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NH-52, Namsai, Arunachal Pradesh -792103

MASTER OF BUSINESS ADMINISTRATION (INFORMATION TECHNOLOGY) – FOURTH SEMESTER

Fourth Semester			
S. No.	Name of Subject	Credits	Total Marks
1	Environmental Management	4	100
2	Financial Management	4	100
3	Data Base Management	4	100
4	Information Security and Cyber Law	4	100
5	Internet & E-commerce	4	100
6	Project Work	2	100
Total		22	

Subject Name: ENVIRONMENTAL MANAGEMENT

Unit 1: Study of Nature, Resources and Ecosystem

- 1. Environment Studies - Scope and Importance:** Objectives, Environment, Types of Environment, Need for Public Awareness, Environment Ethics, Environmental Education, Multidisciplinary Nature of Environmental Education, Scope of Environmental Education.
- 2. Natural Resources:** Objectives, Introduction, Classification of Natural Resources, Principal Natural Resources and their Problems- Forest Resources, Water Resources, Mineral Resources, Food Resources, Energy Resources, Land Resources.
- 3. Ecosystem :** Objectives, Types of Ecosystem, Ecosystem Components, Ecosystem- Structure and Function, Food Chain and food Web. Ecological Pyramids, Major Ecosystems, Ecological Succession (Changes in Biotic Community).

Unit 2: Biodiversity and Pollution Control

- 1. Biodiversity and ITS Conservation :** Objectives, Levels of Biodiversity, Bio Geographical Classification of India, Value of Biodiversity, Man-Wildlife Conflicts, Conservation of Biodiversity, Hot Spots of Biodiversity, Biodiversity Conservation of India.
- 2. Environment Pollution :** Objectives, pollutions, Types of Pollution, Atmospheric or Air pollution, Water pollution, Soil pollution, Radioactive pollution, Noise pollution, Solid Waste Management, Role of Individual in Prevention of Pollution, Environmental Disasters and Their Management.

- 3. Social Issues And The Environment:** Objectives, Sustainable Development, Water Conservation, Resettlement and rehabilitation of People Environmental Ethic and Resource Use, Global Environmental Changes, Greenhouse Effect, Relative Contribution and Effects of Greenhouse, Wasteland Development.

Unit 3: Study of Population Growth And Case Studies

- 4. Human Population and The Environment :** Objectives, human Population Growth, Maximum Carrying Capacity, Environment and Human Health, Family welfare Programme, Human Rights, Women and Child Welfare, role of Information Technology in Environment and Human Health.
- 5. Field Work :** Introduction Visit to a Local Area to Document environmental Assets- River, Forest, Grasslands, Hill Mountains, A Visit to Local Pollution Sites-Urban Site Rural Site, Agricultural Site, Study of Common Plants, Insects and Birds, Study of Simple Ecosystem - Pond Ecosystem, River, Hill Slope.

Subject Name: FINANCIAL MANAGEMENT

Unit I

Introduction: Concept of finance, scope and objectives of finance; Profit maximisation vs. Wealth maximisation; Functions of Finance Manager in Modern Age; Financial decision areas, Time value of money, risk and return analysis, valuation of securities

Unit II

Capitalisation and Capital Structure: Meaning and definitions of capitalization, Over-capitalisation- Meaning, Causes, evils and remedial measures, Under- Capitalisation -meaning, causes, evils and remedial measures. Over-Capitalisation v/s Under- capitalisation.

Meaning and definitions of capital structure, qualities of optimum/ sound capital structure, Factors affecting capital structure, capital structure Theories: NI Approach; NOI Approach; Traditional Approach and M.M. Approach.

Unit III

Working Capital: Concept of Gross Working Capital & Net Working Capital, Various Approaches to Working Capital Management, Factors affecting working capital requirement. Working Capital Management: Management of cash, inventory and receivables.

Working Capital Financing: Sources of short term financing, Role of commercial bank in working capital management; Commercial paper; Factoring and other tools of working capital management

Unit IV

Investment decision; Appraisal of project; Techniques of capital budgeting and its applications; Risk and Uncertainty in Capital Budgeting, Leverage analysis-financing, operating and combined leverage and its implications; EBIT-EPS analysis

Financing Decision: Long-term sources of finance, potentiality of equity shares, preference shares, debentures and bonds as source of long-term finance; Concept and approaches of capital structure decision; NI, NOI, Traditional and Modigliani Miller Approach; Cost of equity share, preference share and debentures

Dividend Decision: Concept of retained earning and plough back of profits, relevancy and irrelevancy theory of dividend decision; Walter's model; Gordon's Model and Modigliani Miller model; Factor affecting dividend decision

Unit V

Stock Exchange: Definition, Market Participants, The Role of Stock Exchanges, Corporate Governance, Trading in stock Exchanges, AMEX, NASDAQ, LSE, NYSE, FSE, PSE, TSE, SSE, Madrid Stock Exchange.

Indian Stock Exchange: Bombay Stock Exchange: BSE Sensex, Sensex Milestones, National Stock Exchange: Innovations, Indices, Mission, Logo, Corporate Structure, Board of Directors, Committee on Trade Issues (COTI), Capital Market Segment.

Suggested Readings:

- a. Pandey I M- Financial Management (Vikas, 2004)
- b. Van Horne- Financial Management and Policy (Pearson Education, 12th edition) 2003,
- c. Knott G-Financial Management (Palgrave, 2004)
- d. Khan and Jain- Financial Management (Tata McGraw-Hill, 3rd edition)
- e. Prasanna Chandra- Fundamentals of Financial Management (TMH), 2004.
- f. Kirt C Butler- Multi National Finance (Vikas)
- g. R P Rustagi- Financial Management (Galgotia) 2000, 2nd reved.
- 8) Lawrence J. Gitman- Principles of Managerial Finance 2004, Pearson Education N. Delhi.

Subject Name: DATABASE MANAGEMENT SYSTEM

1. **Basic Concepts of Database Systems :**Database Schema, Instance and Database State, The Three-Schema Architecture, Data independence, DBMS Languages, People Deal with Databases.
2. **Entity-Relationship Model:** The E-R Model, Entity relationship Diagram, Composite Versus Atomic Attributes, role Names and Recursive Relationships, Constraints on Relationship Types.
3. **Data Models and Its Implementation:** The Hierarchical Data Model, the Network Data Model, Network Modeling Concepts, the Relational Models.
4. **Introduction to Relational model:** CODD'S 12 Rules for a fully Relational DBMS, Basic Concepts of Relational Model, referential Integrity Constraints, Enforcing Integrity constraints.
5. **Oracle:**A Relational Database Management System: Oracle System Structure, Oracle Server, Oracle Database Structures, Oracle Schema Objects, Oracle Data Dictionary.
6. **Structured Query Language:** SQL: Three Parts of SQL, Sub-Queries, Referential Integrity, Some Other SQL Commands.
7. **Procedural Language/Structured Query Language:** PL/SQL runtime Architecture (PL/SQL), Procedure, Parameters, Packages, Cursors and Triggers.
8. **Relational Algebra and Relational Calculus :**Relational-Oriented Operation, Set-Oriented Operations and Union Compatibility, Aggregate Function and Grouping, Tuple Relation Calculus.
9. **Normalizing Database:** Benefits of Normalization, Functional Dependency, the Domain Key Normal Form.

10. **Database Design and Tuning:** The Database Design Process, requirements and Analysis, Choice of DBMS, Logical Database Design, Database Implementation and Tuning.
11. **Transaction Processing:** Concurrency Control, recoverability.
12. **Query Processing and Query Optimization:** Query Processing, Query Optimization and Heuristics Rules in query Optimization, Information used in Cost Function.
13. **Database Recovery Techniques:** Classification of Transaction Failures, Recovery Techniques Base on Deferred update, Recovery Techniques Base on Immediate update, Buffer Management.
14. **Concurrency Control techniques :**The Acid Test for Transaction Failures, Recovery Techniques Base on Deferred Update, Recovery Techniques Base on Immediate update, Buffer Management.
15. **Data Ware housing :** Data Warehousing Definition, Data Form Legacy Systems, Decision-Support and Executive Information System.
16. **Distributed Database :** Structure of Distributed Database, Design of Distributed Database, Advantage of Distributed Database, DDBMS Prototypes.

Subject Name: INFORMATION SECURITY AND CYBER LAW

1. **Cryptography and security: CRYPTO BASICS:** How to Speak Crypto, Classic Crypto, Simple Substitution Cipher, Cryptanalysis of a Simple Substitution, Definition of Secure, Double Transportation Cipher, One-Time Pad, Modern Crypto History, A Taxonomy of Cryptography, A Taxonomy of Cryptanalysis; **SYMMETRIC KEY CRYPTO:** Introduction, Stream Ciphers, A5/1, RC4, Block Ciphers, Feistel Cipher, DES, AES, Block Cipher Modes, Integrity; **PUBLIC KEY CRYPTO:** Introduction, Knapsack, RSA, Repeated Squaring, Public Key Notation, User for Public Key Crypto, Confidentiality in the Real World, Signature and Non-repudiation, Confidentiality and Non-repudiation, Public Key Infrastructure; **Access Control:- AUTHENTICATION:** Passwords, Keys Versus Passwords, Choosing Passwords, Attacking Systems via Passwords, Password Verification, Math of Password Cracking, Other Password Issues, Biometrics, Types of Errors, Biometric Examples, Biometric Conclusions, Something You have, Two-Factor Authentication, Single Sign-on and Web Cookies; **AUTHORIZATION:** Access Control Matrix, ACLs and Capabilities, Confused Deputy, Multilateral Security, Multilateral Security, Convert Channel, Inference Control, CAPTCHA, Firewalls, Packet Filter, Stateful Packet Filter, Application Proxy, Personal Firewall, Defense in Depth, Intrusion Detection, Signature-Based IDS, Anomaly-Based IDS;
2. **Security in Software: SOFTWARE FLAWS AND MALWARE:** Software Flaws, Buffer Overflow, Incomplete Mediation, Race Conditions, Malware, Brain, Morris Worm, Code Red, SQL Slammer, Trojan Example, Malware Detection, The Future of Malware, Cyber Diseases Versus Biological Diseases, Miscellaneous Software-Based Attacks, Salami Attacks, Linearization Attacks, Time Bombs, Trusting Software. **INSECURITY IN SOFTWARE:** Software Reverse Engineering, Anti-Disassembly Techniques, Anti-Debugging Techniques, Software Tamper Resistance, Guards, Obfuscation, Metamorphism Revisited; **Digital Rights Management:** What is DRM?, A Real-World DRM System, DRM for Streaming Media, DRM for a P2P Application, DRM in the Enterprise, DRM Failures, DRM Conclusions. **OPERATING SYSTEM AND SECURITY:** Operating System Security Functions, Separation, Memory Protection, Access Control, Trusted Operating System, MAC, DAC and More, Trusted Path, Trusted Computing

Base, Next Generation Secure Computing Base, NGSCB Feature Groups, NGSCB Compelling Applications, Criticisms of NGSCB.

3. **Security Planning and Implementation: Risk Management:** An Overview of Risk Management, Risk Identification, Risk Assessment, Risk Control Strategies, Selecting a Risk Control Strategy, Quantitative versus Qualitative Risk Control Practices, Risk Management Discussion Points, Recommended Risk Control Practices. **Planning and Implementing Security:** Information Security Policy, Standards and Practices, The Information Security Blueprint, Control Strategies, Information Security Project Management, Technical Topics of Implementation, Nontechnical Aspects of Implementation, Information Systems Security Certification and Accreditation.
4. **Cyber Law:** Legal, Ethical and Professional Issues in Information Security, Introduction, Law and Ethics in Information Security, Relevant U.S Laws, International Laws and Legal Bodies, Ethics and Information Security, Codes of Ethics and Professional Organizations.

Subject Name: INTERNET AND E-COMMERCE

1. **Overview of E-Business:** Introduction, Overview of E-Business, Activities Using E-Business, E-Business Tools, Advantages of E-Business, the Scope of the Internet and the Web.
2. **Electronic Commerce:** Introduction of E-Commerce, History of E-Commerce, Definition of E-Commerce, Basic Functions of Electronic-Commerce Systems, The Technologies of E-Commerce, Types of E-Commerce, The Driving Forces of Electronic Commerce, Frame of E-Commerce, Issues in Implementing Electronic Commerce, Benefits of E-Commerce, The Limitations of E-Commerce, Benefits of the E-Commerce Market, Increasing Interest in Interfacing Technologies, The Internet, Computer Networks and E-Commerce.
3. **Electronic Payments System:** Introduction, Electronic Payment System, The Need for New Payment System Designed for E-Commerce, User Acceptance of Electronic Payment System, Characteristic of electronic Payment System, Classification of Electronic Payment System, Smart Card System, SET (Secure Electronic Transactions), Pay Pal, Micro-Payments for Information Goods.
4. **Business to Business E-Commerce:** Introduction to B2B-Business to Business, B2B Evolution, Types of Transactions in B2B, Business-to-Business Electronic Commerce Models.
5. **Mobile Commerce:** Introduction, The Unique Characteristics of M-Commerce, Driving Forces of M-Commerce, Limiting Factors of M-Commerce, Mobile Customer and Applications, Challenges and Opportunities in M-Commerce, Security in M-Commerce.
6. **Mobile Banking:** Introduction, Technology and Security Standards in Mobile Banking, Mobile Banking Architecture, Mobile Banking Services, Advantages of Mobile Banking.
7. **Internet:** Introduction of Internet, The History of the Internet, Internet Systems, Internet Applications and Application Protocols, Advantages of Internet, Disadvantages of Internet, Domain Name System, Transmission Control Protocol/ Internet Protocol, TCP/ IP and the Internet.
8. **Firewall System:** Introduction of Firewall, Types of Firewalls, Proxy Servers, Common Attacks on System.
9. **Electronic Data Interchange:** Introduction, EDI Standards, Advantages of Using EDI over Paper System, EDI Technology.

10. Supply Chain Management: Introduction, Faces of Supply Chain Management, Elements of the Supply Chain Management, Functions of Supply Chain Management, Supply Chain Management Technology, Value Chain Management.

Subject Name: PROJECT WORK

Note: The Normal Rule and Regulation pertaining to the Examination and other issues will be applicable in Faculty of Commerce and Management as per Arunachal University of Studies Act 2012, Subsequent Statute and Rules & Regulations.