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# UNIVERSITY OF MUMBAI



**Revised Syllabus for the MIM**

**Program: MIM**

**Course: MIM**

**Second Year (Semester II)**

**&**

**Third Year (Semester I &II)**

**(Part Time)**

(As per Credit Based Semester and Grading System  
with effect from the academic year 2012–2013)

## MIM Second Year Second Semester

### 4.1) STRUCTURED LANGUAGES 100 Marks (15 Sessions of 3 Hours Each)

SL.No	Particulars	Sessions
1	Basic data type Arrays Functions Pointers Structures. Object Oriented Programming, its need and characteristics. The basics of C++ programming. Class, Object, and References. The difference between Pointers and References.	2 Sessions of 3 Hours each
2	Constructor and Destructor Operator Overloading. Inheritance, Derived Class and Base Class, Overriding Member Functions (Scope resolution with overridden functions), Multiple inheritance.	2 Sessions of 3 Hours each
3	Container class and Polymorphism Virtual Functions Pure Virtual, Abstract Classes Static Functions what is the difference between “Public”, Protected and “Private” data/functions.	2 Sessions of 3 Hours each
4	Java–its purpose. JDK–ite platform independence Features of JAVA, Naming Ruler in JAVA. A simple JAVA application string and string buffer classes Input, Output and files I/O Data structures in JAVA.	2 Sessions of 3 Hours each
5	The simple data types Flow control Methods packages and interface, Java Language–exception handling.	1 Session of 3 Hours
6	Multithreading session : Java–util, Java–applet v/s Application A simple JAVA Applet.	1 Session of 3 Hours
7	Java net Custom Networking and Security Networking Basics working with URL’s. All about datagrams.	1 Session of 3 Hours
8	Java.sql JDBC Concepts. JFC swing. Swing Components. Java 2D Drag and Drop.	2 Sessions of 3 Hours each
9	Case Studies and Presentations	2 Sessions of 3 Hours each

#### 4.2 WEB BASED TECHNOLOGY 100 Marks (15 Sessions of 3 Hours Each)

SL.No	Particulars	Sessions
1	Introduction to the Web-History and evolution.	1 Session of 3 Hours
2	Technologies-HTTP, FTP, POP, SMTP- evolution and use.	1 Session of 3 Hours
3	Special technologies like Cold Fusion, Broad Vision etc.	1 Session of 3 Hours
4	Languages - Java, ASP - features and application.	1 Session of 3 Hours
5	Upcoming technologies - WML, XML, DHTML, PHP etc.	1 Session of 3 Hours
6	Convergence - media, Internet and telecom issues.	1 Session of 3 Hours
7	Security and encryption.	1 Session of 3 Hours
8	Implementation Issues for any web technology.	1 Session of 3 Hours
9	Economic, technological and social issues	2 Sessions of 3 Hours each
10	Application - SCM, CRM, ERP	2 Sessions of 3 Hours each
11	Internet, Intranet and VPN.	1 Session of 3 Hours
12	Case Studies and Presentations	2 Sessions of 3 Hours each

**4.3 DATA MANAGEMENT & SYSTEMS SOFTWARE 100 Marks (15 Sessions of 3 Hours Each)**

<b>SL.No</b>	<b>Particulars</b>	<b>Sessions</b>
<b>A)</b>	<b>DATA MANAGEMENT</b>	
1	Historical evolution from flat file to database management systems. Purpose and goals of a database management systems. Three models of database management systems. Viz. Hierarchical, Network and Relational.	2 Sessions of 3 Hours each
2	The relational data model including normalisation, SQL with suitable examples. Physical organization of a database, techniques for optimising performance such as indexing etc.	2 Sessions of 3 Hours each
3	Trends in database software, evolution of the object Relational Model and the Object Oriented database system. Features of modern database software, distributed database, two phase commit. Modelling of complex objects, server level constraints and triggers, scalability.	2 Sessions of 3 Hours each
4	Role of database management systems in the context of client server computing in the context of Web based application and OLAP and Data-warehousing/DSS systems.	2 Sessions of 3 Hours each
<b>B)</b>	<b>SYSTEMS SOFTWARE</b>	
6	Purpose of an Operating system–Memory Management, Process Management, File Management I/O etc.	1 Session of 3 Hours
7	Concepts such as time sharing, Batch processing, real-time. Multitasking etc.	1 Session of 3 Hours
8	Components of an operating systems and how it work.	1 Session of 3 Hours
9	Other systems software associated with the OS such as Utilities, device drivers etc.	1 Session of 3 Hours
10	Hand on with DOS, Windows–both command level and some details of internal construction.	1 Session of 3 Hours
11	Case Studies and Presentations	2 Sessions of 3 Hours each

**4.4 NETWORKING AND COMMUNICATIONS 100 Marks (15 Sessions of 3 Hours Each)**

<b>SL.No</b>	<b>Particulars</b>	<b>Sessions</b>
1	Basic principles of data communication, Analog versus digital, Encoding speed etc.	1 Session of 3 Hours
2	Historical perspective of networks.	1 Session of 3 Hours
3	The need for a network- such as date and resource sharing etc.	1 Session of 3 Hours
4	The Network topologies, LANs , WANs and MANs. The OSI model for networking layers.	2 Sessions of 3 Hours each
5	Components of a network such as server, hub. Router, bridge, gateway etc.	2 Sessions of 3 Hours each
6	Types of networks such as peer to peer and server based, packet switched and network switched etc.	2 Sessions of 3 Hours each
7	Common networking technologies and protocols such as TCP IP, Ethernet etc.	2 Sessions of 3 Hours each
8	Contemporary Technology solution for networks such as ISDN, VSATs, Fast Ethernet, Frame Relay, Outlining the basic principle of working of these technologies.	2 Sessions of 3 Hours each
9	Case Studies and Presentations	2 Sessions of 3 Hours each

**4.5 SOFTWARE PROJECT MANAGEMENT & IT RESOURCE MANAGEMENT**  
**100 Marks (15 Sessions of 3 Hours Each)**

<b>SL.No</b>	<b>Particulars</b>	<b>Sessions</b>
1	Role and Functions of a modern IT Department.	1 Session of 3 Hours
2	Peculiarities of managing the various types of resources such as Mainframes, Servers, Network Infrastructure, Software professionals etc.	2 Sessions of 3 Hours each
3	Issues related to planning of IT resources. Budgeting, monitoring, Sourcing and administration of such resources.	2 Sessions of 3 Hours each
4	Security of IT resources. Contingency plans and disaster management issues.	2 Sessions of 3 Hours each
5	Strategies and issues in changing over to new technologies.	1 Session of 3 Hours
6	The Need for and content of formal companywide policies for setting standards in various areas of IT management.	1 Session of 3 Hours
7	Managing IT projects - Stages, roles, documents for project management, outsourcing, monitoring, metrics for estimation & control over effort, time and cost.	2 Sessions of 3 Hours each
8	Use of Software Process management/ project control tools. Common causes for failures in projects and how to overcome them & Critical Issues in managing IT projects	2 Sessions of 3 Hours each
9	Case Studies and Presentations	2 Sessions of 3 Hours each

**PART-TIME MASTER'S DEGREE IN INFORMATION  
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**Third Year First Semester**

**5.1) IT QUALITY ASSURANCE & IT SYSTEMS CONTROL AND AUDIT 100**  
**Marks (15 Sessions of 3 Hours Each)**

<b>SL.No</b>	<b>Particulars</b>	<b>Sessions</b>
<b>A)</b>	<b>IT QUALITY ASSURANCE</b>	
1	Basic principles of Quality management such as definition of quality, Demings Principles of Quality, Reliability, Maintainability etc.	2 Sessions of 3 Hours each
2	Issues related to quality at different stages of an IT Project, Metrics used.	1 Session of 3 Hours
3	Formal Processes for Quality assurance, Quality related certification / models such as Tick IT ISO, CMM etc.	1 Session of 3 Hours
4	Role of bench - marking as a concept and its applications at various levels in IT from product benchmarks to IT usage benchmarks.	2 Sessions of 3 Hours each
5	Problems in implementing a quality system in an IT environment. Tools for measuring quality performance, etc.	1 Session of 3 Hours
<b>B)</b>	<b>IT SYSTEMS CONTROL AND AUDIT</b>	
6	Basic Principles of Audit Control. Risks involved in deploying it such as Fraud, hacking etc.	1 Session of 3 Hours
	Analysis of risks, techniques for managing risk. Physical security, system and application controls and audit trails. Disaster management issues.	2 Sessions of 3 Hours each
7	Types of Audit and Auditing methods. Management Audits of IT in an organization.	1 Session of 3 Hours
8	Exposure in the context of Internet and E-Commerce. Use of encryption, Fire Walls, electronic signatures and third party authentication techniques. Emerging role of Information Systems Auditors.	2 Sessions of 3 Hours each
10	Case Studies and Presentations	2 Sessions of 3 Hours each

## 5.2) KNOWLEDGE MANAGEMENT 100 Marks (15 Sessions of 3 Hours Each)

SL.No	Particulars	Sessions
<b>A)</b>	<b>KNOWLEDGE MANAGEMENT</b>	
1	Knowledge Management (KM): An introduction KM Process and Strategies. Intellectual Capital. Knowledge workers	1 Session of 3 Hours
2	Communication for KM Barriers to KM Knowledge Bartering KM and IT for dissemination.	1 Session of 3 Hours
<b>B)</b>	<b>SUPPLY CHAIN MANAGEMENT AND CUSTOMER RELATIONSHIP MANAGEMENT</b>	
	<b>Supply Chain Management (SCM):</b>	
1	Introduction to SCM : Definition, Purpose and Objectives. <b>SCM Design Considerations:</b> • Various types by which SCM can be done. • Design issues for each type. • Distribution channel design.	2 Sessions of 3 Hours each
2	<b>SCM Mechanism:</b> • Description of the whole process involved. • Costs involved at each stage.	2 Sessions of 3 Hours each
3	<b>Supply Chain Strategies:</b> • Vendor Management and Supplier Relationship • Inventory and Logistics Management. • Distribution Channel Management. • JIT and Quality Management.	2 Sessions of 3 Hours each
4	<b>SCM Vendors</b> • Supply Chain Planning Vendors. • Supply Chain Execution Vendors. • Various tools available. • Study of various packages and benefits offered.	1 Session of 3 Hours



5	<b>Customer Relationship Management (CRM)</b>	
1	Introduction to CRM : Basic Concepts, Purpose and Object. CRM Architecture : Its building blocks, their functions and importance.	1 Session of 3 Hours
2	CRM Capabilities. Economic Analysis of CRM.  CSF (Critical success factors) for building CRM. CRM Channels of customer interaction.	2 Session of 3 Hours each
3	CRM Application areas: Its role in the growth of organisation. CRM Market: Various tools and vendors, Products offered by them and integrating these to the existing system.	1 Session of 3 Hours
4	Case Studies and Presentations	2 Sessions of 3 Hours each

**5.3 E- BUSINESS & ENTERPRISE PLANNING SYSTEMS 100 Marks (15 Sessions of 3 Hours Each)**

SL.No	Particulars	Sessions
	<b>E- BUSINESS</b>	
1	<b>Introduction</b> • Technology • Business Models	1 Session of 3 Hours
2	Revenue Models Transaction Security Implementation Issues	1 Session of 3 Hours
3	Other Issues • Future of E-Business	1 Session of 3 Hours
	<b>ENTERPRISE PLANNING SYSTEMS</b>	
1	Variation in functional process from organisation – best practices.	1 Session of 3 Hours
2	Scope for generalization of software through parameterization and extensibility through tools such as report writers etc.	2 Sessions of 3 Hours each
3	Typical functional processes in different industries, industry segments.	1 Session of 3 Hours
4	Modern ERP Software Products.	1 Session of 3 Hours
5	Transaction flows, work floes, parameterisation, best practices & inter functional linkages.	2 Sessions of 3 Hours each
6	Implementation issues related to integrated organisation wide systems.	1 Session of 3 Hours
7	Introduction to a formal methodology for ERP implementation. Case Studies on ERP implementation.	2 Sessions of 3 Hours each
8	Case Studies and Presentations	2 Sessions of 3 Hours each

**5.4) IT STRATEGY & BUSINESS DYNAMICS OF THE IT INDUSTRY 100 Marks  
(15 Sessions of 3 Hours Each)**

<b>SL.No</b>	<b>Particulars</b>	<b>Sessions</b>
<b>A)</b>	<b>IT STRATEGY</b>	
1	Different IT Strategies available to Organizations	2 Sessions of 3 Hours each
2	Linking IT and Business strategy.	2 Sessions of 3 Hours each
3	IT and Strategic transformation	2 Sessions of 3 Hours each
4	Role of CIO.	1 Session of 3 Hours
<b>B)</b>	<b>BUSINESS DYNAMICS OF THE IT INDUSTRY</b>	
5	IT Industry Scenario	1 Session of 3 Hours
6	IPR	2 Sessions of 3 Hours each
7	Case studies on S/w exports in various countries	1 Session of 3 Hours
8	Venture Capital & High Tech Funding.	2 Sessions of 3 Hours each
9	Case Studies and Presentations	2 Sessions of 3 Hours each

**5.5) SPECIAL STUDIES IN INFORMATION TECHNOLOGY  
(PROJECTS)**

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**6.1 ENTREPRENEURSHIP MANAGEMENT 100 Marks (15 Sessions of 3  
Hours Each)**

<b>SL.No</b>	<b>Particulars</b>	<b>Sessions</b>
1	Concept of entrepreneurship, Difference between an entrepreneur and an executive qualities of a successful entrepreneur Indian styles of entrepreneurship business ethics and entrepreneurship	3 Sessions of 2 Hours Each
2	Theories of Entrepreneurship Analysis of business opportunities environmental scanning, sectoral studies, process of generating business ideas, screening and selection	3 Sessions of 2 Hours Each
3	International Variations in entrepreneurship (with cultural and political differences) Risk & Return Management and Business Vision for an entrepreneur	2 Sessions of 2 Hours Each
4	Small and Big Size Entrepreneurs Entrepreneurship for building Indian Multinational Companies	2 Sessions of 2 Hours Each
5	Government's role for entrepreneurship development in India Institutes and non-government organisations imparting training on entrepreneurship.	3 Sessions of 2 Hours Each
6	Case Studies and Presentations	2 Sessions of 3 Hours each

**6.2 MANAGEMENT OF ENVIRONMENT & PRODUCTIVITY**  
**MANAGEMENT OF ENVIRONMENT 100 Marks (15 Sessions of 3 Hours Each)**

<b>SL.No</b>	<b>Particulars</b>	<b>Sessions</b>
1	Significance of Environment Management - Broad outline of National Environment - Policy Definition of Environment with particular reference to Management.	2 Sessions of 3 Hours each
2	Environmental issues relevant to India. Present status of Environment Management Major issues	1 Session of 3 Hours
3	Scope of Environment Management, Role and functions of the government as a planning, organising, directing, implementing and controlling agency. Managerial aspects involved in Environment management. Environment Quality Management - Overview of the role and responsibilities of the industries.	2 Sessions of 3 Hours each
4	<b>PRODUCTIVITY TECHNIQUES</b>  Concept of Productivity - application in manufacturing and service industries, application in different functional areas.	1 Session of 3 Hours
5	Measurement of Productivity - partial, Multifactor and Total Factor Models, Sumath's Total Productivity Model, Sink's Multifactor Model, Productivity by Objectives, American productivity Center Models. Value Analysis & Value Engineering.	2 Sessions of 3 Hours each
6	Approach to Productivity Improvement - Classic ILO approach, Modern TQC approach, Sumath's 5-pronged approach - product based, technology based, people based, and material based and task based techniques.	2 Sessions of 3 Hours each
7	Quality Circles - Relationship with total quality management, objectives, seven tools - fishbone diagram, Pareto, Analysis, Scatter diagrams, checklists, control charts, etc. - use in solving chronic problems, Organising for Quality Circles, Structure, method of implementation of Quality Circles.	2 Sessions of 3 Hours each
8	Creativity Based Techniques - Brain Storming, Synectics, Whole Brain Thinking, Nominal Group Techniques, use in Creative problem solving with practical applications.	1 Session of 3 Hours
9	Case Studies and Presentations	2 Sessions of 3 Hours each

### 6.3) PROJECT MANAGEMENT 100 Marks (15 Sessions of 3 Hours Each)

SL.No	Particulars	Sessions
1	Total Project Management - Concept, relationship with other function and other organisations, organising for project management - matrix organisation - the project manager is an entrepreneur	1 Session of 3 Hours
2	Project Identification - Scouting for project ideas and promoters, identification of investment opportunities, basis of governmental regulatory framework, various acts and laws affecting project identification.	2 Sessions of 3 Hours each
3	Locational Decisions - Objectives, factors affecting location, concept of Industrially Backward Areas, Incentives available for appropriate location.	1 Session of 3 Hours
4	Project Appraisal - Market Appraisal, Demand Estimation and Forecasting, Technical Appraisal - Raw materials technology - product mix-plant capacity – distribution channels.	2 Sessions of 3 Hours each
5	Project Financing - Basic concepts of cost of project, profitability Analysis, Means of Financing, raising capital, assessing tax burdens and using Financial projections. Appraisal criteria used by lending institutions.	2 Sessions of 3 Hours each
6	Risk Analysis of Project - measures of risk, use of subjective probabilities, mathematical analysis, sensitivity analysis, simulation analysis, decision tree analysis.	2 Sessions of 3 Hours each
7	Project Planning, Monitoring & Control - network Techniques - Gantt charts, network cost system, resource allocation and scheduling, progress reports, updating. Management information system for projects.	2 Sessions of 3 Hours each
8	Use of computer in network Analysis - project management packages - choosing and using them.	1 Session of 3 Hours
9	Case Studies and Presentations	2 Sessions of 3 Hours each

## 6.4) STRATEGIC MANAGEMENT 100 Marks (15 Sessions of 3 Hours Each)

### OBJECTIVE :

The market scenario is undergoing a significant -change contributed to by changing consumer life style, increase in interfirm rivalry, which is further contributed to by Liberalized Policies Of Government of India. The Global changes, advances in technology and travel have brought the world closer today. Such that the national borders have ceased to have any significance. In this context it is this strategic orientation that is going to make firms survive.

SL.No	Particulars	Sessions
1	The concepts of strategy - Five P'S for strategy (strategy as plan, as pattern, as position, as perspective and as purpose). The strategic management process, organisation of strategic management function.	2 Sessions of 3 Hours each
2	Environmental Analysis, Mission and Definition of Goals : Corporate philosophy, corporate governance.	1 Session of 3 Hours
3	Industry structural analysis and identification of opportunities and threads : Porter's five forces model.	1 Session of 3 Hours
4	Internal analysis - identification of distinctive competencies : value chain analysis.	1 Session of 3 Hours
5	Business strategy, customer needs and product differentiation/customer groups and market segmentation: Development of competitive strategy - cost leadership strategy/ differentiation strategy/focus strategy.	2 Sessions of 3 Hours each
6	Strategy and industry structure - strategy in fragmented industries, strategy in for industries in growth stage : strategy in mature industry and strategies in decline industries.	2 Sessions of 3 Hours each
7	Vertical integration and diversification. Global strategy	1 Session of 3 Hours
8	Strategic implementation - organisations dealing with a problem of organizational structure, systems, culture and power.	2 Sessions of 3 Hours each
9	Managing change The strategic management in entrepreneurial organizations.	1 Session of 3 Hours
10	Case Studies and Presentations	2 Sessions of 3 Hours each

### RECOMMENDED READINGS;

1. Michael Porter - Competitive Advantage
2. Michael Porter - Competitive Strategy
3. Samuel C Certo and J Paul Peter - Strategic Management Concepts and Applications - McGraw Hill
4. Henry Mintzberg and James Brian Quinn - Strategic Process, Concepts, Contexts, Cases - Prentice Hall.

### **6.5) BUSINESS ETHICS 100 Marks (15 Sessions of 3 Hours Each)**

<b>SL.No</b>	<b>Particulars</b>	<b>Sessions</b>
1	Evolution of thought of Ethics in Business	1 Session of 3 Hours
2	Culture and Ethics - Overview of Ethics Value Systems, Attitudes, Beliefs & Life Patterns	1 Session of 3 Hours
3	Social and Economic Values and Responsibilities - Trusteeship Management	2 Sessions of 3 Hours each
4	Gandhian Philisophy of Wealth Management Ethics and Indian Management	2 Sessions of 3 Hours each
5	Basic Framework of Normative Ethics, Ethics and Decision Making, Social Responsibility of Business	2 Sessions of 3 Hours each
6	Ethical Aspects of Corporate Policy, Morality and Rationally in Formal Organisation	2 Sessions of 3 Hours each
7	Moral Relationship between Individual and Organisations.	1 Session of 3 Hours
8	Relationship between Ethics and Corporation Excellence	1 Session of 3 Hours
9	Approaches for Developing various Orientations towards Ethical Business Behaviour.	1 Session of 3 Hours
10	Case Studies and Presentations	2 Sessions of 3 Hours each