Solapur University, Solapur

Revised New Syllabus

MCA-III

(w.e.f. June 2010)

Semester – V

Sr. No.	Subject Code	Title	Internal	External
1	IT51	Human Computer Interface	30	70
2	IT52	Software IT Project Management	30	70
3	IT53	Emerging Trends in Information Technology	30	70
4	*IT54	Application Development Technology	100	
5	ITE1	IT Elective	30	70
6	IT55	Advanced Internet Technology	30	70
7	IT51P	Mini Project using Advanced internet technology	50	
8	IT52L	ADT Lab	50	

Semester – VI

List Of Elective Subjects:

Sr. No.	Subject Code	Title	Internal	External
1	IT61P	Project	200	300

Sr. No.	Title	Internal	External
1	Cyber Law and IT Security	30	70
2	Programming Language paradigms	30	70
3	Advanced Unix	30	70
4	Mobile Wireless computing	30	70
5	Distributed Databases	30	70

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Name of the Paper - : Human Computer Interface **No. of Lectures: per week 4hrs**

Course No. IT-51 **Total Lectures: 40**

Total Marks : 100

Semester- V

Objective: To learn various aspects and design consideration and practices used in modern systems while developing a application interface between user (Human) and Computer.

Contents of the course

Unit No.	Name of the Topic	Details	Lectures/ Period
1	**Introduction**	Human factors of interactive software, goods of system engineering, user interface design, Motivation human factors in design.	4
2	**Principles and Guidelines**	Usability paradigms, object action interface principles and rules, guidelines for data entry and display	5
3	**Design Process**	Managing design process, design methodologies, participatory design. Usability and tests, Acceptability tests, Software tools, specification methods	5
4	**Dialog Notation Design**	Visual thinking and icons, direct manipulation programming, virtual; environments, item presentation sequence, layout, form fill-in dialog boxes	5
5	**Implementation Support**	Individual window design, multiple window design, coordination, image browsing, command organization, command menus, natural languages in compiling, window manages and user interfaces	5
6	**Interactive Device**	Keyboards, Speech recognition, image & video displays, Response time and Display Rate	3
7	**Documentation**	Presentation styles, balancing function, error Interaction handling, errors, printed manuals, Online facilities	3
8	**Computer Supported Co-operation**	Goals of Co-operation, asynchronous interactions, synchronous distributed, application to education, and social uses	3
9	**Information search and**	Database query and phase search in documents, multimedia document searches,	7

	Visualization	information visualization, advanced filtering, hypertext and hypermedia, users and their tasks, object action interface model for website design	

Nature of Question Paper:

a) 20% marks - Objectives questions

40% marks – Short notes/ Short answers type questions

40% marks – Descriptive type questions

out of 20% marks for objectives questions 10% marks should be assigned to multiple choice questions and remaining 10% be assign to fill in the blanks or answer in one sentence etc.however each faculty may decide nature and type of questions to be set subject to distribution of above percentage of marks

b) One descriptive type question will be compulsory. Paper setter should mention approximate words limit for short note/short answer type questions except diagrammatical and numerical questions

Reference Books:

1. designing the user interface Ben shnelderman, Pearson Education Asia.
2 Human Computer interaction, 2/e Alan J Dix, Janet E. Finlay, G.D. Abowd and Rusell Beale, Prentice Hall.
3. Elements of User interface design Theo Mandel, JW and Son.
5. Essential Guide to User Interface Design Willbert Galitz, JW.

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Name of the Paper - Software IT Project Management

No. of Lectures: per week 4hrs

Course No. IT52 **Total Lectures: 40**

Total Marks : 100

Semester- V

Objective To learn process of software projects management, estimations, use of project management tools, configuration management, quality and testing and Software teams.

Contents of the course

Unit No.	Name of the Topic	Details	Lectures/ Period
1.	**Project Management Framework**	Overview of project Management , Project Organization ,Planning a s/w project , Project management life cycle ,Risk management , Identification of Risks , Risk Analysis ,Risk Planning & Monitoring	6
2.	**S/w Project Estimation**	Project Estimation , Different methods of estimation(COCOMO model, Delphi cost estimation etc.) , Function point analysis	6
3.	**Project Management Tools & Techniques**	PERT & Gantt Charts , Introduction to Microsoft Project	5
4.	**Software Quality Management & Testing**	Quality Assurance & Standards ,Quality Planning ,Quality control, Role of testing in Software development ,Testing Procedure , Defect Management	6
5.	**Configuration Management(CM)**	CM planning, Change Management , Version and Release Management , Configuration Management Tools	6
6.	**S/W Team Management**	Characteristics of Performance management ,High performance Directive and collaborative styles , Team Structure , Team Communication , Managing customer expectations ,Group Behavior	6
7.	**Role of User in Projects**	User role in project management ,User role in various stages of S/W Development , User role in System implementation	5

Nature of Question Paper:

a) 20% marks - Objectives questions

40% marks – Short notes/ Short answers type questions

40% marks – Descriptive type questions

out of 20% marks for objectives questions 10% marks should be assigned to multiple choice questions and remaining 10% be assign to fill in the blanks or answer in one sentence etc.however each faculty may decide nature and type of questions to be set subject to distribution of above percentage of marks

b) One descriptive type question will be compulsory. Paper setter should mention approximate words limit for short note/short answer type questions except diagrammatical and numerical questions

Reference:

1. Software Project management — Edwin Bennatan
2. Software Engineering — Roger S. Pressman
3. Software Engineering concepts — Richard Fairley
4 Software Project Management — S.A. Kelkar
5. Software Engineering — IAN Sommerville
6. System Analysis and Design Methods — Whitten, Bentley and Dittman

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Name of the Paper - Emerging Trends In Information Technology

No. of Lectures: per week 4hrs

Course No. IT-53 **Total Lectures : 40**

Total Marks : 100

Semester-V

Objectives To make aware student the changes in technologies, applications and systems around us.

Contents of the course

Unit No.	Name of the Topic	Details	Lectures/ Period
1.	**Business Trends in IT**	E-learning, E-banking, E-governance	3
2.	**Neural Network**	Introduction, Humans and Computers, Organization of brain, biological neurons, biological and artificial neuron models, essentials of artificial neural networks (artificial neural models, operations on artificial neurons, types of neuron activation function, artificial neuron network architecture, classification, taxonomy on ANN connectivity, learning strategy, learning rules)	7
3.	**Embedded System**	Feature and type of embedded system, components of embedded system, application of embedded system, palm devices	4
4.	**Fuzzy Logic**	Fuzzy logic system components(fuzzyfication, membership value assignment, development of rule base and decision making system, defuzzyfication method), fuzzy logic application, fuzzy logic controls, fuzzy classification	3
5.	**Machine Learning**	Definition of learning systems, goal and application of machine learning, aspects of developing learning system training data, concepts representation, function approximation	4
6.	**Natural Language Processing**	Introduction of natural Language Processing, Statistical machine translation, language models, statistical alignment model and expectation maximization	4

7.	**Expert System and Knowledge Management**	**Expert System**: basic concepts, structure, how they work? Benefits, learning, planning, advanced topics **Knowledge Management:** What is KM? (Components and types of knowledge), knowledge building models, KM cycle & KM architecture, KM tools, KM approaches	7
8.	**GIS / GPS**	What is GIS? Nature of Geographic data, Spatial Objects & Data Models, Getting map on Computers, GIS standards & Standardization Process of GIS development, Implementation and Deployment phases	4
9.	**Biometric Technologies**	RFID, Retina Scanning, Facial Reorganization, Finger Print scanning, hand geometry , DNA (Working principles) Application area :Case Study	4

Nature of Question Paper :

a) 20% marks - Objectives questions

40% marks – Short notes/ Short answers type questions

40% marks – Descriptive type questions

out of 20% marks for objectives questions 10% marks should be assigned to multiple choice questions and remaining 10% be assign to fill in the blanks or answer in one sentence etc. however each faculty may decide nature and type of questions to be set subject to distribution of above percentage of marks

b) One descriptive type question will be compulsory. Paper setter should mention approximate words limit for short note/short answer type questions except diagrammatical and numerical questions

Reference:

1 Management Information System: Jawadekar
2. Management Information System Laudon & Laudon
3. E – Commerce Milind Oka
4. E – Commerce C.V.S. Murty
5. Fire Wall and Internet Security William Cheswick, Stevens, Aviel Rubin
6. The Essential Guide to Knowledge management Amrit Tiwana
7. The GIS Book George B. Karte.
8. Internet (Use of Search Engines Google & yahoo etc)
9. S. Rajasekaran and Pai G. A.Vijayalakshmi, Neural networks, fuzzy logic and genetic algorithms – synthesis and applications, PHI
10. Bart Kasko, Neural Networks and Fuzzy Systems, PHI

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Name of the Paper - Application Development Technologies

No. of Lectures: per week 4hrs

Course No. *IT-54 **Total Lectures: 40**

Total Marks : 100

Semester- V

Objective: To train the student for developing Console, Window and Web applications using Dot Net technologies.

Contents of the course

Unit No.	Name of the Topic	Details	Lectures/ Period
1.	**Introduction to . Net Framework**	Block diagram of .net framework, Components of .Net framework, Features and Application of .Net framework	4
2.	**Fundamentals of C#**	Introduction of C#, basic C# syntax, Value type, reference type, type conversion, boxing and unboxing, flow control, String manipulation, defining and using functions, properties, indexer, preprocessor	4
3.	**Object Oriented Concepts with C#**	Classes and Objects, Constructor and Destructor, inheritance, polymorphism, abstract class, interfaces, delegate	4
4.	**File I/O and Concurrency**	FileStream, binarywriter, binaryreader, textwriter, textreader, Introduction to threading, Thread life cycle	6
5.	**Windows Application**	Introduction to windows application, Controls	8
6	**Fundamentals of VB.Net**	Introduction of VB.Net, syntax, flow control, defining and using functions	2
6.	**Introduction to ASP.Net**	Asp.net page directives, page life cycle, Introduction to web server controls, validation server controls, cross page posting, working with master pages	8
7.	**ADO.Net**	Data binding in ASP.Net	4

Nature of Question Paper :

a) 20% marks - Objectives questions
   40% marks – Short notes/ Short answers type questions
   40% marks – Descriptive type questions
   out of 20% marks for objectives questions 10% marks should be assigned to multiple choice questions and remaining 10% be assign to fill in the blanks or answer in one sentence etc. however each faculty may decide nature and type of questions to be set subject to distribution of above percentage of marks
b) One descriptive type question will be compulsory. Paper setter should mention approximate words limit for short note/short answer type questions except diagrammatical and numerical questions.
c) The Components of the Examination will be i) Written Examination for 70%
   ii) Small Project for 30% with viva-voce

Reference Books:

1. C# Black Book
2. Complete Reference C#
3. Professional C# by Simmon Robinson
4. ASP.Net Black Book
5. Complete Reference ASP.Net
6. VB.Net Black Book

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Name of the Paper - Programming Language Paradigms

No. of Lectures: per week 4hrs

Course No. IT-E1 **Total Lectures : 40**

Total Marks : 100

Semester- V

Objectives To learn programming languages structures, components, syntaxes.

Contents of the course

Unit No.	Name of the Topic	Details	Lectures/ Period
1.	**Language Design Issue**	Short History , Development of early languages , Evolution of software architecture , Role of Programming languages , Attributes of language, Language paradigms ,Language standardization,Programming Environment , Effects on language design , Environment framework	5
2.	**Impact of machine architecture Operation of Computer**	Computer Hardware,Firmware Computers , Translator and Virtual Machines .	3
3.	**Virtual computers & Binding times**	Language Implementation, Hierarchies of virtual machines , Binding & Binding times Language Translation Issue, General syntactic Criteria ,Syntactic Element of language, Stages in translation ,Analysis of source program ,Synthesis of object program.	4
4.	**Elementary Data Types**	Properties of types and Object , Scalar data types, Composite data types	6
5.	**Sequence Control**	Implicit & Explicit Sequence control , Sequencing with Arithmetic Expression, Tree structure representation, Implicit & Explicit Sequence control, Sequencing with Arithmetic Expression , Tree structure representation	4

6.	**Subprogram Control**	Subprogram Sequence Control , Simple call return subprograms, Recursive sub program , Examples in C & C++ ,Attributes Of Data Control , Name & referencing environments, Static and dynamic scope, Block structure , Local data & local referencing Env,Parameter Transmission, Actual and Formal Parameters, Methods for Transmitting Parameters , Explicit Common Environments , Dynamic Scope State Scope and Block Structure	6
7.	**Storage Management**	Element requiring storage , Programmer and system controlled storage , Static storage management , Heap storage management	6
8.	**Language Summaries**	Language summaries of C++ & JAVA	6

Nature of Question Paper :

a) 20% marks - Objectives questions

40% marks – Short notes/ Short answers type questions

40% marks – Descriptive type questions

out of 20% marks for objectives questions 10% marks should be assigned to multiple choice questions and remaining 10% be assign to fill in the blanks or answer in one sentence etc. however each faculty may decide nature and type of questions to be set subject to distribution of above percentage of marks

b) One descriptive type question will be compulsory. Paper setter should mention approximate words limit for short note/short answer type questions except diagrammatical and numerical questions

References:

1. Programming Languages **Terrence W. Pratt,** Pearson Education Publications

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Name of the Paper - Advanced Unix

No. of Lectures: per week 4hrs

Course No. -ITE1 **Total Lectures : 40**

Total Marks : 100

Semester- V

Objectives:. To learn Unix Operating system calls and processes and understand them through small programs.

Contents of the course

Unit No.	Name of the Topic	Details	Lectures/ Period
1.	**Introduction to UNIX**	Evolution of Unix, Features, System structure, File System	4
2.	**File I/O**	System calls for file I/O, File Sharing, Concept of File descriptor duplication, File Control	4
3.	**Files and Directories**	File status, File types, Permission, ownership and related System call. File system, Links, File times Directory related functions	4
4.	**Standard I/O Library**	Streams, Buffering, open, read & write on streams, Binary I/O, Formatted I/O Temporary Files	4
5.	**Environment of Unix Process**	Process invocation and termination, Environment variables & List Memory Layout of C program & memory management routines	4
6.	**Process control**	Process identifiers, system calls related to Multitasking, Race condition Zombie & Orphan process, system measurement, scaling and scale construction techniques	5
7.	**Process relationship**	Sessions, Controlling Terminal, Job Control haring data among parent & Child using Files	3
8.	**Signals**	Signal Concepts, Signal	3

		handling, Important signals: kill, raise, alarm, pause, and abort	
9.	**Advanced I/O**	Record Locking , Streams, I/O Multiplexing, Memory Mapped I/O, various Read and write	4
10.	**Inter Process Communication**	Pipes, FIFO, System V IPC (Message Queue, Semaphore, Shared Memory)	5

Nature of Question Paper :

d) 20% marks - Objectives questions

40% marks – Short notes/ Short answers type questions

40% marks – Descriptive type questions

out of 20% marks for objectives questions 10% marks should be assigned to multiple choice questions and remaining 10% be assign to fill in the blanks or answer in one sentence etc. however each faculty may decide nature and type of questions to be set subject to distribution of above percentage of marks

e) One descriptive type question will be compulsory. Paper setter should mention approximate words limit for short note/short answer type questions except diagrammatical and numerical questions.

f) The Components of the Examination will be i) Written Examination for 70%

ii) Small Project for 30% with viva-voce

References:

1. Advanced Programming in the UNIX environment W.R.Stevens
2. The C Odyssey UNIX Meeta Gandhi

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Name of the Paper - Mobile Wireless Computing

No. of Lectures: per week 4hrs

Course No. -- ITE1 **Total Lectures : 40**

Total Marks : 100

Semester- V

Objective : To introduce network, system, techniques and applications in Mobile Wireless Computing.

Contents of the course

Unit No.	Name of the Topic	Details	Lectures/ Period
1.	**Introduction**	Cellular networks, wireless LANs, application adaption administrative	1
2.	**Cellular Overview**	Cellular concept, location management, handoffs	2
3.	**WirelessLANs overview**	Mac issues, mobile IP, ad-hoc networks, TCP issues	3
4.	**Applications Overview**	Wireless applications, disconnected operations, data broadcasting, mobile agents	3
5.	**GSM**	Air-interface, channel structure, timing, architecture	4
6.	**WAP**	Architecture, protocol stack, application environment, application demo	3
7.	**TCP**	Asymmetric links, wireless errors, handoffs, cp-ip, snoop, link rxmit, m-top	4
8.	**Adhoc Networks**	Mac, routing, transport	3
9.	**Routing**	Virtual backbone, Kelpi, MobileIP	3
10.	**Sensor Networks**	SPIN, distributed computation	1
11	**Data Broadcasting**	Push-pull, consistency	3

12.	**Mobile agents**	Design, applications frameworks: Aglets etc. Ajanta	5
13	**Location Management**	HLR-VLR, hierarchical **File systems:** Bayou	1
14	**Access Technologies**	Blue Tooth, GPRS, 802.11, CDMA	3
15	**Q0s in Wireless**		1

Nature of Question Paper:

g) 20% marks - Objectives questions

40% marks – Short notes/ Short answers type questions

40% marks – Descriptive type questions

out of 20% marks for objectives questions 10% marks should be assigned to multiple choice questions and remaining 10% be assign to fill in the blanks or answer in one sentence etc. however each faculty may decide nature and type of questions to be set subject to distribution of above percentage of marks

h) One descriptive type question will be compulsory. Paper setter should mention approximate words limit for short note/short answer type questions except diagrammatical and numerical questions.

i) The Components of the Examination will be i) Written Examination for 70%

ii) Small Project for 30% with viva-voce

References:

1. Mobile Communications J. Schiller, Addition Wesley Publication
2. GSM System Engineering A.Mehrotra, Addition Wesley Publication
3. Understanding WAP M. Heijden, M. Taylor, Artech House Publication
4. Mobile IP Charles Perkins, Addition Wesley Publication
5. Adhoc Networks Charles Perkins, Addition Wesley Publication

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Name of the Paper -Distributed Database Management System

No. of Lectures: per week 4hrs

Course No. - ITE1 **Total Lectures: 40**

Total Marks : 100

Semester- V

Objective: To understand distributed databases, data fragmentation, data sites and other techniques used.

Contents of the course

Unit No.	Name of the Topic	Details	Lectures/ Period
1.	**Introduction**	Distributed data processing, What is a DDBMS, Advantages and disadvantages of DDBMS, Problem areas, Overview of database and computer network concepts	3
2.	**Distributed database Management System Architecture**	Transparencies in a distributed DBMS, Distributed DBMS architecture Global directory issues	3
3.	**Distributed Database Design**	Alternative design strategies, Distributed design issues, Fragmentation, Data allocation	3
4.	**Query Processing Issues**	Objectives of query processing, Characterization of query processors, Layers of query processing, Query decomposition, Localization of distributed data	3
5.	**Optimizing Distributed Queries**	Factors governing query optimization, Centralized query optimization, Ordering of fragment queries, Distributed query optimization algorithms	5
6.	**Distributed Object Management**	Object model features, Fundamental object management issues, DOM architectures, Object caching, Object clustering, Object migration, Distributed object base systems	5

7.	**Query Processing In Distributed Object base Systems**	Problems in accessing distributed objects, Distributed object assembly problem, Strategies for distributed object assembly	3
8.	**Transaction Management**	The transaction concept, Goals of transaction management, Characteristics of transactions, Taxonomy of transaction models	3
9.	**Concurrency Control**	Concurrency control in centralized database systems, Concurrency control in DDBs, Distributed concurrency control algorithms, Deadlock management	3
10.	**Reliability**	Reliability issues in DDBs, Types of failures, Reliability techniques Commit protocols, Recovery protocols	3
11	**Transaction Management In Distributed Object base Systems**	Additional demands of object base transactions, Transaction model extensions and alternatives, Classification of correctness criteria, Survey of object base transaction models	3
12.	**Other Topic**	Mobile database systems introduction/concept	3

Nature of Question Paper :

j) 20% marks - Objectives questions

40% marks – Short notes/ Short answers type questions

40% marks – Descriptive type questions

out of 20% marks for objectives questions 10% marks should be assigned to multiple choice questions and remaining 10% be assign to fill in the blanks or answer in one sentence etc. however each faculty may decide nature and type of questions to be set subject to distribution of above percentage of marks

k) One descriptive type question will be compulsory. Paper setter should mention approximate words limit for short note/short answer type questions except diagrammatical and numerical questions.

l) The Components of the Examination will be i) Written Examination for 70%

ii) Small Project for 30% with viva-voce

Note:

While teaching the subject and for evaluation the emphasis should be only on making the concepts clear as they do not have any practical for the paper

Reference Books:

1. M.T. Özsu and P. Valduriez. - Prentice-Hall
   Principles of Distributed Database Systems.
2. M.T. Özsu, U. Dayal and P. Valduriez (editors)
   Distributed Object Management - Morgan-Kaufmann.
3. S. Ceri and G. Pelagatti - McGraw Hill Book Company
   Distributed Databases Principles and Systems
4. A. Dogac, M.T. Özsu, A. Billiris, and T. Sellis (editors) - Springer-Verlag
   Advances in Object-Oriented Database Systems..
5. W. Kim (editor).
   Modern Database Systems - The Object Model, Interoperability, and Beyond.
   ACM Press.

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Name of the Paper: Cyber Law and IT Security

No. of Lectures: per week 4hrs

Course No. - IT E1 **Total Lectures: 40**

Total Marks : 100

Semester- V

Objective: To learn IT security – threats, detection and prevention and Cyber Laws and provisions.

Contents of the course

Unit No.	Name of the Topic	Details	Lectures/ Period
1.	**Object and Scope of the IT Act**	Genesis ,Object , Scope of the Act	4
2.	**Encryption**	Symmetric Cryptography , Asymmetric Cryptography , RSA Algorithm , Public Key Encryption	4
3.	**Digital Signature**	Technology behind Digital Signature , Creating a Digital Signature , Verifying a Digital Signature , Digital Signature and PKI , Digital Signature and the Law	4
4.	**E-Governance and IT Act 2000**	Legal recognition of electronic records, Legal recognition of digital signature, Use of electronic records and digital signatures in Government and its agencies	3
5.	**Certifying Authorities**	Need of Certifying Authority and Power , Appointment, function of Controller, Who can be a Certifying Authority?, Digital Signature Certifications , Generation, Suspension and Revocation Of Digital Signature Certificate	3
6.	**Domain Name Disputes and Trademark Law**	Concept of Domain Names , New Concepts in Trademark Jurisprudence, Cyber squatting, Reverse Hijacking, Meta tags,	2

		Framing, Spamming, Jurisdiction in Trademark Dispute	
7.	**Cyber Regulations Appellate Tribunal**	Establishment & Composition Of Appellate Tribunal , Powers of Adjudicating officer to Award Compensation, Powers of Adjudicating officer to Impose Penalty	4
8.	**The Cyber Crimes (S-65 to S-74)**	Tampering with Computer Source Documents, Hacking with Computer System, Publishing of Information Which is Obscene in Electronic Form, Offences : Breanch of Confidentiality & Privacy Offences : Related to Digital Signature Certificate	3
9.	**Concurrency Control**	Concurrency control in centralized database systems, Concurrency control in DDBs, Distributed concurrency control algorithms, Deadlock management	3
10.	**Reliability**	Reliability issues in DDBs, Types of failures, Reliability techniques Commit protocols, Recovery protocols	3
11	**Transaction Management In Distributed Objectbase Systems**	Additional demands of objectbase transactions, Transaction model extensions and alternatives, Classification of correctness criteria, Survey of objectbase transaction models	3
12.	**Other Topic**	Mobile database systems introduction/concept	3

Nature of Question Paper :

m) 20% marks - Objectives questions

40% marks – Short notes/ Short answers type questions

40% marks – Descriptive type questions

out of 20% marks for objectives questions 10% marks should be assigned to multiple choice questions and remaining 10% be assign to fill in the blanks or answer in one sentence etc. however each faculty may decide nature and type of questions to be set subject to distribution of above percentage of marks

n) One descriptive type question will be compulsory. Paper setter should mention approximate words limit for short note/short answer type questions except diagrammatical and numerical questions.

o) The Components of the Examination will be i) Written Examination for 70%

ii) Small Project for 30% with viva-voce

Reference Books:

1) Cyber Law in India by Farooq Ahmad – Pioneer Books
2) Information Technology Law and Practice by
Vakul Sharma – Universal Law Publishing Co. Pvt. Ltd.
3) The Indian Cyber Law by Suresh T Vishwanathan –
Bharat Law house New Delhi.
4) Hand book of Cyber & E-commerce Laws by P.M. Bakshi & R.K.Suri –
Bharat Law house New Delhi.
5) Guide to Cyber Laws by Rodney D. Ryder –
Wadhwa and Company Nagpur.
6) The Information Technology Act,2000 – Bare Act –
Professional Book Publishers – New Delhi.

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Name of the Paper - Advanced Internet Technology

No. of Lectures: per week 4hrs

Course No. : IT55 **Total Lectures: 40**

Total Marks : 100

Semester- V

Objective : To provide extension to web development skills acquired in 3rd semester, Servlets, JSP and PHP is introduced for student to enhance their skills.

Contents of the course

Unit No.	Name of the Topic	Details	Lectures/ Period
1.	**E- Commerce**	Introduction E-commerce as business need, types advantages, disadvantages, E-commerce Architecture, Internet Payment Systems ,Characteristics 4C payment methods SET protocol for Credit card payment E-Cash, E-check Overview of Smart Card , E-commerce security ,Need of security Encryption: Public, Private & Hybrid Digital signature Authentication	6
2.	**Internet Basics**	Overview of Internet, history, web system architecture, Uniform Resource Locator, HTTP protocol basics, HTTP request & response, Cookies Basics	4
3.	**Servlets**	Introduction, Servlet vs CGI, Servlet API Overview , Servlet Life Cycle, Coding, Writing & running simple servlet, Generic servlet, HTTPServlet , ServletConfig, ServletContext, Writing servlet to handle Get & Post methods, reading use	8

		request data Session tracking in servlets, Servlets & JDBC. Writing threadsafe servlet Note: Apache HTTP server is used at server side.	
4.	**JSP**	Why JSP?,JSP Directives, Writing simple JSP page, Scripting Elements, Default Objects in JSP, JSP Actions, Managing Sessions using JSP, JSP with beans, JSP & Databases, Error Handling in JSP, Introduction to custom tag Note: Apache HTTP server is used at server side.	8
5.	**PHP**	Obtaining, Installing & Configuring PHP , Introduction, PHP & web server Architecture, Model Overview of PHP Capabilities, PHP HTML embedding tags & syntax, Simple script examples, PHP & HTTP Environment variables, PHP Language Core Variables, constants, data types PHP: operators, flow control & loops, Arrays, string, functions, Include & require statements, Simple File & Directory access operations, Error handling, Processing HTML form using GET, POST, SESSION, COOKIE variables, Sending E-mail , Intro. Of Object-oriented PHP, Database Operations with PHP, Built in functions, Connecting to My-SQL (or any other database), Selecting a db, building & Sending Query, retrieving, updating & inserting data Note: Apache HTTP server is used at server side.	14

Nature of Question Paper:

p) 20% marks - Objectives questions

40% marks – Short notes/ Short answers type questions

40% marks – Descriptive type questions

out of 20% marks for objectives questions 10% marks should be assigned to multiple choice questions and remaining 10% be assign to fill in the blanks or answer in one sentence etc. however each faculty may decide nature and type of questions to be set subject to distribution of above percentage of marks

q) One descriptive type question will be compulsory. Paper setter should mention approximate words limit for short note/short answer type questions except diagrammatical and numerical questions.

r) The Components of the Examination will be i) Written Examination for 70%

ii) Small Project for 30% with viva-voce

Reference Books:

1. E-Commerce Fundamentals & Application — Wiley publications
2. Programming the World Wide Web — Robert W. Sebesta
3. Web enabled commercial application development using HTML, DHTML, JavaScript, PERL-CGI — Ivan Bayross.
4. Inside Servlets — Dustine R. Callway
5. Developing Java Servlets — James Goodwill
6. Professional JSP — Wrox press
7. Complete reference JSP
8. Java Server Programming Vol-I — Wrox press.
9. Beginning PHP5
10. Complete Ref. PHP
11. Beginning PHP, Apache, MySql web development

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Name of the Paper: **Mini Project (Using AIT)**

No. of Lectures: per week 4hrs

Course No. **IT51P** **Total Practical: 20**

Total Marks : 50

Semester-V

Objective : The objective of this mini project is to gear up student for preparation of final project in Semester-VI.

The objective of this mini project is to gear up student for preparation of final project in Semester-VI. Student will select individually Commercial or Technical project based on Application Development Technologies learnt in Semester IV. Each student will have to prepare proper documentation consisting of SRS, Modeling Techniques, Development Strategies and Implementation and Testing Strategies. Student may use any Design Methodologies such as SSAD, OOAD and UML etc. This is a documentation project only.
The project work will be presented by student using Power Point Presentation Tool to the panel of internal teachers appointed by the Director of the concerned Institute/College. The Institute may appoint external expert from industry or academics if it feels so. The students will be assessed internally by such panel for this project.

Solapur University, Solapur

Revised New Syllabus

MCA-III

Name of the Paper– Application Development Technologies Lab

No. of Lectures: per week 4hrs

Course No. - IT52L **Total Practical: 20**

Total Marks : 50

Semester- V

Objective: To provide hands on practice of technologies learnt in .Net course

At least 25 Assignments based on C# and ASP.Net and VB.net concepts should be covered.

Nature of Evaluation for Lab work:

a) 20% marks – Based on laboratory work

40% marks – Programming questions and actual practical exam

40% marks – viva voce exam based on lab assignments

Semester VI

Code: IT61P Total Marks: 500

General Instruction Regarding Preparation Of Project Report For MCA-III SEM-VI

TYPING

(a) The typing shall be standard 12 pts in double spaced using black ink only
(b) Margins must be Left 2 inches Right 1.5 inches
Top 2 inches Bottom 1.5 inches
(c) Paper A4 size Bond Paper

COPIES

Two hard-bound copies (Black Rexine with Golden Embossing as per format displayed herewith) One original and one clean Xerox Copy.

FORMAT FOR TITLE PAGE AND FOR EMBOSSING

PROJECT REPORT
ON
NAME OF THE SYSTEM
NAME OF THE COMPANY
BY
NAME OF STUDENT
SOLAPUR UNIVERSITY SOLAPUR
MASTER IN COMPUTER APPLICATION
INSTITUTE……..
SOLAPUR
20010-2011

The Guidelines regarding the documentation and scope of project are mentioned here below:

MCA-III SEM-VI (COMMERCIAL SYSTEM PROJECTS)

Project Report should be submitted in following format for Commercial Application Projects viz. Payroll, Sales, Purchase, Inventory, Book Shop, Examination system etc.Where VB, Access, Oracle, ASP and Java is used.

2 Blank Pages at beginning
Title Page
Certificate from Company
Certificate from Guide
Acknowledgement
Index with printed Page Numbers
CHAPTER 1 : INTRODUCTION
1.1 Company Profile
1.2 Existing System and Need for System
1.3 Scope of Work
1.4 Operating Environment – Hardware and Software
CHAPTER 2 : PROPOSED SYSTEM
2.1 Proposed System
2.2 Objectives of System
2.3 User Requirements
CHAPTER 3 : ANALYSIS & DESIGN
3.1 Data Flow Diagram (DFD)
3.2 Functional Decomposition Diagram (FDD)
3.3 Entity Relationship Diagram (ERD)
3.4 Data Dictionary
3.5 Table Design
3.6 Code Design
3.7 Menu Tree
3.8 Menu Screens
3.9 Input Screens
3.10 Report Formats
3.11 Test Procedures and Implementation
CHAPTER 4 : USER MANUAL
4.1 User Manual
4.2 Operations Manual / Menu Explanation
4.3 Forms and Report Specifications
Drawbacks and Limitations
Proposed Enhancements
Conclusion
Bibliography
ANNEXURES :
ANNEXURE 1 : INPUT FORMS WITH DATA
Project report should be submitted in following format for project using OOAD, Embedded System, WAP and other technologies and Web Deployed Systems where C, C++, J2EE, .NET, OOAD and JAVA, SDK's, API's are used.

ANNEXURE 2 : OUTPUT REPORTS WITH DATA
ANNEXURE 3 : SAMPLE CODE
2 Blank Pages at the end.

MCA-III SEM VI * TECHNICAL PROJECTS ********

2 Blank Pages at beginning

Title Page

Certificate from Company

Certificate from Guide

Acknowledgement

Index with printed Page Numbers

CHAPTER 1 : INTRODUCTION

1.1 Company Profile
1.2 Existing System and Need for System
1.3 Scope of Work
1.4 Operating Environment – Hardware and Software
1.5 Detail Description of Technology Used

CHAPTER 2 : PROPOSED SYSTEM

2.1 Proposed System
2.2 Objectives of System
2.3 User Requirements

CHAPTER 3 : ANALYSIS & DESIGN

3.1 Object Diagram
3.2 Class Diagram
3.3 Use Case Diagrams
3.4 Module Hierarchy Diagram
3.5 Component Diagram
3.6 Deployment Diagram (in case of Web Deployment)
3.7 Module Specifications
3.8 Interface Diagram (in case of WAP and Embedded Systems)
3.9 Web Site Map Diagram (in case of Web Site)
3.10 User Interface Design (Screens etc.)
3.11 Table specifications (in case back end is a database)
3.12 Test Procedures and Implementation

CHAPTER 4 : USER MANUAL

4.1 User Manual
4.2 Operations Manual / Menu Explanation
4.3 Program Specifications / Flow Charts

Drawbacks and Limitations

Proposed Enhancements

Conclusion

Bibliography

ANNEXURES :

ANNEXURE 1 : USER INTERFACE SCREENS

ANNEXURE 2 : OUTPUT REPORTS WITH DATA (if any)

ANNEXURE 3 : SAMPLE PROGRAM CODE (which will prove sufficient development is done by the student)

2 Blank Pages at the end.