach – Design, Technical and Implementation Considerations – Database Architecture for Parallel Processing – DBMS Schema

MODULE 5

Metadata – Repository and Management – Need for OLAP – OLAP Tools and the Internet - Data Mining – Embedded Effectiveness – Over fitting - Technologies.

MODULE 6

Decision Trees – Neural Networks – Business Score Card and Clustering and Nearest-Neighbor – Prediction and analysis – Genetic Algorithms - Usage and Applications - Data Visualization Principles – Data Ware House market

Text Book: -

   Alex Berson, Stephen J. Smith , "Data Warehousing, Data- Mining and OLAP", Tata McGraw Hill

COURSE CODE: 132001
FINANCIAL SERVICES

OBJECTIVE:The objective of this paper is to throw light on the current state of financial services sector in India.

MODULE 1

Introduction to Financial services – Types of Financial Services – Fee based Services – Fund based services – Financial Markets – Financial Instruments and Services – Overview of the Indian Financial System.

MODULE 2

Merchant Banking – Issue Management – Intermediaries – Underwriters – Registrars – Bankers – Brokers to the issue – Portfolio Managers – Issue Management Activities and Procedures – Book Building – Green Shoe option – IPO – Pre and Post Issue Obligations.

MODULE 3

Fund Based Activities – Leasing – types – Financial Evaluation of Leasing – Advantages and Disadvantages – Hire Purchase Finance – Consumer Credit.

MODULE 4

Factor and forfeiting – Theoretical Framework – Factoring in India – Bills Discounting – Concept - Advantages – Bill Market Schemes – Housing Finance - Securitization - Credit Rating – Regulatory Framework – Credit Rating Agencies – Rating Process and Methodology.

MODULE 5

Insurance Services and Products - IRDA – Regulations – Venture Capital Financing – Theoretical Framework – Indian Venture Capital Scenario.

MODULE 6

Stock Broking – Depositories – Custodial Services – Securities Lending Scheme – Corporate Restructuring – Conceptual Framework and Financial Framework of Mergers and Amalgamations – Tax and Legal Aspects of Merges and Acquisitions

Text Book: -

Financial Services, M Y Khan, Tata McGraw Hill Publication.

COURSE CODE: 130502
SECURITY ANALYSIS & PORTFOLIO MANAGEMENT

OBJECTIVE: To provide comprehensive information about investing in securities.

MODULE 1

Valuation of securities – bond and fixed income instruments valuation – bond pricing theorems, durations of bond and immunization of interest risk, term structure of interest rate, determination of yield curves, valuation of equity and preference shares (Dividend capitalization & CAPM).

MODULE 2

Analysis of risk & return, concept of total risk, factors contributing to total risk, systematic and unsystematic risk, default risk, interest rate risk, market risk, management risk, purchasing power risk. Risk & risk aversion. Capital allocation between risky & risk free assets – Utility analysis.

MODULE 3

Fundamental & Technical Analysis of equity stock. Concept of intrinsic value. Objectives and beliefs of fundamental analysis. Economy-Industry-Company framework, points and figures chart, bar chart, contrary opinions theory, confidence index RSA,RSI, Moving average analysis, Japanese Candlesticks.

MODULE 4

Behaviour of stock market prices – The market mechanism, testable hypothesis about market efficiency, implications of efficiency market hypothesis for security analysis and portfolio management. Asset pricing theories, CAPM & Arbitrage pricing theories

MODULE 5

Modern portfolio theory – Asset allocation decision. Dominant & Efficient portfolio – Simple diversification, Markowitz diversification model, selecting an optimal portfolio – Single index model, Treynor – Black model. Determination of corner portfolio. Process of Portfolio Management – International Diversification

MODULE 6

Portfolio performance evaluation – Sharp & Treynor & Jemsen's measure. Portfolio revision – Active and passive strategies & formula plans in portfolio revision. Mutual funds – types, performance evaluation of mutual funds, functions of Asset Management Companies

Text Book: -Donald E.Fischer and Roanal J.Jordan – Security Analysis and Portfolio Management – Pearson Education – Third Edition 2008

<div align="center">

COURSE CODE: 132002

CORPORATE FINANCE

</div>

OBJECTIVE: To evaluate firm value and equity value and to inculcate the concept of dividend.

MODULE 1

Introduction to corporate Finance – Corporate Finance and the Firm – First Principles of Corporate Finance – Firm Value and Equity Value – Tools – Objective – Stockholder Wealth Maximization – Stock Price Maximization and Agency Costs – Stockholders and Managers – Stockholders and Bondholders – The firm and Financial Markets – Firms and Society – A Postscript – Limitations.

MODULE 2

The Time value of Money – Cash Flows and Time Lines – Time Value of Money: Compounding and Discounting – Compounding – Discounting – The Frequency of Discounting and Compounding – Time Value of Money: Annuities and Perpetuities – Annuities – Growing Annuities Perpetuities – Growing Perpetuities.

MODULE 3

Value and Price: An Introduction – Need – Valuing an Asset with Guaranteed Cash Flows – Default-free Zero-coupon Bond – Default –free Coupon Bond – Bond Value and Interest Rate Sensitivity and Duration – Introducing Uncertainty into Valuation – Valuing an Asset with Default Risk – Valuing an Asset with Equity Risk – Valuing an Asset with an Infinite Life – Equity and Firm Valuation – Dividends and Equity Valuation – Binomial Model – Market Prices and Value – The Pricing Process – Information, Expectations and Prices – Market Efficiency – Testing Market Efficiency.

MODULE 4

The Basics of Risk – Motivation and perspective in Analyzing Risk – Equity Risk and Expected Return – Defining Risk – Diversifiable and Nondiversifiable Risk – Models Measuring Market Risk – A Comparative Analysis of Risk and Return Models – Models of Default Risk – The Determinants of Default Risk – Bond Ratings and Interest rates – Significance of miller modigilane theorem.

MODULE 5

Dividend Policy – Process – Measures – Empirical Evidence on Dividend Policy – Timing of Tax Payments – Measuring the Dividend Tax Disadvantage – Reasons for Paying Dividends – Cash Returned to Stockholders – The Effects of Buying Back Stock – The Magnitude of Stock Buybacks – A Cash Flow Approach to Analyzing Dividend Policy Evaluating Dividend Policy.

MODULE 6

Alternative Ways of Returning Cash to Stockholders – Equity Repurchases – Forward Contracts to Buy Equity – Actions that affect Number of Shares Outstanding – Stock Splits – Stock Dividends – Actions that Affect claims on Assets – Diverstitures – Spin-offs, Split offs and Split-ups – Equity Carve-outs(ECSs) – Tracking Stock – Comparing the Alternatives – Comparing the Alternatives – Common Objectives – Key Differences – Choosing Between the Alternatives.

Text Book: -   Aswath Damodaran, "Corporate Finance", Wiley India, Second Edition , 2008.

COURSE CODE: 130504
FUTURES, OPTIONS & DERIVATIVES

OBJECTIVES: To understand the concepts of Options, Futures & Derivatives and to familiarize the students about its usage.

MODULE 1
Futures – Meaning – Specification – Types of Traders & Types of orders – Regulation – Forward Vs Future contracts – Basic Principles – Basic Risk – Cross Hedging – Rolling the Hedge forward.

MODULE 2
Investment Assets Vs, Consumption Assets – Valuing forward contracts - Future contract on currencies – Futures on Commodities-Mechanics of interest rate swaps – Nature of Swap rates -Currency Swaps – Other Types of Swaps.

MODULE 3
Options – Types – Trading Commissions – Margin – Regulation – Taxation – Warrants – Over the counter markets – Factors – Assumption and notations – Put-Call Parity – Effect of Dividend - Strategies involved in single option – Spreads – Combination – Other payouts.

MODULE 4
Dividend yield – Option pricing formula – Option on stock indices – Currency options – Future options – Binomial Trees – Drift of Future – Exotic options – Packages – Forward start options Types – Option involving one Asset Vs. Several Assets.

MODULE 5
Credit Derivatives – Swaps & Indices – Valuation of Credit Default Swaps – CDS forward & option – Convertible Bonds – Equilibrium models – No arbitrage models-Option on Bonds – Volatility
Structures.

MODULE 6
Heath, Jarrow &   Morton Model – LIBOR market model – Mortgage-backed securities - Experience of all user of Derivatives, Financial Institution and Non Financial Institutions Corporation.

Text Book: -

John.C.Hull – Options, Futures & Other Derivatives – Prentice-Hall of India – Sixth Edition – 2008

<div align="center">

COURSE CODE: 132003

FINANCIAL INSTITUTIONS AND MARKETS

</div>

OBJECTIVES: The objective of this paper is to familiarize students with the organization, operation and growth of Financial System in India.

MODULE 1

Introduction – Financial institutions – Role of Financial System – Equilibrium in Financial markets – Financial System and Economic Development – Meaning and Process of Financial Development – Financial Sector and Economic Development

MODULE 2

Overview of the Indian Financial System – Structure of Financial Institutions – Financial Sector Reforms – Universal Banking – Consumer Credit – The Central Bank Policy.

MODULE 3

Regulatory and Promotional Institutions – RBI – Functions – Roles of RBI – Monetary Policy of the RBI – Recent Policy Developments – SEBI – Genesis, Organizations, Objectives and Functions.

MODULE 4

Banking Institution – Commercial Banks – Growth and structure of Banking – Retail Banking - Risk Exposure of Banks – Micro Finance – Banking Sector Reforms – Bank Performance – Co-operative Banks – Types, Structure and Growth of Co-operative Banking Systems

MODULE 5

Non–Bank Financial Intermediaries and Statutory Financial Organizations – Small – Savings, Provident Funds and Pension Funds – Insurance companies – LIC – GIC Investment Pattern and Policy.

MODULE 6

Mutual Funds – Organisation – Types – Valuation – UTI – Structure and Size – Money Market Mutual Funds – Regulatory Framework – Regulation – Non – Bank Statutory Financial Organization – IFCI – NIDC – ICICI – IDBI – EXIM Bank – IRBI – NABARD – SFC's.

<u>**Text Book: -**</u>

Financial Institution and Markets, LM Bhole, Tata McGraw Hill Publication.

132101 - PETROLEUM GEOLOGY

MODULE 1:

Theories related to petroleum origin –Biogenic theory-Abigenic petroleum origin-mechanisms-evidence-Deep biotic petroleum theory-Geogical time scale-Proterozoic era-Paleozoic era-Cenozoic-Petroleum geology-Anticlines-Drilling-Dry hole-Geo phones-Mud-Pinchout-reservoir rock-

MODULE 2:

Seismic lines-Trap-Well logs-Asthemosphere-Delta-Diagenesis-Evaporite-Metamorphic rock-Prograde-Reverse fault-Salt dome-Shale-Sinistral –Syncline-Synthetic fault-Up dip-weathering.Main type of rock-Acid, intermediate and basic igneous rocks-Nepheline and lencite-Bearing rocks-Classification of rocks-Rock cycle-Analysis of source rocks

MODULE 3:

Statigraphy-Lithostratigraphy-Biostratigraphy-Chrono and magneto- stratigraphy.Sampling procedures-Analytical procedures-Sequence stratigraphy –Maximum flooding surfaces-transgressive surfaces-Sequence boundaries-Early phase and late phase lowstand systems-Highstand systems-Archaeological stratigraphy-Stratigraohic cross section .

MODULE 4:

Sedimentary rocks-Sedimentary rock type-Porosity and permeability in sedimentary rocks-Mud log-Identification of sedimentation rocks-Methodology of sedomentology-Kerogens Type I,II, Type II-Sulfer Type III and Type IV.Sedimentary basin-Methods of formation-Litjospheric stretching-Compression and shortening-Stike-Slip deformation .

MODULE 5:

Oil and gas in rocks-Anticlinal trap-Fault trap-Stratigraphic trap-Major tectonic plates of the world-Prinicipal types of folds and faults.

MODULE 6:

Structural geology-Anticlines-Syncline-Measurement conventions-Plane, fabric, fold and deformation conventions folds-2D, 3D fold types-Mass transport deposits in deepwater environments.

Text Books:

N.Nanderpour and FH Kordmahaleh, "Petroleum Geosciences", SBS Publishers and Distributors Limited 2009 edition

132102 - GEOGRAPHIC INFORMATION SYSTEMS

OBJECTIVE: To provide brief information about the various aspects, principles and techniques of Geographic Information Systems

MODULE 1:

Geographical Information Systems and Graphical Information – Basic Concepts – Socioeconomic Challenges – Benefits of Computerizing Information – Users of GIS – Historical Developments – Early Developments – First Automatic Processing of Geographical Information – The Microprocessor – Recent Developments – The Real World – Real World Model – Data Model – Levels of Measurement – Mapping From Database to GIS & GIS to Map – Extension of Traditional GIS Data Model – Conceptual Generalization – Role of Maps in Data Modeling – Extension of the Reality Concept

MODULE 2:

Basic Data Models – Vector Data Models – Raster Data Models – Automatic Conversion Between Vector and Raster Models – Vector Vs Raster Models – Attribute Data and Computer Registers – Linking Digital Map and Attribute Information – Advanced Data Models – Terrain Surface Representation – Three Dimensional Objects – Representation of Time – Models for Movable Objects – Combination of Models – Georeferencing Systems – Datum – Coordinate Systems – Map Projection – UTM – Coordinate Conversion and Transformation – Elevation Referencing – Relative Georeferencing – Discrete Georeferencing Systems

MODULE 3:

Hardware and Communication Technology for GIS – Computers – Networks – Displays – Quantizers – Plotters and Other Output Devices – Basic Software and Databases for GIS – The Foundation Stones of GIS Software – Operating Systems – Communication between Users and Computers – Database Management Systems – Computer Aided Design – Multimedia – World Wide Web – User Requirements – Working Environment – Data Collection – Digitizing Maps - Scanning – Manual Digitizing – Aerial Photographs and Photo Interpretation – Remote Sensing – Surveying – Satellite Positioning Systems – Photogrammetric Mapping – Collection of Attribute Data – Text Data

MODULE 4:

Data Quality – Selection Criteria – Measuring Accuracy and Precision – Resolution and Sampling Rate – Data Storage Precision – Positional Accuracy – Attribute Data Accuracy – Temporal Accuracy – Logical Consistency – Completeness –Data Quality Overview Elements – Accessibility – Probable Sources of Errors – Quality Control - Database Implementation and Spatial Indexing – Database – Distributed Databases – Databases for Map Data and Indexing – Database Design - Housekeeping Tools – Data Entry Functions – Importing Existing Digital Map – Organization of Data Storage Operations – Functions for Creating and Adapting Geometric Data – Editing and Correcting Attribute Data

MODULE 5:

Basic Spatial Analysis – Analysis of Spatial Information – Logic Operations – Arithmetic Operations – Statistical Operations – Search and Report Generation – Geometric Data Search and Retrieval – Complex Operations – Classification and Reclassification – Integrated Processing – Overlay – Buffer Zones – Raster Data Overlay – Procedures – Network and Raster Connectivity – Spatial Interpolation and Proximity Operations – Fuzzy Analysis – GIS Analytic Models – Practical Application – Digital Terrain Models – Hydrologic Modeling – Functions for Engineering GIS – Visualization – Theoretical Foundation – Graphic Generalization – Selecting Map Symbols – Limitations and Potentials of GIS

MODULE 6:

Organizational Issues – Technology and Organization – Phases – Development of a Business Concept – Appraisal of Tasks – Review – Identification of User Requirements – Developing a Strategic Plan – Developing a Logical Data Model – Creating a National Geographic Databases – Technical Issues – Plot Project – Choosing Hardware and Software – Contracts – Technical Database Design – Creating a Database – System Operation and Maintenance – Standards – Elements for Standardization – Standard Transfer Formats – Special Standardization Elements – Metadata – Infrastructure for Georeferenced Data – Data Access and Digital Libraries

Text Books: Tor Bernhardsen, "Geographic Information Systems – An Introduction", Wiley, Third Edition 2007

132103 - OIL AND GAS FIELD DEVELOPMENT

MODULE 1:

Reservoir existence-Definition-Producing reservoir-New infill reservoir-deeper pool reservoir-Well testing-oil recovery-secondary recovery-Geological heterogeneity-deeply buried sandstone reservoir –Carbonate reservoir-Carbonate analogs through time(CATT)-reservoir fluids.

MODULE 2:

Petroleum finding search techniques-Maps and imaging-Satellite imaging and remote sensing-Geological maps- Contour map-Electric logs-Gamma ray portion- Resistivity portion-Magnetics-Seismology-Body waves-P waves-S waves-Surface waves- Love waves-Ray light

MODULE 3:

Waves- Seismic waves in the earth- Reflection-2D seismic-advances 3D visualization - Paleontogy-Biostratigraphy-sequence stratigraphy- Paleoecology-Hydrocarbon generation-Microfossils- Coring- Rock core- Open Hole rotary coring- Core bit- Slabbed core- Sidewall coring-Small sidewall cores- Pressure date of a giant oil field- Next wave in reservoir monitoring.

MODULE 4:

Implications for exploration and development- Reducing the risk of lithology predication-Maturing basin- Evaluation seal potential- Use of dip data to improve the interpretation of fold traps- Carbonate sequence stratigraphy- Coalbed methane- Shale tight sands- Tight sands-Unconventional gas-FMI Fullbore formation-Resistivity imager- Benefits and features.

MODULE 5:

Measurement physics- Characterization of rock structure-Net pay in laminated sediments- -Visualization of sedimentary features- Fracture-Permeability direction- Structural interpretation- 3-D reservoir modeling- Key input for mechanical earth models- FMI specifications- Formation evaluation tools- Coring- mud logging- electric logs- porosity logs- Lithology logs- Routine core analysis.

MODULE 6:

Role of visualization in resource- formation resistivity measurement- Saturation measurement- Faster logging reservoir monitoring- logging for primary evaluation- Accuracy and precision Geophysical logging- Hole to hole measurements- Time domain electromagnetic-Ground penetrating radar- high resolution aeromagnetic surveys- Gravity- Magnetic- Resistivity-Seismic sources- Seismic reflection cross section

Text Books:

N.Nanderpour and FH Kordmahaleh, "Petroleum Geosciences", SBS Publishers and Distributors Limited 2009 edition

132104 - OIL WELL DRILLING TECHNOLOGY

MODULE 1:

Plate tectonics- Continental Draft – Seafloor spreading- Location of plate boundaries- type of plate motion- Integrated rock physics modeling- Geochemistry in exploration- Geochemistry and hydrocarbon assets- Distribution of oil quality in basis

MODULE 2:

Identifying missed payzones- Delineating reservoir compartmentalization- Maximizing water flood efficiency -   Production lubing failure- Defecting cementing failures- Origin and distribution of heavy high inscosity deposits-Exploration and production tar study-Tracer and traceless studies-Mudges-Wet chemistry-Petrophysical properities-Chemometrics.

MODULE 3:

Elements of a petroleum system-Crucial factors-Petroleum system events chart-Hydrocarbon trap types-Petroleum system processes-Thermal maturation –Quantitative play analysis-Drilling-Rig-Completed oil well-Transporting petroleum-4 D seismic technology-Application and benefits-4 D feasibility study

MODULE 4:

Well data conditioning-Repeatability-Seismicresolution-Offset-Regularization-Survey azimuth-Wavelet matching –Spactial regularization –Deterministic, global and non rigid matching. Types of drilling rigs- Land rigs,jackup rig-Inland barge, drill ship-Semi-Submersible rig-Drill bit-Drill string-Drilling mud pumping-Drilling mud cycle.

MODULE 5:

Running logs-good porosity-poor porosity- poor resistivity-good reistivity- final string of casing-perforating guns-packer- pipeline design and running-production seperators-gas,water,oil lines

MODULE 6:

Global basins-Mississsipi-petroleum play-Anadarko basin- san Joaquin valley gusher-K-T sedimentary basins-Ghawar field-The gulf of Suez,Greece and the North sea-Albacora field-Mexico rocks- hydrocarbons of the South Caspian Basin

Text Books:

N.Nanderpour and FH Kordmahaleh, "Petroleum Geosciences", SBS Publishers and Distributors Limited 2009 edition

131604 - ENVIRONMENTAL MANAGEMENT

OBJECTIVE: To understand the implication of Environment damage and resource depletion and to upgrade the Environment

MODULE 1:

Meaning – Importance – Selected concepts of ecology – Ecological services – International efforts for environmental protection.

MODULE 2:

Global warming – Effects – Measures to control – Ozone depletion – Ozone depletion and Business –Green freeze Refrigerator

MODULE 3:

Environmental management system – Installation – Certification – Standards – Actual conduct of Audit – Indian Scene – Green Rating Project

MODULE 4:

Key function of the Government Agencies – Environmental impact assessment – Environmental compliance status in India – Constraint – Small scale industries

MODULE 5:

Bio-diversity – Bio-diversity in south – Acquisition of biological Health – Formers Right – The patent and Intellectual Property Rights – Indigenous Knowledge – Convention of Biological diversity

MODULE 6:

Business strategy – Green Marketing – Eco-labeling - Criteria for Eco-mark – Environmental accounting - Environmental ethics – Indian situation – Deep ecology

Text Books:

N.K Uberoi, "Environmental Management", Excel Books, 2nd Edition, 2005

132201 - PETROLEUM REFINING PROCESS

OBJECTIVE: To provide a broader view about the refinery processes and about the Indian Petroleum Industry.

MODULE 1:

Origin and Formation of Petroleum – Reserves and Deposits of World – Petro Glimpses and Petroleum Industry in India – Composition of Petroleum

MODULE 2:

Petroleum Processing Data – Evaluation of Petroleum – Thermal Properties of Petroleum Fractions – Important Products – Properties and Test Methods

MODULE 3:

Fractionation of Petroleum – Dehydration and Desalting of Crudes – Heating of Crude – Pipe Still Heaters – Distillation of Petroleum – Blending of Gasoline

MODULE 4:

Treatment Techniques – Fractions – Impurities – Gasoline Treatment – Treatment of Kerosene – Treatment of Lubes – Wax and Purification

MODULE 5:

Thermal and Catalytical Processes – Cracking – Catalytic Cracking – Catalytic Reforming – Naphtha Cracking – Cocking

MODULE 6:

Hydrogen Processes – Alkylation – Isomerisation Processes – Polymer Gasolines – Asphalt Technology – Source of Asphalt – Air Blowing of Bitumen – Upgradation of Heavy Crudes

Text Books:

B.K. Bhaskara Rao, "Modern Petroleum Refining Processes", 5th Edition, Oxford & IBH Publishing, New Delhi, 2008

132103 - OIL AND GAS FIELD DEVELOPMENT

MODULE 1:

Reservoir existence-Definition-Producing reservoir-New infill reservoir-deeper pool reservoir-Well testing-oil recovery-secondary recovery-Geological heterogeneity-deeply buried sandstone reservoir –Carbonate reservoir-Carbonate analogs through time(CATT)-reservoir fluids.

MODULE 2:

Petroleum finding search techniques-Maps and imaging-Satellite imaging and remote sensing-Geological maps- Contour map-Electric logs-Gamma ray portion- Resistivity portion-Magnetics-Seismology-Body waves-P waves-S waves-Surface waves- Love waves-Ray light

MODULE 3:

Waves- Seismic waves in the earth- Reflection-2D seismic-advances 3D visualization -Paleontogy-Biostratigraphy-sequence stratigraphy- Paleoecology-Hydrocarbon generation-Microfossils- Coring- Rock core- Open Hole rotary coring- Core bit- Slabbed core- Sidewall coring-Small sidewall cores- Pressure date of a giant oil field- Next wave in reservoir monitoring.

MODULE 4:

Implications for exploration and development- Reducing the risk of lithology predication-Maturing basin- Evaluation seal potential- Use of dip data to improve the interpretation of fold traps- Carbonate sequence stratigraphy- Coalbed methane- Shale tight sands- Tight sands-Unconventional gas-FMI Fullbore formation-Resistivity imager- Benefits and features.

MODULE 5:

Measurement physics- Characterization of rock structure-Net pay in laminated sediments- -Visualization of sedimentary features- Fracture-Permeability direction- Structural interpretation- 3-D reservoir modeling- Key input for mechanical earth models- FMI specifications- Formation evaluation tools- Coring- mud logging- electric logs- porosity logs- Lithology logs- Routine core analysis.

MODULE 6:

Role of visualization in resource- formation resistivity measurement- Saturation measurement- Faster logging reservoir monitoring- logging for primary evaluation- Accuracy and precision Geophysical logging- Hole to hole measurements- Time domain electromagnetic-Ground penetrating radar- high resolution aeromagnetic surveys- Gravity- Magnetic- Resistivity-Seismic sources- Seismic reflection cross section

Text Books:

N.Nanderpour and FH Kordmahaleh, "Petroleum Geosciences", SBS Publishers and Distributors Limited 2009 edition

132104 - OIL WELL DRILLING TECHNOLOGY

MODULE 1:

Plate tectonics- Continental Draft – Seafloor spreading- Location of plate boundaries- type of plate motion- Integrated rock physics modeling- Geochemistry in exploration- Geochemistry and hydrocarbon assets- Distribution of oil quality in basis

MODULE 2:

Identifying missed payzones- Delineating reservoir compartmentalization- Maximizing water flood efficiency -   Production lubing failure- Defecting cementing failures- Origin and distribution of heavy high inscosity deposits-Exploration and production tar study-Tracer and traceless studies-Mudges-Wet chemistry-Petrophysical properities-Chemometrics.

MODULE 3:

Elements of a petroleum system-Crucial factors-Petroleum system events chart-Hydrocarbon trap types-Petroleum system processes-Thermal maturation –Quantitative play analysis-Drilling-Rig-Completed oil well-Transporting petroleum-4 D seismic technology-Application and benefits-4 D feasibility study

MODULE 4:

Well data conditioning-Repeatability-Seismicresolution-Offset-Regularization-Survey azimuth-Wavelet matching –Spactial regularization –Deterministic, global and non rigid matching. Types of drilling rigs- Land rigs,jackup rig-Inland barge, drill ship-Semi-Submersible rig-Drill bit-Drill string-Drilling mud pumping-Drilling mud cycle.

MODULE 5:

Running logs-good porosity-poor porosity- poor resistivity-good reistivity- final string of casing-perforating guns-packer- pipeline design and running-production seperators-gas,water,oil lines

MODULE 6:

Global basins-Mississsipi-petroleum play-Anadarko basin- san Joaquin valley gusher-K-T sedimentary basins-Ghawar field-The gulf of Suez,Greece and the North sea-Albacora field-Mexico rocks- hydrocarbons of the South Caspian Basin

Text Books:

N.Nanderpour and FH Kordmahaleh, "Petroleum Geosciences", SBS Publishers and Distributors Limited 2009 edition

131604 - ENVIRONMENTAL MANAGEMENT

OBJECTIVE: To understand the implication of Environment damage and resource depletion and to upgrade the Environment

MODULE 1:

Meaning – Importance – Selected concepts of ecology – Ecological services – International efforts for environmental protection.

MODULE 2:

Global warming – Effects – Measures to control – Ozone depletion – Ozone depletion and Business –Green freeze Refrigerator

MODULE 3:

Environmental management system – Installation – Certification – Standards – Actual conduct of Audit – Indian Scene – Green Rating Project

MODULE 4:

Key function of the Government Agencies – Environmental impact assessment – Environmental compliance status in India – Constraint – Small scale industries

MODULE 5:

Bio-diversity – Bio-diversity in south – Acquisition of biological Health – Formers Right – The patent and Intellectual Property Rights – Indigenous Knowledge – Convention of Biological diversity

MODULE 6:

Business strategy – Green Marketing – Eco-labeling - Criteria for Eco-mark – Environmental accounting - Environmental ethics – Indian situation – Deep ecology

Text Books:

N.K Uberoi, "Environmental Management", Excel Books, 2nd Edition, 2005

130303 - PROJECT MANAGEMENT

OBJECTIVE: To identify how business regularly uses Project Management to accomplish unique out comes with limited resources under critical constraints.

MODULE 1:

Project Definition – Project Life Cycle – Project objectives – purpose of Project Management – Project Management Maturity – Project Selection and Choice – Types of Project – Selection Models – Analysis under Uncertainty and Rise – Project Portfolio Process.

MODULE 2:

Functional Manager vs. Project Manager – Project Responsibilities – Demands on the Project Manager – Project Manger Selection – Culture and the Project impact of Institutional Environments – Need for Multicultural Communications

MODULE 3:

Project Organization – Pure Project Organization – Matrix – Mixed Organizational Systems – choosing a Firm – Risk Management – Project Management Office – The Project Team – Human Factors and the Project Team – Sources of Conflict.

MODULE 4:

Project Planning and Coordination – Systems Integration – Action Plan – Work Breakdown Structure – Partnering - Chartering – Categories of Conflict – Principles of Negotiation – Top Down and Bottom Up Budgeting – Activity vs. Program Budgeting.

MODULE 5:

Network Techniques PERT and CPM – Precedence Programming – Resource Loading – Leveling – Goldratts Critical Chain – Monitoring System Design – Reporting Process – Project Management Information Systems (PMIS).

MODULE 6:

Project Control – Purposes, Types – Three Types of Control Processes – Post Control – critical Ratio and Control Charts – Balance in Control System – Project Auditing – Purpose of Evaluation – use of Audit Report Product Audit Life Cycle – Measurement – varieties of Project Termination.

Text Books:

Jack.R Mexdith and Samuel J.Mantel Jr,"Project Management, A Managerial Approach", Willey, 5th Edition

132301 - TRADEMARK LAW

OBJECTIVE: To familiarize the students with the basics of the Law of Trademarks and its uses.

MODULE 1:

Foundations of Trademark Law – Introduction – Purpose and Function of Trademarks – Types of Marks – Trademarks, Service Marks, Certification marks and Collective Marks – Acquisition of Trademark Rights – Common Law Rights, Federal Registration Under the Lanham Act – Laws and treating Governing Trademarks – State Trademark Rights – Categories of Marks – Trade Names and Business Names – Exclusions from Trademark Protection.

MODULE 2:

Trademark Selection and Searching – Selecting and Evaluating a Mark – The Trademark Search – Trademark Registration Process – Preparing application – Filing Application – Docketing Critical Dates – Examination Process – Post examination Procedure – Registration – Monitoring System.

MODULE 3:

Post registration Procedures, Trademark Maintenance and– Affidavit of Continued Use – Affidavit of Incontestability – Renewal of Registrations – Docketing Requirements – Loss of Trademark Rights – Trademark Use and Compliance Policies – trademark Policing and Maintenance – Use of Marks Owned by Third Parties –

MODULE 4:

Transfer of Rights to Marks - Transfer of Ownership or Rights in Trademarks - Inter Partes Proceedings, Infringement and Dilution – Inter Partes Proceedings – Infringement of Trademarks – Dilution of Trademarks – Related Trademark Claims.

MODULE 5:

New Developments in Trademark Law – the Internet – Protecting a Domain Name – Hyper linking and the First Amendment – Other Cyberspace Trademark Issues – Case Studies.

MODULE 6:

International Trademark Law – Applications in the United States based on Foreign Applications and Registrations – Securing Trademark Protection in Foreign Counties – Effects of New International Agreements (NAFTA and TRIPs) International Associations.

Text Books:

Deborah E Bouchoux, "Intellectual Property Rights", Cengage Learning India Edition, New Delhi, 2008.

132303 - COPYRIGHT LAW

OBJECTIVE: This paper focuses on the Laws pertaining to Copyrights and its uses.

MODULE 1:

Foundations of Copyright Law – Common Law Rights and Rights Under the 1976 Copyright Act – The United States Copyright Office – The Subject Matter of Copyright – Originality of Material – Fixation of Material – Works of Authorship – Exclusions from Copyright Protection – Compilations, Collections, and Derivatives Works.

MODULE 2:

Rights Afforded By Copyright Law – Introduction – Rights of Reproduction – Rights to Prepare Derivative Works – Rights of Distribution and the First Sale Doctrine – Rights to perform the Work Publicly – Rights to Display the Work Publicly – Rights to Perform Copyrighted Sound Recordings – Limitations on Exclusive Rights – Moral Rights and the Visual Artists Rights Act.

MODULE 3:

Copyright Ownership, Transfers and Duration – Copyright Ownership Issues – Joint Works – Ownership in Derivative or Collective4 Works – Works Made for Hire – Transfers of Copyright – Termination of Transfers of Copyright – Duration of Copyright.

MODULE 4:

Copyright Registration, Searching Copyright Office Records and Notice of Copyright – Application for Copyright Registration – deposit Materials – Application Process and Registration of Copyright – Searching Copyright Office Records – Obtaining Copyright Office Records and Deposit Materials – Copyright Notice.

MODULE 5:

Copyright Infringement – Elements of Infringement – Contributory Infringement and Vicarious infringement – Defenses to Infringement – Infringement Actions – Remedies for Infringement - International Copyright Law – Berne Convention – WIPO Treaties – Uruguay round Agreements – Universal Copyright Convention – Trade Aspects of Intellectual Property Law – Gray Market Goods.

MODULE 6:

New Developments in Copyright Law and the Semiconductor Chip Protection Act – Copyright protection for Computer Programs – for Automated Databases – Copyright in the Electronic Age – Digital Millennium Copyright Act – Musical Notes – Recent developments in Copyright Law – Vessel Hull Protection - Semiconductor Chip Protection.

Text Books:

Deborah E Bouchoux, "Intellectual Property Rights", Cengage Learning India Edition, New Delhi, 2008.

132302 - PATENT LAW

OBJECTIVE: The subject throws light on the Patent Laws and its uses.

MODULE 1:

Foundations of Patent Law – Introduction – Rights under Federal Law – United States Patent and Trademark Office – Patentability – Design Patents – Plant Patents – double Patenting – The Orphan Drug Act.

MODULE 2:

Patent Searches and Applications – Patent Application Process – Prosecuting the Application – Post issuance Actions – Terms and Maintenance of Patents

MODULE 3:

Patent Ownership and Transfer – Ownership Rights – Sole and Joint Investors – Disputes over Inventorship – Inventions Made by Employees and Independent Contractors – Assignment of Patent Rights – Invention Developers and Promoters.

MODULE 4:

Patent Infringement – Direct Infringement, Inducement to Infringe and Contributory Infringement – The First Sale or Exhaustion Doctrine – Claims Interpretation – Defenses to Infringement – Remedies for Infringement – Resolving an Infringement Dispute – patent Infringement Litigation

MODULE 5:

New Developments and International Patent Law – New Developments in the Patent Law – Introduction to International Patent Protection – The Paris Convention – The Patent Cooperation Treaty – the European Patent Organization – Agreement on Trade-Related Aspects of Intellectual Property Rights – the Patent Law Treaty – Foreign Filing Licenses.

MODULE 6:

Intellectual Property Audits and Due Diligence Reviews – Introduction – Practical Aspects of Intellectual Property Audits – Conducting the Audit – Post Audit Activity.

Text Books:

Deborah E Bouchoux, "Intellectual Property Rights", Cengage Learning India Edition, New Delhi, 2008.

130605 - BRAND MANAGEMENT

OBJECTIVE: To understand and appreciate the significant influence of Brand and their reach **in** ensuing customer retention and continued loyalty.

MODULE 1:

Brand definition, nature, and scope and significance economics – competition – differentiation – customer loyalty – Brand and trust Different Brand perspectives – Anatomy of a Brand

MODULE 2:

Brand knowledge pyramid – Benefits and promises – norms and values – identity and self expression – emotion and love – Evolution of a brand – Brand levels – Value hierarchy – Brand evolution – Poor, Hollow and power brands

MODULE 3:

Brand positioning – USP – Brand image and personality – 3 C^s of positioning – Competitive positioning and strategy – Brand success – Core Benefits

MODULE 4:

Buying decision – Consumer perspectives – Consumer decision making – Post purchase behavior – Brand selection – building superior brands – Key drives of buying

MODULE 5:

Brand equity – definition and dimensions – brand awareness and customer loyalty – Brand report card – Brand identity levels and perspectives – Brand image – Brand check – Brand association – Brand extensions: reason and Types

MODULE 6:

Managing brand image – concept management – functional brands – symbolic brands – forces affecting brands – Brand revitalization – Brand recall and elimination – product branding, line branding umbrella branding – Brand endorsement – Brand valuation methods.

Text Books:

Harsh V Verma, "Brand Management", Excel Books

132304 - TRADE SECRETS, UNFAIR COMPETITION AND GEOGRAPHICAL INDICATION

OBJECTIVE: To familiarize the students about the trade secrets, unfair competition, geographical indication and other aspects of Intellectual Property Rights.

MODULE 1:
      Introduction to Trade Secrets Law – Determination of Trade Secret Status – Liability for Misappropriation of Trade Secrets – Employer-Employee Relationships – Protection for Submissions – Defenses to Trade Secret Misappropriation – Remedies for Misappropriation – Trade Secret Litigation- Trade Secret Protection Programs – New and International Developments in Trade Secrets Law.

MODULE 2:
      Introduction to Unfair Competition – Passing Off – Misappropriation – Right of Publicity – False Advertising – Product Disparagement – Dilution – Infringement of Trade Dress – International Protection Against Unfair Competition.

MODULE 3:
      Overview and Provisions of the Trips Agreement – Definition – Features – General Provisions – Substantive standards of Protection – Protection of Intellectual Property – TRP Agreements and WTO Members – Role of the TRIPS Council

MODULE 4:
      Introduction to Intellectual Property Audits – Definition – Importance - Practical Aspects of Intellectual Property Audits – Conducting the Audit – Post audit Activity.

MODULE 5:
      Geographical Indication – Definition – Benefits of Registration of Geographical Indications – Features of Geographical Indications – Geographical Indication Vs Trademark – Guidelines for Filling of Geographical Indication Application – Cost of Registering a GI – Steps involved in Processing of Application

MODULE 6:
      Industrial Design – Process of Design – Industrial Design Rights – Hague System – Integrated Circuit and Layout – Definition – Advantages - Classification – Regulations on the Protection of Layout Designs – Criteria for Registration – Emerging Trends in IPR – Case Studies and Case Laws.

Text Books:
1.   Deborah E Bouchoux, "Intellectual Property Rights", Cengage Learning India Edition, New Delhi, 2008.
2.   R. Karuppasamy, H.C. Bindusha, "A Practical Approach to Intellectual Property Rights", Himalaya Publishing House.

131804 – COMPUTER GRAPHICS AND MULTIMEDIA

OBJECTIVE: To impart the fundamental concepts of Computer Graphics and Multimedia.

MODULE 1:
Introduction – Graphical Input and Output Devices – Raster Scan Video Principles – Random Scan Devices – Graphic Accelerators and Graphics Co-Processors – Scan Conversion – Polynomial Method – DDA Algorithms – Bresenham's Algorithms – Midpoint Methods – Problems of Scan Conversion – Solid Areas or Polygons – Inside-Outside Test – Solid Area Filling Algorithms

MODULE 2:
2D Geometrical Transformation – Basic Transformations – Homogenous Coordinate System – Other Transformations – Combined Transformations – Inverse of Combined Transformations – Display File – Segments – Algorithms for Segment Table and Display File – 3D Geometrical Transformation – Basic Transformations – Other Transformations – Parallel Projection – Perspective Projection – Image Formation Inside a Camera

MODULE 3:
2D Viewing and Clipping – Windows and View ports – Viewing Transformation – Clipping of Lines in 2D – Concepts of Parametric Clipping – Generalized 2D Line Clipping – Polygon Clipping – Clipping Against Concave Windows – 3D Viewing and Clipping – Viewing Transformation Matrix in 3D – Clipping of Lines in 3D – Clipping in Homogenous Coordinates – Clipping Using Normalized Windows – Curve Design

MODULE 4:
Hidden Surface Elimination – Modeling Illumination – Shading – Shadow – Assigning Intensity Levels to Gray Shades – Concepts of Colors – CIE Color Standard

MODULE 5:
Multimedia Basics – Concepts of Multimedia – Digital Video – MIDI – Image Compression Standards – Video Compression and Encoding – Hypertext and Hypermedia – Virtual Reality – Basics – Virtual Reality Markup Language (VRML) – Building a VRML World

MODULE 6:
Image File Formats – BMP Format – JPEG and JFTF – GIF Format – TIFF File – Animation and Flash Overview – Development of Animation – Non-Computer and Computer Based Animation – Flash Basics – The Flash Work Environment – Drawing Overview – Using Layers – Creating Text Boxes – Creating Animation – Publishing and Exporting

Text Books: -
Malay K. Pakhira, "Computer Graphics-Multimedia and Animation", Prentice Hall India, New Delhi

References:
-Donald Hearn, M. Pauline Baker, "Computer Graphics"- Prentice Hall India, 2nd Edition

132401 – 3D GRAPHICS

OBJECTIVE: To provide all the aspects of various animation tools

MODULE 1:
Introduction to Flash – Flash Files and Flash Player – The Flash Workspace – The Panels – Component Inspector Panel – Working with Graphics and Colors – Understanding Vector and Bitmap Graphics – Drawing Models in Flash – Selecting Objects in Flash – Creating Graphics in Flash – Setting Pen Tool Preferences – Fills and Outlines – The Color Palette – Using the Color Swatches Panel – Using the Color Mixing Panel – Applying a Locked Gradient as a Fill

MODULE 2:
Transforming and Aligning Graphics – Grouping the Objects – Understanding the Stacking Order of Objects – Breaking Apart Groups and Objects – Transforming the Objects – Aligning the Objects – Symbol and Library – Creating Library – Creating a Button – Editing Symbols – Modifying the Instance of a Symbol – Using the Library – Using the Common Libraries – Opening the Library – Creating the Custom Libraries.

MODULE 3:
Animation in Flash – Working with Timeline Effects – Using the Transform Timeline Effect – Using the Explode Timeline Effect – Using the Frame-by-Frame Animation Technique – Using Motion Tweening to Create Animations – Using Shape Tweening to Create Animations – Animating Filters – Applying the Bevel Filter – Applying the Glow Filter – Animating the Filter using the Motion Tween.

MODULE 4:
Introduction to 3dsMax – Understanding the 3dsMax Interface Elements – Working with Viewports – Setting System Units – Managing 3dsMax Files – Working with Objects – Working with Primitive Objects – Modifying the Primitives – Selecting Objects – Transforming Objects – Hiding / Freezing the Objects – Cloning Objects – Mirroring Objects – Grouping Objects – Aligning Objects – Aligning the Objects Using Quick Align Tool.

MODULE 5:
Modifiers – Types – Modifier Stack – Using Modifiers – Objects and Modifiers sub-objects – Applying the Bend Modifier – Applying the Taper Modifier – Applying the Twist Modifier – Applying the Noise Modifier – Applying the Stretch Modifier – Applying the Squeeze Modifier – Working with 2D Shapes – Shape Primitives – Creating a Line, Star, Text – Creating Multi Spline Shapes – Modifying the Splines – Rendering Splines – Making Splines Editable – Combining Shapes – Cross Section Feature – Editing Vertices.

MODULE 6:
Lights – Standard and Photometric Lights – Key Light, Fill Light and Back Light – Default Lightning – Creating Standard Light Objects – Modifying Parameters of Light Object – Animation in 3dsMax – Understanding Frames, Key Frames and Keys – 3dsMax Animation Tools – Changing the number of Frames – Animating Objects in Auto Key and Set Key Mode – Working with the Motion Panel – Assigning a Path Constraint

Text Books: Vikas Gupta, "Multimedia and Web Design", Dreamtech Press, 2008

132402 – ART OF MAYA

OBJECTIVE: To provide clear knowledge about the use, design and implementation of animation software development using Maya 2008

MODULE 1:

Introduction to Maya 2008 – Workflow of 3D Content Development – Installing Maya 2008 – Steps to Start Maya 2008 – Exploring Maya 2008 User Interface – Exiting Maya 2008 – Working with Projects and Scenes – Viewing the Workspace – Working with Objects – Grouping and Ungrouping Objects – Duplicating Objects – Working with Construction History

MODULE 2:

Polygon Modeling in Maya 2008 – Exploring the Components of a Polygon Mesh – Creating a Polygon Mesh – Modifying a Polygon Mesh

MODULE 3:

NURBS Modeling – NURBS Curves – Creating a NURBS Curve – Editing a NURBS Curve – Creating NURBS Surface – Editing a NURBS Surface

MODULE 4:

Animating Objects in Maya 2008 – Basics – Types of Animation – Using the Animation Controls – Animating an Object Using Key Frame Animation – Adding Sound to an Animation – Previewing an Animation

MODULE 5:

Shading, Texturing and Lighting – Shader Types – Shader Attributes – Hyper shade – Using Hyper shade – Maya Lights – Adding Shadows – Mental Ray Lighting – Lightning Effects

MODULE 6:

Rendering Scenes in Maya 2008 – Types of Rendering and Renderers – Using the Render Settings Window - Working with a Camera – Adding Depth of Field – Adding Motion Blur – Rendering a Scene using Maya Software Renderer – Rendering Nodes – Working with Rendering Layers – Using the Mental Ray for Maya Renderer

Text Books:

"Maya 2008 – Simple Steps", Dreamtech Press, 2008

132403 - MULTIMEDIA AND WEB DESIGNING

OBJECTIVE: To provide all-round exposure on various multimedia and web development tools

MODULE 1:

Introduction to Computers – Computer Hardware - Introduction to Windows – Windows XP – Mouse Basics – Working in Windows XP – Learning More About the Mouse – Performing Mouse Actions – Components of a Window – Quitting Windows XP

MODULE 2:

Introduction to Photoshop CS2 – Photoshop Basics - Working with Images – Making Selections – Painting, Drawing and Retouching Tools – Layers – Filters

MODULE 3:

CorelDraw Basics – Drawing and Selecting – Working with Text – Working with Images – Page Layout and Background

MODULE 4:

Introduction to HTML – Document Overview – Head Elements – Section Headings – Block Oriented Elements – Lists – Uniform Resource Locators – Hypertext Links – Images – Tables – Frames - Forms

MODULE 5:

Introduction to Dreamweaver MX – Working with Tables, Anchors and Frameset – Layers and Style sheets – Forms and Media Elements

MODULE 6:

Introduction to Sound Forge – Creating a Project in Sound Forge – Opening an Audio File and Saving it as Workspace – Import a Media File – File Properties – Editing in Sound Forge – Effects – Recording in Sound Forge

Text Books:

Vikas Gupta, "Multimedia and Web Design", Dreamtech Press, 2008

132404 – VIRTUAL REALITY TECHNOLOGY

OBJECTIVE: To impart the fundamental aspects, principles and applications of virtual reality technology.

MODULE 1:

Introduction to Virtual Reality – Definition – Three I's of Virtual Reality – Virtual Reality Vs 3D Computer Graphics – Components of VR System - Input Devices – 3D Position Trackers - Performance Parameters – Types of Trackers - Navigation and Manipulation Interfaces – Gesture Interfaces – Types of Gesture Input Devices.

MODULE 2:

Output Devices – Graphics Display – Human Visual System – Personal Graphics Displays – Large Volume Displays – Sound Displays – Human Auditory System – The Convolvotron – Speaker Based 3D Sound – Haptic Feedback – Human Haptic System – Tactile and Force Feedback Interfaces.

MODULE 3:

Computing Architectures of VR – Rendering Principle – Graphics and Haptics Rendering – PC Graphics Architecture – Graphics Accelerators – Graphics Benchmarks – Workstation Based Architectures – Sun Blade 1000 Architecture – SGI Infinite Reality Architecture – Distributed VR Architectures – Multipipeline Synchronization – Collocated Rendering Pipelines – Distributed Virtual Environments.

MODULE 4:

Modeling – Geometric Modeling – Virtual Object Shape – Object Visual Appearance – Kinematics Modeling – Transformation Matrices – Object Position – Transformation Invariants – Object Hierarchies – Viewing the 3D World – Physical Modeling – Collision Detection – Surface Deformation – Force Computation – Force Smoothing and Mapping – Behavior Modeling – Model Management.

MODULE 5:

VR Programming – Toolkits and Scene Graphs – WorldToolKit – Java 3D – Comparison of WorldToolKit and Java 3D - GHOST – PeopleShop – Human Factors in VR – Methodology and Terminology – VR Health and Safety Issues – VR and Society.

MODULE 6:

VR Applications – Medical Applications of VR – Education, Arts and Entertainment – Military VR Applications – Emerging Applications of VR – VR Applications in Manufacturing – Applications of VR in Robotics – Information Visualization.

Text Books:

Grigore C. Burdea, Philip Coiffet, "Virtual Reality Technology", 2nd Edition, Wiley India, 2006.

132501 - DATA COMMUNICATION AND COMPUTER NETWORKS

OBJECTIVE: To impart the fundamental concepts, terminologies and technologies used in modern days data communication and computer networking.

MODULE 1:

Introduction to Data Communication – Overview of Networks – Protocols and Standards – Layered Tasks – The OSI Model – Layers in the OSI Model – TCP/IP Protocol Suite – Addressing

MODULE 2:

Introduction to Physical Layer and Media - Analog and Digital Data, Analog and Digital Signals – Transmission Impairment – Performance – Line Coding and Line Coding Schemes - Transmission modes – Guided Transmission media – Structure of a Switch – Telephone Network – Dial-Up Modems – Digital Subscriber Line (DSL)

MODULE 3:

Introduction to Data Link Layer – Error and Types of Error - Error Detection and Error Correction – Parity – LRC – CRC - Hamming Code – Checksum – Flow and Error Control – Stop and Wait – Go-Back N ARQ – Selective Repeat ARQ – Sliding Window – HDLC – LAN – IEEE 802.3 - IEEE 802.4 – IEEE 802.5 – IEEE802.11 – FDDI – SONET - Bridges

MODULE 4:

Introduction to Network Layer – Internetworks - Circuit Switching – Packet Switching – Datagram, Virtual Circuit – Message Switching – IP Addressing Methods – Subnetting – Routing – Distance Vector Routing – Link State Routing - Routers

MODULE 5:

Introduction to Transport Layer – Duties of Transport Layer – Multiplexing – Demultiplexing – Sockets – UDP – TCP – Congestion Control – Quality of Service – Integrated Services - Introduction to Application Layer – Domain Name Space – Distribution of Name Space – Resolution – DNS Messages – Types of Records – Encapsulation - Remote Logging – Electronic Mail – File Transfer – WWW – HTTP

MODULE 6:

Introduction to Network Management System – SNMP – Introduction to Cryptography – Symmetric Key Cryptography – Asymmetric Key Cryptography – Introduction to Network Security - Security Services – Message Confidentiality – Message Integrity – Message Authentication – Digital Signature – Entity Authentication – Key Management – Internet Security - IP Sec – SSL – PGP - Firewalls

Text Books:

Behrouz A Forouzan, "Data Communications and Networking", Tata McGraw Hill, 4th Edition

132502 - NETWORK PROGRAMMING

OBJECTIVE: To provide comprehensive guidance for building robust, high performance networked systems in any environment.

MODULE 1:

Introduction to Client and Server – A Simple Daytime Client – Protocol Independence – Error Handling: Wrapper Functions - A Simple Daytime Server – OSI Model - BSD Networking History - Test Networks and Hosts – Unix Standards – 64-Bit Architectures - The Transport Layer – Overview of TCP / IP Protocols – UDP – TCP – SCTP – TCP Connection Establishment and Termination – TIME_WAIT State – SCTP Association Establishment and Termination – Port Numbers and Concurrent Servers – Buffer Sizes and Limitations – Standard Internet Services – Protocol Usage by Common Internet Applications.

MODULE 2:

Introduction to Sockets – Socket Address Structure – Value Result Arguments – Byte Ordering Functions – Byte Manipulation Functions – inet_aton, inet_addr and inet_ntoa Functions – inet_pton and inet_ntop Functions – sock_ntop and Related Functions – readn, writen and writeline Functions – Elementary TCP Sockets – socket Function – connect Function – bind Function – listen Function – accept Function – fork and exec Functions – Concurrent Servers – close Function – getsockname and getpeername

MODULE 3:

TCP Echo Server: main and str_echo Functions – TCP Echo Client: main and str_cli Functions – Normal Startup and Termination – POSIX Signal Handling – Handling SIGCHLD Signals – wait and waitpid Functions – Connection Abort before accept Returns – Termination of Serve Process – SIGPIPE Signal – Crashing, Rebooting and Shutdown – Data Format – Introduction to I/O Multiplexing – I/O Models – select and str_cli Functions – Batch Input and Buffering – shutdown Function – pselect and poll Functions

MODULE 4:

Introduction to Socket Options – getsockopt and setsockopt Functions – Socket States – Generic Socket Options – Ipv4 Socket Options – ICMPv6 Socket Options – Ipv6 Socket Options – TCP Socket Options – SCTP Socket Options – fcntl Function – Introduction to Elementary UDP Sockets – recvfrom and sendto Functions – UDP Echo Server: main and dg_echo Functions – UDP Echo Client: main and dg_cli Functions – Lost Datagrams – Verifying Received Response – connect Function with UDP – Lack of Flow Control with UDP – Determining Outgoing Interface with UDP

MODULE 5:

Introduction to Elementary SCTP Sockets – Interface Models – Various SCTP Related Socket Functions – SCTP One to Many Style Streaming Echo Server: main Function - SCTP One to Many Style Streaming Echo Client: main Function – SCTP Streaming Echo Client: str_cli Function – Exploring Head-of-Line Blocking – Controlling the Number of Streams – Controlling Termination

MODULE 6:

Introduction to Name and Address Conversion – Domain Name System (DNS) – gethostbyname Function – gethostbyaddr Function – getservbyname and getservbyport Functions – getaddrinfo Function – gai_strerror Function – freeaddrinfo Function getaddrinfo Function: IPv6 – Examples – host_serv Function – tcp_connect Function – tcp_listen Function – udp_client Function – udp_connect Function - udp_server Function – getnameinfo Function – Re-entrant Functions – gethostbyname_r and gethostbyaddr_r Functions – Other Networking Information

Text Books: Richard Stevens, "UNIX Networking Programming", Prentice Hall India, Volume 1, 3rd Edition

132503 - NETWORK ADMINISTRATOR

OBJECTIVE: To provide comprehensive guidance to deployment and administration of windows server.

MODULE 1:

Windows Server 2008 and Windows Vista – Networking Tools and Protocols – Domain Controllers, Member Servers, and Domain Services – Name-Resolution Services – Frequently Used Tools - Server Roles, Role Services, and Features for Windows Server 2008 – Full-Server and Core-Server Installation of Windows Server 2008 – Installing Windows Server 2008 – Managing Roles, Role Services, and Features - Performing Initial Configuration Tasks – Managing Your Servers – Managing System Properties – Managing Dynamic-Link Libraries.

MODULE 2:

Managing Applications, Processes, and Performance – Managing System Services – Event Logging and Viewing – Monitoring Server Performance and Activity – Tuning System Performance - Understanding Group Policies – Navigating Group Policy Changes – Managing Local Group Policies – Managing Site, Domain, and Organizational Unit Policies – Maintaining and Troubleshooting Group Policy – Managing Users and Computers with Group Policy - Using Security Templates – Using the Security Configuration Wizard.

MODULE 3:

Introducing Active Directory – Working with Domain Structures – Working with Active Directory Domains – Understanding the Directory Structure - Tolls for Managing Active Directory – Using the Active Directory Users And Computers Tool – Managing Domain Controllers, Roles, and Catalogs – Managing Organizational Units – Managing Sites – Maintaining Active Directory – Troubleshooting Active Directory

MODULE 4:

The Windows Server 2008 Security Model – Differences Between User and Group Accounts – Default User Accounts and Groups – Account Capabilities – Using Default Group Accounts - User Account Setup and Organization – Configuring Account Policies – Configuring User Rights Policies – Adding a User Account – Adding a Group Account – Handling Global Group Membership - Managing User Contact Information – Configuring the User's Environment Settings – Setting Account Options and Restrictions – Managing User Profiles – Updating User and Group Accounts – Managing Multiple User Accounts – Troubleshooting Logon Problems – Viewing and Setting Active Directory Permissions.

MODULE 5:

Managing the File Services Role – Adding Hard Disk Drives – Working with Basic and Dynamic Disks – Using Basic Disks and Partitions – Managing Existing Partitions and Drives - Using and Enabling File Sharing – Configuring Standard File Sharing – Managing Share Permissions – Configuring NFS Sharing – Connection to Network Drives – File and Folder Permissions – Auditing System Resources – Using, Configuring, and Managing Resource Manager – Disk Quotas - Creating a Backup and Recovery Plan – Backing Up Your Data: The Essentials – Performing Server Backups – Managing Encryption Recovery Policy – Backing Up and Restoring Encrypted Data and Certificates.

MODULE 6:

Navigating Networking in Windows Server 2008 – Networking Enhancements in Windows Vista and Windows Server 2008 – Installing TCP/IP Networking – Configuring TCP/IP Networking – Managing Network Connections - Managing the Print Services Role – Installing Printers – Configuring Printer Properties – Configuring Print Server Properties – Managing Print Jobs on Local and Remote Printers - Understanding DNS – Installing DNS Servers – Managing DNS Servers – Managing DNS Records – Managing DNS Server Configuration and Security.

Text Books:

William R. Stanek, "Window Server 2008 – Administrator's Pocket Consultant", Prentice Hall India – Microsoft, 2008

132504 – INTERNETWORKING WITH TCP / IP

OBJECTIVE: To understand their fast growing technologies related to networks and internetworking.

MODULE 1:

ARPANET - Birth of Internet-Protocols and Standards - Internet Standards - Internet Administration - OSI Model –Layers in the OSI Model –TCP/IP Protocol Suite - Addressing - IP Versions - LAN's – Point to Point WAN's -Switched WAN's – Connecting Devices.

MODULE 2:

Classful Addressing – Subnetting and Supernetting - Variables length blocks - Delivery – Forwarding Techniques - Static versus Dynamic Routing –Structure of a Router – ARP - ARP Package – RARP.

MODULE 3:

Datagram – Fragmentations - Checksum - IP Package - Message format-Error Reporting – Query - Debugging Tools –IGMP Messages-Encapsulation - Port Numbers-Socket Address – UDP Operation - UDP Package.

MODULE 4:

TCP Services – TCP Features – Segment – Flow Control – Error Control – Congestion Control – TCP Timers - TCP Package – SCTP Services – Packet Format – SCTP Association - State Transition Diagram.

MODULE 5:

Distance Vector Routing –RIP- Link State   Routing – OSPF – Path Vector Routing – BGP – Unicast, Multicast and Broadcast – Multicast Applications – Routing – CBT – PIM - BOOTP – DHCP – Name Space – DNS in the Internet – NVT – Embedding – Options, Sub options Negotiations.

MODULE 6:

FTP – TFTP – SMTP – POP – SNMP – Web Documents – HTTP – Mobile IP – Digitizing audio and video – VNP – IPV6 – Cryptography Digital Signature – Key Management – Security in the Internet –Firewalls.

Text Books:

Behrouz A.Forouzan, "TCP/IP Protocol Suite", Tata McGraw Hill, 3rd Edition

132505 - NETWORK MANAGEMENT

OBJECTIVE: Enables students to move onto the networking industry to acquire knowledge in the field of network management

MODULE 1:

Data Communications and Network Management Overview-Analogy of Telephone Network Management.-Data (Computer) and Telecommunication Network.-Distributed Computing Environment.-Network Management: Goals, Organization and Functions.-Goal of Network Management.-Network Installation and Maintenance.-Network Management System.

MODULE 2:

Basic Foundations: Standards, Models, and Language – Introduction - Network Management Standards - Network Management Models - Organization Model - Information Model - Management Information Tree - Managed Object Perspective - Communication Model.

MODULE 3:

History of SNMP Management.-Internet Organizations and Standards – Organizations - Internet Documents - SNMP Model - SNMPv1 Network Management - Communication and Functional Models. -SNMP Architecture- SNMPv2 System Architecture-Bi-lingual Manager-SNMP Proxy Server.

MODULE 4:

Ethernet Management Information Base-Relationship Between Control and Data Tables-Token Ring RMON Management Information Base- Broadband Network Management: ATM Networks-Broadband Network and Services-ATM Technology-Virtual Path - Virtual Circuit-.ATM Packet Size- Role of SNMP and ILMI in ATM Management- ATM Digital Exchange Interface Management

MODULE 5:

Cable Modem and CMTS Management.-HFC Link Management- RF Spectrum Management - ADSL Management-ADSL Network Management Elements - ADSL Configuration Management - ADSL Fault Management. - Telecommunications Network Management Standards.-TMN Architecture

MODULE 6:

Network Management Tools- Configuration Management- Fault Management-Performance Management-Performance Metrics- Commercial Network Management Systems-Web Interface SNMP Management-Embedded Web-Based Management. Desktop Management Interface-Web-Based Enterprise Management

Text Books:

Mani Subramanian, "Network Management: Principles and Practice", Pearson Education, 2009.

132601 – SOFTWARE QUALITY MANAGEMENT

OBJECTIVE: To introduce an integrated approach to software development incorporating quality management methodologies.

MODULE 1:

Introduction to Quality and Software Quality – Views of Quality – Hierarchical Models of Quality – Definition - McCall Model – Boehm Model – Interrelationships between Quality Criteria – Practical Evaluation of Software Quality

MODULE 2:

Quality Measurement – Measuring Quality – Software Metrics – Metrics Cited based on the Quality Criteria – Problems Related with Metrics – Overall Measure of Quality – Gilb's Approach Quality Measurement – COQUAMO Project – Quality Profiles.

MODULE 3:

Growth of Software Engineering Methods – Methodologies based upon the Waterfall Lifecycle: SSADM - IEM - CASE Tools: Excelerator CASE Tool – IEF – Contribution of Methods and Tools to Quality – Alternative Approaches to Software Development – Software Quality Standards.

MODULE 4:

Quality Management System – Historical Perspective – Deming, Juran and Crosby Philosophy and their Comparison – Three Principal Terms related to QM – Elements of QMS – Key to Quality Management – Problems of User Requirements – QMS for Software – Quality Assurance and Improvement.

MODULE 5:

Quality Management Standards – Purpose of Standards – ISO9000 Series – ISO9000-3 for Software Development – Impact of ISO9000 and TickIT.

MODULE 6:

Models and Standards for Quality Improvement – Capability Maturity Model – Individuals Levels of the CMM – Role of the CMM – SPICE – Comparison of ISO9000 and CMM – Future Trends in Software Quality – Case Studies.

Text Books:

Alan C Gillies, "Software Quality – Theory and Management", 2nd Edition, Thomson Learning.

132602 - SOFTWARE QUALITY ASSURANCE

OBJECTIVE: To imbibe the knowledge of managing and maintaining quality issues concerned with the software design, development and maintenance.

MODULE 1:

Overview - People's Quality Expectations - Software Quality Perspectives and Expectations - Quality Frameworks and ISO – 9126 - Correctness and Defects - Definitions, Properties and Measurements A Historical Perspective of Quality

MODULE 2:

Quality Assurance – Classification - QA as Dealing with Defects - Defect Prevention - Education and training - Formal method - Other defect prevention techniques Defect Reduction - Direct fault detection and removal- Other techniques and risk identification-Defect Containment-Software fault tolerance- Safety assurance and failure containment.

MODULE 3:

Handling Discovered Defect During QA Activities - QA Activities in Software Processes - Verification and Validation Perspectives - Quality Engineering - Activities and Process - Quality Planning - Goal Setting and Strategy Formation - Quality Assessment and Improvement.

MODULE 4:

Quality Assurance beyond testing- Defect Prevention and Process Improvement - Basic Concepts and Generic Approaches - Root Cause Analysis for Defect Prevention - Education and Training for Defect Prevention - Analysis and modeling for Defect Prevention - Technologies, Standards and methodologies for defect prevention --Software tools to block defect injection.

MODULE 5:

Focusing on Software Processes - Process selection, definition and conformance Process maturity - Process and quality improvement - Fault Tolerance and Failure Containment - Basic Ideas and Concepts - Fault Tolerance with Recovery Blocks - Fault Tolerance with N - Version Programming - Failure Containment - Safety Assurance and Damage Control - Application in Heterogeneous Systems.

MODULE 6:

Comparing Quality Assurance Techniques and Activities - General Questions - Cost, Benefit and Environment - Applicability to Different Environments - Effectiveness Comparison - Defect perspective - Problem types - Defect level and pervasive level - Result interpretation and constructive information - Cost Comparison - QA Monitoring and Measurement - Direct and Indirect quality measurements - Models for Quality Assessment.

Text Books:

Jeff Tian, Software Quality Engineering: Testing, Quality Assurance, and Quantifiable Improvement, Wiley-India Edition

132603 - SOFTWARE RELIABILITY ENGINEERING

OBJECTIVE: To understand the fundamental concepts of software reliability process.

MODULE 1:

Overview of Software Reliability Engineering – Definition of Software Reliability – Factors Affecting Software Quality – Definition of Software Reliability Engineering – Software Reliability Engineering Process

MODULE 2:

Overview of Software Reliability Models - Basic Features - Single Failure Model - Reliability Growth Model - Exponential Failure Class Models - Weibull and Gamma Failure Class Models - Infinite Failure Category Models - Bayesian Models - Early Life-Cycle Prediction Models.

MODULE 3:

Defining Necessary Reliability - Failure Severity Class and Failure Intensity Objective Concepts - Steps in Defining Necessary Reliability – Finding Failure Intensity Objective for Developed Software - Strategies to meet Failure Intensity Objective - Serial and Parallel System Reliability - Reliability Economics

MODULE 4:

Developing Operational Profiles - Defining Function, Operation, Run, Run Type, Operational Mode, Operational Profile - Representation of Operational Profile - Procedure to Define Operational Profile - Create Functions/Operations List - Determine Occurrence Rate of Individual Operations - Determine Occurrence Probabilities

MODULE 5:

Preparing For Test - Direct and Indirect Input Variables - Operation, Load and Regression Test – Definition of Test Case – Managing Test Cases - Test Procedure - Equivalence Classes and Boundary Conditions - Developing Test Cases – Executing Test – Planning and Allocation Test Time – Invoking Test – Identifying Failures

MODULE 6:

Guiding Test – Tracking Reliability Growth – Certifying Reliability – Deploying Software Reliability Engineering – Overview of Software Reliability Tools – SMERFS - SRMP - SoftRel – CASRE - Case Study using CASRE

Text Books:

John D. Musa, "Software Reliability Engineering: More Reliable Software, Faster and Cheaper", Tata McGraw Hill, 2nd Edition, 2005

References:

1. Michael R. Lyu, "Hand Book of Software Reliability Engineering", McGraw Hill

2. Stephen H. Kan, "Metrics and Models in Software Quality Engineering", Addison Wesley, 2nd Edition, 2002

132604 - SOFTWARE METRICS

OBJECTIVE: To introduce an integrated approach to software development incorporating quality metrics and models.

MODULE 1:

Quality – Views of Quality – Software Quality – Software Development Process Models – Waterfall, Prototyping, Spiral, Iterative, Object Oriented – Defect Prevention Process – Process Maturity Framework and Quality Standards – Measurement Theory – Definition – Level of Measurement – Basic Measures – Reliability and Validity – Measurement Errors.

MODULE 2:

Overview of Software Quality Metrics – Product Quality Metrics – In-Process Quality Metrics – Metrics for Software Maintenance – Ishikawa's Seven Basic Quality Tools – Checklist – Pareto Diagram – Histogram – Run Charts – Scatter Diagram – Control Chart – Cause and Effect Diagram.

MODULE 3:

Defect Removal Effectiveness – Overview – Defect Injection and Removal Process – Phase Based Defect Removal Model – Cost Effectiveness of Phase Defect Removal – The Rayleigh Model – Basic Assumptions – Implementation – Reliability and Predictive Validity.

MODULE 4:

Exponential Model – Reliability Growth Models – Model Assumptions – Criteria for Model Evaluation – Modeling Process – Quality Management Models – The Rayleigh Model Framework – Code Integration Pattern – The PTR Submodel – The PTR Arrival/Backlog Projection Model – In- Process Metrics and Reports – Orthogonal Defect Classification.

MODULE 5:

In-Process Metrics for Software Testing – In-Process Metrics and Quality Management – Complexity Metrics and Models – Lines of Code – Halstead's Software Science – Cyclomatic Complexity – Syntactic Constructs – Structure Metrics – Object Oriented Projects - Design and Complexity Metrics – Productivity Metrics – Quality and Quality Management Metrics.

MODULE 6:

Customer Satisfaction Surveys – Analyzing Satisfaction Data – Satisfaction with Company – Conducting In-Process Quality Assessments – Preparation Phase – Evaluation Phase – Summarization Phase – Conducting Software Project Assessments – Audit and Assessment – Software Process Assessment Cycle – Proposed Software Project Assessment Method – Dos and Don'ts of Software Process Improvement.

Text Books:

Stephan H. Kan, "Metrics and Models in Software Quality Engineering", Pearson Education, 2nd Edition

132605 - SOFTWARE TESTING TOOLS

OBJECTIVE: To impart the fundamental concepts with details of the testing process and widely used automated, sophisticated testing tools.

MODULE 1:

Overview of Software Quality Assurance - The Software Crisis – The Birth of Software Engineering – Definition and Importance of Software Engineering – The Software Chaos – Criteria for the Success of a Software Project – Process Oriented Software Development – Phases in Software Development Life Cycle – Software Development Life Cycle Models – The Management Process – Software Quality Assurance – Quality Management Systems – Process Change Management.

MODULE 2:

Introduction to Software Testing Process - Psychology of Testing – Verification and Validation – Testing Team and Development Team – Cost of Quality – Characteristics of Test Engineers – Difficulties of Testing – Levels of Testing – Testing Approaches – Types of Testing – Test Plan – Criteria for Completion of Testing – Software Reliability – Manual Testing and its Limitations – Overview of Software Testing Tools - Need for Automated Testing Tools – Taxonomy of Testing Tools – Functional, Performance, Management and Source Code Testing Tools – Selection of Testing Tool.

MODULE 3:

Overview of WinRunner – Testing and Application Using WinRunner – Test Script Language (TSL) – GUI MAP File – Synchronization of Test Cases – Data-Driven Testing – Rapid Test Script Wizard – Mapping Custom Objects to a Standard Class – Checking GUI Objects - Overview of Silk Test – Architecture of Silk Test – Testing an Application Using Silk Test – The 4Test Scripting Language – Checkpoints – Data-Driven Test Cases.

MODULE 4:

Overview of SQA Robot – Testing an Application Using SQA Robot – Synchronization of Test Procedures – Creating Checkpoints - Overview of LoadRunner – Creating Vuser script using Virtual User Generator – Creating Virtual User Using LoadRunner Controller - Overview of JMeter – JDBC Test – HTTP Test.

MODULE 5:

Overview of Test Director – Testing Management Process – Managing the Testing Process Using Test Director - GNU Tools – Timing of Programs – Profiler – Code Optimization – Productivity Tools – Portability Testing Tools – Configuration Management Tools – Coding Guidelines and Standards.

MODULE 6:

Overview of QuickTest Professional – Testing an Application Using QTP – Synchronization of Test Cases – Creating Checkpoints – Testing Calculator with Parameterization – Testing Database Application – Testing A web Application.

Text Book:

Dr. K.V.K.K. Prasad, "Software Testing Tools", Dreamtech Press, 2008

131901 - SOFTWARE PROJECT MANAGEMENT

OBJECTIVE: To inculcate the fundamental practices of good project management needed by software industry.

MODULE 1:

Meaning – Software projects versus other types of project – Contract Management – Activities – Problems with software projects – Project Planning – Steps.

MODULE 2:

Programme management – Strategic Programme management – Evaluation –Choosing technologies for a selection of a project – Structure versus speed of Delivery – Waterfall Model – V-processes Model – Spiral Model – Prototype – Dynamic System Development method.

MODULE 3:

Estimation – Problems – Basis – Techniques – Activity planning – Schedules – Scheduling Activities – Activity float – Identifying Critical Activities – Activity-on arrow networks.

MODULE 4:

Risk Management – Framework – Evaluating risk to the schedule – Monte Carlo Simulation – Critical Chain Concepts – Resource allocation – Identifying resource requirements –Scheduling resources – counting the cost.

MODULE 5:

Monitoring and Control – Creating the framework – Collection of data – Change Control – Managing Contracts – ISO 12207 approach – Types of Contract – Contract Management.

MODULE 6:

Managing People – Understanding Behaviour – Motivation – Oldham - hackman Model – Decision Making Influence of Culture – Stress – Software Quality – Meaning and importance – Product versus process quality management.

Text Books:

Bob Hughes and Mike Cotterell, "Software Project Management", Tata McGraw Hill, 4th Edition 2006.

132601 – SOFTWARE QUALITY MANAGEMENT

OBJECTIVE: To introduce an integrated approach to software development incorporating quality management methodologies.

MODULE 1:

Introduction to Quality and Software Quality – Views of Quality – Hierarchical Models of Quality – Definition - McCall Model – Boehm Model – Interrelationships between Quality Criteria – Practical Evaluation of Software Quality

MODULE 2:

Quality Measurement – Measuring Quality – Software Metrics – Metrics Cited based on the Quality Criteria – Problems Related with Metrics – Overall Measure of Quality – Gilb's Approach Quality Measurement – COQUAMO Project – Quality Profiles.

MODULE 3:

Growth of Software Engineering Methods – Methodologies based upon the Waterfall Lifecycle: SSADM - IEM - CASE Tools: Excelerator CASE Tool – IEF – Contribution of Methods and Tools to Quality – Alternative Approaches to Software Development – Software Quality Standards.

MODULE 4:

Quality Management System – Historical Perspective – Deming, Juran and Crosby Philosophy and their Comparison – Three Principal Terms related to QM – Elements of QMS – Key to Quality Management – Problems of User Requirements – QMS for Software – Quality Assurance and Improvement.

MODULE 5:

Quality Management Standards – Purpose of Standards – ISO9000 Series – ISO9000-3 for Software Development – Impact of ISO9000 and TickIT.

MODULE 6:

Models and Standards for Quality Improvement – Capability Maturity Model – Individuals Levels of the CMM – Role of the CMM – SPICE – Comparison of ISO9000 and CMM – Future Trends in Software Quality – Case Studies.

Text Books:

Alan C Gillies, "Software Quality – Theory and Management", 2nd Edition, Thomson Learning.

132702 - SOFTWARE ESTIMATION AND COSTING

OBJECTIVE: To get a clear, complete understanding of how to estimate software costs, schedules, and quality using the real-world information.

MODULE 1:

Introduction – The Origins of Software Cost Estimation – Six Forms of Software Cost Estimation – Software Cost-Estimating Tools - Project Success and Failure Rates – Sources of Error in Software Cost Estimation

MODULE 2:

Manual Software Estimating Methods - Manual Software Estimating Methods derived from Agile Projects and New Environments – Automated Estimates from Minimal Data

MODULE 3:

Sizing Software Deliverables – Compensation and Work-Pattern Adjustments – Activity Pattern Adjustment Factors – Software Technology Adjustment Factors

MODULE 4:

Estimating Software Requirements - Estimating Software Prototypes - Estimating Software Specifications and Design - Estimating Design Inspections – Estimating Programming or Coding

MODULE 5:

Estimating Code Inspections - Estimating Software Configuration Control and Change Management - Estimating Software Testing - Estimating User and Project Documentation – Estimating Software Project Management

MODULE 6:

Maintenance and Enhancement Estimating – Software Cost Estimating Research Issues

Text Books:

Capers Jones, "Estimating Software Costs"- Tata McGraw Hill Publication – 2nd Edition.

132604 - SOFTWARE METRICS

OBJECTIVE: To introduce an integrated approach to software development incorporating quality metrics and models.

MODULE 1:

Quality – Views of Quality – Software Quality – Software Development Process Models – Waterfall, Prototyping, Spiral, Iterative, Object Oriented – Defect Prevention Process – Process Maturity Framework and Quality Standards – Measurement Theory – Definition – Level of Measurement – Basic Measures – Reliability and Validity – Measurement Errors.

MODULE 2:

Overview of Software Quality Metrics – Product Quality Metrics – In-Process Quality Metrics – Metrics for Software Maintenance – Ishikawa's Seven Basic Quality Tools – Checklist – Pareto Diagram – Histogram – Run Charts – Scatter Diagram – Control Chart – Cause and Effect Diagram.

MODULE 3:

Defect Removal Effectiveness – Overview – Defect Injection and Removal Process – Phase Based Defect Removal Model – Cost Effectiveness of Phase Defect Removal – The Rayleigh Model – Basic Assumptions – Implementation – Reliability and Predictive Validity.

MODULE 4:

Exponential Model – Reliability Growth Models – Model Assumptions – Criteria for Model Evaluation – Modeling Process – Quality Management Models – The Rayleigh Model Framework – Code Integration Pattern – The PTR Submodel – The PTR Arrival/Backlog Projection Model – In- Process Metrics and Reports – Orthogonal Defect Classification.

MODULE 5:

In-Process Metrics for Software Testing – In-Process Metrics and Quality Management – Complexity Metrics and Models – Lines of Code – Halstead's Software Science – Cyclomatic Complexity – Syntactic Constructs – Structure Metrics – Object Oriented Projects - Design and Complexity Metrics – Productivity Metrics – Quality and Quality Management Metrics.

MODULE 6:

Customer Satisfaction Surveys – Analyzing Satisfaction Data – Satisfaction with Company – Conducting In-Process Quality Assessments – Preparation Phase – Evaluation Phase – Summarization Phase – Conducting Software Project Assessments – Audit and Assessment – Software Process Assessment Cycle – Proposed Software Project Assessment Method – Dos and Don'ts of Software Process Improvement.

Text Books:

Stephan H. Kan, "Metrics and Models in Software Quality Engineering", Pearson Education, 2nd Edition

132703 – MANAGING THE TESTING PROCESS

OBJECTIVE: To provide the fundamental aspects of practical tools and techniques for managing the software testing process.

MODULE 1:

The Foundation of a Test Project – Test Granularity - Test Phases – Benefits of Phased Test Approach – Test Phase Sequencing – Defining Quality – Experience of Quality – Informal Methods of Assessing Quality Risks – Formal Method for Understanding Quality Risks – Schedule, Resource and Budget – Test Plans – Definition – Ways of writing Test Plans – Test Plan Template - Bounds – Quality Risks – Transitions – Entry and Exit Criteria – Test Configurations and Environments – Test Development – Test Execution – The IEEE 829 Template – Other Test Planning Templates

MODULE 2:

Test System Architecture – Principles for Test System Architecture – Test Cases – Coverage and Regression Test Gaps – Test Case Incremental Improvement – Formal Bug Tracking System – Failure Description – Construction of Bug Tracking Database - Capturing Bug Data for Analysis – Extracting Metrics from the Bug Tracking Database - Managing Bug Tracking – Case Study

MODULE 3:

Test Tracking Spreadsheet – Making Enhancements – Test Tracking System in Motion – Extracting Metrics from the Test Tracking Spreadsheet – Defining Test Execution Process – Managing Test Hardware and Software Configuration Logistics – Change Management Database – Case Study

MODULE 4:

Need for Test Lab - Selecting and Planning a Lab Area – The Test Lab Inventory – Security and Tracking Concerns – Managing Equipments and Configurations – Keeping the Test Environment Clean – Human Factors – Qualities of Good Test Engineers – Defining the Test Team – Organizational Modules – Hiring Testers – Motivation of Test Team – Temporary Experts and Implementers – Case Study

MODULE 5:

Test Group – Functions of Test Group – Directions of Test Management – Documentation – Layoffs and Liquidation – Importance of Accuracy and Audience – Test Partners – Planning a Distributed Test Effort – Managing a Distributed Test Effort – Case Study

MODULE 6:

Economic Justification for the Testing Investment – Testing Life Cycle Themes – System, Subsystem, Commercial and Component Integration – Process Maturity – Managing the Test Process – Case Study

Text Books:

Rex Black, "Managing the Testing Process", Wiley Publishing, Second Edition, 2008