

## SVKM's NMIMS

School Name: MUKESH PATEL SCHOOL OF TECHNOLOGY MANAGEMENT &amp; ENGINEERING

Template Codes for Academic year: 2014-15

Campus: MUMBAI

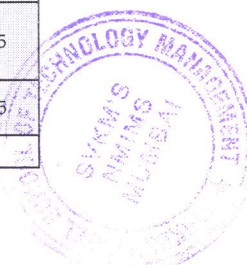
(As approved in the Academic Council)

Name of the Programme: MBA(Tech.) - Information Technology									Semester: V/VI				Year: 2014 - 15									
Sr. No.	SAP Module Code	Module / Subject Code	Name of the Module	No. of Students booked for module	Theory	Practicals	Tutorials	Total no. of hours for the subject	Credit/s	Term End Exam		Examination Scheme (Weightage)								Template Codes		
										Written/ Online	Only ICA	ICA				TEE		Total				
												Test 1	Test 2	Term work	Total Marks	ICA Weightage	Marks	Weightage	Marks		Weightage	
Second Year - Semester - V																						
1	71110I003	MBIT05001	Information Security		3	2	0	5	4	Written/ 3 hrs.		15	15	20	50	40	100	60	100	100	7005	
2	71110D005	MBIT05002	Digital Signal Processing		3	2	0	5	4	Written/ 3 hrs.		15	15	20	50	40	100	60	100	100	7005	
3	71110W006	MBIT05003	Wireless Networking		3	2	0	5	4	Written/ 3 hrs.		15	15	20	50	40	100	60	100	100	7005	
4	71110S002	MBIT05004	Service Oriented Architecture		3	0	0	3	3	Written/ 3 hrs.		15	15	20	50	40	100	60	100	100	7005	
5	71110R001	MBIT05005	Research Methodology		0	2	0	2	1	-	Only ICA	15	15	20	50	100	-	-	50	100	7003	
6	71110E007	MBIT05006	Ethics for IT Users		0	0	2	2	1	-	Only ICA			50	50	100	-	-	50	100	7003	
7	711AAO003	MBAB05024	Operations Research		2	0	0	2	2	Written/ 2 hrs.		25	-	25	50	40	50	60	100	100	7005	
8	711AAB011	MBAB05025	Business Economics		2	0	0	2	2	Written/ 2 hrs.		25	-	25	50	40	50	60	100	100	7005	
9	711AAC015	MBAB05026	Constitution of India		2	0	0	2	0	-	Only ICA	25	-	25	50	100	-	-	50	100	7003	
			Total		18	8	2	28	21						450		500		750			
Second Year - Semester - VI																						
1	71110C002	MBIT06001	Computer Simulation and Modeling		2	2	0	4	3	Written/ 3 hrs.		15	15	20	50	40	100	60	100	100	7005	
2	71110O006	MBIT06002	Object Oriented Modeling and Design		3	2	0	5	4	Written/ 3 hrs.		15	15	20	50	40	100	60	100	100	7005	
3	71110I010	MBIT06003	Implementation of Technology		0	2	0	2	1	-	Only ICA	15	15	20	50	100	-	-	50	100	7003	
4	71110D006	MBIT06004	Distributed Computing		3	2	0	5	4	Written/ 3 hrs.		15	15	20	50	40	100	60	100	100	7005	
5	71110E008	MBIT06005	Ethics for IT Organization		0	0	2	2	1	-	Only ICA			50	50	100	-	-	50	100	7003	
6	711AAP010	MBAB05027	Project Management		2	0	0	2	2	Written/ 2 hrs.		25	-	25	50	40	50	100	100	100	7005	
7	711AAI009	MBAB05028	Information System for Managers		2	0	0	2	2	Written/ 2 hrs.		25	-	25	50	40	50	100	100	100	7005	
8	711AAS012	MBAB05029	Safety, Health & Environmental Management Systems		2	0	0	2	2	Written/ 2 hrs.		25	-	25	50	40	50	100	100	100	7005	
9	711AAF004	MBAB05030	Financial Accounting		2	0	0	2	2	Written/ 2 hrs.		25	-	25	50	40	50	100	100	100	7005	
			Total		16	8	2	26	21						450		500		800			

Date :

(HOD's Signature)

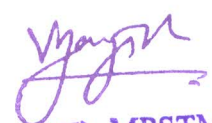
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**SVKM's Narsee Monjee Institute of Management Studies**  
**Mukesh Patel School of Technology Management & Engineering**

<b>Program:</b> MBA(Tech) (Information Technology)				<b>Semester :</b> VI	
<b>Course :</b> Computer Simulation and Modeling				<b>Code :</b> MBIT06001	
Teaching Scheme				Evaluation Scheme	
Lecture	Practical	Tutorial	Credit	Theory (3 Hrs, 100 Marks)	Internal Continuous Assessment (ICA) As per Institute Norms
2	2	0	3	Weightage 60%	Weightage 40%
<b>Pre-requisite:</b> Engineering Mathematics – II , Advanced Maths					
<b>Objective:</b> <ul style="list-style-type: none"> <li>The objective of this course is to teach students methods for modeling of systems using discrete event simulation.</li> <li>Emphasis of the course will be on modeling and on the use of simulation software. The students are expected to understand the importance of simulation in IT sector, manufacturing, telecommunication, and service industries etc.</li> </ul>					
<ul style="list-style-type: none"> <li><b>Outcomes:</b></li> <li>Students should be able to explain introduction about computer simulation and modelling</li> <li>Students should be able to use manual simulation and simulation software</li> <li>Students should be able to understand Discrete Event Formalisms</li> <li>Students should be able to use different software</li> <li>Students should be able explain Statistical and Queuing Models in Simulation</li> <li>Students will be able to formulate simulation model for a given problem, implement the model in software and perform simulation analysis of the system.</li> </ul>					
<b>Detailed Syllabus:</b>					
Unit	Description				Duration
1.	<b>Introduction to Simulation and Modeling:</b> Simulation: appropriate and not appropriate, advantages and disadvantage, application areas. System and System environment, Components of system, Type of systems, Model of a system, Type of models, Steps in simulation study.				2
2.	<b>Manual Simulation of Systems:</b> Simulation of Queuing Systems such as single channel and multi channel, lead time demand, Inventory system, reliability problem, Random normal numbers.				3
3.	<b>Discrete Event Formalisms:</b> Concepts of discrete even simulation, model components, and a discrete event system simulation. World views or formalisms, simulation of single channel queue, multi channel queue, inventory system and dump truck problem using event scheduling approach.				4
4.	<b>Simulation Software:</b> History of simulation software, An				2

  
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	evaluation and selection technique for simulation software, General - purpose simulation packages, Trends in simulation software.	
5.	<b>Statistical and Queuing Models in Simulation:</b> Overview of probability and statistics, Useful statistical model, Discrete distribution, Continuous distribution, Poisson process, Empirical distribution. Characteristics of Queuing systems, Queuing notations, Long run measures of performance of Queuing Systems, Steady state behaviour of Markovian models, Network of Queues.	4
6.	<b>Random Number Generation:</b> Properties of random numbers, Generation of truly pseudo random numbers, Techniques for generating random numbers, Hypothesis testing, Tests for uniformity and independence.	4
7.	<b>Random Variate Generation:</b> Random variate, Different techniques to generate random variate Inverse transform technique: algorithm, graphical view, and method for discrete and continuous distribution, Direct transformation technique, Convolution method, and Acceptance rejection techniques.	4
8	<b>Input Modeling:</b> Development steps of a useful model of input data, Data Collection, Identifying the distribution with Data, Parameter estimation, Suggested estimators Goodness of fit tests, Selection input model without data, Covariance and correlation, Multivariate and Time series input models.	4
9	<b>Verification and validation of Simulation Model:</b> Model building, Verification of simulation models, Calibration and validation of models: validation process, face validity, validation of model, validating input-output transformation, t-test, power of test, Input output validation using historical data and Turing test.	3
	<b>Total</b>	<b>30</b>

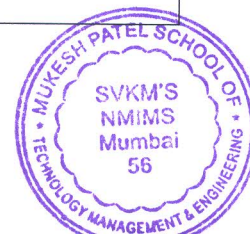
**Text Book:**

1. Banks, J., Carson, J. S., Nelson, B. L., and Nicol, D. M., "Discrete Event System Simulation", 4th Edition, Pearson Education, 2010.

**Reference Books:**

1. Geoffrey Gordon, "System Simulation", 2nd edition, PHI, 2011.
2. Narsing Deo, "System Simulation with Digital Computer", PHI, 2004
3. Law, A. M., and Kelton, W. D., "Simulation Modeling and Analysis", 4th Edition, McGraw-Hill, 2007.
4. Trivedi, K. S., "Probability and Statistics with Reliability, Queuing, and Computer Science Applications", 2nd Edition, PHI, 2001.

**Term Work:** As per Department and Institute norms for termwork.





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<b>Program:</b> MBA(Tech) (Information Technology)				<b>Semester :</b> VI	
<b>Course :</b> Object Oriented Modeling and Design				<b>Code :</b> MBIT06002	
<b>Teaching Scheme</b>				<b>Evaluation Scheme</b>	
<b>Lecture</b>	<b>Practical</b>	<b>Tutorial</b> <b>1</b>	<b>Credit</b>	<b>Theory</b> <b>(3 Hrs,</b> <b>100 Marks)</b>	<b>Internal Continuous</b> <b>Assessment (ICA)</b> <b>As per Institute Norms</b>
3	2	0	4	Weightage 60%	Weightage 40%
<b>Pre-requisite:</b> SSAD, Computer Programming-II					
<b>Objectives:</b> <ul style="list-style-type: none"> <li>The main objective of the course is to gain enough competence in object-oriented analysis and design (OOAD) to tackle a complete OO project.</li> <li>It also gives the thought to acquire a common language for talking about requirements, designs, and component interfaces.</li> <li>Addresses the main principles of good OO design, what major tasks are appropriate to developing OO models and software, the issues and options in reuse and component based development.</li> </ul>					
<b>Outcomes:</b> <p>After successfully completion of this course, students should be able to</p> <ul style="list-style-type: none"> <li>To gain enough competence in object oriented analysis and design (OOAD) to tackle a complete OO project.</li> <li>It gives the thought to acquire a common language for talking about requirements designs and component interfaces.</li> <li>Addresses the main principles of good OO design and what major tasks are appropriate to developing OO models and software, the issues and options in reuse and component based development.</li> </ul>					
<b>Detailed Syllabus:</b>					
<b>Unit</b>	<b>Description</b>				<b>Duration</b>
1.	<b>Introduction:</b> Object oriented approach, Object oriented themes, and Object oriented methodologies, Overview of OOL, Object classes; Meta Types, Object Oriented Methodologies, the Uniform Approach Modeling; Need of Modeling, Static and Dynamic Models, Functional Models.				4
2.	<b>Object Modeling:</b> Modeling concepts, Modeling techniques, Objects and classes, Links and association, multiplicity, Advanced link and association concepts, Generalization and inheritance, Grouping constructs, Aggregation, Abstract classes, Generalization as an extension and restriction, Multiple inheritance, Metadata, Candidate key, Constraints, Homomorphism, problems on object modeling and Advanced				5



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	Object Modeling, Advantages of Object Modeling.	
3.	<b>Analysis:</b> Problem Analysis, Problem Domain Classes, Identity classes, Object of Real World Problems using use case analysis and Recording Analysis.	5
4.	<b>Dynamic Modeling:</b> Events, Modeling scenarios, Mapping Events to Object, Interface, Discovering attributes scenarios and event trace diagrams, Modeling simple collaboration, Modeling Logical Database schema, Activity Diagram, Modeling workflow, Advanced Dynamic Modeling concepts, Relation of object and dynamic models.	5
5.	<b>Class and State Diagram:</b> Test scenarios, Interfaces, classes, Methods, Stress Testing, System Testing, Scalability Testing, and Regression Testing. Behavioural Modelling, State Chart diagrams, operations, Nested state diagrams, concurrency.	5
6.	<b>Functional Modeling:</b> Functional models, Data Flow Diagrams, Specifying Operations, Relation of functional to object and dynamic models, Problems on functional modeling.	5
7.	<b>Design:</b> Architectural Design, Refining the Model, Refactoring, Coupling and cohesion. Who should own the attribute and the operations? Process and Threads, Classes visibility, user interface, Subsystem interfaces.	5
8.	<b>Deployment Diagram:</b> Modeling source codes, Physical Database, Modeling in AC/S system, Distributed system and Embedded systems	5
9.	<b>Case Study:</b> Designing a static and dynamic model using diagrams for Banking System, Student Information System, Examination System, Air Ticket Reservation System, Inventory System etc.	6
	<b>Total</b>	<b>45</b>

**Text Books:**

1. James Rumbaugh, "Object Oriented Modeling and Design with UML", 2<sup>nd</sup> Edition, Pearson Education, 2011.
2. Grady Booch, "Object Oriented Analysis and Design with Applications", 3<sup>rd</sup> Edition, Pearson Education, 2009.

**Reference Books:**

1. Brock Wirfs Rebecca, Wilkerson Brain, "Designing Object Oriented Software", 2<sup>nd</sup> Edition, PHI, 2007.

**Term Work:**

As per Department and Institute norms for term-work.





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<b>Program:</b> MBA(Tech)(Information Technology)				<b>Semester :</b> VI	
<b>Course :</b> Implementation of Technology				<b>Code:</b> MBIT06003	
Teaching Scheme				Evaluation Scheme	
Lecture	Practical	Tutorial 1	Credit	Theory (3 Hrs, 100 Marks)	Internal Continuous Assessment (ICA) As per Institute Norms
0	2	0	1	-	Weightage 100%
<b>Pre-requisite:</b> NIL					
<b>Objectives:</b> <ul style="list-style-type: none"> <li>To study latest tools, methods and technologies as per best industry practices.</li> </ul>					
<b>Outcomes:</b> After successfully completion of this course, students should be able to: <ul style="list-style-type: none"> <li>Understand the different components needed to implement.</li> <li>Analyse the data and interpret the results to understand the requirements.</li> <li>Select the appropriate methods and tools.</li> <li>Design and implement the planned modules.</li> </ul>					
<b>Content :</b> <ul style="list-style-type: none"> <li>Define Problem statement</li> <li>Study the basic tools needed to solve the problem in hand</li> <li>Hands on exercises to understand the tools usage and accuracy</li> <li>Complete the exercises and find the solution to the problem in hand</li> <li>Provide the solution and Implement it using the tool studied above</li> </ul>					
<b>Term Work:</b> As per Department and Institute norms for Term-work.					



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<b>Program:</b> MBA(Tech) (Information Technology)				<b>Semester :</b> VI	
<b>Course :</b> Distributed Computing				<b>Code :</b> MBIT06004	
<b>Teaching Scheme</b>				<b>Evaluation Scheme</b>	
<b>Lecture</b>	<b>Practical</b>	<b>Tutorial</b>	<b>Credit</b>	<b>Theory (3 Hrs, 100 Marks)</b>	<b>Internal Continuous Assessment (ICA) As per Institute Norms</b>
3	2	0	4	Weightage 60%	Weightage 40%
<b>Pre-requisite:</b> Operating Systems, Computer Networks					
<b>Objectives:</b> <ul style="list-style-type: none"> <li>To enable the students to understand need of Distributed Systems and the architecture required for building such systems.</li> <li>To help them design a distributed system by understanding the various aspects of design such as communication, Synchronization, consistency, replication.</li> <li>To enable the students understand the role of security in Distributed Systems</li> </ul>					
<b>Outcomes:</b> <ul style="list-style-type: none"> <li>The students will learn the architecture of distributed Systems.</li> <li>They will be learn to develop code required for communication between different parts of distributed systems.</li> <li>They will learn various consistency models and protocols used to implement consistency models in a distributed system.</li> <li>They will learn the concept of code migration and the issues involved in the process of code migration.</li> <li>They will learn how synchronization is achieved between different processes in a distributed system.</li> <li>They will learn the different security considerations important for distributed systems.</li> <li>They will also learn how distributed file system works.</li> </ul>					
<b>Detailed Syllabus:</b>					
<b>Unit</b>	<b>Description</b>				<b>Duration</b>
1.	<b>Introduction to Distributed System:</b> Definition, goals, Examples of Distributed system: Internet, Distributed Computing System, Distributed information system.				3



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2.	<b>Architecture of Distributed System:</b> System architecture : centralized architecture, decentralized architecture, hybrid architecture, architecture versus middleware,	3
3.	<b>Processes:</b> Threads, virtualization, clients, servers, code migration	5
4.	<b>Communication in Distributed System:</b> Fundamental, remote procedure call, message oriented communication, stream oriented communication, multicast communication, Java RMI case study.	6
5.	<b>Naming:</b> Names, identifiers, and addresses, flat naming, structure naming, attributed-based naming	4
6.	<b>Synchronization:</b> Clock synchronization, logical clocks, mutual exclusion, global positioning of nodes, election algorithm.	6
7.	<b>Consistency and replication:</b> Introduction, data centric consistency model, client-centric consistency models, replica management, fault tolerance services.	5
8.	<b>Security:</b> Secure channels, access control, security management	3
9.	<b>Distributed file system:</b> File service architecture, sun network file system, recent advances	4
10.	<b>Case study:</b> Distributed Object-based system, distributed web-based system.	6
	<b>Total</b>	<b>45</b>

**Text Book:**

1. Andrew S. Tanenbaum, "Distributed System: Principles and Paradigms", 2nd Edition, Pearson Education, 2007

**Reference Book:**

1. George Couloris, "Distributed System: Concept and Design", 3rd Edition, Pearson Education, 2005

**Term Work:**

As per Department and Institute norms for term-work.



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<b>Program:</b> MBA(Tech) (Information Technology)					<b>Semester :</b> VI
<b>Course :</b> Ethics for IT Organization					<b>Code:</b> MBIT06005
<b>Teaching Scheme</b>				<b>Evaluation Scheme</b>	
<b>Lecture</b>	<b>Practical</b>	<b>Tutorial</b>	<b>Credit</b>	<b>Theory</b> (3 Hrs, 100 Marks)	<b>Internal Continuous Assessment (ICA)</b>  <b>As per Institute Norms</b>
0	0	2	1	-	Weightage 100%
<b>Pre-requisite:</b> Nil					
<b>Objectives:</b> This course provides knowledge about ethics applicable in an IT organization's context. It covers related laws, software development process, social networking, IT human resources					
<b>Outcomes:</b>  After completion of the course, students will be able to : <ul style="list-style-type: none"> <li>• Understand copyrights, patents and laws needed in IT organizations</li> <li>• Understand the quality software development process</li> <li>• Analyze the impact of IT on productivity and quality of life</li> <li>• Understand the concepts on online social networking, its applications and effective usage</li> <li>• Illustrate the key ethical issues of an IT organization</li> </ul>					
<b>Detailed Syllabus:</b>					
<b>Unit</b>	<b>Description</b>				<b>Duration</b>
1.	<b>Intellectual Property:</b> Intellectual property, copyrights, patents, trade secrets and its laws, employees and trade secret, key intellectual property issues, plagiarism, reverse engineering, open source code, competitive intelligence, trademark infringement, cyber squatting.				6
2.	<b>Software Development:</b> Strategies for engineering quality				6



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	software, importance of software quality, software product liability, software development process, capability maturity model integration, safety critical system, quality management standards.	
3.	<b>The Impact of Information Technology on Productivity and Quality of Life:</b> Impact of IT, IT investment and productivity, digital divide, impact of it on healthcare cost, electronic health records, use of mobile and wireless technology in healthcare industry, telemedicine, medical information websites.	6
4.	<b>Social Networking:</b> Social networking website, business application of online social networking, social networking ethical issues: cyberbullying, cyberstalking, sexual predators, uploading inappropriate material. online virtual world: crime in virtual world, educational and business uses.	6
5.	<b>Ethics of IT Organization:</b> Key ethical issues, non traditional workers, contingent workers, H-1 B workers, outsourcing, whistle blowing, green computing, ICT industry code of conduct.	6
	<b>Total</b>	<b>30</b>

**Text Books:**

1. "Ethics in Information Technology", 4th Edition, George Reynolds Strayer University, 2012.

**Reference Books:**

1. "Ethics and Technology: Controversies, Questions, and Strategies for Ethical Computing", 3rd Edition, Herman T. Tavani, John Wiley & Sons, 2011.
2. "Information Technology Ethics: Cultural Perspectives", Soraj Hongladarom, Charles Ess, Idea Group Inc (IGI), 2007.

**Term Work:** As per department and Institute Norms for Term-work.

