MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

CURRICULUM & COURSE STRUCTURE

(2018-19onwards)

MBA:BANKING TECHNOLOGY

REGULATION

PROGRAMME:

MBA Banking Technology (Interdisciplinary Programme between Computer Science & Engineering and Management)

DURATION:

Two Years (Four Semesters including Winter Project, Summer Project, Bank Internship for two Months and Final Project for three Months in a specialized Elective Stream)

INTAKE:

72 students (+ 5 Industry Sponsored)

ELIGIBILITY:

Under Graduates with 55% marks in one of the following degree or equivalent.

- BE/B.Tech (CSE/IT/ECE/EEE/E&I/IMCE)
- BSE-CSE/IT
- BCA/B.Com Computer Applications
- Any other degree with University Recognized PGDCA

SELECTION CRITERIA:

All India Admission Test along with Group Discussion and Personal Interview for short listed candidates.

ACADEMIC PROGRAMME:

CBCS Mode, Hard core & Soft Core: 90 – 110 Credits.

Pedagogy Consists of Class Room Teaching, Problem Solving, Computer Lab Practicals, Case Study Discussion, Industry Visits, Industry Mini-Projects, Assignments, Participation in Conventions of Professional Bodies, Role Play, Internship in Banks, Project Work Report and Development of Hardware Devices and Software Packages.

EVALUATIONS:

Internal Assessments – 40 percentages of Marks, External Assessments – 60 percentage of Marks. Internals based on two Term Tests, Written Assignments / field study & seminar Presentations in every Paper. End Semester Exam Consists of 3 hours written test with 3 sections A, B and C. Section C will be a case study.

Computer Lab Practical Exam:

Internal Evaluation consists of 1 hour written test, 1hour Programming / Data analysis followed by a Viva with External Examination.

Winter, Summer and Final Project works are guided by Faculty Members and evaluated by one or two External Examiners. Project Reports are presented in a Public Presentation and a Viva is conducted for every Candidate.

The Final Project is divided into Phase 1 & Phase 2 Components. Phase 1 consists of an exhaustive review of 20 papers, designing of Syllabus for Phase 1 Components and a Test on it. Phase 2 Consists of a survey / industry internship, software development, Data Analysis, development of a model and preparation of a Project report adapting approved session Methodology or Software Project management methodology

Comprehensive Viva:

Every Semester ends with a Comprehensive Viva Examination Conducted by two external experts (1 from Academic & 1 from industry) Industry Visits, Banking Internship and Final Projects.

All students are expected to take up a compulsory industry visit or field study in every semester. Fifteen days of winter Project is to be conducted on any manufacturing units with the focus to learn different functional areas of management. Students may also take up studies to document successful entrepreneurship in MSNE sectors.

The banking internship is to be carried out for two months during summer vacation and physically participate in the front and back office of a bank branch. Attendance is compulsory and a work dairy is to be maintained. A report is to be summited on different bank operations listed in the syllabus.

The department may conduct an annual industry trip to financial capital or software development Centre's. An Annual Industry Interface Meet is to be organized for understanding the contemporary development in business. An Annual Alumni Meet is to be organized to get the feedback and to develop placement contacts.

Students have to finance themselves to participate in campus-based activities, industry tour and industry visits, Project work and internship visits and preparation of project reports.

Laboratory:

The department shall maintain a computer lab with one or two servers, licensed software for organizing computer lab practical such as Oracle, Rational Rose, BI tools, Data bases like CMIE, BLOOMBERG, India stat, Capitalite etc. Accounting software Tally, Statistical Software SPSS, Data mining software and other general software like Linux, Visual studio, Java, SQL Server, Turbo C++, MS-Office should be made available. Computer lab should be connected with dedicated intranet and internet and with Wi-Fi facilities for enabling students to use laptops. All students are expected to buy a laptop and use it for both class rooms and lab related works.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
REVISED COURSE STRUCTURE
(2018-19onwards)

Non-Credit Bridge Courses:

MBAB :	Basics of Business Environment	Hard Non Credit
MBAB :	Basics of Computer Programming	Hard Non Credit
MBAB :	Basics of Economics	Hard Non Credit

I SEMESTER

MBAB 700: Management Concepts & Organizational Behavior	Hard 3 Credits
MBAB 701: Quantitative Techniques for Management	Hard 3 Credits
MBAB 702: Accounting and Finance for Bankers	Hard 3 Credits
MBAB 703: Banking Principles and Practices	Hard 3 Credits
MBAB 704: System Analysis and Design and Agile Software Development	Hard 3 Credits
MBAB 705: Data Centre Management and Cloud Computing	Hard 3 Credits
MBAB 706: Business Communication Lab	Hard 2 Credits
MBAB 707: Modeling and Design Lab	Hard 2 Credits
MBAB 708: Seminar & Comprehensive Viva	Hard 2 Credits

II SEMESTER

MBAB 750: Banking Operations and Management	Hard 3 Credits
MBAB 751: Entrepreneurship and Startups	Hard 3 Credits
MBAB 752: Security Analysis and Portfolio Management	Hard 3 Credits
MBAB 753: Financial Statement Analysis	Hard 3 Credits
MBAB 754: Banking Technology Management	Hard 3 Credits
MBAB 755: IT Infrastructure Management for Banks	Hard 3 Credits
MBAB 756: Banking Technology Lab	Hard 2 Credits
MBAB 757: Corporate Finance Lab	Hard 2 Credits
MBAB 758: Value Added Course	Soft 2 Credits
MBAB : Elective 1: Paper – 1	Soft 3 Credits
MBAB : Elective 2: Paper – 1	Soft 3 Credits
MBAB 761: Seminar & Comprehensive Viva	Hard 2 Credits

III SEMESTER

MBAB 800: Financial Management	Hard 3 Credits
MBAB 801: International Banking and Financial Services	Hard 3 Credits
MBAB 802: Merchant Banking and Financial Services	Hard 3 Credits
MBAB 803: Strategic Management	Hard 3 Credits
MBAB 804: Information Security for Banks	Hard 3 Credits
MBAB 805: Data Warehousing and Applied Data Mining	Hard 3 Credits
MBAB 806: Business Intelligence Lab	Hard 2 Credits
MBAB 807: Stock and Forex Trading Lab	Hard 2 Credits
MBAB 808: Bank Internship	Hard 3 Credits
MBAB : Elective I: Paper – 2	Soft 3 Credits
MBAB : Elective II: Paper – 2	Soft 3 Credits
MBAB 811: Seminar & Comprehensive Viva	Hard 2 Credits

IV SEMESTER

MBAB : Elective I: Paper – 3	Hard 3 Credits
MBAB : Elective I: Paper – 4	Hard 3 Credits
MBAB : Elective II: Paper – 3	Hard 3 Credits
MBAB : Elective II: Paper – 4	Hard 3 Credits
MBAB 850: Final Project & Viva	Hard 6 Credits
MBAB 851: Seminar & Comprehensive Viva	Hard 2 Credits

ELECIVE STREAMS

(Every Student has to take 4 papers out of 10 listed papers from two Elective Streams)

INFORMATION TECHNOLOGY STREAM

MBAB 901	Service Oriented Architecture	Soft 3Credits
MBAB 902	Design Patterns	Soft 3Credits
MBAB 903	Smart Banking Technologies	Soft 3Credits
MBAB 904	Software Project Management	Soft 3Credits
MBAB 905	Secure Electronic Payment Systems	Soft 3Credits
MBAB 906	Block Chain and Cryptography	Soft 3Credits
MBAB 907	Machine Learning	Soft 3Credits
MBAB 908	Data Science and Business Data Analytics	Soft 3Credits
MBAB 909	Information Systems Control and Audit	Soft 3Credits
MBAB 910	Data Visualization and Reporting	Soft 3Credits

BANKING AND FINANCE STREAM

MBAB 911	Treasury Management	Soft 3Credits
MBAB 912	Cyber Crimes and IT Laws	Soft 3Credits
MBAB 913	Rural Banking and Micro Finance	Soft 3Credits
MBAB 914	Risk Management in Banks	Soft 3Credits
MBAB 915	Central Banking & Monetary Policy	Soft 3Credits
MBAB 916	Financial Modeling using Spreadsheet	Soft 3Credits
MBAB 917	Treasury and Fixed Income Securities	Soft 3Credits
MBAB 918	Global Financial Markets & Instruments	Soft 3Credits
MBAB 919	Financial Derivatives	Soft 3Credits
MBAB 920	International Financial Management	Soft 3Credits

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

*BRIDGE COURSES – NON CREDIT**

MBAB :	Basics of Business Environment	Hard Non Credit
MBAB :	Basics of Computer Programming	Hard Non Credit
MBAB :	Basics of Economics	Hard Non Credit

** to be organized in the first month of I semester Programme*

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

I SEMESTER

(BRIDGE COURSES– NON CREDIT)

MBAB : BASICS OF BUSINESS ENVIRONMENT

Hard Core
Non Credit

Learning Objectives

- Introduce the students to understand basics of Business
- Provide an overview on Indian Industrial environment
- A prelude to institutional environment for Industrial Finance

- What is Business? Differences between Trade/Commerce/Aids to trade
- Nature of Business : Manufacturing – Services – trading – Banking – Commission Agency, etc
- Types of Organizations – Sole trader – Partnership – Company form – Cooperatives
- Business Organist ions – Company form – Formation – Board of Directors – Memorandum of Association – articles of Association
- Company Law – Provisions – Factories Act – Competition Law – Consumer Protection Law
- Business Combinations – Cartlels – Mergers & Takeovers
- Taxes – Direct Taxes – Indirect Taxes – Central Sales Act – Octroi – Excise – Customs duties - GST
- Foreign Trade – Exports – Imports – Special Economic Zones – EOUs
- Indian Industrial Policy – IPRs – Public Vs Private Sector – Privatization
- Top Business Houses – Product Concentration – Entry of MNCs
- Business Environments: Internal and External: Legal-Political-Economic-Cultural-Geographical-
- Indian Banking – Public Sector Banks – Private Sector Banks – Foreign Banks – RBI – Credit creation by Banks – RBI Credit Policy

Basic Text Book and References

1. Bhushan Y.K "Indian Economy", Sultan Chand, New Delhi (2010) (Text Book)
2. Kuchhal S.C. "Industrial Economy of India", Sultan Chand, 2007
3. Dutt&Sundaram "Indian Economy", Sultan Chand & Co., New Delhi 2010
4. Maheswari S.N. "Indian Banking Law & Practice", Kalyani, Ludiyana, 6th Edition, 2014

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

I SEMESTER

(BRIDGE COURSES– NON CREDIT)

MBAB : BASICS OF COMPUTER PROGRAMMING

Hard Core
Non Credit

Learning Objectives

- Introduce the students to understand basics of Computer Programming

A. Introduction to Imperative Programming using C
    1. Data Types, Constant, Variables, Assignment Statement, I/O Functions
    2. Control and Loop Statements– Arrays, Functions
    3. Structure and Union –File Functions– Sample Programs

B. Introduction to Object Oriented Programming using C ++
    4. Class, Constructor, Destructor, Data & Method Visibility
    5. Operator Overloading–Function Overloading–Friend Function–Virtual Functions
    6. Template Class– Abstract Class –IO Streams– Sample Programs

C. Introduction to Client-side Scripting languages
    7. HTML
    8. Java Script
    9. Sample Application

D. Introduction to Server-side Scripting Language
    10. JSP
    11. JDBC in JSP
    12. Sample Applications

Basic Tex Books &References

1. Balagurusamy, Programming in ANSI C, Tata McGraw-Hill Education, 2008
2. Balagurusamy, Object Oriented Programming, Tata McGraw-Hill Education, 2007
3. Bryan Basham, Kathy Sierra, Bert Bates, Head First Servlets and JSP, 2nd Edition, O'Reilly Media, 2008
4. Bruce W. Perry, Java Servlet & JSP Cookbook, O'Reilly Media, 2004

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

I SEMESTER

(BRIDGE COURSES– NON CREDIT)

MBAB : BASICS OF ECONOMICS

Hard Core
Non Credit

Learning Objectives

- Introducing the concepts of Economics

  - Economic Logic and Different Concepts of Economics
  - Theory of Firm and Concept of Profit Maximization
  - Factors of Production and Market Mechanism
  - Production and Consumption Theories
  - Cost and Revenue Curves and Break Even Analysis
  - Market Structures and Basic Characteristics
  - Pricing of Factors of Production and Pricing Policies
  - Macro Economics, Concept of GDP and National Income
  - Functions of Money, Demand for Money and Supply
  - Interest Rate, Inflation, Aggregate Income
  - General Theory of Income and Emp0loyment
  - Real Market and Money Market Equilibriums
  - Wealth of Nations and International Trade
  - Trade Cycles, Growth and Welfare state
  - Open Economy, Globalization

Basic Text Book & References

1. Thomas, Christopher R., S. Charles Maurice, and Sumit Sarkar. Managerial economics. McGraw-Hill/Irwin, 2010.(Text Book)
2. Mankiw, N. Gregory. Principles of Economics. Cengage Learning, 2014.
3. Marshall, Alfred. Principles of economics. Digireads. com Publishing, 2010.
4. Kajal Laturi, G.S.Maddala Introduction to econometrics, Wiley 2009
5. Paul Anthony Samuelson,William D Nordhaus, ―Economics‖,Mc Graw Hill,2012

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

I SEMESTER

MBAB 700: Management Concepts & Organizational Behavior	Hard 3 Credits
MBAB 701: Quantitative Techniques for Management	Hard 3 Credits
MBAB 702: Accounting and Finance for Bankers	Hard 3 Credits
MBAB 703: Banking Principles and Practices	Hard 3 Credits
MBAB 704: System Analysis and Design and Agile Software Development	Hard 3 Credits
MBAB 705: Data Centre Management and Cloud Computing	Hard 3 Credits
MBAB 706: Business Communication Lab	Hard 2 Credits
MBAB 707: Modeling and Design Lab	Hard 2 Credits
MBAB 708: Seminar & Comprehensive Viva	Hard 2 Credits

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

I SEMESTER

MBAB 700: MANAGEMENT CONCEPTS AND ORGANIZATIONAL BEHAVIOUR

Hard Core
3 ***Credits***

Prerequisites:

- Basics of Business, Human Resource Management and Organizational Behaviour.

Learning Objectives:

- To Introduce basic management concepts and the principles and
- To impart the necessary skills to manage various functions of business organizations

Learning Outcomes:

- Helps the students to deal with complex management decision making process

Unit I

Management Process: Nature and Purpose; Functions of Management; Evolution of Management Thought; Management Approaches; Management and Society; External Environment, Social Responsibility and Ethics – Managerial Skills - Qualities of a Good Manager; - Introduction to Strategic Management.

Unit II

Planning: Nature and Purpose; Objectives - Strategies, Policies and Planning Premises Types of Plans; Steps in Planning; Management by Objectives; Strategic Planning Process; Decision Making Process.

Unit III

Organizing: Nature of Organizing - Organizational Structure; Organization Levels and Span of Management; Basis of Departmentation; Line and Staff Relationship; Decentralization and Delegation of Authority; Effective Organizing and Organizational Culture. Staffing Systems Approach – Selection, Appraisal and Training - Communication Process; Types of Communication; Barriers to Effective Communication; Motivation Theories: Maslow, Herzberg, McGregor. Approaches and Styles of Leadership.

Unit IV

Direction and Control Process: Requirements for Effective Control; Control Techniques; Role of Information Technology; Management Information System; Management by Exception; Overall Control and toward the Future through Preventive Control -Controlling and Challenges.

Unit V

Organizational Behavior : The concept and significance of organizational behavior – Skills and roles in an organization- Classical and modern theories of organizational structure- organizational design-Understanding and Managing individual behavior personality-perception- Values – Attitudes – learning – Motivation.

Text Book and References:

1. Heinz Weihrich, Mark V.C Annice and Harold Koontz, 'Management – A Global, Innovative and Entrepreneurial Perspective', McGraw Hill, 2013.(Text Book)
2. Ramesh B Rudani, Management and Organisational Behavior, McGraw Hill, 20012.
3. Burton, Gene and Manab Thakur, 'Management Today: Principles and Practice', Tata McGraw Hill,1995.
4. VSP Rao, V Hari Krishna – Management: Text and Cases, Excel Books, 1st edition, 2008
5. Hill, Charles W and Steven McShane, 'Principles of Management', McGraw Hill, 1st edition, 2007

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
I SEMESTER
MBAB 701: QUANTITATIVE TECHNIQUES FOR MANAGEMENT

Hard Core 3 Credits
(SPSS + LINDO Software based) ***Problem Solving 60% Lab exercises 40%***

Prerequisites

- *Basics of Statistics*

Learning Objectives

- *To introduce the application of basic statistical methods in business decision making.*
- *To familiarize the students with OR techniques required for Management Science.*

Learning Outcomes

- *Helps the students to find the appropriate solutions for business problems by using statistics and OR techniques*

1. Correlation and Regression – Types of Correlation – Measurement – Scatter Diagram – Karl Pearson's Coefficient of Correlation – Rank Correlation – Utility of Correlation Analysis – Regression Analysis – Estimation of Simple linear regression equation – Testing – Coefficient of Determination – Relationship between Correlation and Regression

2. Probability, Sampling and Testing of Hypothesis – Theories of Probability – Probability distribution – Binomial – Normal distribution – Relationship between binomial and normal distributions – Testing of Hypothesis – Steps involved – Level of Significance - Comparison between Sample Mean and Population Mean – Comparison between two sample means – Type I and Type II errors – t test – ANOVA – F test – Introduction to Production Management- Scope – Facility Location: Lay out Planning and analysis – Production and Control –

3. **Linear Programming and Assignment Problems**: Basics of LP – Fields of application – Minimization and Maximization – Graphic solution – Simplex Method – Degeneracy – Non-feasible solution – Unbound solution – Problem Dual ; Assignment formulation – areas of application – Balanced Minimization and unbalanced – Maximization Problems

4. PERT & CPM : Critical Path method – Meaning – Utility – Assumptions –Network Diagram – Computation of critical path – Time Cost trade off – Limitations of CPM; PERT – Calculation of probabilities – Expected Time-variances – PERT area control device – Usefulness of PERT.

5. Waiting Line theory – Meaning – Objectives – Applications – M/M/1Queueing model – Elements of Waiting Line problem – Fixed arrival and Fixed service time – Random arrival and random service time – Limitations of Waiting line theory - **Game Theory** – Meaning – Types – Value of a Game – Pure Game – Mixed Game – Rule of Dominance – Finding value of Game for various types of Games – Linear programming solution to two person Zero sum game – Short Cut Method – Limitations

***Basic text book and References*:**

1. **Levin & Rubin., Statistics for Management, Prentice Hall, 7th Edition, 2012 (Text Book)**
2. Gupta, S P., Statistical Method, Sultan Chand, New Delhi, 7th Edition
3. Arora&Arora, Statistics for Management, S Chand & Co, New Delhi
4. Kothari C. R., Quantitative Techniques, Vikas, New Delhi
5. Tulsian PC & Vishal Pandey., Quantitative Techniques, Pearson Education, Mumbai, 1st edition, 2002

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
I SEMESTER
MBABT 702: ACCOUNTING AND FINANCE FOR BANKERS

Hard Core 3 Credits
Theory 30% Problems 50% Lab 20%

Prerequisites: ***Basic Business and mathematical Understanding***
Learning Objectives: ***Prepare Students -***

1. ***To familiarise basic concept of Accounting and Finance***
2. ***To measure Income, Expenditure, Assets and Liabilities***
3. ***To prepare Financial Statements***
4. ***To understand Reporting standards***
5. ***To understand the role of Information Technology in the process of preparing accounts***

Learning outcome: Students who complete this course can Understand and Prepare Financial Statements

Unit I: BASIC ACCOUNTING MODEL
Business Organisation – Accounting – Accounting Information System – Accounting measurement assumptions – Accounting Environment – Accounting Equations – Commonly used Accounts – Double Entry system – Recording and classifying Transactions – Trial Balance – Accrual Accounting.

Unit II: MEASURING AND REPORTING INCOME
Income measurement – Accrual Accounting – Adjustment process – Post-closing Trial Balance and Reversing Entries – Income measurement for a Merchandising organisation – Worksheet for a merchandising organisation – Preparation of Final Accounts.

Unit III: MEASURING AND REPORTING ASSETS
Internal Control system – Cash Receivables – Cash and Cash Equivalents – Bank Reconciliation – Trade Receivables.
Classification of Assets - Current Assets – Inventory Valuation – Financial Analysis of Inventories – Fixed Assets – Depreciation – Depreciation Methods.
Investments – Financial Instruments and Financial Assets – Equity and Debt Instruments – Consolidated Income statement and Business Combination.

Unit IV: MEASURING AND REPORTING LIABILITIES
Classification of Liabilities – Current liabilities – Contingent Liabilities – Long-Term Liabilities – Off-Balance sheet Financing.
Share Capital - Accounting for Share Capital - Reserves and Surplus – Buy-back of shares and Treasury stock – Bonus Shares – Dividends – Statement of Changes in Equity – Company Final Accounts – Banking Company Final Accounts.

Unit V: REPORTING STANDARDS AND COMPUTERIZATION
Accounting standard (Ind-AS) - Generally Accepted Accounting Principles (GAAP) - International Financial Reporting Standards (IFRS) – eXtensible Business Reporting Language (XBRL).
Computerised Accounting – Terms used in Computerised Accounting – Accounting Software – ERP Accounting – Core Banking Software and its components.

Text Books:

1. R.Narayansamy, **Financial Accounting-A Managerial Perspective**, PHI learning Private Limited, Sixth Edition, 2017.
2. Indian Institute of Banking and Finance, **Accounting and Finance for Bankers**, Macmillan Education, Third Edition, 2017.

References:

- Gupta R L and Radhaswamy M, **Advanced Accounts**, Vol I , Sultan Chand & Sons, New Delhi 2017
- Jain S P and K L Narang, **Advanced Accounts**, Kalyani Publishers, Ludhiana 2018
- Shukla M C and Grewal T S, **Advanced Accounts**, Vol I , S Chand & Co, New Delhi 2016
- https://onlinecourses.nptel.ac.in
- https://swayam.gov.in/course
- http://www.iibf.org.in
- https://students.icai.org

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
I SEMESTER
MBAB 703: BANKING PRINCIPLES AND PRACTICES

Hard Core
3 Credits

Prerequisites

- *Basics of Banking*

Learning Objectives

- *To introduce the Indian Banking and Financial system*
- *To expose the developments taking place in the banking industry in the recent times in India*
- *To introduce the legal and regulatory aspects of banking in India*

Learning Outcomes

- *Helps the students to comply with banking regulations in the banking sector.*

Unit – 1

Indian Financial System - Central Banking Authority - Roles and Functions - Commercial Banks and Financial Intermediaries - Enactments Governing Banks - Financial Market – Structure - Role and Functions - Capital Market – Money Market - Mutual Funds – Insurance Companies –Role and functions of SEBI and IRDA.

Unit - 2

Functions of Banks- Deposits types – Concept of CASA - KYC Guidelines - Different Deposit Products -Services Rendered by Banks – Opening of Accounts for Various Types of Customers - Minors - Joint Account Holders -HUF -Firms - Companies - Trusts - Societies - Govt. and Public Bodies etc.

Unit-3

Approach to Lending - Credit distribution - Principles of good Lending - Credit Products & Facilities – Documentation Procedures and Practices – Working Capital Assessment - Priority Sector Lending- Agriculture/SMEs/SHGs/SSI/Tiny Sector Financing –Consortium Financing - Credit Appraisal Techniques – CIBIL Procedures.

Unit – 4

Legal Aspects of banks - Important Provisions of RBI Act, 1934 – Salient Features of Banking Regulations Act 1949 and Negotiable Instrument Act 1881 – Overview of Bankers Book of Evidence Act 1879 and Indian Contract Act 1872.

Unit – 5

Ancillary Services of Banks - Remittances, Safe Deposit Lockers- Merchant Banking - Credit Information Bureau (India) Limited- Fair Practices Code for Debt Collection - Banking Codes and Standards Board of India - Financial Inclusion, SHGs - Lead bank Scheme - Financial Innovation- ADR & GDR.

Reference Books:

1. IIBF, Principles and Practices of Banking, 3rd Edition, MacMillan Education. 2015
2. IIBF, Legal and Regulatory Aspects of Banking, 3rd Edition, MacMillan Education. 2015
3. M.Y.Khan, Indian Financial System, McGraw Hill Education Pvt. Ltd, 9th Edition, 2015
4. Preethi Singh, Dynamics of the Indian Financial system: Markets, Institutions and Services, Ane Books Private Ltd. 2015.
5. V.Nitynanada Sharma, Banking and Financial System, Cambridge University Press-New Delhi, 2011.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
I SEMESTER
MBAB 704: SYSTEM ANALYSIS AND DESIGN AND AGILE SOFTWARE DEVELOPMENT

Hard Core
3Credits

Prerequisites:

- *Basic knowledge of system analysis and design.*

Learning Objectives:

- *To teach techniques and approaches to students so that they may analyze and develop business systems more effectively and efficiently using OO Methodology and Agile Methodology.*

Learning Outcomes:

- *Helps the students to develop the business systems using UML and Agile Methodology*

Unit I

Systems Development Life Cycle: Planning, Analysis, Design, Implementation -Systems Development Methodologies: Structured Design, RAD, JAD, Prototyping - · Project Team Roles and Skills - Project Initiation: Identifying Business Value, Feasibility Analysis - · Project Management: Creating a Work Plan, Project Staffing, Controlling the Project.

Unit II

Systems Analysis: Developing an Analysis Plan - · Process Modeling: Data Flow Diagrams - Data Modeling: Entity Relationship Diagrams - System Design: Physical Data Flow Diagrams, Physical Entity Relationship Diagrams - Architecture Design: Computing Architectures, Infrastructure Design, Global and Security Issues.

Unit III

Object-Oriented Analysis and Design, and Testing: Object Concepts, Introduction to the Unified Modeling Language, Use Case Diagrams, Sequence Diagrams, Class Diagrams, State chart Diagrams - OO Analysis - Use Case Modeling – OO Design – UI Design – Data Design – Program Design – Testing – Test Plan- System Testing- Documentation – Installation – Implementation – Maintenance and Review.

Unit IV

AGILE AND ITS SIGNIFICANCE: Software is new product development – Iterative development – Risk-Driven And Client-Driven iterative planning – Time boxed iterative development – Evolutionary and adaptive development - Evolutionary requirements analysis – Evolutionary and adaptive planning – Incremental delivery – Evolutionary delivery - Agile development – Classification of methods – The agile manifesto and principles – Agile project management – Simple practices and project tools – DevOps, Virtual Collaboration Tools - Empirical vs defined and prescriptive process – Principle-based versus Rule-Based – Sustainable discipline: The human touch – Team as a complex adaptive system – Agile hype – Specific agile methods – Agile Testing.

Unit V

CASE STUDY - Agile – Motivation – Evidence – Scrum – Extreme Programming – Unified Process - – Evo – Practice Tips – Banking Case study.

Text Books and Reference Books

1. **Systems Analysis and Design, Roberta M. Roth, Alan Dennis, Barbara Haley Wixom, John Wiley Sons; 5th Edition, International Student Version edition (13 April 2012) (Text Book).**
2. **Craig Larman, "Agile and Iterative Development–A Manager"s Guide", Pearson Education, 2010. (Text Book)**
3. **Elisabeth Hendrickson, "Agile Testing" Quality Tree Software Inc, 2012. (Text Book)**
4. Object-Oriented Systems Analysis and Design, McGraw-Hill Higher Education; 4 edition (1 April 2010)
5. Systems Analysis and Design Methods, Jeffrey L Whitten , Lonnie D. Bentley , McGraw-Hill Higher Education; 7 edition (1 April 2006)
6. System Analysis and Design, Garry B. Shelly, 9th Edition, Cengage Pub, 2011.
7. Agile Software Development, Principles, Patents and Practices, Robert C Martin, Prentice Hall, 2012.
8. The art of Agile Development, James Shore and Shane Warden, O' Reiely, 2012

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
I SEMESTER
MBAB 705: DATA CENTRE MANAGEMENT AND CLOUD COMPUTING

Hard Core
3 Credits

Prerequisites:

- *Fundamentals of Operating Systems, Memory Management*

Learning Objectives:

- *Understanding of Storage Technology, Networked Storage, characteristics of a Data Center*
- *Understanding technologies required to build classic (traditional), virtualized, and cloud data center environments. These technologies include compute, storage, networking, desktop and application virtualization.*

Learning Outcomes:

- *Helps the Students to gain knowledge in data centre management.*

Unit I: Introduction To Storage Technology: Review data creation and the amount of data being created and understand the value of data to a business, challenges in data storage and data management, Solutions available for data storage, Core elements of a data center infrastructure, role of each element in supporting business activities.

Unit II: Storage Systems Architecture: Hardware and software components of the host environment, Key protocols and concepts used by each component, Physical and logical components of a connectivity environment, Major physical components of a disk drive and their function, logical constructs of a physical disk, access characteristics, and performance Implications, Concept of RAID and its components, Different RAID levels and their suitability for different application environments, Compare and contrast integrated and modular storage systems, high-level architecture and working of an intelligent storage system.

Unit III : Information Availability, Monitoring & Managing Data center : The reasons for planned / unplanned outages and the impact of downtime, Impact of downtime - Difference between business continuity (BC) and disaster recovery (DR) ,RTO and RPO, Single points of failure in a storage infrastructure and solutions to mitigate these failures, Architecture of backup/recovery and the different backup/ recovery topologies, replication technologies and their role in ensuring information availability and business continuity, Remote replication technologies and their role in providing disaster recovery and business continuity capabilities. Key areas to monitor in a data center, Industry standards for data center monitoring and management, Key metrics to monitor for different components in a storage infrastructure, Key management tasks in a data center.

Unit IV: Networked Storage and Virtualized Data Centre: Evolution of networked storage, Architecture, components, and topologies of FC-SAN, NAS, and IP-SAN, Benefits of the different networked storage options. CAS for long-term archiving solutions. The appropriateness of the different networked storage options for different application environments. Virtualization of core technologies in a data center – Fundamental concepts of compute, storage, networking, desktop and application virtualization. Securing Storage and Storage Virtualization - block-level and file-level virtualization technologies and processes.

Unit V: Cloud Computing and Infrastructure: Business drivers for Cloud computing, Definition of Cloud computing, Characteristics of Cloud computing as per NIST, Steps involved in transitioning from Classic data center to Cloud computing environment. Different Cloud services and deployment models, Cloud infrastructure components, and Cloud service creation processes. Cloud service management processes, Cloud service consumers. Cloud services models, Cloud deployment models, Economics of Cloud.

Basic Text Book and References:

1. EMC Corporation, Information Storage and Management, Wiley, India.(Text Book)
2. Robert Spalding, "Storage Networks: The Complete Reference", Tata McGraw Hill, Osborne, 2003. (Text Book)
3. Marc Farley, ―Building Storage Networks‖, Tata McGraw Hill, Osborne, 2001.
4. IBM ,‖Introduction to Storage Area Network and System Networking‖ , Fifth Edition,2012
5. Additional resource material on ―www.emc.com/resource-library/resource-library.esp‖
6. Cloud Computing: A Practical Approach Author: Anthony T. Velte, Publisher: Tata Mcgraw Hill Education Private Limited (2009), ISBN: 0070683514 (Text Book)
7. Cloud Computing For Dummies Author: Halper Fern, Kaufman Marcia, Bloor Robin, Hurwit Judith, Publisher: Wiley India Pvt Ltd (2009)
8. Toby Velte, Anthony Velte, Robert Elsenpeter, Cloud Computing, A Practical Approach

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
I SEMESTER
MBAB 706: BUSINESS COMMUNICATION LAB

Hard Core
2 Credits

Prerequisites:

- *Basics of English Grammar*

Learning Objectives:

- *To develop effective communication skills and interpersonal relations*
- *To motivate and manage life incidents*

Learning Outcomes:

- *Helps the students to have communication skill, writing of business correspondence, and to interact with different levels of managers/authorities.*

Unit I: Development of competency/proficiency and Practice on- Oral/spoken communication skill & testing – voice and accent, voice clarity, voice modulation & intonation, word stress etc. Feedback& questioning technique: Objectiveness in argument (Both one on one and in groups- Effective Communication -Development Etiquette and manners. Study of different pictorial expression of non-verbal communication and its analysis

Unit II: Concept of Effective Communication Components of Effective Communication- Conviction, confidence & enthusiasm, Listening Communication Process & Handling them KISS (keep it short & simple) in communication – composing effective messages Barriers to Communication- Listening -it's importance, Good and bad listening Non-Verbal Communication – its importance and Nuances :- Facial Expression, Posture, Gesture, eye contact, Appearance (Dress Code)

Unit III: Self Management: Self Evaluation- Self discipline- Self criticism- Recognition of one's own limits and deficiencies -Independency etc. Thoughtful & Responsible Self Awareness- Self Management Identifying one's strength and weakness- Planning- & Goal setting Managing self –emotions, ego, pride- Time Management Technique, Discipline& Punctuality Act in time on commitment- Quality /Productive time.

Unit IV: Interpersonal Skill Development - Interpersonal Skill Development Positive Relationship- Positive Attitudes- Empathise : comprehend other- opinions points of views, and face them with understanding Mutuality- Trust- Emotional Bonding- Handling Situations (Interview)

Unit V: Motivation/ Inspiration: Ability to shape and direct- working/process methods according to self defined criteria. Motivate customers- Ability to think for oneself- Apply oneself to a task- independently with self motivation. Motivation techniques- Motivation technique based on needs-and field situation- Idealising

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
I SEMESTER
MBAB 707: MODELING AND DESIGN LAB

Hard Core
2 Credits

Prerequisites:

- *Basics of Object oriented Concepts*

Learning Objectives:

- *This course gives a hands-on-experience to the students to build and manage the financial information systems using object-oriented design by applying established design principles using UML diagrams.*
- *Design and Develop Financial Information Software applying Object Oriented Modeling approach using typical Case Tool as given below:*

Learning Outcomes:

- *Helps the students to design and develop systems using UML and Agile Methodology*

Problem Statement

1. Study of the problem
2. Identify project scope
3. Objectives and infrastructure

Business modeling and requirements specification

1. Prepare Software Requirements Specification
2. The specification language
3. Unified Modeling Language (UML)

UML

1. Design data dictionary
2. Use case diagrams
3. Activity diagrams

Build and Test

1. Class diagrams
2. Sequence diagrams
3. Collaboration diagrams
4. Add interface to class diagrams

Software Implementation

1. Coding
2. Use tools for automatic code generation from system specifications.

Agile Software Development using Agile tools

1. Agile Management practices and principles
2. Agile development practices and principles

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
I SEMESTER
MBAB 708: SEMINAR & COMPREHENSIVE VIVA VOCE

Hard Core
2 Credits

Learning Objectives:

To evaluate the comprehensive Understands of Theoretical concepts of all subjects of that semester. All subjects in final comprehensive viva.

To evaluate the Communication Skill of the MBA Students.

Glossary of Terms:

Every Student shall prepare a list of Technical Terms for every Hard core and elective subjects registered in the given semester. (All Subjects in case of final semester) (Minimum of 100 concepts per subject to be compiled)

Test on Concepts:

A comprehensive Viva would contain two components. Phase I is a written test on concepts for 1½ hrs to be answered in one-two sentences. These papers will be evaluated by External Examiners (Test paper contain at least 10 concepts per subjects)

Seminar:

Students have give a seminar on the relevant contemporary topic.

VIVA by External Experts:

A student ability to comprehend and apply the theoretical concepts to practical Business operations will be tested by two external Examiners (Mostly one Academician and other Industry expert). They will conduct either individual / group viva on a comprehensive Business situation requiring the applications of Knowledge acquired in the core subjects.

Division of Marks:

Test: 20
Viva: Communication - 20
Domain Knowledge - 20
Seminar - 20
Group participation - 20

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

II SEMESTER

MBAB 750: Banking Operations Management	Hard 3 Credits
MBAB 751: Entrepreneurship and Startup	Hard 3 Credits
MBAB 752: Security Analysis and Portfolio Management	Hard 3 Credits
MBAB 753: Financial Statement Analysis	Hard 3 Credits
MBAB 754: Banking Technology Management	Hard 3 Credits
MBAB 755: IT Infrastructure Management for Banks	Hard 3 Credits
MBAB 756: Banking Technology Lab	Hard 2 Credits
MBAB 757: Corporate Finance Lab	Hard 2 Credits
MBAB 758: Value Added Course	Soft 2 Credits
MBAB : Elective 1: Paper – 1	Soft 3 Credits
MBAB : Elective 2: Paper – 1	Soft 3 Credits
MBAB 761: Seminar & Comprehensive Viva	Hard 2 Credits

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
II SEMESTER
MBAB 750: Banking Operations Management

Hard Core
3 Credits

Prerequisites

- *Basics of Banking*

Learning Objectives:

- *To introduce the overview of risk management in Banks*
- *To explain the various aspects of guidelines governing Indian Banks*
- *To expose various management aspects of banks in India*

Learning Outcomes:

- *Helps the students who join the banking the industry to excel in the industry*

Unit – 1

BIS - Basel Committee Norms – Risks in Bank – Management of Risk in Banks and its Impact– Factoring & Forfeiting Alliances –Consolidation in Banking sector – Issues - Off Balance Sheet Items and Issues- Due Diligence – AML and its compliance.

Unit – 2

Understanding Bank Funds – Liquidity Management Practices – RBI Guidelines - Asset Liability Management – Gap Analysis – Liquidity Risk – Interest Rate Risk – Market Risk.

Unit – 3

Credit Policy - Credit Monitoring and Recovery Management – Non Performing Assets – Management of NPAs- Documentation and Procedures - Modes of Charges - Collateral and Characteristics – Loan Syndication - Priority Sector Lending Issues– New Products & Services – Factoring – Securitization – Lok Adalat – Debt Recovery Tribunal – Prompt Corrective Action.

Unit – 4

Branding and Strategies - Retail Banking: Approach, Products, Marketing - Promotion and delivery channels of banking Products and services - Traditional and modern – Bancassurance -Direct selling agents - Customer Relationship Management- eCRM.

Unit – 5

Prudential Norms – IRAC Norms - Capital Adequacy Norms - Exposure Norms for Advances and Investments – SARFAESI Act - Insolvency and Bankruptcy Code.

Reference Books:

1. IIBF, Advanced Bank Management, 3rd Edition, MacMillan Education. 2015
2. IIBF, Risk Management, 3rd Edition, MacMillan Education. 2015
3. IIBF, Bank Financial Management, 3rd Edition, MacMillan Education. 2015
4. W.Koch, S.Scott Mac Donald Timothy Bank Management, 8th Edition, Cengage Learning, 2014.
5. John a.Haslem, Banks Fund Management, Pearson Education.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
II SEMESTER
MBABT 751: Entrepreneurship and Startups

Hard Core
3 Credits

Prerequisitess:

Not required

Learning Objective:

- *To create a learning experience to enable the students to face the challenges of starting new ventures.*
- *To prepare the students for starting new business and the skills for managing existing family business.*

Learning Outcomes:

- Helps the students to become entrepreneurs in different fields.

Unit I: Evaluating Entrepreneurial Career Options and Startup Opportunities Overview of Entrepreneurship-What Does It Take to Be an Entrepreneur? Evaluating New-Business Opportunities - Research & Analysis to Guide Your Startup Strategy - The Entrepreneur's Role, Task and Personality - Defining Survival and Success

Unit II: Role of Government: Government push for startups-facilities-training-appraoching government-innovative ideas-different departments –SME-Ministry of company affairs –NITI Ayog-State government supports-licensing- various schemes.

Unit III: Understanding Startup Finances and Capital Requirements
An Overview of Startup Finances and Sources of Investment Capital - Developing Financial Projections—How to Forecast Expenses and Revenue Case Discussion: Raising Seed Financing Workshop: Capitalization and Ownership for New Ventures

Unit IV: Developing and Presenting Startup Business Plan The Venture Communication -Communication for Startups Examining Sample Business Plans and Executive Summaries Workshop: Business Plan Critique The Art of the Venture Presentation Developing Entrepreneurial Marketing: Competencies, Networks and Frameworks Gathering Resources

Unit V: Launching and Managing the Startup Enterprise Maintaining Competitive Advantage The Changing Role of the Entrepreneur: Mid-Career Dilemmas What to Expect During the "Launch Stage" Where to Focus First? The Imperatives of the Launch Stage Legal Issues Facing Entrepreneur Building Your Team

Text Books and References:

1. Barringer, Bruce R. Entrepreneurship: Successfully launching new ventures. Pearson Education India, 2008.
2. Drucker, Peter F., and Peter Ferdinand Drucker. Innovation and entrepreneurship: Practice and principles. Routledge, 2007.
3. Kuratko, Donald F., and Richard M. Hodgetts. Entrepreneurship: A contemporary approach. Fort Worth;: Harcourt College Publishers, 2001.
4. Timmons, Jeffry A., and Stephen Spinelli. "New venture creation: Entrepreneurship for the 21st century." (1999).
5. Timmons, Jeffry A. The Entrepreneurial Mind. Brick House Publishing 1989.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
II SEMESTER
MBAB 752: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

Hard Core

3 Credits

Prerequisites

- *Basics of Finance*

Learning Objectives

- *To provide the basics of investment analysis, fundamental and technical analysis about the companies and markets.*
- *To impart the knowledge and skills to value and price the equity using different models.*

Learning Outcomes

- *Helps the students to start stock broking firm also to join financial consultancy firms*

Unit I Investment: Meaning–Features - Alternatives - Investment, Speculation and Gambling – Indian Capital Market – Primary Market and Secondary Markets – Processes of Buying and Selling Securities – Secondary Markets – Types – Stock Exchanges – OTCEI – Depository – Role of SEBI in security markets.

Unit II :Risk – Return Framework: Security Returns–Measurement of Returns–Risk Systematic and Unsystematic Risk

Unit III: Fundamental Analysis: Meaning–Importance–Objectives – Analysis of Economic, Industry, and Company– Financial and Non-Financial Parameters – Technical Analysis: Meaning – Difference between fundamental analysis and Technical analysis - The Dow Theory – Technical indicators – Charting Techniques – Stock market indicators – Market Efficiency: Weak form – Semi-strong form – Strong form – valuation equity

Unit IV: Portfolio Analysis : Portfolio Returns and Risk–Mean Variance Criterion– Markowitz Diversification – Efficient Frontier – Dominance Principle – Optimum Portfolio – Utility Theory

Unit V: Asset Pricing Model –Capital Market Theory–Capital Asset Pricing Model (CAPM) –Assumptions–Inputs -Capital Market Line-Security Market Line– CAPM nomalies

Text Books and References:

1. Fisher & Jordan, „Portfolio Management", Prentice Hall, New York, 2012. (Text Book)
2. Reilly Brown, Investment Analysis and Portfolio Management, Cengage Learning 8th Edition 2006
3. Alexander, Gordon J and Sharpe, William F., Fundamentals of Investment, Englewood Cliffs, New Jersey, Prentice Hall Inc, 2004
4. Elton, Edwin J and Gruber, Martin J., Modern Portfolio Theory and Investment Analysis, John Wiley, NY, 2001
5. Lee, Cheng F., et. al., Security Analysis and Portfolio Management, Foresman, Scott, 1999 Jack Clark Francis, Investments, Prentice Hall Inc, NY, 2004
6. Prasanna Chandra, Investment Analysis and portfolio Management, Tata McGraw Hill, New Delhi, Third Edition 2006.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
II SEMESTER
MBABT 753: FINANCIAL STATEMENT ANALYSIS

Hard Core 3 Credits
Theory 30% Problems 50% Lab 20%

Prerequisites: ***Basic knowledge on Financial Accounting***
Learning Objectives: Prepare Students -

1. To learn how to compare companies financially
2. To analyze profitability, Liquidity and Solvency issues
3. To analyze and interpret Financial statements for Managerial Decision Making
4. To analyze and interpret Financial statements for Investment and Lending Decision Making
5. To understand the role of Information Technology for analyzing Financial Statements

Learning outcome: Students who complete this course can develop a more efficient and effective approach to researching, interpreting, and analyzing financial statements

Unit I: FINANCIAL ANALYSIS TOOLS AND TECHNIQUES

Objectives of Financial Statement Analysis – Horizontal vs. Vertical Analysis - Tools and Techniques of Financial Statement Analysis – Sources of Information – Standards for Comparison – Comparative, Common-Size and Trend Analysis.

Unit II: RATIO ANALYSIS

Classification – Profitability Ratios - Short Term Liquidity Ratios - Operating Performance and Efficiency Ratios – Capital Structure and Long Term Solvency Ratios – Market measures Ratio – Analyzing Bank Financial Statements – Ratios for Trading, Manufacturing and Service organizations.
Forecasting Financial Statements - One Year Projection – Sensitivity Analysis – Contribution Margin Analysis - Projecting Financial Flexibility – Multiyear Projection

Unit III: FUND AND CASH FLOW ANALYSIS

Concept of Funds – Funds Flow Statement – Statement of Changes in working capital - Calculation of Funds from operation – Sources of Funds – Applications of Funds – Preparation of Funds Flow Statement.
Uses and Structure of Cash Flow Statement – Preparation of Cash flow statement – Determining Net Cash flow from Operating Activities - Direct and Indirect Method - Determining Cash flow from Investing Activities - Determining Net Cash flow from Financing Activities – Reporting Cash Flows – Interpreting the Cash Flow Statement.

Unit IV: COST-VOLUME-PROFIT ANALYSIS

Marginal Costing – Assumptions of Marginal Costing – Marginal Costing vs. Absorption Costing – Profit / Volume Ratio – Cost-Volume-Profit Analysis – Break-Even Analysis – Margin of Safety – Managerial Applications of Marginal Costing.

Unit V: BUDGETARY CONTROL AND VARIANCE ANALYSIS

Budget, Budgeting and Budgetary Control – Essentials of Budgetary Control – Budgeting vs. Forecasting – Classification and Types of Budgets – Zero-Base Budgeting – Activity based Budgeting – Analysis of variance – Material, Labour, Overhead and Sales variances.

Text Books:

1. Martin S. Fridson, Fernando Alvarez, **Financial Statement Analysis: A Practitioner's Guide**, Wiley India Private Ltd Finance, Fifth Edition, 2016.
2. Shashi K.Gupta & R.K.Sharma, **Management Accounting Principles and Practice**, Kalyani Publishers, 13th Revised Edition, 2017.
3. K.Scott Proctor, **Building Financial Models with Microsoft Excel – A Guide for Business Professionals**, Wiley India Private Ltd Finance, 2013.

References:

- John J. Wild, K. R. Subramanyam, **Financial Statement Analysis**, Mc Graw Hill Education, 10th Edition, 2015
- Maheswari S N, **Management Accounting**, Sultan Chand & Sons, New Delhi, 2015
- Gupta R L and Radhaswamy M, **Advanced Accounts**, Vol I , Sultan Chand & Sons, New Delhi 2017
- Jain S P and K L Narang, **Advanced Accounts**, Kalyani Publishers, Ludhiana 2018
- Shukla M C and Grewal T S, **Advanced Accounts**, Vol I, S Chand & Co, New Delhi 2016
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- https://swayam.gov.in/course
- http://www.iibf.org.in
- https://students.icai.org

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
II SEMESTER
MBAB 754: Banking Technology Management

Hard Core
3 Credits

Prerequisites

- *Basics of Banking and IT*

Learning Objective:

- *Understanding of Core Banking and Technologies involved in it.*
- *Understanding of Banking Channels and Payments gateways.*
- *Lab Practices on Banking Technology*

Learning Outcomes

- *Helps the students to gain knowledge about CBS components and other banking software*

Unit I: Branch Operation and Core Banking

Introduction and Evolution of Bank Management – Analysis of Rangarajan Committee Reports - Technological Impact in Banking Operations – Total Branch Computerization - Concept of Opportunities – Centralized Banking – Concept, Opportunities, Challenges & Implementation.

Unit II: Delivery Channels

Overview of delivery channels – Automated Teller Machine (ATM) – Phone Banking – Call centers – Internet Banking – Mobile Banking- USSD, UPI, BHIM – Payment Gateways – Card technologies – MICR electronic clearing.

Unit III: Back office Operations

Bank back office management –Inter branch reconciliation – Treasury Management – Forex Operations – Risk Management – Data centre Management – Network Management – Knowledge Management (MIS/DSS/EIS) – Customer Relationships Management (CRM).

Unit IV: Inter bank Payment System - INFINET

Interface with Payment system Network – Structured Financial Messaging system – Electronic Fund transfer – RTGSS – Negotiated Dealing Systems & Securities Settlement Systems – Electronic Money – E Cheques.

Unit V : Contemporary Issues in Banking Techniques

Block Chain and Bit-coin – Crypto currency -: Analysis of Recent Core Banking Software-Case study.

Text Books and References:

1. Financial Services Information Systems-Jessica Keyes Auerbach publication; (March 24, 2012)
2. Kaptan SS & Choubey NS., E-Indian Banking In Electronic Era, Sarup & Sons, NewDelhi, 2013.
3. Vasudeva,E–Banking, Common Wealth Publishers, New Delhi, 2010
4. Turban Rainer Potter, Information Technology, John Wiely & Sons Inc,2012.
5. Banking Technology – Indian Institute of Bankers Publication,2010.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
II SEMESTER
MBAB 755: IT Infrastructure Management for Banks

Hard Core
3 Credits

Prerequisites:

- *Basic knowledge of principles and practices of Computer System Security.*

Learning Objectives:

- *To expose the emerging areas of IT Infrastructure and its Management focuses on the IT governance and risk management.*
- *To understand the risk management framework, IT infrastructure management, ITIL service delivery and other frameworks.*

Learning Outcomes:

- *Students gain knowledge in IT infrastructure management services.*

Unit I: Server Management – Storage Management – Application Management – Information Life Cycle Management – Network Management – Security Management – Tools and Standards for Server, Storage, Application, Information Life Cycle Management, Network and Security Management

Unit II: Data Centre Management: Data Center Basics – Data Center Architecture – Data Center Design – Data Center Network Design - Data Center Maintenance – Data Center HVAC– Data Center consolidation

Unit III: IT Services Management – Service Management as a practice – Service strategy principles – Service economics – Strategy and Organization – Strategy, tactics and operations – Service Design principles – Service Design processes – Service Design Technology related activities – Implementing Service Design

Unit IV: Service Transition principles – Service Transition processes – Service Transition common operations – Implementing service transition – challenges, critical success factors and risk – Service Operation principles - Service Operation processes – Common Service Operation activities – Implementing service operation

Unit V: Continual Service Improvement principles - Continual Service Improvement processes – Continual Service Improvement methods and techniques – Implementing Continual Service Improvement.

Text Books and References:

1. Office of Government Commerce, ―ITIL – Service Strategy, TSO publications, London, 2007
2. EMC, Information Storage Management: ―Storing, Managing and Protecting Digital Information‖, Wiley 2009
3. Gilbert Held, Server Management, Best Practices Series, Aurebach Publications, 2000.
4. Stephan R.Kass, ―Information Life Cycle Management, Woodhead Publishing, 2006
5. Alexander Clemm, Network management Fundamentals, Cisco Press, 2012

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
II SEMESTER
MBAB 756: Banking Technology Lab

Hard Core
2 Credits

Prerequisites

- ***Computer Programming knowledge to develop banking softwares***

Learning Objectives:

- *This lab imparts knowledge of design and development of banking software like Mobile Banking, Internet Banking, ATM system and Financial Middleware. Also, it focuses on a detailed study on the recent core banking software.*

Learning Objectives:

- *Helps the student to build a solution for Banking systems*

Lab Exercises

Design and Develop the following Banking Software using the appropriate teschnologies:

- Mobile Banking
  - Balance Enquiry
  - Cheque Book Request
  - Stop Cheque
  - Credit/Debit Notification
  - Bill Payment

- Internet Banking
  - Electronic Funds Transfer
  - Account Management
  - Loan Application
  - Registering of new bank services
  - Customer Information Management

- ATM system
  - Balance Enquiry
  - Withdrawal
  - Deposit
  - Pin change
  - Mini statement

- Financial Middleware
  - Design of Online Banking Middleware
  - ATM Middleware ♣ Mobile Middleware
  - Banking Software Middleware

- Case Study on the recent Core Banking Software.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
II SEMESTER
MBAB 757: Corporate Finance Lab

Hard Core
2 Credits

Prerequisites:

- *MS. Excel*

Learning Objectives:

- *Gives the hands on experience using real live data also it will help the students to give financial consultancy firms.*

List of Practical

Based on Annual Reports of Companies:

- Analysis of Financial Statements based on the any five select annual reports, Important Ratios, Funds Flow Analysis statements, Examining the trends over a period of time, Comparison between cross category ratios, cross sectional analysis

CMIE Based:

- Extraction of Industry wise data on select fundamentals
- Extraction of Company specific data
- Annual data on select indicators across companies in a given industry
- Data on select Big Business Houses in India
- Data on Capital structure designs of select industries
- Sector wise Stock Price Indices
- Company specific Price charts and identification of

events Excel Based Exercises:

- Estimation of Daily Returns, Weekly Returns, Monthly, Quarterly and Half yearly returns
- Calculation of Geometric Mean and Standard deviation to returns
- Estimation of Beta for select stocks in select industries
- Working out leads and lags in the stock

market SPSS Based Exercises:

- Calculation of correlation between funds and stock returns
- Estimation of Multiple Regression Equation between select firm values and market returns
- Dummy value regressions, step-wise regressions
- Multivariate Analysis : Factor Analysis and Principle Component Analysis
- Discriminate functions and Credit Rating
- Cluster Analysis and Data distances

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
II SEMESTER
MBAB 758: Value Added Course

Soft Core
2 Credits

Student has to register and complete a certification course offered by any one of the following online platforms:

- Swayam Platform (Approved by MHRD)
  - https://swayam.gov.in/
- NPTEL (Funded by MHRD)
  - http://nptel.ac.in/
- National Institute of Securities Markets (http://www.nism.ac.in/)
- NCFM (https://www.nseindia.com/education/content/nse_certification.htm)
- Indian Institute of Banking and Finance (http://www.iibf.org.in/)
- ISACA (https://www.isaca.org/)
- PMI

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
II SEMESTER
MBAB 761: SEMINAR & COMPREHENSIVE VIVA

Hard Core
2 Credits

Learning Objectives:

To evaluate the comprehensive Understands of Theoretical concepts of all subjects of that semester. All subjects in final comprehensive viva.

To evaluate the Communication Skill of the MBA Students.

Procedure:

Glossary of Terms:

Every Student shall prepare a list of Technical Terms for every Hard core and elective subjects registered in the given semester. (All Subjects in case of final semester)
(A minimum of 100 concepts per subject to be compiled)

Test on Concepts:

A comprehensive Viva would contain two components. Phase I is a written test on concepts for 1½ hrs to be answered in one-two sentences. These papers will be evaluated by External Examiners (Test paper contain at least 10 concepts per subjects)

Seminar:

Students have give a seminar on the relevant contemporary topic.

VIVA by External Experts:

A student ability to comprehend and apply the theoretical concepts to practical Business operations will be tested by two external Examiners (Mostly one Academician and other Industry expert). They will conduct either individual / group viva on a comprehensive Business situation requiring the applications of Knowledge acquired in the core subjects.

Division of Marks:

Test: 20
Viva: Communication - 20
Domain Knowledge - 20
Seminar - 20
Group participation - 20

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

III SEMESTER

MBAB 800: Financial Management	Hard 3 Credits
MBAB 801: International Banking and Financial Services	Hard 3 Credits
MBAB 802: Merchant Banking and Financial Services	Hard 3 Credits
MBAB 803: Strategic Management	Hard 3 Credits
MBAB 804: Information Security for Banks	Hard 3 Credits
MBAB 805: Data Warehousing and Applied Data Mining	Hard 3 Credits
MBAB 806: Business Intelligence Lab	Hard 2 Credits
MBAB 807: Stock and Forex Trading Lab	Hard 2 Credits
MBAB 808: Bank Internship	Hard 3 Credits
MBAB : Elective I: Paper – 2	Soft 3 Credits
MBAB : Elective II: Paper – 2	Soft 3 Credits
MBAB 811: Seminar & Comprehensive Viva	Hard 2 Credits

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
III SEMESTER
MBBT 800: FINANCIAL MANAGEMENT

Hard Core 3 Credits
Theory 30% Problems 50% Lab 20%

Prerequisites: ***Basic knowledge on Finance and Accounting***
Learning Objectives: Prepare Students -

1. To learn Financial Planning and Objectives
2. To understand the concept of time value of money
3. To understand the cost of capital and Leverage
4. To learn Capital Budgeting and Lease Financing
5. To learn working capital management and Dividend Decisions
6. To understand the role of Information Technology for Financial Management

Learning outcome: Students who complete this course can manage the sources of raising the funds and effective utilizations of funds

Unit I: FINANCIAL MANAGEMENT
Financial Management: Introduction, Meanings and Definitions, Goals of Financial Management, Finance Functions, Interface between Finance and Other Business Functions - *Financial Planning:* Introduction, Objectives, Benefits, Guidelines, Steps in Financial Planning, Factors Affecting Financial Planning, Estimation of Financial Requirements of a Firm, Capitalisation - *Time Value of Money:* Introduction, Rationale, Future Value, Present Value - *Valuation of Bonds and Shares:* Introduction, intrinsic value, book value, Valuation of Bonds, Valuation of Shares.

Unit II: COST OF CAPITAL, LEVERAGE AND CAPITAL STRUCTURE
Cost of Capital: Introduction, Meaning of Cost of Capital, Cost of Different Sources of Finance, Weighted Average Cost of Capital - *Leverage:* Introduction, Operating Leverage, Application of operating leverage, Financial Leverage, Combined Leverage - *Capital Structure:* Introduction, Features of an Ideal Capital Structure, Factors Affecting Capital Structure, Theories of Capital Structure.

Unit III: CAPITAL BUDGETING
Capital Budgeting: Introduction, Importance of Capital Budgeting, Complexities Involved in Capital Budgeting Decisions, Phases of Capital Expenditure Decisions, Identification of Investment Opportunities, Rationale of Capital Budgeting Proposals, Capital Budgeting Process, Investment Evaluation, Appraisal Criteria - *Risk Analysis in Capital Budgeting :* Introduction, Types and Sources of Risk in Capital Budgeting, Risk Adjusted Discount Rate, Certainty Equivalent Approach, Probability Distribution Approach, Sensitivity Analysis, Simulation Analysis, Decision Tree Approach - *Capital Rationing:* Introduction, Types, Steps Involved in Capital Rationing, Various Approaches to Capital Rationing.

Unit IV: LEASE FINANCE AND DIVIDEND DECISIONS
Evaluation of lease contracts: Introduction – Meaning and essential – Classification – Financial lease – Operating lease – Sales and lease back – Indirect lease; Corporate Restructuring: Introduction – Scope – Types; Financial Restructuring: Share split – Consolidation – Cancellation of paid up capital - *Dividend Decisions:* Introduction, Traditional Approach, Dividend Relevance Model, Miller and Modigliani Model, Stability of Dividends, Forms of Dividends, Stock Split

Unit V: MANAGEMENT OF WORKING CAPITAL
Working Capital Management : Introduction, Components of Current Assets and Current Liabilities, Concepts of Working Capital, Objective of Working Capital Management, Need for Working Capital, Operating Cycle, Determinants of Working Capital, Approaches for Working Capital Management, Estimation of Working Capital - *Cash Management:* Introduction, Meaning and Importance of Cash Management, Motives for Holding Cash, Objectives of Cash Management, Models for Determining Optimal Cash Needs, Cash Planning, Cash Forecasting and Budgeting - I*nventory Management:* Introduction, Role of Inventory in Working Capital, Characteristics of inventory, Purpose of Inventory, Costs Associated with Inventories, Inventory Management Techniques, Importance of Inventory Management Systems - R*eceivable Management:* Introduction, Costs Associated with Maintaining Receivables, Credit Policy Variables, Evaluation of Credit Policy.

Text Books:

1. ***Khan MY, Jain PK., Financial Management, Tata Mc Hill, New Delhi,2017***
2. ***Pandey I M., Financial Management, Vikas Publishing House, Delhi, 2016***

References:

Chandra, Prasanna: Financial Management, Tata McGraw Hill, Delhi, 2013
Van Horne, James C: Financial Management and Policy, Prentice Hall, Delhi, 2015
Brigham, Eugene and Ehrhardt C Michael., Financial Management: Theory and Practice, 2014
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http://www.iibf.org.in
https://students.icai.org

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

III SEMESTER

MBAB 801: INTERNATIONAL BANKING AND TRADE FINANCE

Hard Core** 3 **Credits

Prerequisites: *Basic of Banking and Finance*

Learning Objectives:

- To understand the structure of Global Financial Systems
- To learn about the Euro currency transactions and the role played by International Financial Institutions
- To develop the skills to handle the Forex transactions
- To associate with activities of a Bank for Ex-Im Trade and cross country transactions.

Learning Outcomes: Helps the students to be successful in the International banking dealing with Cross-border transactions.

Unit I: Global Business Environment –World Economy–Developing and Developed Nations –Trade between countries –Trade Blocks and Regional Economic Cooperation – World Bank–IMF –WTO – Growths of Multinationals – Globalization. International Financial System –Euro Currency Markets –International Money Market – Euro Bonds–FRN – Medium Term nodes. Global Capital Markets –Major Stock Markets – International Equity Trading – Instruments –Private placement - structure and Regulations of International Equity and Bond Markets – New Issue procedure – Linkages between Domestic, Euro bond Secondary Markets.

Unit II: The Foreign Exchange Market: Organisation – Spot Vs Forward Markets–Bid and sk rates – Inter bank Quotations – International Market Quotations – Cross Rates–Merchant Rates –FEDAI Regulations– Role of RBI. **Exchange Rates** – Exchange rate systems – Gold Standard – Bretton Woods –Fixed Vs Floating Exchange Rate systems – Determinants of Exchange Rates –Exchange Controls. **Foreign Exchange Transactions** – Purchase and Sale transactions – Spot Vs Forward transactions – Forward Margins – Inter bank Deals – Cover deals –Trading – Swap deals - Arbitrage Operations – Factors determining Forward margins. **Ready and Forward Exchange Rates** – Principle types of Ready Merchantrates –Ready rates based on cross rates – Forward exchange contracts –Execution of Forward contracts – cancellation and Extensions – Dealing position –Exchange position – Cash position.

Unit III: Euro currency Derivatives –Currency Forward and Futures Markets – Currency Options – Option Combinations – Put – Call parity – Hedging – Trading on Volatility – Currency and Interest Rate Swaps – Swap valuation – Credit Risk of Swaps. **Global Commodity Markets** – Globally Traded Commodities – Commodity price Indicators – Futures price and cost of carry – Backwardation – Linkage between commodity Futures and Interest Rate Futures – Commodities in a Portfolio – Commodity swaps - option based commodity Hedging

Unit IV: International Banking: Origin and Evolution of International banking – Global trends as reasons for growth of international banking – financial activity following real-sector transactions – Regulatory, Tax and Supervisory explanations – Definitions – Growth and future prospects of International banking – Need for regulation of international banking in the current scenario. **International financial institutions** – The World Bank Group – International Bank for Reconstruction and Development (IBRD) – IDA – IFC – MIGA – International Monetary Fund (IMF) in brief – Lending facilities – BIS – ADB - AfDB.

Unit V: International Banking Operations: Off-shore financial centres – Rationale – Characteristics of offshore financial centres – Types of offshore centers – Benefit and reasons for growth – Factors of success – Tax Havens – Major Offshore Financial Centres – International Banking facilities – Special Economic Zones (SEZs) – Regulatory concerns. **Correspondent banking** – Origin and Growth of Correspondent banking – Challenges for correspondent banking – clearing house functions – payments and collections – credit services – foreign exchange services – other facilities. **Foreign Bank Branches' operations**: Factors behind overseas branch expansion – Objectives of abroad branches – constraints faced by overseas operations.

Basic Text Books and References:

- A.W. Mullineux& Victor Murinde. (2003). Handbook of International Banking. ISBN 1840640936 Edward Elgar Publishing.
- CheolEun& Bruce G. Resnick. (2012). International Financial Management, 6e. ISBN 9780078034657 McGraw Hill Education.
- Indian Institute of Banking & Finance. International Banking Operations. ISBN 9780230632585 Macmillan Publishers India.
- Jane Hughes & Scott MacDonald. (2002). International Banking: Text and Cases. ISBN 9780201635355 Prentice Hall.
- *Ian H Giddy, "Global Financial Markets", AITBS Pub, Delhi 11 051.*
- Buckley, ―Multi-National Finance, Prentice Hall, New Delhi.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
III SEMESTER
MBAB 802: Merchant Banking and Financial Services

Hard Core 3 Credits
Theory 100%

Prerequisites: *Basic knowledge on Business and Finance*
Learning Objectives: Prepare Students -
To learn various Financial services
To learn the role and Functions of Merchant Bank
To understand the role of Financial Regulators
To learn the functions of Rating Agencies
Learning outcome: Students who complete this course can understand the role and functions of Merchant Bank and various fund based and fees based financial services and regulators

Unit I: FINANCIAL SERVICES
Financial System – Components - Financial Services - Need for financial services, various types of financial services - Fund based and Non-Fund based Financial Services - Financial Markets- Meaning, Types, Classification of Financial Markets - Financial Institutions: Broad Categories- Special Characteristics - Financial Instruments – Various Types - Stock Exchanges -Constitution, control, functions - Financial Services Industry in India – Recent Trends in the Financial sector.

Unit II: MERCHANT BANKING
Concept – Categories of Merchant Bankers – Investment Banking vs. Merchant Banking – Functions of Merchant Banking - Role of merchant bankers in fund raising -Managing public issue-Issue pricing - Pre and Post issue – Book Building - private placement-raising of Funds through Bonds and public deposits – Underwriting of securities - Role of Merchant Banker in Project counselling and Appraisal of Projects - Credit Syndication – Portfolio management – Working capital finance - Role of Merchant Banker in Foreign currency Financing – Pre-investment services – Capital Restructuring services – Merchant Banking Regulatory Frame works - Recent trends in merchant banking services - Role of Merchant Banker in Mergers and Amalgamations - Revival and Restructuring of Sick Companies - SEBI guidelines for Merchant Bankers.

Unit III: FUND BASED FINANCIAL SERVICES
Leasing – Hire purchase finance and consumer credit – Factoring and forfeiting – Bills discounting – House Financing - Insurance Services and products – Venture Capital Financing - Credit Rating Agencies – Nature – Factors considered – Rating procedure – Instruments rated – Revisions in rating.

Unit IV: FINANCIAL INTERMEDIATION
Depository Institutions - Characteristics and role of financial intermediaries - Depository Institutions and financial services- NSDL – CDSL - Non-Depository institutions and their role - Clearing Corporation of India Ltd, Discount and Finance House of India Ltd - Role of governance and regulatory bodies.

Unit V: FINANCIAL REGULATORS
Types – Role – Functions - Ministry of finance (MOF), Ministry of corporate affairs (MCA), Reserve Bank of India (RBI) - its role as regulator - Security Exchange Board of India (SEBI) and its role as regulator-SEBI Guidelines on merchant bankers –SEBI Guidelines on Issue managers- SEBI Guidelines for Mutual Funds- SEBI Guidelines for Secondary Markets - Insurance Regulatory and Development Authority (IRDA) - its role as regulator - Recent developments in financial regulations.
International Regulators – Various Regulators – Salient Features – Role of International Regulators – Important International Regulators.

Text Books:
1. ***Khan M.Y, Financial Services, Tata McGraw Hill, 2016***.
2. **Thummuluri Siddaiah, Financial Services, Pearson India, 2012**

References:

1. Meir Kohn, Financial Institutions and Markets, McGraw Hill Publishing Company, New York.2008
2. Bhole M.K., Financial Markets and Institutions, Macmillan Publishing Co. Inc., New York.2015
3. Auerbach Robert D., Finance Markets and Institutions, Macmillan Publishing Co. Inc., New York.2012
4. https://www.nseindia.com/education
5. https://certifications.nism.ac.inhttps://onlinecourses.nptel.ac.in
6. https://swayam.gov.in/course
7. http://www.iibf.org.in
8. https://students.icai.org

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
III SEMESTER
MBAB 803: Strategic Management

Hard Core
3 **Credits**

Prerequisites:

- *Basics of Management concepts*

Learning Objectives:

- *To make the students understand the strategic management process in a business organisation*
- *To help the students to identify and link the strategy formulation*
- *To develop learning and analytical of the students to solve the business cases.*

Learning Outcomes:

- *Helps the students to deal with strategic decision making process*

Unit-I:

Strategic Thinking – Emerging Approaches- Levels of Strategy - Strategic Decision Making – Benefit and risks of strategic management – Ethics and corporate social responsibility.

Unit -II:

Strategic Intent – Strategic Planning - Strategic Management Process – Vision, Mission, Values – Business – objectives and goals- Business policies and strategies.

Unit -III:

Strategy Formulation - Environmental scanning and analysis – External Environment- Competitive Analysis- Political, Legal and Economic forces, Social and technological forces- Internal Analysis- SWOT – Functional Approach, Value chain, Core competency.

Unit -IV:

Strategic Choice- Generic strategies – Corporate level strategies- Business Level Strategies- Functional Strategies – Tailoring strategies to fit specific industry and company situations.

Unit-V:

Strategy Implementation and Control - Structural, Behavioral, functional and operational considerations – frame work for executing strategy – strategy execution process – managing internal operations corporate culture of leadership – designing strategic control system, key success factors – monitoring success and evaluating deviation.

References:

1. Strategic Management – Theory and Practice – John A Parnell.
2. Strategic Management An integrated approach – Charles W.L..Hill, Gareth R.Jones.
3. Strategic Management: South Asian Perspective – Hitt, Ireland, Hoskisson, Manikutty.
4. Crafting and Executing Strategy – Arthur A.Thomson, A.J. Strick land III, John E. Cambel
5. Strategic Management and Business Policy – Azhar Kazmi
6. Business policy and strategic management concept and application – Vipin Gupta, Kamala Gollakota, R. Srinivasan.
7. Reflecting Global Strategy- Harvard Business School Press.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
III SEMESTER
MBAB 804: Information Security for Banks

Hard Core
3 Credits

Prerequisites
Basic knowledge of principles and practices of Computer System Security.

Learning Objectives
The course provides the knowledge of protecting the computer systems against attacks and intrusions, and gaining protection from physical and technical measures.

Learning outcome
Gains knowledge in identifying the weakest component in the computer systems and helps in providing a countermeasures for it.

Unit I: Introduction to Information Security
Information Security Overview – Importance of Information Security – Security Methodology. Risk Analysis: Threat – Types of Attacks – Compliance with Information security standards, Regulations and Laws – Secure Design Principles: The CIA Triad and Other models, Defense models – Security Policies, Standards, Procedures and Guidelines – Security Organizations: Roles and responsibilities, Managed security services – Authentication and Authorization.

Unit II: Data, Network and Operating System Security
Data Security – Securing Unstructured Data – Encryption – Database Security -Security in Networks – Threats in Networks – Network Security controls. Operating System Security – Operating system security models – Security Technology – Access Controls – Firewalls – Virtual Private Networks – Intrusion detection and Prevention Systems.

Unit III: Securing Infrastructure Services
E-mail– Web Servers – DNS Servers – Proxy Servers – Application Security – Secure Application Design – Secure Development Lifecycle – Application Security Practices.

Unit IV: Security Operations and Physical Security
Disaster Recovery, Business Continuity, Backups and High Availability – Incident Response and Forensic Analysis – Physical Security – Security Agencies – Certifying Authorities – National and International.

Unit V: Recent Trends in Security
Case Studies: Analyze Information security for Banking Systems, Casestudy on INFINET etc.

References:

1. Mark Rhodes – Ousley, “Information Security, The Complete Reference”, Second Edition, 2013, McGraw Hill.
2. Charles P. Pfleeger, Shari Lawrence Pfleeger, “Security in Computing”, Fourth Edition, 2006
3. William Stallings, Cryptography and Network Security Principles and Practices, PHI Third Edition, 2005
4. Caelli, J., and Longley D. and Shain M., Information Security Handbook, Macmillan, 1991
5. Mcclure S., Scambray J. and Kurtz G., Hacking exposed: Network security secrets and solutions, McGraw-Hill, 1999

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
III SEMESTER
MBAB 805: DATA WAREHOUSING & APPLIED DATA MINING

Hard Core
3 Credits

Prerequisites:

Relational Data Base Management System, Statistics and Algorithms

Learning Objectives:

The main purpose of the course is to develop and gain an understanding of the principles, concepts, functions and uses of data warehouses, data modelling and data mining in business.

The course focuses on data model for data warehouses and implementing data warehouses: data extraction, cleansing, transformation and loading, data cube computation, materialized view selection, OLAP query processing.

Learning outcome:

On successful completion of the course, the students will be able to Use current techniques, skills, and tools necessary for extraction, transformation, loading and mining of data.

1. The Business Dimensional Lifecycle – Project Planning and Management – Dimensional Modelling – Advanced Dimensional Modelling.

2. **Data Warehouse architecture** – Back room technical architecture – architecture for the front room – infrastructure and metadata – selecting the products.

3. Aggregates – physical design – data staging – planning the deployment – maintaining and growing the data warehouse.

4. Data mining – motivation – functionalities – data for data mining – data pre-processing need – data summarization – data cleaning – data integration and transformation – data reduction – data discretization and concept hierarchy generation.

5. Pattern, Classification & Clustering : Mining frequent patterns, associations and correlations – basic concepts – apriori algorithm – classification and prediction – introduction -classification by decision tree induction – cluster analysis – types of data in cluster analysis – k-Means and k-Medoids – Mining time series Data – Trend Analysis.

Basic Text Books and References:

1. **Kimball, Ralph; Reeves, Laura et al, "Data warehouse lifecycle toolkit: Expert methods for designing, developing, and deploying data warehouses", John Wiley & Sons, 2012. (Text Book)**
2. **Han, Jiawei; Kamber, Micheline, —Data mining: concepts and techniques, Morgan**
3. **Kaufmann Publishers, 2012. (Text Book)**
4. Paulraj Ponniah, — Data Warehousing Fundamentals: A Comprehensive Guide for IT Professionals , Wiley Publications, 2014.
5. Ralph Kimball, Margy Ross, — The Data Warehouse Toolkit, Wiley Publications, 2012.
6. Arun K. Pujari, Data Mining Techniques, Oxford Universities Press, 2010.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
III SEMESTER
MBAB 806: Business Intelligence Lab

Hard Core
2 Credits

Prerequisites:

RDBMS, Data warehouse and Data Mining

Learning Objectives:

This lab imparts the practical knowledge of the techniques and tools to provide effective business intelligence. It enables the students to leverage data warehousing and data mining to solve business problems faster by using online analytical processing, data warehousing and data mining tools. Also, this lab offers a comprehensive knowledge and strategic analysis of the data mining and warehousing technologies.

Learning outcome:

On successful completion of the course, the students will be able to use current techniques, skills, and tools necessary for business intelligence to make suitable decisions.

- Defining Business Requirements
  - Dimensional Analysis
  - Developing Information Packages
  - Requirements Definition

- Architecture and Infrastructure Specification
  - Metadata definition
  - Multi-Dimensional Modeling
    - Star Schema
    - Snow Flake Schema

- Extraction, Transformation and Loading
  - Defining rules for ETL
  - Usage of ETL Tools
  -
- Information Delivery – OLAP, ROLAP and MOLAP

- Data Mining – Usage of Data Mining Tools

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
III SEMESTER
MBAB 807: Stock and Forex Trading Lab

Hard Core 2 Credits

Prerequisites: ***Basic knowledge on Financial Market Operation***

Learning Objectives: Prepare Students -

- To introduces the operations of Securities market
- To understand the Trading process, settlement and legal frameworks

Learning outcome: ***S***tudents who complete this course can do stock and Forex trading

UNIT-1 - SECURITIES MARKET AND ITS OPERATION - Primary Market – Secondary Market – Key Indicators of secondary market - Market Capitalization, Market Capitalization Ratio, Turnover, Turnover Ratio – Products and Participation – Market segments and their products.

UNIT-2 – FOREX MARKET AND ITS OPERATION – Forex market and its organisation – Exchange Rates and its calculations – Forex Transactions – Types of Forex market – Forex market operations.

UNIT -3 - ONLINE TRADING - Procedure/process involved in performing share trading - OCITE - Neat system – BOLT System - market types - trading system users hierarchy - local database - market phases - logging on - log off/exit from the application. Online Forex Trading – Operations – procedures.

Opening of Trading and DEMAT Accounts – Procedure for opening Trading and DEMAT accounts – Trading Vs. Investment – Steps to be followed for trading and Investment.

UNIT–4 - CLEARING, SETTLEMENT AND RISK MANAGEMENT - key terminologies used in clearing and settlement process - transaction cycle - settlement agencies -clearing and settlement process – Risk management in Trade and settlement – Depositories and their Roles. **Legal Frameworks** – SEBI - Role of SEBI regarding the protection of investor - FEDAI Regulations – Role of RBI.

Unit -5 - FUNDAMENTAL VALUATION CONCEPTS - Time value of money – Fundamental Analysis - understanding financial statements - Ratio analysis – Economic Analysis - Technical analysis – Different Techniques
Market Capitalization and calculation of Market Capitalization - Index – Types – Calculation of Index – Market return and Beta Calculation

Text Books:

1. **EVERYTHING YOU WANTED TO KNOW ABOUT STOCK MARKET INVESTING - Network 18 Publication Pvt. Ltd - 2 Edition, 2017**
2. **Sid Bhattacharjee, Generate Daily Income from Financial Market, *Partridge India, 2014 November***

References:

1. Punithavathy Pandian, Security Analysis and Portfolio Management, Vikas Publishing House Pvt. Ltd, 2nd edition, 2012. (Text Book)
2. V. A. Avadhani, Investment and Securities Market in India , Himalaya Publishing House.
3. Prasanna Chandra, Security Analysis and Portfolio Management , Tata McGraw-Hill. 4. SanjeevAgarwal, A Guide to Indian Capital Market , Bharat Publishers
4. Ravi Puliani and Mahesh Puliani, Manual of SEBI , Bharat Publication

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
III SEMESTER
MBAB 808: BANKING INTERNSHIP

Hard Core
4 Credits

Learning Objectives:

Banking Internship is to be carried out for 2 months in a Bank Branch. Students should attend to different regular activities of a Bank. All public sector /Private Sector bank branches with different operations like different deposit accounts, Credit facilities for Agricultural Loans, Educational Loans, Working capital Trade credit etc are the Branches were students should undertake This Internship Minimum 45 Physical attendance for Full day is Mandatory. A report is to be prepared on the following topics with copies of forms, documents of that given bank duly certified by the Branch Manager is to be submitted and it will be evaluated by 2 DGM/AGM level Bank officers. A viva will be conducted to evaluate the Knowledge and skills learned by students during 2 months Long Internship.

- Practicing the formalities regarding opening a Savings Bank Account
- Practicing the formalities regarding opening a Current Account -Practicing the formalities regarding opening Term Deposits -NRE / FCNR accounts opening formalities –
- Administration of Cash Departments in the Branch -Securities aspects in the Bank branch Activities regarding withdrawal of cash -List of activities carried out Teller / Cash Counter -Procedures for calculation of interests on deposits and loan account - Inward and outward
- Bills Collection activity -Clearing House Operations. – MICR clearing, High value clearing and RTGS -Electronic Funds Transfer, DD, Mail Transfer, Telegraphic / Telephonic transfer -Different types of crossing cheque and activities associated with them -Extension of Bank overdraft facility in SB and CD accounts –
- Procedure to be followed for sanctioning a gold loan -Appraisal of loan application of ISB loan -Sanctioning of working capital credit line -Formalities associated with documentation of Security -Agency Services : Issue of drafts -Periodic Payments - Merchant Banking activities :
- Bankers to IPO issues -Treasury operations: Barriers to Government -List of subsidiary books operated and writing final ledger -Checking the balances -Day-to-day vouching procedures Miscellaneous services offered by banks -Gift Cheques, Pay orders, Bankers Cheque. -Power of Attorneys -Fore closing accounts and activating dormant deposits -Discounting bills and cheques Locker facility – safe deposit services Loan against securities / deposits / LIC policies -Advances against hypothecation of goods - Advances against book debts and supply bills -LC / LG facilities/ documentation Precautions for averting frauds / Preventive vigilance

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
III SEMESTER
MBAB 811: SEMINAR & COMPREHENSIVE VIVA

Hard Core
2 Credits

Learning Objectives:

To evaluate the comprehensive Understands of Theoretical concepts of all subjects of that semester. All subjects in final comprehensive viva.

To evaluate the Communication Skill of the MBA Students.

Procedure:

Glossary of Terms:

Every Student shall prepare a list of Technical Terms for every Hard core and elective subjects registered in the given semester. (All Subjects in case of final semester)
(A minimum of 100 concepts per subject to be compiled)

Test on Concepts:

A comprehensive Viva would contain two components. Phase I is a written test on concepts for 1½ hrs to be answered in one-two sentences. These papers will be evaluated by External Examiners (Test paper contain at least 10 concepts per subjects)

Seminar:

Students have give a seminar on the relevant contemporary topic.

VIVA by External Experts:

A student ability to comprehend and apply the theoretical concepts to practical Business operations will be tested by two external Examiners (Mostly one Academician and other Industry expert). They will conduct either individual / group viva on a comprehensive Business situation requiring the applications of Knowledge acquired in the core subjects.

Division of Marks:

Test: 20
Viva: Communication - 20
Domain Knowledge - 20
Seminar - 20
Group participation - 20

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

IV SEMESTER

MBAB : Elective I: Paper – 3	Soft 3 Credits
MBAB : Elective I: Paper – 4	Soft 3 Credits
MBAB : Elective II: Paper – 3	Soft 3 Credits
MBAB : Elective II: Paper – 4	Soft 3 Credits
MBAB 850: Final Project & Viva	Hard 6 Credits
MBAB 851: Seminar & Comprehensive Viva	Hard 2 Credits

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
IV SEMESTER
MBAB 850: FINAL PROJECT AND VIVA

Hard Core
6 Credits

Guidelines:

- The Final Project has two Phases.
- In Phase I students under the guidance of Faculty in-charge(s) of the given project work, carry out the background work, identify a tentative Title for the Project work, Review 20-25 Research papers, prepare a Review Paper.
- A public presentation on broad areas of proposed work to be made by students before starting II phase.
- Presentations would be evaluated by the Committee of Internal Faculty
- The division of Marks for Phase I and Phase II components is 40% and 60% respectively
- Final Project Work must be in the inter-disciplinary area of Banking/Finance and IT.
- Students should be in regular contact with their Faculty guide(s) and submit a rough draft of the Report by the First week of April; Project work will be evaluated by two external examiners in a Public presentation.

Final Project Report must contain the following Components: (75-100 Pages)

1. Title Page (Soft Binding)
2. 4- 5Chapters (Back ground work, Methodology/Algorithm/Mathematical Model)
3. The final project report should be prepared by following the template provided by the department.

Division of Marks:

- Phase I: Compilation of Research Papers and Presentation (Internal Assessment): 40 Marks
- Phase II:
    - Final Project work Report (External Evaluation): 30 Marks
    - Presentation and Viva (External Evaluation) : 30 Marks

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
IV SEMESTER
MBAB 851: SEMINAR & COMPREHENSIVE VIVA

Hard Core
2 Credits

Learning Objectives:

To evaluate the comprehensive Understands of Theoretical concepts of all subjects of that semester. All subjects in final comprehensive viva.

To evaluate the Communication Skill of the MBA Students.

Procedure:

Glossary of Terms:

Every Student shall prepare a list of Technical Terms for every Hard core and elective subjects registered in the given semester. (All Subjects in case of final semester)
(A minimum of 100 concepts per subject to be compiled)

Test on Concepts:

A comprehensive Viva would contain two components. Phase I is a written test on concepts for 1½ hrs to be answered in one-two sentences. These papers will be evaluated by External Examiners (Test paper contain at least 10 concepts per subjects)

Seminar:

Students have give a seminar on the relevant contemporary topic.

VIVA by External Experts:

A student ability to comprehend and apply the theoretical concepts to practical Business operations will be tested by two external Examiners (Mostly one Academician and other Industry expert). They will conduct either individual / group viva on a comprehensive Business situation requiring the applications of Knowledge acquired in the core subjects.

Division of Marks:

Test: 20
Viva: Communication - 20
Domain Knowledge - 20
Seminar - 20
Group participation - 20

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

ELECTIVE STREAMS

(Every Student has to take 4 papers out of 10 listed papers from two Elective Streams)

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

ELECTIVES

INFORMATION TECHNOLOGY STREAM

MBAB 901	Service Oriented Architecture	Soft 3Credits
MBAB 902	Design Patterns	Soft 3Credits
MBAB 903	Smart Banking Technologies	Soft 3Credits
MBAB 904	Software Project Management	Soft 3Credits
MBAB 905	Secure Electronic Payment Systems	Soft 3Credits
MBAB 906	Block Chain and Cryptography	Soft 3Credits
MBAB 907	Machine Learning	Soft 3Credits
MBAB 908	Data Science and Business Data Analytics	Soft 3Credits
MBAB 909	Information Systems Control and Audit	Soft 3Credits
MBAB 910	Data Visualization and Reporting	Soft 3Credits

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVE: SOFTWARE ENGINEERING AND TECHNOLOGY STREAM
MBABT 901: SERVICE ORIENTED ARCHITECTURE

Soft Core
3 Credits

Project Based: Theory 20% Mini Project 80%

***Prerequisites*:**

- *Basics of Computer Architecture*

***Learning Objective*:**

- Understanding of SOA and BSB
- Practical on SOA

***Learning Outcomes*:**

- Helps the students to develop software systems using SOA

1. **Introduction to SOA**- Understanding of SOA - Evolution of SOA - Concepts of services and SOA - Design principles of SOA - Relationship between SOA and web services -Advantages and risks of SOA - Service Oriented Methodology - Introduction to a SOA adoption roadmap - Service lifecycle - Three analysis approaches - Service oriented analysis - Service oriented design - Introduction to service oriented patterns - Traditional EAI Approach - Problems With Traditional EAI Approach - Building the Services - Advantages of SOA - Business Advantages - Adoption Stages - Benefits of employing SOA - Review of common business goals - Evaluating trade-off strategies.

2. **SOA Past and Present** - From XML to Web Service to SOA - Emerging standards for SOA - Compare SOA with other architectures - Basic Concepts -Building from components - Modelling concepts - Object – Containment - Messages and methods - Object interaction - Introduction to Business Process - Collection of services -Simple request response interaction - Complex interaction involving many services - Need for a coordinator service emerges - Orchestration or Business process - Composing processes using processes - Business Process Execution Language (BPEL).

3. **Service Enablement** - Basic web services elements - Core web services standards stack -The Importance of WSDL - The design of SOAP - The use of registries via UDDI - The basic concepts of service orientation - Distributing Services Across a Network - Aligning functional and non-functional requirements - The role of Intermediaries in Service Networks - Modelling SOA building blocks - Using UML to analyse and design interfaces - Generating a domain model - Implementing and realizing Use Cases - Showing web service collaboration - Usage of communication diagrams.

4. **Enterprise Service Bus (ESB)** - Objectives - Service Invocation - Legacy System Integration - The role of ESB in SOA - Security and ESB - Process Driven Services -Service layer abstraction - Introduction to business process layer - Process patterns -Orchestration and choreography - WS-BPEL for process automation - Layered Architecture -The layers pattern - Classic three-their architecture - Application service layer - Business service layer - Orchestration service layer - Service Oriented Reference Model - Reference models and reference architectures.

5. **SOA in Banking Domain** - Banking business processes – SOA in Core Banking Software – Case Studies.

Basic Text Books and References Books

1. ***Service-Oriented Architecture: Concepts, Technology and Design, Thomas Erl, Prentice Hall PTR, First edition, 2012(Text Book)***
2. Service-Oriented Architecture: A Field Guide to Integrating XML and Web Services, Thomas Erl, Prentice Hall PTR, First edition, 2012
3. Enterprise SOA: Service-Oriented Architecture Best Practices,Dirk Krafzig, Karl Banke and Dirk Slama, Prentice Hall PTR, 2010
4. SOA Principles of Service Design, Thomas Erl, Prentice Hall PTR, First edition, 2011 ..

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVE: SOFTWARE ENGINEERING AND TECHNOLOGY STREAM

MBABT 902: DESIGN PATTERNS

Soft Core 3
Credits
Project Based: Theory 20% Mini Project 80%

Prerequisites

Knowledge in OO Concepts

Learning Objectives

Introduction of Design Patterns and Understanding of Design Patterning and its Mining
Practicing of Application of Design Patterns

Learning Outcomes

Helps to develop software patterns

1. Introduction to Design Patterns: Design Patterns Arose from Architecture and Anthropology – Architectural to Software Design Patterns – Advantages of Design Patterns – Adapter Pattern – Strategy Pattern – Bridge Pattern – Abstract Factory Pattern

2. **New Paradigm of Design -** Principles and Strategies of Design Patterns -Open-Closed Principle – Designing from Context - Encapsulating Variation. Commonality and Variability Analysis - Analysis Matrix - Decorator Pattern - Open Closed Principle – The Principle of encapsulating variation – Abstract Classes vs Interfaces

3. **Values of Patterns -** Observer Pattern - Categories of Patterns - Template Method Pattern – Applying the Template Method to the Case Study - Using Template Method Pattern to Reduce Redundancy

4. **Applying Design Patterns -** Design Patterns - Factories - Singleton Pattern and the Double-Checked Locking Pattern - Applying Singleton Pattern to Case Study. Object Pool Pattern - Management of Objects - Factory Method Pattern - Object Oriented Pool Pattern

5. **Case Studies -** What to Expect from Design Patterns - The Pattern Community An Invitation – A Parting Thought – Banking Case Study

Basic Text Book and References

1. **Jason McC. Smith, "*Elemental design Patterns*", Pearson, 2012. (Text Book)**
2. Alan Shalloway and James R.Trott, ―*Design Patterns explained*: A new perspective on Object-Oriented Design, 2011.
3. Erich Gamma, Richard Helm, Ralph Johnson, John Vlissides, ―*Design Patterns: Elements of Reusable Object-Oriented Software",* Addison-Wesley, 2013.
4. Eric Freeman, Elisabeth Freeman, Kathy Sierra, Bert Bates, ―*Head First Design Patterns",* O'Reilly Media, Inc., 2012.
5. Elizabeth Freeman, Eric Freeman, Bert Bates and Kathy Sierra, ―HeadFirst Design Patterns, O'Reily, 2010.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

ELECTIVE: SOFTWARE ENGINEERING AND TECHNOLOGY STREAM

MBABT 903: SMART BANKING TECHNOLOGIES and INTERNET OF THINGS

Soft Core
3 Credits

Prerequisites:

- Knowledge in Banking technology

Learning Objectives:

- Introduction on Smart Banking & IoT
- Understanding of Smart Banking Technologies & IoT
- Practices on Smart Banking Technology & IoT.

Learning Outcomes:

- Applying internet of things in Banking Applications

1. **Smart Banking and Software Agents** – Introduction – Characteristics of Smart Banking environment – Components and Technologies of Smart Banking environments – Issues in Smart Banking - **Software Agents** – Introduction – Fundamentals - Agents as Tools of the Information Society - Fundamental Concepts of Intelligent Software Agents - Base Modules of Agent Systems - Development Methods and Tools – Applications - Application Areas for Intelligent Software Agents.
2. **RFID** – Introduction – RFID system components – Operating frequency – Close coupling smart cards – Proximity-coupling smart cards, Working of slotted Aloha – OSI layers and RFID, vicinity coupling smart cards, RFID security considerations – RFID Applications – Short range RFID applications, Long range RFID applications.
3. **Context Aware Computing** – Introduction – Structure and Elements of Context Aware Pervasive Systems – Context Aware Mobile Services – Context-Aware Artifacts – Context Aware Mobile Software Agents for Interaction with Web Services in Mobile Environment – Context Aware Addressing and Communication for People, Things and Software Agents – Context-Aware Sensor Networks – Context Aware Security.
4. **Internt of Things** - Introduction to IoT Defining IoT, Characteristics of IoT, Physical design of IoT, Logical design of IoT, Functional blocks of IoT, Communication models & APIs - Design challenges, Development challenges, Security challenges, Other challenges - Home automation, Banking and Other Industry applications, Surveillance applications, Other IoT applications
5. **Case Studies in** Software Agents, RFID, Context Aware Computing and Internet of Things.

Basic Text Books and References Books

1. ***Intelligent Software Agents: Foundations and Applications, Walter Brenner, RudigerZarnekow, Hartmut Wittig, springer verlag 1998 (Text Book)***
2. ***RFID, Steven Shepard, McGraw Hill 2014***
3. ***Context-Aware Pervasive Systems: Architectures for a New Breed of Applications, SengLoke, Auerbach, 2013***
4. IoT Fundamentals: Networking Technologies, Protocols and Use Cases for the Internet of Things, David ,Hanes and Salgueiro Gonzalo, Perason, 2017
5. Agent Technology Handbook, Dimitris N. Chorafas, McGraw Hill 2010
6. RFID Implementation, Dennis Brown, McGraw Hill Osborne Media, 2012

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVE: SOFTWARE ENGINEERING AND TECHNOLOGY STREAM

MBAB 904: SOFTWARE PROJECT MANAGEMENT

Soft Core
3 Credits

Prerequisites:

Basic knowledge of Software Design principles

Learning objectives:

To study the project management concepts.

Learning outcome:

Gaining knowledge on Software project management principles and practices.

Unit I:

Product, Process and Project – Definition: Product Life Cycle: Project Life cycle Models. Process Models- ISO-9001 Model, Capability Maturity Model, Six Sigma. Metrics – Metrics strategy, Setting Targets and Tracking, Metrics implementation checklists and Tools.

Unit II:

Software Quality assurance – Quality control and Quality assurance, cost and benefits of quality, Software quality assurance tools, Software Quality analyst's functions. Software Configuration Management – Processes and activities. Risk Management – Processes and activities.

Unit III:

Project Schedule planning - Top down and bottom up planning – initial and final project schedule plans – types of activity relationships – estimating the duration of an activity – critical path – identifying milestones – activity responsibility matrix – project check list.

Unit IV:

Project tracking - Overview of project progress – project outlook – occurrence of tracking – tracking meetings – tracking meeting agenda - tracking meeting ground rules – recovery plans – the role of escalations. Project estimation – Processes and activities.

Unit V:

Project Management in Testing phase – Testing, Activities of Testing, Test scheduling and types of tests. Management structures for Testing in Global teams. Project Management in Maintenance Phase – Processes, activities, management issues, configuration management, skill sets, metrics – Case study. Emerging trends in Project Management: Globalization issues in Project Management, Impact of Internet on Project Management, People focused Process Models, Project Management tools.

Basic Text Books & References:

1. Ramesh, Gopalaswamy: "Managing Global Software Projects ", Tata McGraw Hill, 2001.

2. Neal Whitten: " Managing Software Development Projects, Formula for Success". John Wiley and sons, Inc, II edition, 1995

3. Humphrey, Watts: "Managing the software process ", Addison Wesley, 1986.

4. Pressman, Roger, "Software Engineering – A Practitioner's approach", McGraw Hill, 2001.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVES
MBAB 905: Secure Electronic Payment Systems

Soft Core
3 Credits

Prerequisites:
Basic knowledge of principles and practices of Computer System Security.

Learning Objectives:

- *Introduction on E-Commerce related security.*
- *Understanding in Security Algorithms and Architectures.*
- *Understanding and Practices on E-Payment and Digital Money.*

Learning outcome:
Gaining knowledge on IT Infrastructure Management and its frameworks.

1 Overview of Electronic Commerce – Introduction to Electronic Commerce – Internet and Transactional Security – Infrastructure for Electronic Commerce. Money and Payment Systems: Instruments of payment systems – Dematerialized currencies – Transactional properties of Dematerialized currencies.

2 Algorithms and Architectures for Security – Security of Commercial Transaction – Security Objectives – OSI Model for Cryptographic Security – Message confidentiality – Data Integrity – Identification and Authentication of the Participants.

3 Secure Sockets Layer – Functional models of SSL - SSL Security services – TLS – WTLS – SET –Security services of SET.

4 Remote Micropayments: Overview of Remote Micropayments – NetBill – Second Generation Systems – Prepaid Cards Systems – Systems Based on Electronic Mail – Minitel-like Systems.

5 Digital Money – Building blocks – DigiCash (Ecash) – Netcash. Security of Integrated Circuit Cards: Smart cards and their applications – Multiapplication smart cards – Limits on security.

Text Books, References and Online Resources:

1. Mostafa Hashem Sherif, Protocols for Secure Electronic Commerce, CRC Press, Third Edition, 2018.
2. Stalling W., ―Network Security Essentials, Pearson Edition, 1st Edition, 1999.
3. Charles P. Pfleeger, Shari Lawrence Pfleeger, ―Security in Computing, Fourth Edition, 2010.
4. Kurt Bauknecht, Sanjay K. Madria, Günther Pernul, Electronic Commerce and Web Technologies, Lecture Notes in Computer Science, 2011
5. Weidong Kou, Payment Technologies for E-Commerce, Springer, 2010.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVE: SOFTWARE ENGINEERING AND TECHNOLOGY STREAM

MBAB 906: BLOCK CHAIN AND CRYPTOGRAPHY

Soft Core
3 Credits

Prerequisites:

- *Computer Networks and security systems*

Learning Objectives:

- *Knowledge about Block Chain and its usages in projects*
- *Knowledge about Crypto currencies and implementation*

Learning Outcomes:

- *Helps the students to develop a secure systems using block chain and cryptographic concepts.*

Unit I:

Block Chain - Introduction to crypto economics - Byzantine agreement - Extensions of BFT (Ripple, Stellar) - Blockchain Dynamics - Public and private blockchains - Hard and soft forks - Sharding Side chain - Verifiers – trust, cost and speed - Proof of work and other models.

Unit II:

Smart Contracts - Distributed Virtual Machines, Smart Contracts, Oracles - Basics of contract law - Smartcontracts and their potential Trust in Algorithms, - Integration with existing legal systems - OpenZeplin, OpenLaw- Writing smart contracts.

Unit III

Cryptography and Other Technologies: Application of Cryptography to Blockchain - Using hash functions to chain blocks - Digital Signatures to sign transactions - Using hash functions for Proof-of-Work. - Putting the technology together – examples of implementations with their tradeoffs.

Unit IV

Implementation: Supply Chain and Identity on Blockchain - Blockchain interaction with existing infrastructure – Trust in blockchain data - Scaling Blockchain – reading and writing data. Differentiate nodes, sparse data and Merkle trees - Fixing on the fly – Layer 2 solutions - Lightning and Ethereum state channels

Unit V

Bitcoin - The big picture of the industry – size, growth, structure, players - Bitcoin versus Cryptocurrencies versus Blockchain - Distributed Ledger Technology (DLT) - Strategic analysis of the space –Major players: Blockchain platforms, regulators, application providers, etc. - Bitcoin, HyperLedger, Ethereum, Litecoin, Zcash .

Text Books and Reference Books:

1. ***Blockchain Revolution: How the Technology Behind Bitcoin and Other Cryptocurrencies Is Changing the World, Don Tapscott and Alex Tapscott, Portfolio, 2018***
2. The Age of Cryptocurrency: How Bitcoin and the Blockchain Are Challenging the Global Economic Order, Paul Vigna and Michael J. Casey, Picador. 2016
3. Blockchain Technology Explained: The Ultimate Beginner's Guide About Blockchain Wallet, Mining, Bitcoin, Ethereum, Litecoin, Zcash, Monero, Ripple, Dash, IOTA And Smart Contracts, Alan T. Norman, CreateSpace Independent Publishing Platform, 2017

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
MBAB 907: Machine Learning Techniques

Soft Core
3 Credits

Prerequisites:

Statistics, Algorithms

Learning Objectives:

To understand the concepts of machine learning
To appreciate supervised and unsupervised learning and their applications
To understand the theoretical and practical aspects of Probabilistic Graphical Models
To appreciate the concepts and algorithms of reinforcement learning
To learn aspects of computational learning theory

Learning outcome:

Upon completion of this course, the student should be able to

- Design a neural network for an application of your choice
- Implement probabilistic discriminative and generative algorithms for an application of your choice and analyze the results
- Use a tool to implement typical clustering algorithms for different types of applications
- Design and implement an HMM for a sequence model type of application
- Identify applications suitable for different types of machine learning with suitable justification

Unit I : INTRODUCTION: Machine Learning - Machine Learning Foundations –Overview – Design of a Learning system - Types of machine learning –Applications Mathematical foundations of machine learning - random variables and probabilities - Probability Theory – Probability distributions -Decision Theory- Bayes Decision Theory - Information Theory

Unit II : SUPERVISED LEARNING: Linear Models for Regression - Linear Models for Classification – Naïve Bayes - Discriminant Functions -Probabilistic Generative Models -Probabilistic Discriminative Models - Bayesian Logistic Regression. Decision Trees - Classification Trees- egression Trees - Pruning. Neural Networks -Feed-forward Network Functions - Back- propagation. Support vector machines - Ensemble methods- Bagging- Boosting

Unit III : UNSUPERVISED LEARNING: Clustering- K-means - EM Algorithm- Mixtures of Gaussians. The Curse of Dimensionality -Dimensionality Reduction - Factor analysis - Principal Component Analysis - Probabilistic PCA- Independent components analysis

Unit IV : PROBABILISTIC GRAPHICAL MODELS: Graphical Models - Undirected graphical models - Markov Random Fields - Directed Graphical Models -Bayesian Networks - Conditional independence properties - Inference – Learning- Generalization - Hidden Markov Models - Conditional random fields(CRFs)

Unit V : ADVANCED LEARNING: Sampling –Basic sampling methods – Monte Carlo. Reinforcement Learning- K-Armed Bandit- Elements - Model-Based Learning- Value Iteration- Policy Iteration. Temporal Difference Learning- Exploration Strategies- Deterministic and Non-deterministic Rewards and Actions Computational Learning Theory - Mistake bound analysis, sample complexity analysis, VC dimension. Occam learning, accuracy and confidence boosting. Deep Learning – RNN, ReLU, etc.

Text books and References:

1. ***Christopher Bishop, "Pattern Recognition and Machine Learning" Springer, 2007.***
2. Kevin P. Murphy, "Machine Learning: A Probabilistic Perspective", MIT Press, 2012.
3. Ethem Alpaydin, "Introduction to Machine Learning", MIT Press, Third Edition, 2014.
4. Tom Mitchell, "Machine Learning", McGraw-Hill, 1997.
5. Trevor Hastie, Robert Tibshirani, Jerome Friedman, "The Elements of Statistical Learning", Springer, Second Edition, 2011.
6. Stephen Marsland, "Machine Learning - An Algorithmic Perspective", Chapman and Hall/CRC Press, Second Edition, 2014.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
MBABT 908: DATA SCIENCE AND BIG DATA ANALYTICS

Soft Core
3 Credits

Prerequisites:

Statistics, Operating Systems, DBMS

Learning Objectives:

- This course provides practical foundation level training that enables immediate and effective participation in big data and other analytics projects.
- It provides grounding in basic and advanced analytic methods and an introduction to big data analytics technology and tools, including MapReduce and Hadoop.
- To learn about the extraction and mining tools for social networks
- To gain knowledge on web personalization and web visualization of social networks

Learning outcome:

- On successful completion of the course, the students will be able to Use current techniques, skills, and tools necessary for managing and doing analytics on big data.
- Design extraction and mining tools for Social networks
- Develop personalized web sites and visualization for Social networks

Unit I - Introduction to Big Data Analytics, Overview of Data Science: Big Data Overview, State of the Practice of Analytics, Big Data Analytics in Industry Verticals. Overview of Data Analytics Lifecycle, Discovery, Data Preparation, Model Planning, Model Building, Communicating Results and Findings, Operationalizing.

Unit II - Advanced Analytics and Statistical Modeling for Big Data – Technology & Tools: Learning various tools to Perform Analytics on Unstructured data using MapReduce Programming paradigm. Use Hadoop, HDFS, HIVE,PIG and other products in the Hadoop ecosystem for unstructured data analytics. Effectively use advanced SQL functions and Greenplum extensions for in-database analytics. Use MADlib to solve analytics problems in-database. Apache Spark

Unit III - Advanced Analytics and Statistical Modeling for Big Data – Theory and Methods: Examining analytic needs and select an appropriate technique based on business objectives; initial hypotheses; and the data's structure and volume. Apply some of the more commonly used methods in Analytics solutions Explain the algorithms and the technical foundations for the commonly used methods. Explain the environment (use case) in which each technique can provide the most value. Use appropriate diagnostic methods to validate the models created. Use R and in-database analytical functions to fit, score and evaluate models.

Unit IV - Using R for Initial Analysis of the Data: Introduction to Using R Initial Exploration and Analysis of the Data Using R Basic Data Visualization Using R. How to use the R package as a tool to perform basic data analytics, reporting, and apply basic data visualization techniques to sample data. Apply basic analytics methods such as distributions, statistical tests and summary operations, and differentiate between results that are statistically sound vs. statistically significant. Identify a model for sample data and define the null and alternative hypothesis

Unit V - Endgame - Operationalizing an Analytics Project: The various tasks needed to operationalize an analytics project. Deliverables of an analytics lifecycle project. Framework for creating final presentations for sponsors and analysts. Evaluation of data visualization and ways to improve – Application of these concepts to a big data analytics problem in the final lab. Case Study: Social Network Mining and Analysis using Text Mining

Basic Text Books and References Books

- **Analytics in Practice, Author: SoumendraMohanty, Publisher: Tata Mcgraw Hill Education (2011), ISBN-13:-9780070707061(Text Book)**
- Agile Analytics: A Value-Driven Approach to Business Intelligence and Data Warehousing, Author: Ke W. Collier Publisher: Pearson Education (2012),
- MapReduce Design Patterns, Author: Donald Miner, Publisher: O'Reilly (2012), ISBN-13:- 9789350239810
- C. Bishop, Pattern Recognition and Machine Learning, Springer 2010.
- Airoldi, E.M., Blei, D.M., Fienberg, S.E., & Xing, E.P. Mixed membership stochastic block models. (2008)
- Peter Mika, "Social networks and the Semantic Web", Springer, 2007.
- Reza Zafarani, Mohammad Ali Abbasi, Huan Liu, "Social Media Mining", Cambridge University Press, 2014.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
MBABT 909: INFORMATION SYSTEMS CONTROL AND AUDIT

Soft Core
3 Credits

Prerequisites:

Basics of Information System

Learning Objectives:

This course focuses on the audit and control aspects of information systems.

This course emphasizes on the management control framework, data resource management controls, application control framework and processing controls.

Learning outcome:

It enables student to carry out projects which will provide experience in audit and control.

Unit I : Introduction – Overview of Information Systems Auditing – Need for Control and Audit of Computers – Effects of Computers on Internal Controls – Effects of Computers on Auditing – Foundations of Information Systems Auditing - Conducting an Information Systems Audit – Audit risks – Types of Audit Procedures – Auditing around or through the computer.

Unit II : Management Control Framework – Top Management Controls – Systems Development Management Controls –Programming Management Controls

Unit III : Data Resource Management Controls – Security Management Controls – Operations Management Controls – Quality Assurance Management Controls

Unit IV : The Application Control Framework – Boundary Controls – Input Controls - Communication Controls

Unit V : Processing Controls – Database Controls – Output Controls

Basic Text Book and Reference Books:

1. ***Ron Weber, "Information System Control and Audit", Prentice Hall, 2011. (Text book)***
2. Dube, D.P. and Gulati V.P., ―Information System Audit and Assurance (Including CaseStudies and Checklists from the Bank), Tata McGraw-Hill, 2nd Edition, 2008.
3. Frederick Gallegos, Daniel P. Manson, Sandra Senft, and Carol Gonzales Gallegos, ― Information Technology Control and Audit, Auerbach Publications, Second Edition, 2004
4. Alexander, Michael. 2007. Microsoft Access 2007 Data Analysis. Wiley. ISBN 978-0-470-10485-9
5. Mayor-Schönberger, V., and K. Cukier. Big Data. First Mariner Books

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
MBAB 910: DATA VISUALIZATION &BUSINESS INTELLIGENCE REPORTING

Soft Core
3 Credits

Prerequisites:

Data warehousing and Data Mining

Learning Objectives:

- To introduce visual perception and core skills for visual analysis
- To understand visualization for various analysis .
- To understand issues and best practices in information dashboard design

Learning outcome:

On successful completion of the course, the students will be able to Use current techniques, skills, and tools necessary for visualizing data output and preparing business intelligence reports.

Unit I : CORE SKILLS FOR VISUAL ANALYSIS: Information visualization – effective data analysis – traits of meaningful data – visual perception – making abstract data visible – building blocks of information visualization – analytical interaction – analytical navigation – optimal quantitative scales – reference lines and regions – trellises and crosstabs – multiple concurrent views – focus and context – details on demand – over-plotting reduction – analytical patterns – pattern examples

Unit II : TIME-SERIES, RANKING, AND DEVIATION ANALYSIS: Time-series analysis – time-series patterns – time-series displays – time-series best practices – part-to-whole and ranking patterns – part-to-whole and ranking displays – best practices - deviation analysis – deviation analysis displays – deviation analysis best practices

Unit III : DISTRIBUTION, CORRELATION, AND MULTIVARIATE ANALYSIS: Distribution analysis – describing distributions – distribution patterns – distribution displays – distribution analysis best practices – correlation analysis – describing correlations – correlation patterns – correlation displays – correlation analysis techniques and best practices – multivariate analysis – multivariate patterns – multivariate displays – multivariate analysis techniques and best practices

Unit IV : INFORMATION DASHBOARD DESIGN: Information dashboard – categorizing dashboards – typical dashboard data – dashboard design issues and best practices – visual perception – limits of short-term memory – visually encoding data – Gestalt principles – principles of visual perception for dashboard design

Unit V : INFORMATION DASHBOARD DESIGN II: Characteristics of dashboards – key goals in visual design process – dashboard display media – designing dashboards for usability – meaningful organization – maintaining consistency – aesthetics of dashboards – testing for usability – case studies: sales dashboard, CIO dashboard, Telesales dashboard, marketing analysis dashboard.

Text Books and References:

1. ***Stephen Few, "Now you see it: Simple Visualization techniques for quantitative analysis", Analytics Press, 1st Edition, 2009 (Text Book)***
2. Stephen Few, "Information dashboard design: The effective visual communication of data", O'Reilly, 2006.
3. Edward R. Tufte, "The visual display of quantitative information", Second Edition, Graphics Press, 2001.
4. Nathan Yau, "Data Points: Visualization that means something", Wiley, 2013.
5. Ben Fry, "Visualizing data: Exploring and explaining data with the processing environment", O'Reilly, 2008.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

ELECTIVES

BANKING AND FINANCE STREAM

MBAB 911	Treasure Management	Soft 3Credits
MBAB 912	Cyber Crimes and IT Laws	Soft 3Credits
MBAB 913	Rural Banking and Micro Finance	Soft 3Credits
MBAB 914	Risk Management in Banks	Soft 3Credits
MBAB 915	Central Banking & Monetary Policy	Soft 3Credits
MBAB 916	Financial Modeling using Spreadsheet	Soft 3Credits
MBAB 917	Treasury and Fixed Income Securities	Soft 3Credits
MBAB 918	Global Financial Markets & Instruments	Soft 3Credits
MBAB 919	Financial Derivatives	Soft 3Credits
MBAB 920	International Financial Management	Soft 3Credits

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVES: BANKING & FINANCE
MBAB 911: TREASURY MANAGEMENT

Soft Core
3 Credits

Prerequisites:

- *Basics of Treasuries*

Learning Objective:

- *To understand cash, risk and markets, treasury activities.*
- *To understand the complexity of instruments, systems and interactions with the business, both operationally and strategically*

Learning Outcomes:

- *Helps the students to work in the treasuries division of the banks.*

1. **Positioning Treasury and Manage Accounting:** . What should invest in? How to fund these investments? How to manage the risk of our choices?-CRR-SLR-FOREX-Tresury activities
2. **Treasury and Corporate Strategy :**Business strategy-Financial strategy-Corporate strategy- Corporate Funding -Strategic and financial risk management-Risk management system-Financing guidelines and policies
3. **Capital structure:** Gearing or leverage-Optimal gearing-Squeeze or panic-Corporate borrowing-Equity-bond-bank dept/loan-Asset based Finance- Business Operations and Stakeholder Relations: Business operations-Stakeholder relations-Treasury relationship-own credit risk-Credit Rating Tools-Agencies
4. **Cash and Liquidity Management:** Cash and liquidity forecasts-Cash management-Organizing and managing borrowing facilities-Cash flow modeling- Cash Management-Components-Day-to-day cash control-Money at the bank-Receipts-Payments control-Short-term investments-Short-term borrowings
5. **Treasury Operations and Controls:** Internal controls-Counterparty Risks-Treasury management systems-Market information-Treasury And Financing Risks-Swaps-Currency-commodity risks

Basic Text Book & References:

1. Frank J. Fabozzi, Bond Markets, Analysis and Strategies, Pearson, 8th Edition, 2012

2. Reilly, Brown, Investment Analysis and Portfolio Management, Cengage Learning, 8th Edition, 2008.

3. Fixed-Income Securities. L. Martellini, P. Priaulet and S. Priaulet. John Wiley & Sons, Chichester, UK, 2003.

4. Website of National Stock Exchange,

5. Steven M Braggs ―Treasury Management: The Practical Guide‖ Wiley 2010.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVE: BANKING OPERATIONS STREAM
MBAB 912: CYBER CRIMES AND IT LAWS

Soft Core
3 Credits

Prerequisites: Basics of IT Laws

Learning Objective:

To make the students understand the importance of cyber security in banks and familiarize with various kinds of cyber crimes with particular reference to banking operations and services today and make them understand the basics of cyber forensics, investigation and cyber security so that the students acquire necessary knowledge and understanding of cyber crimes in banks and the relevant legal framework to deal with such issues.

Learning Outcomes:

Helps the students to deal with cyber crimes related problems occurring in the banks.

1. **Fundamentals of Criminal Behaviour and cyber crime:**

Nature and fundamental principles of crime – Theories of Criminal Behaviour - Cyber crimes – definition, scope and growing dimensions – Cyber Criminals and characteristic- Nature and Types of cyber crimes - Cyber Crime Techniques; Computer insecurity and computer attacks; Internet Crimes and Internet Frauds; Computer Hacking and Hackers; Social Engineering; Digital signatures and forgery.

2. Emerging Banking Environment and Vulnerability:

Development in Banking Industry and Banking operations – Payment and Settlement; E-commerce, Online Banking and Crimes; Banking Software crimes, Computer Hacking – browsing, password cracking, session hijacking, man in the middle attack, Website hacking, DOS, DDoS, Source code theft - On-line banking crimes and Frauds - Spamming – Phishing - identity theft, cyber money laundering, intercepting electronic communication, Accounting frauds, forgery and counterfeiting; Vulnerability in Banks - Bank Failure and its impact on the system.

3. Cyber Forensics and Investigation:

Introduction to Cyber Forensic Investigation, Investigation Tools, e-Discovery, Digital Evidence Collection, Evidence Preservation, E-Mail Investigation, E-Mail Tracking, IP Tracking, E-Mail Recovery, Encryption and Decryption methods, Search and Seizure of Computers, Recovering deleted evidences, Password Cracking.

4. **Cyber Security in Banks:**

Introduction to Cyber Security, Implementing Hardware Based Security, Software Based Firewalls, Security Standards and Best Practices, Assessing Threat Levels, Penetration Testing Security Controls – Preventive, Detective and Corrective controls; Forming an Incident Response Team, Reporting Cyber crime, Operating System Attacks, Application Attacks, Cryptanalytic Attacks; Reverse Engineering & Cracking Techniques - Cryptography- Encryption- Public Key Infrastructure (PKI), Key Management - IS Security and IS Audit - Global initiatives and development.

5. Cyber Crimes and Legislative Framework:

Salient features of IT Act, 2000 and latest amendments – offenses and penalties – Amendments to Indian Evidence Act, 1872 - Amendments to Indian Penal Code, 1860 - Amendments to Bankers Book of Evidence Act, 1891 - Amendments to RBI Act, 1934 - Civil and criminal liability of cyber crime - Challenges of legislative, law enforcement and justice system – Indian and International Initiatives.

Books and References:

1. VermaAmita, Cyber Crimes and Law, Central Law Publications, Allahabad, 2009.
2. Dasgupta .M. , Cyber Crimes in India – A Comparative Study, Eastern Law House, Kolkata, 2009.
3. Barkha and Mohan Rama.U., Cyber Law and Crimes – IT Act 2000 and Computer Crime Analysis, Asia Law House, Hyderabad, 2009.
4. Eoghan Casey, Digital Evidence & Computer Crime, Forensic Digital Science, Computers and the Internet (Academic Press, 2000) Text Book
5. Cyber Crimes and Fraud Management, Macmillan, 2012.
6. Scott Charney, The Internet, Law Enforcement and Security, Internet Policy Institute, 2001.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVE: BANKING & FINANCE
MBBT 913: RURAL BANKING AND MICRO FINANCE

Soft Core 3 Credits

Prerequisites: *Basics of Banking Concepts.*

Course Objective

The objective of this course is to expose students to the key issues linked to rural banking including the challenges in Indian context. It also discusses the initiatives of the government for inclusive financial system such as micro finance.

Learning Outcomes:

Helps the students to join the rural banks and micro finance institutions.

1 **Introduction**: Demographic features- Population- occupation- literacy, socio-economic development – indicators-health- nutrition and education, - urban migration--Caste and power structure - rural social stratification- Economic life of rural people, share in National income- Trends in percapita income, rural money markets, rural indebtedness, rural poverty - main causes and methods of measuring rural poverty.

2 **Agricultural Economy:** Agriculture Economy-Structure and characteristics of Indian agriculture- Role of agriculture in economic development-agriculture-industry linkages -constraints to agriculture development- Emerging issues in Indian Agriculture- Rural infrastructure; Transport, Power- Markets and other services

3 **Rural Financing and Development Policy**- policies and programmes for rural farm and non-farm sectors. Economic reforms and its impact on rural economy- Regulation of Rural Financial Services; - NABARD, RBI- role, refinance support. Lead bank approach, State level and- District level Credit committees- subsidy-linked credit programmes of the Government- -Priority Sector Financing

4 **Micro Finance:** Genesis and evolution of microfinance- different models of microfinance operating in India; - Bank Linkage Programme (SBLP) as an innovative strategy of microfinance evolved in India - SME Finance; Definition of SME .Importance to Indian economy- Financing of SME- Revival of sick units; revival package- and implementation, Stressed assets under rehabilitation.

5 **Problems and prospects in Rural Banking:** Problems of Rural branches of Commercial banks- transaction costs and risk costs- Technology based Financial Inclusion- Emerging trends in rural banking-financing poor as bankable opportunity- Micro Credit, Self- Help Groups / NGOs, linkages with banking, latest guidelines of GOI and RBI

Text Books and References:

1. Karmakar, K. G. Rural credit and self-help groups: micro-finance needs and concepts in India. Sage Publications India Pvt Ltd, 1999.
2. Harper, Malcolm. Profit for the poor: cases in micro-finance. Intermediate Technology Publications Ltd (ITP), 1998.
3. Robinson, Marguerite S. The microfinance revolution: sustainable finance for the poor. Vol. 1. World Bank Publications, 2001.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVES: BANKING & FINANCE
MBBT 914: RISK MANAGEMENT IN BANKS

Soft Core
3 Credits

Prerequisites: *Basics of Banking*

Learning Objectives:

To make the student understand the basic concept of risk management in banks and expose various types of risk faced by banks with a view to provide necessary knowledge and impart the skills required to mitigate and manage the risks as a professional risk manager.

Learning Outcomes:

Facilitates the students to deal with different risk management mechanism.

1. **Introduction and Overview:** Risk definition - BIS – Basel Committee – Basel I, II and III norms; Risk Process- Risk Organization - Key risks-Credit risk, market risk, operational risk, liquidity risk, legal risk, interest rate risk and currency risk – Concept of ALM for Banks.

2. **Credit Risk:** Definition - - Framework for risk management - RBI guidelines for risk management - Risk rating and risk pricing - Methods for estimating capital requirements -Credit risk - standardized approach and advanced approach - Credit rating /scoring - Credit Bureaus - Stress test and sensitivity analysis - Internal Capital Adequacy Assessment Process (ICAAP) - Structured products.

3. **Operational Risk:** Definition - RBI guidelines for Operational risk - Types of operational risk - Causes for operational risk - Sound Principles of Operational Risk Management (SPOR) - Identification, measurement, control / mitigation of operational risks; Organizational set up and Policy requirements; Strategic approach and key responsibilities of ORM; Capital allocation for operational risk, methodology and qualifying criteria for banks for the adoption of the methods; Computation of capital charge for operational risk.

4. **Market risk:** Definition - Liquidity risk - Interest rate risk - foreign exchange risk - ALM organization - ALCO - Simulation, Gap, Duration analysis, Linear and other statistical methods of control; Price risk (Equity) - Commodity risk - Treatment of market risk under Basel- Standardized duration method- Internal measurement approach – VaR.

5. **Risk Measurement, Control and Risk management:** Risk Calculation - Risk exposure analysis - Risk management / mitigation policy - Risk immunization policy / strategy for fixing exposure limits - Risk management policy and procedure - Risk adjusted return on capital - Prudential norms – Income Recognition and Asset Classification (IRAC) norms -Capital adequacy norms - Hedging – Forwards – Futures – Options Arbitrage opportunities -Regulatory prescriptions of risk management – Exposure Norms - Systems Audit - Risk Organization and Policy.

TEXT BOOK AND REFERENCES:

1. **Foundations of Banking Risk: An Overview of Banking, Banking Risks, and Risk-Based Banking Regulation by GARP (Global Association of Risk Professionals).**
2. MooradChoudhry, Bank Asset and Liability Management: Strategy, Trading, Analysis, Wiley Publishing.
3. John C. Hull, Risk Management and Financial Institutions , Pearson, 2009
4. Indian Institute Of Banking, Amp, Finance(IIBF), Risk Management , Macmillan Publishers India, 2010
5. Risk Measurement Models to Capital Allocation Policies, Wiley, ISBN: 978-0-470-02978 IIBF Material.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME

ELECTIVES: BANKING & FINANCE

MBBT 915: CENTRAL BANKING AND MONETARY POLICY

Soft Core 3 Credits

Prerequisites: *Basics of Banking*

Learning Objective

The objective of this course is to expose students to the theory and functioning of the monetary Policy and the role of Central Banks in the Economy. It also discusses the conduct of monetary policy and its effect on interest rates, credit availability, price and inflation.

Learning Outcomes:

Helps the students to comply with norms of RBI which is important to take banking decisions.

1. **Introduction**: Understanding money- Concept-functions of money-kinds money of measurement-theories of money supply determination-savings-investments-role of debit card-credit card-plastic money-electronic money

2. **Central Banking System:** RBI as Central Bank- **s**tructure-functions-working-reforms-current regulatory structure- reserve system- balance sheet; goals, targets, indicators

3. **Monetary Theory:** Reserve system-money creation-money multiplier-money supply- The Level of Prices and the Value of Money- money supply-money demand, and monetary equilibrium-Quantity theory-inflation- classical theory of money-modern theory of money and income

4. **Central Banking and Monetary Policy**- Functions-goals-targets-indicators and instruments of monetary control-monetary management in an open economy-Tools of monetary policy- conduct of monetary policy- effect of monetary injection-current monetary policy of India.

5. **Economics of Banking:** Understanding Interest Rates- Risk and Term Structure of Interest Rates- Interdependence of Markets and Interest Rates-Rational Expectations and Efficient Markets- Role of financial markets and institutions-problem of asymmetric information – adverse selection and moral hazard-financial crises.

Text Books and References:

1. ***F. S. Mishkin and S. G. Eakins, Financial Markets and Institutions, Pearson Education,*** 8^{th} ***Edition, 2014.***
2. ***M. Y. Khan, Indian Financial System, Tata McGraw Hill, Latest edition.***
3. *Mishkin, Frederic S., ed. Monetary policy strategy. Mit press, 2007.*
4. *Gans, Joshua, et al. Principles of economics. Cengage Learning, 2011.*

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVE: BANKING & FINANCE
MBABT 916: FINANCIAL MODELING USING SPREADSHEET

SOFT CORE
3 Credits

Prerequisites: *Basic knowledge on Finance and Business Statistics*
Learning Objectives: Prepare Students -

- To learn the various Financial Analysis
- To understand the methods of various Financial Analysis

Learning outcome: ***S***tudents who complete this course can Analyze and Built Financial Model

Unit I: Financial Models
Introduction to modeling, introduction to spreadsheet, database functions in spreadsheet, finance function in spreadsheet, creating dynamic models. Basic Financial Calculations – Financial Statement Analysis – Financial Ratios – Cash Flow Analysis - Financial Budget & other Budget Modeling – Break even analysis - Financial Forecasting – Valuation and Rates of Return

Unit II: Corporate Financial Models
Calculation of Time value of Money - Cost of Capital – Leverage Analysis - Capital Budgeting – Financial analysis of Leasing

Unit III: Portfolio Models
Calculating of Efficient Portfolios – Calculating variance – Covariance Matrix – Estimating Beta and Security Market line – Portfolio Optimization – Value at Risk

Unit IV: Derivatives & Option Pricing Models and Bonds
Introduction to Options – Binomial Option Pricing Model - Black Scholes Model - Option Greeks - Calculation of Bond Duration - Returns – Modeling the Term Structure.

Unit V: Statistical Models
Application of Statistical tools for Financial calculations and Model Building through Excel Addon.

Text Books and References:

1. **Simon Benninga, Financial Modeling, MIT Press, Cambridge, Massachusetts, London, England**
2. **Scott Proctor, Building Financial Models, Wiley India private Ltd, 2013**
3. Clive Marsh, Business and financial models, konganPage.
4. Alastair L. Day, Mastering Financial Modelling in Microsoft Excel, 2/E pearson
5. Chandan Sengupta, Financial Analysis and Modeling using Excel and VBA, 2/E, Wiley.
6. Michael Alexander, Jared Decker, Bernard Wehbe, Business Intelligence tools for Excel Analysts, Wiley.
7. Craig W. Holden, Excel Modeling in Investments, 2/E, Pearson
8. V. A. Avadhani, Investment and Securities Market in India , Himalaya Publishing House.
9. Prasanna Chandra, Security Analysis and Portfolio Management , Tata McGraw-Hill. 4. SanjeevAgarwal, A Guide to Indian Capital Market , Bharat Publishers

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVES: BANKING & FINANCE
MBABT 917: TREASURY AND FIXED INCOME SECURITIES

Soft Core
3 Credits

Theory 60% Problems 40%

Prerequisites:

- *Basics of treasuries and Debt. instruments*

Learning Objectives

- To introduce the basics of debt markets and treasury operations.
- To provide the skills required to calculate yields, bond values etc.

Learning Outcomes:

- *Helps the students to work in the treasury divisions of the banks.*

1. Debt Instruments: Fundamental Features–Indian Debt Markets–Market segments–Participants -Secondary Market for Debt instruments – Bond Market – SEBI (Disclosure and Investor Protection) guidelines 2008

2. Analysis and Valuation of Bonds: Pricing of bonds – Measuring yields – Bond price volatility – Factors affecting bond yields and the term structure of interest rates.

3. Bond Portfolio Management Strategies: Passive management strategies–Active management strategies – Global fixed income investment strategy – Core-plus bond portfolio management – Matched-funding Techniques

4. Central Govt. Securities: G - Secs–Tenor and Yields–Primary Issuance Process, Participants–SGL accounts – Dealers – Secondary Market – Negotiated Dealing system – T bills – Cut off Yields – State Govt. Bonds – Money market instruments -Call Money Markets – Participants

5. Fixed Income Derivatives: Meaning–Types–Mechanics for forward rate agreements–Guidelines for exchange traded interest rate derivatives.

Basic Text Book & References:

1. Frank J. Fabozzi, Bond Markets, Analysis and Strategies, Pearson, 8th Edition, 2012

2. Reilly, Brown, Investment Analysis and Portfolio Management, Cengage Learning, 8th Edition, 2008.

3. Fixed-Income Securities. L. Martellini, P. Priaulet and S. Priaulet. John Wiley & Sons, Chichester, UK, 2003.

4. Website of National Stock Exchange,

5. Steven M Braggs ―Treasury Management: The Practical Guide‖ Wiley 2010.

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVE: BANKING AND FINANCE
MBAB 918: GLOBAL FINANCIAL MARKETS

Soft Core
3 Credits

Prerequisites:

Completed a Course on Indian Financial System
*Completed a course on Indian **Banking** System*

Learning Objectives

- *To introduce the basic concepts of international financial system, institutions involved, instruments traded and the nature of short term and long term markets operate in it.*
- *To highlight the role and functioning of different international financial institutions facilitating the working of global financial markets*

Learning Outcomes

- *Helps the students to work in the global financial consultancy firms.*

Unit 1: Euro Currency system – Initial years 1958-69 – Mature Years 1970 – 74 – Decline and Fall of Breton Woods System – Role of Central Banks – Monetary controls – Problems of Intermediation.

Unit 2: Central Banks – US Federal – European Central Banks – Central Bank of Japan – Bank of England – Peoples bank of China – Central bank of Russia – Brazil – Saudi Arabia Monetary Agency.

Unit 3: Financial Crisis: Latin American and African Debt crisis 1982 – Asian Financial and Economic crisis 1963 – The Argentina crisis of 2001 – GFC 2008 – International Response to GFC

Unit 4: Regulatory Frameworks - the Brady plan of 1989 to 1994 – Post GFC – International Financial Regulators – Dodd Frame Act of USA – Global Measures – IMF Regulations – Bank Levis & Financial Taxes – A sovereign Bankruptcy Regime.

Unit 5: Euro Debt Markets – Euro currency Markets – Evolution of Euro and Markets – Types – Volumes – operations across countries

Basic Text Books and References :

1. *Ross P. Buckley, Douglas Arner, "From Crisis to Crisis, The global Financial System and Regulatory Failure",* Kluwer Law International, ISBN 9789041133540, 2011.
2. Antonio G. Fazio, Luigi De Rosa, "International Banking and Financial Systems: Evolution and Stability", 2003.
3. Lessambo, Felix I, "The International Banking System Capital Adequacy, Core Businesses and Risk Management", 2012, Palgrave Macmillan UK
4. George W. McKenzie, "The Economics of the Euro-Currency System", Macmillan Publishers Limited 1976\
5. Daniel Gros, Karel Lannoo, "The Euro Capital Market", ISBN: 978-0-471-99762-7, Wiley

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVE: BANKING & FINANCE
MBABT 919: FINANCIAL DERIVATIVES

Soft Core 3 Credits
Theory 20% Problems 80%

Prerequisites

Basics of derivatives

Learning Objectives

To provide the basics of working of financial derivatives markets, pricing of futures, options etc.
To impart skills required for calculating option prices, VaR, Margin trading, algorithm trading and risk measurement.

Learning Outcomes

Helps the students to be placed in banking and financial consultancy firms.

1. **Derivatives:** Introduction - Evolution–Structure of Derivatives markets–Types of Derivatives– Underlying assets – Spot markets – Participants in Derivatives markets – Derivatives and Risk Management- Technical terminologies used in derivatives trading

2. **Derivatives Pricing Theory:** Option pricing–Black - Scholes Model–Assumptions–Derivation and Properties – Determination of volatility – Historical and Implied volatility – Option pricing on dividend paying stocks – Binomial Model – One period – Two period – Three Period – Infinite Periods – Option strategies – Put – Call Parity Theorem

3. **Futures:** Meaning–Evolution of futures contract–Over–the - Counter Market–Forward contracts–Types of traders in the derivatives markets – Specification of the futures contract – Difference between forward contract and futures contract – Convergence of futures price to spot price – Operation of margins – Role of clearing house – Forward and futures prices – investment assets versus consumption assets – short selling – Assumption and notation – Cost of carry – Delivery options – Hedging strategies using futures – Short hedges and long hedges – Basis risk – Minimum variance hedge ratio – Stock index futures

4. **Swaps:** Meaning–Mechanics of interest rate swaps–Valuation of interest rate swaps–Currency swaps–Valuation of currency swaps

5. **Trading & Clearance: Trading system:** Trader Workstation–Clearing entities – Open position calculation – Margin and settlement – Regulatory Framework – Risk Management – Accounting Issues

Basic Text Book & References:

1. **Hull J C, Options, Futures and Other Derivatives, Prentice Hall, NJ 2002 (Text Book)**
2. Baye and Jansen, ―Money, Banking and Financial Markets- An economics approach, AITBS Publishers & Distributors, Delhi, 1996
3. Marshal JF, ―Futures and Options Contracting: Theory and Practice‘ south Western Publishing Company, NY 1991
4. Kolb R W, Futures, Options and Swaps, Blackwell Publishers, NY 2002

MBA: BANKING TECHNOLOGY DEGREE PROGRAMME
ELECTIVE BANKING AND FINANCE
MBAB 920: INTERNATIONAL FINANCIAL MANAGEMENT

Soft Core 3 Credits

Pre Requisites:

- Completed Basic Course in Indian Financial System
- Completed a Course in Financial Management

Learning Objectives

- *To introduce the concepts like Forex risk, different type of exposures and strategies adapted by MNCs.*
- *To provide the skills required for managerial positions in an finance division of an MNC.*

Learning Outcomes

- Helps the students to join MNC's.

Unit I : Globalization and Multinational Finance –Goals of International Financial Management – Globalization of the World Economy – International Monetary System – Flexible Exchange Rate System – Balance of Payments.

Unit II : Foreign Exchange Markets - Exchange Rate Determinants – International Parity Relationships and Forecasting Foreign Exchange Rates – Currency Derivatives Market – Linkage Between Euro Dollar Market and Derivatives Prices

Unit III: Exposure Management – Types of Exposure - Hedging – Exposure Netting Measurement of Economic Exposure – Translation Expoure - Tools to Handle – Political Risk and Country Risk – Interest Rate Exposure.

Unit IV: Financial Management in MNCs – FDI Cross Broader Acquisitions – International Portfolio Investments – Short Term International Financing – Long Term International Financing – Country Risk Analysis – Covered Deals – Money Market Hedge.

Unit V: Multinational Capital Budgeting – Parent Cash flows, Project Cash flows – Multinational Cash Management – International Trade Finance – International Capital Structure and Cost of Capital – Global Shopping for Funds – Financial Swaps and Credit Derivatives – Long Term Borrowing in Global Capital Markets – Tax Implications on International Activities.

Basic Text Books: *:*

1. *Cheol S Eun, Bruce G Resnick, " International Financial Management", TATA McGraw Hill, New Delhi, 2008.* (Text Book)
2. *Alan C Shapiro, ―Multinational Financial Management‖, Prentice Hall, New Delhi, 2007.*

References:

1. PG Apte, International Financial Management‖, TATA McGraw Hill, New Delhi, 2013.
2. Anuj Verma and Kogent Learning solution Inc. International Financial Management‖, ,Dream tech, New Delhi, 2012.
3. Siddaiah T, ―International Financial Management‖, TATA McGraw Hill, New Delhi, 2013.
4. http://www.ddegjust.ac.in/studymaterial/mba/fm-406.pdf
5. https://www.bauer.uh.edu/rsusmel/4386/IFM%20-%20Lecture%20Notes.pdf
6. http://icmai.in/upload/Students/Syllabus-2008/StudyMaterialFinal/P-12.pdf
7. https://www.princeton.edu/~ies/IES_Studies/S13.pdf
8. http://dspace.oneu.edu.ua/jspui/bitstream/123456789/2844/1/International%20finance.pdf
9. https://www.imf.org/external/pubs/ft/wp/2005/wp05196.pdf
10. https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8392.pdf
11. http://nifm.ac.in/sites/default/files/Syllabus_PGDM_FM_0.pdf
12. https://www.researchgate.net/publication/252932043_Determinants_of_Financial_Management_Practices_A_conceptual_Study
13. https://www.ersj.eu/repec/ers/papers/13_SISME_p7.pdf