

**MANONMANIAM SUNDARANAR UNIVERSITY
TIRUNELVELI**

UG COURSES – AFFILIATED COLLEGES

**B.Sc. Software Engineering
(Choice Based Credit System)**

(with effect from the academic year 2016-2017 onwards)

(44th SCAA meeting held on 30.05.2016)

Sem.	Pt. I/II/ III/ IV/ V	Sub No.	Subject status	Subject Title	Hrs/ week	Cre- dits	Marks				
							Maximum			Passing minimum	
							Int.	Ext.	Tot.	Ext.	Tot.
III	III	15	Core – 3	WEB TECHNOLOGY	6	4	25	75	100	30	40
		16	Core – 4	JAVA PROGRAMMING	6	4	25	75	100	30	40
		17	Major Practical – III	JAVA PROGRAMMING	6	4	50	50	100	20	40
		18	Allied - III	COMPUTER ARCHITECTURE	4	4	25	75	100	30	40
		19	Allied Practical – III	SCRIPTING LANGUAGES	2	(Continue to the next Semester)					
IV	20	Skilled Based Practical	PYTHON / SCILAB	4 (1T+ 3P)	2	25	75	100	30	40	
IV	21	Non-Major Elective - I	(A) INTRODUCTION TO COMPUTERS (OR) (B) PROGRAMMING IN C	2	2	25	75	100	30	40	
SUB- TOTAL					30	20					

Sem	Pt I/II/ III/ IV/V	Su b No .	Subject status	Subject Title	Hrs/ wee k	Cre - dits	Marks				
							Maximum			Passing minimum	
							Int.	Ext.	Tot.	Ext.	Tot.
IV	III	22	Core - 5	DATA STRUCTURES	6	4	25	75	100	30	40
	III	23	Major Practical - IV	DATA STRUCTURES LAB	6	5	50	50	100	20	40
		24	Major Elective-I (Select any one)	1. MULTIMEDIA APPLICATIONS/ 2. EMBEDDED SYSTEM / 3. OPEN SOURCE TECHNOLOGIES	6	4	25	75	100	30	40
		25	Allied - IV	E-COMMERCE	4	4	25	75	100	30	40
		26	Practical - IV	SCRIPTING LANGUAGES	2	4	50	50	100	20	40
	IV	27	Skilled Based Practical - II	PHP / XML	4	2	25	75	100	30	40
	IV	28	Non Major Elective – II	(A) BASIC ROGRAMMING DESIGN (B) FUNDA MENTALS OF INTERNET		2	25	75	100	30	40
	V		Extension Activity	NCC,NSS, YRC, YWF		1					
	SUB- TOTAL				30	26					

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)/
Semester-III/Ppr.no.15/ Core - 3**

Web Technology

Unit I

Introduction: What is the Internet-History of Internet-Internet Services and Accessibility-Uses of the Internet-Protocols-Web concepts-The client/server model at the web-Retrieving data from the web. **Internet Protocols:** Introduction – Internet protocols-transmission control protocols-User Datagram protocols - Host Names - Internet applications and application protocols.

Unit II

HTML: Introduction-SGML-DTD-DTD Elements- attributes-outline of an HTML document-Head section-Body section- HTML Tags - HTML forms. **Dynamic HTML:** Introduction- cascading style sheets-DHTML Document object model and collections-Event handling - filters and transitions.

Unit III

JavaScript: Introduction-language elements-objects of JavaScript-other objects- Arrays. **VBScript:** Introduction-embedding VBScript code in an HTML document- comments-variables-operators-procedures-conditional statements-looping constructs- objects & VBScripts-Cookies.

Unit IV

Extensible Mark-Up Language (XML): Syntax of the XML Document – XML Attributes – XML Validation – XML DTD – Building blocks of XML Documents – XSL - XSL Transformation – XML Schema. **Common Gateway Interface (CGI):** Server- Browser interaction –CGI Script Structure – CGI Environment variables - Processing forms- CGI security issues.

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)/
Semester-III/Ppr.no.15/ Core - 3**

Unit V

Servlets: Advantages of Servlets over CGI – Installing Servlets – The Servlet Life Cycle – Servlet API – A simple Servlet – Handling HTTP GET requests - Handling HTTP POST requests – Cookies – Session Tracking – Multi-tier Applications using Database Connectivity – Servlet Chaining. **Java Server Pages (JSP):** Advantages of JSP – Components of JSP – Reading Request Information – Retrieving the Data Posted from a HTML file to a JSP file – JSP Sessions – Cookies – Disabling Sessions. **Active Server Pages (ASP):** Advantages of using ASP – Processing of ASP Scripts with Forms – Variables and Constructs – Subroutines – Include/Virtual – ASP Cookies – ASP Objects – Connecting to data with ASP..

Text Book:

Web Technology A Developer's Perspective, N.P.Gopalan, J. Akilandeswari ,PHI

Reference Book:

1. Web Technology and Design, C.Xavier, New Age International Publishers
2. Web Technologies TCP/IP Architecture and Java Programming Second Edition, Achyut S. Godbole & Atul Kahate, Tata McGraw Hill
3. Web Technology, S. Padma Priya, SCITECH Publications (India)Pvt. Ltd

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)/
Semester-III/Ppr.no.16/Core – 4**

JAVA PROGRAMMING

UNIT I

Data Types, Variables and Arrays: Primary types – Integers – Floating point types – Characters – Booleans – A Closer Look at Literals – Variables – Type Conversion and Casting – Automatic type Promotion in Expressions - One Dimensional Arrays– Multi Dimensional Arrays. **Operators:** Arithmetic Operators – Bitwise operators – Relational Operators – Boolean Logical Operators – Assignment Operator – Conditional Operator – Operator Precedence-Using parentheses.

UNIT II

Introducing Classes: Class Fundamentals – Declaring objects- Assigning object Reference variables- Introducing Methods- Constructors-Garbage collection – Finalize() Method **A Closer Look at Methods and classes:** Overloading Methods-Using objects as parameters-Argument passing –Returning objects- Recursion-Introducing Access control – understanding static –Introducing final – Nested and Inner classes- String class- Using command line arguments. **Inheritance:** Inheritance Basics –Using super- creating Multilevel Hierarchy - Method overriding –Dynamic Method Dispatch –Using Abstract class –Using final with inheritance-The object class.

UNIT III

Packages and interfaces: Packages –Access Protection – Importing packages-Interfaces. **Exception Handling:** Introduction- Exception Types – Uncaught Exceptions- Using try and catch – Multiple catch clauses –Nested try statements- throw – throws-finally. **Multithreaded programming :** Java Thread Model –Main Thread –Creating a Thread –Creating Multiple Threads – Using is Alive() and join() –Thread priorities

UNIT IV

The Applet class: Applet Basics – Applet Architecture –Applet Skeleton- Applet Display method –Requesting Repainting – HTML APPLET tag- Passing Parameters to Applet. **Event Handling:** Event Handling Mechanisms –Delegation Event Model –Event classes(The Action Event ,Item Event , Key Event, Mouse Event) – Sources of Events - Event Listener Interfaces(Action Listener, Item Listener, Key Listener, Mouse Listener).

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)/
Semester-III/Ppr.no.16/Core – 4**

UNIT V

Introducing the AWT: AWT Classes – Window fundamentals – working with Frame Windows –working with Graphics– Working with color – Working with Fonts. **Using AWT Controls:** Controls Fundamentals – Labels – Using Buttons –Applying check Boxes – Check Box group – Choice Controls – Using a Text field – Using a Text Area – Understanding Layout Managers [Flow Layout Only] – Menu Bars and Menus.

Text Book:

Java, The Complete Reference 8/e , Herbert Schildt, TMH

Reference Book:

1. Programming with Java –C.Muthu
2. Java Programming A Practical Approach, C.Xavier, TMH
3. Programming in Java, Sachin Malhotra, Saurabh Choudhary, OXFORD University Press
4. Programming with Java a primer 3/E E.BALAGURUSWAMY
5. Core Java, Mahesh P. Matha, PHI Learning Private Limited

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)/
Semester-III/Ppr.no.17/ Major Practical - III**

JAVA PRACTICAL LIST

It is compulsory to complete all the exercises given in the list in the stipulated time.

1. Define a class called Student with the attributes name, reg_number and marks obtained in four subjects(m1,m2,m3,m4). Write a suitable constructor and methods to find the total mark obtained by the student and display the details of the student.
2. Write a Java program to find the area of a square, rectangle and triangle by
 - (i) Overloading Constructor
 - (ii) Overloading Method.
3. Write a java program to add two complex numbers.
[Use passing object as argument and return object].
4. Define a class called Student_super with data members name, roll number and age. Write a suitable constructor and a method output () to display the details. Derive another class Student from Student_super with data members height and weight. Write a constructor and a method output () to display the details which overrides the super class method output().[Apply method Overriding concept].
5. Write a java program to create a package —Employee which contains the classes Emp and Memp. The data members of Emp are name, emp_id, category and Bpay. write suitable constructors and methods to compute net pay of the employee. The class Memp contains the main method.
6. Write a java program to create an interface called Demo, which contains a double type constant, and a method called area () with one double type argument. Implement the interface to find the area of a circle.
7. Write a java program to create a thread using Thread class.
8. Write a java program to Design a calculator to perform only addition and division. It must contains three Buttons with labels +, / and =, and a TextField to get input and display the result.

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)/
Semester-III/Ppr.no.17/ Major Practical - III**

JAVA PRACTICAL LIST

9. Create an applet with four Checkboxes with labels MARUTI-800, ZEN, ALTO and ESTEEM and a Text area object. The program must display the details of the car while clicking a particular Checkbox.
10. Write a Java program, which creates a window with a check box group with boxes for the colors, Violet, Indigo, Yellow, Orange, Red, Blue, and Green. When the button is selected the background color must change accordingly.
11. Write a Java program to throw the following exception,
 - 1) Negative Array Size
 - 2) Array Index out of Bounds
12. Write a java program to create a file menu with options New, Save and Close, Edit menu with option cut, copy and paste.

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)
Semester-III/Ppr.no.18/Allied - III**

COMPUTER ARCHITECTURE

UNIT I

Basic Computer Organisation And Design : Instruction codes - Computer Registers - Computer Instructions - Timing and Control - Instruction Cycle - Control Memory-Address Sequencing

UNIT II

Central Processing Unit : General Register Organization – Stack Organization – Instruction Formats – Addressing Modes – Data transfer and manipulation – Program Control.

UNIT III

Computer Arithmetic : Hardware Implementation and Algorithm for Addition, Subtraction, Multiplication, Division-Booth Multiplication Algorithm-Floating Point Arithmetic

UNIT IV

Input Output Organization: Input – Output Interface – Asynchronous data transfer – Modes of transfer – Priority Interrupt – Direct Memory Access (DMA). **Memory Organisation:** Memory Hierarchy - Main memory - Auxillary memory - Associative memory - Cache memory - Virtual memory.

Unit V

Advanced Processing: RISC, CISC Characteristics- Parallel Processing-Pipe Lining-Vector Processing-Array Processor-Multi Processors-Interconnections Structures

Text Book:

Computer system Architecture - by Morris Mano, Third Edition. P.H.I Private Limited.

Reference Books:

1. Computer System Architecture P.V.S. Rao PHI
2. Nirmala Sharma, "Computer Architecture", First Edition,2009,University Science Press
3. Nicholas Carter, "Computer Architecture" ,2006, TMH Publication.

MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)

Semester-III/Ppr.no.19/Allied Practical - III

Scripting Languages

(Java/ VB Script/HTML)

It is compulsory to complete all the exercises given in the list in the stipulated time.

1. Create a home page using HTML with neat formatting, different fonts and colors.
2. Create a website using internal links and images.
3. Design a calendar using table tag.
4. Create a HTML document to display a list of five flowers and link each one to another document displaying brief description of the flower, Add pictures wherever possible.
5. Write an HTML code to display a list of 5 cars in a frame, Link each one to a brief description in second frame. The left frame should display the list and the right frame should display the paragraph about the frame.
6. Using CSS, design a website.

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)
Semester-III/Ppr.no.20 (A)/Skilled Based - 1 (A)**

Practical List – PYTHON

It is compulsory to complete all the exercises given in the list in the stipulated time.

1. Write a menu driven program to convert the given temperature from Fahrenheit to Celsius and vice versa depending upon user's choice.
2. Write a menu-driven program, using user-defined functions to find the area of rectangle, square, circle and triangle by accepting suitable input parameters from user.
3. WAP to display the first n terms of Fibonacci series.
4. WAP to find factorial of the given number.
5. WAP to find sum of the following series for n terms: $1 - 2/2! + 3/3! - \dots - n/n!$
6. WAP to calculate the sum and product of two compatible matrices.
7. WAP to read n integers and display them as a histogram.
8. WAP to display sine, cosine, polynomial and exponential curves.
9. WAP to plot a graph of people with pulse rate p vs. height h. The values of p and h are to be entered by the user.
10. Explore String functions.
11. Creating a CSV File based on user input.
12. Reading a CSV File already created and display the contents

Reference Book:

1. Python in easy steps - Mike McGrath - Mc Graw Hill publications
2. Introduction to computation and programming using Python - John V. Guttag - PHI
3. Chun, J Wesley, Core Python Programming, 2 nd Edition, Pearson, 2007 Reprint 2010.

MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)
Semester-III/Ppr.no.20(B)/Skill Based- I (B)

SCILAB

It is compulsory to complete all the exercises given in the list in the stipulated time.

1. Demonstrate scilab as a calculator(at least 15 calculations)
2. Demonstrate elementary mathematical functions(at least 15 functions)
3. Demonstrate statistics methods(at least 10 functions)
4. Demonstrate matrix operations(at least 5 operations)
5. Demonstrate using functions - arrange an array in ascending order
6. Demonstrate using functions - convert decimal to binary(without using built-in function)
7. Demonstrate plotting few curves defined by $f(x)$ (at least 3 functions)
8. Demonstrate plotting a histogram with proper labels (at least 3 histograms)
9. Demonstrate plotting bar graph with proper labels (at least 3 graphs)
10. Read from a file and plot any graph

References:

1. Scilab - A Hands on Introduction - Satish Annigeri - ebook(pdf)
2. <https://www.scilab.org/>
3. http://www.openeering.com/sites/default/files/First_Steps_0.pdf
4. http://www.openeering.com/sites/default/files/Scilab_calculator.pdf
5. https://www.scilab.org/content/download/849/7901/file/Scilab_beginners.pdf
6. <https://www.scilab.org/content/download/247/1702/file/introscilab.pdf>
7. <http://www.ee.iitm.ac.in/~hst/scilab/manual.pdf>

MSU/2016-17/UG-Colleges/Part-IV (B.Sc. Software Engineering)

Semester-III/Ppr.no.21(A)/Non-Major Elective- 1 (A)

Introduction to Computers

UNIT I

Computer Preliminaries: Introduction – Characteristics of a Computer – Generations of Computer – Applications of Computer – Architecture of a Computer – Computer memory – Classification of Computers - Concepts of Hardware and Software.

UNIT II

Peripheral Devices: Input Devices – Keyboard, Pointing Devices, Scanning Devices, Audio and Video input devices. Output Devices – Dot matrix printer, Ink-jet Printer, Laser Printer, Drum Plotter, Flatbed Plotter, Monitors, Projectors, Speaker, Headphone. Storage devices –Hard disk, Optical Storage devices, Solid State devices.

UNIT III

Operating Systems: Introduction – types of User Interface – Functions of Operating System – Getting started with Windows – Windows Explorer – Windows setting – Creating Shortcuts – Windows Accessories.

UNIT IV

Elements of Word Processing : Introduction to Microsoft Office – MS Word – Creating, Opening and Saving a Document – Menu Bar – Formatting the text –View Menu – Insert menu – Tools Menu – Table Manipulation – Window menu – Printing a document.

UNIT V

Computer Networks : Introduction to Computer communication – Client server architecture – Networking components - Uses of Network – Common types of network – Network topology.

Text Book:

Computer Basics to Advancements - by P. Velmani and V. Lakshmi Praba, Chess Educational Publishers, Chennai.

Reference Book:

1. Introduction to Information Technology ITL Education Solutions Limited, Pearson Education.
2. Introduction to Computers, Peter Norton Tata McGraw Hill.
3. Fundamentals of Information Technology By Alexis Leon & Mathews Leon
Vikas publication – New Delhi

MSU/2016-17/UG-Colleges/Part-IV (B.Sc. Software Engineering)

Semester-III/Ppr.no.21 (B)/ Non-Major Elective- I (B)

Programming in C

Unit I

C Declarations:- Introduction – Character Set – C tokens – Keywords and Identifiers – Identifiers – Constants – Variables – Data types – Declaration of Variables – initializing variables – dynamic initialization – type modifiers – type conversion – constant and volatile variables. **Operators and Expressions:-** Introduction – Arithmetic Operators – Relational Operators – Logical Operators – Assignment Operators – Increment and Decrement Operators – Conditional Operator – Bitwise Operators – Special Operators – Arithmetic Expressions – Evaluation of Expressions – Operator Precedence.

Unit II

Input and Output in C: Introduction – Formatted Functions – Flags, widths and Precision with Format String – Unformatted Functions – Commonly used Library functions. **Decision Statements :** Introduction – Simple IF statement – The IF...Else Statement – Nesting of IF...Else Statements – The ELSE IF ladder – The Break Statement – The Continue Statement – The Goto Statement – The Switch Statement.

Unit III

Loop Control:- Introduction –The WHILE Statement – The DO Statement – The FOR statement – Nested FOR Loops. **Arrays :-** Introduction – One-dimensional arrays – Declaration of One-dimensional arrays – Initialization of One-dimensional arrays – Array terminology -Two-dimensional arrays – Initialization of Two-dimensional arrays.

Unit IV

Strings and Standard functions:- Introduction – Declaring and Initializing String Variables – Display of strings in different formats – String Standard functions – String Conversion Functions. **Unit V**

Functions:- Introduction – Basics of a function - Function definition – The Return statement Types of functions – Call by Value and Reference – Function as an argument – Function with operators – function and decision statements – function and loop statements – functions with arrays.

Text Book:

Programming in C – 3th Edition by Ashok Kamthane – Pearson Education

Reference Book:

1. Computer Basics and C Programming by V. Rajaraman – PHI Learning Private Limited
2. Programming with C, Third Edition, Byron S Gottfried, Tata McGraw Hill Education Private Limited.

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)
Semester-IV/Ppr.no.22/Core - 5**

DATA STRUCTURES

Unit I

Basic Concepts:- Algorithm specification – Data Abstraction – Performance Analysis. **Arrays and Structures:-** Arrays: Abstract data type – Polynomials – Sparse Matrices – Representation of Multidimensional Arrays.

Unit II

Stacks and Queues:- Stacks – Queues – Evaluation of Expressions – Multiple Stacks and Queues. **Linked Lists:-** Singly Linked Lists and Chains – Linked Stacks and Queues – Polynomials: Polynomial Representation – Adding Polynomials. – Additional List Operations: Operations for Circularly Linked Lists. – Sparse Matrices: Sparse Matrix Representation. – Doubly Linked Lists.

Unit III

Trees:- Introduction – Binary Trees – Binary Tree Traversals: Inorder Traversal – Preorder Traversal – Postorder Traversal – Iterative Inorder Traversal. - Threaded Binary Trees – Heaps – Binary Search Trees – Selection Trees – Forests: Transforming a Forest into a Binary Tree. – Representation of Disjoint sets: Introduction – Union and Find operations. – Counting Binary Trees : Distinct Binary Trees.

Unit IV

Graphs: - The Graph Abstract Data Type-Elementary Graph Operations – Minimum Cost Spanning Trees: Kruskal’s Algorithm – Prim’s Algorithm. – Shortest Paths and Transitive Closure: Single Source/ All Destination: Nonnegative Edge Costs – Single Source / All Destination: General Weights – All Pairs Shortest Paths. – Activity Network: Activity-on-Vertex(AOV) Networks.

Unit V

Sorting:- Motivation – Insertion Sort – Quick Sort – Merge Sort: Recursive Merge Sort. – Heap Sort – External Sorting: Introduction – k-way Merging. **Hashing:-** Static Hashing: Hash Tables.

Text Book:

Fundamentals of Data Structures in C by Ellis Horowitz, Sartaj Sahni, Susan Anderson-Freed – Second Edition – Universities Press (India) Private Limited.

Reference Books:

1. Data Structures Using C, Second Edition by Reema Thareja – Oxford University Press
2. Data Structures by Dr N Jeya Prakash – Anuradha Publications

MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)

Semester-IV/ Ppr.no.23/Major Practical – 4

Data Structures Lab

It is compulsory to complete all the exercises given in the list in the stipulated time.

(C / C++ / Java)

1. Merging two unsorted Arrays.
2. Inserting a node after a given node and Deleting a given node in a Singly Linked List.
3. Evaluating Arithmetic expression using Postfix notation.
4. Implementation of Circular Queues- Add and delete.
5. Implementation of Binary Tree Traversals using recursion.
 - a) Pre-order
 - b) In-order
 - c) Post-Order
6. Implementation of Breadth First Search algorithm.
7. Implementation of Depth First Search algorithm.
8. Search an element in a list using Binary Search
9. Implementation of Merge Sort
10. Implementation of Quick Sort

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)
Semester - IV/Ppr.no.24 (A) / Major Elective- 1**

Multimedia Applications

Unit I

Introduction: Objectives – History of Multimedia – Its market – Content copyright – Resources for multimedia developers – Types of produces – Evaluation – Hardware Architecture – OS and Software – Multimedia Architecture – Software library – Drivers.

Unit II

Text and Graphics : Elements of Text – Text Data files – Using text in Multimedia Application – Hypertext – Elements of Graphics – Images and color – Graphics files and Application formats – Creating images for multimedia use –Using graphics in Application.

Unit III

Digital Audio and Video : Characteristics of sound and Digital audio – Digital Audio systems – MIDI – Audio file formats – Using Audio in Multimedia Applications – Audio for content – Background as video – Characteristics of digital video – digital video data sizing 0 Video capture and playback systems –computer animation.

Unit IV

Product design and Authoring tools: Building blocks – classes of products – Content organizational strategies – story boarding – Multimedia tool selection – Tool feature – categories of Authoring tools – selecting the right authoring paradigm.

Unit V

Multimedia and Internet : Internet – HTML and web authoring – Multimedia considerations for Internet – Design considerations for web pages.

Text Book :

Multimedia Technology and Applications – David Hillman-Galgotia Publications pvt. Ltd, 1998.

Reference Books :

1. Multimedia making it work by Tay Vaughan TMH, 1997
2. Computer Graphics Multimedia and Animation - Malay K. Pakhira PHI , New Delhi - Second edition
3. Principles of Multimedia - Ranjan Parekh - TMGH, New Delhi - Twelfth Reprint,
4. Computer Graphics and Multimedia - Anirban Mukhapathyay, Aruop Chattopadhyay - Vikas Publishing Ltd - Second Edition

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)
Semester-IV/Ppr.no.24(B)/Major Elective- 2**

Embedded System

Unit I

Introduction to embedded System – Examples of Embedded Systems – Typical Hardware – Gates – Times Diagram – Memory.

Unit II

Advanced Hardware Fundamentals: Microprocessors Buses – DMA – Interrupts – Built in on the microprocessor – Conventions used on Schematic – Schematic Interrupts Microprocessor Architecture – Interrupt Basics – Shared Data Problem – Interrupt Latency.

Unit III

8051 Micro Controllers: Micro Controllers and Embedded Processors – Overview of 8051 Family – Block Diagram – PIN Description.

Unit IV:

Software Development: Round-Robin, Round Robin with interrupts, Function-Queue-Scheduling Architecture, Algorithms, Introduction to Assembler, Compiler, Cross Compilers and IDE, Recursion, Debugging Strategies, Simulators.

Unit V:

RTOS: Task and Task States, Task and Data, Semaphores and Shared Data. OS Services – Message Queues – Timer Function – Events – Memory Management – Interrupt Routines in RTOS Environment – Basic Design using RTOS.

Text Book:

David E.Simson, An Embedded Software Primer, Pearson Education Asia, 2001.

Reference Books:

1. The 8051 Microcontrollers and Embedded Systems using Assembly and C, Muhammed Ali Mazidi, Rolin D.MCKinlay, Pearson Education.
2. Raj Kamal, Embedded Systems Architecture, Programming and Design, TMH, 2003.

MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)

Semester-IV/Ppr.no.24(C) / Major Elective- 3

Open Source Technologies

Unit I

Introduction : Open Source, Free Software, Free Software vs. Open Source software, Public Domain Software, FOSS does not mean no cost. History : BSD, The Free Software Foundation and the GNU Project.

Unit II

Open Source History, Initiatives, Principle and methodologies. Philosophy : Software Freedom, Open Source Development Model Licences and Patents: What Is A License, Important FOSS Licenses (Apache,BSD,GPL, LGPL), copyrights and copylefts, Patents Economics of FOSS : Zero Marginal Cost, Income-generation opportunities, Problems with traditional commercial software, Internationalization

Unit III

Community Building: Importance of Communities in Open Source Movement-JBoss Community- Starting and Maintaining an Open Source Project - Open Source Hardware

Unit IV

Apache HTTP Server and its flavors- WAMP server (Windows, Apache, MySQL, PHP)- Apache, MySQL, PHP, JAVA as development platform.

Unit V

Open source vs. closed source Open source government, Open source ethics. Social and Financial impacts of open source technology, Shared software, Shared source.

REFERENCE

1. PDF file available in web sites
2. https://en.wikibooks.org/wiki/Open_Source

**MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)
Semester-IV/Ppr.no.25/Allied - 4**

E-Commerce

Unit I

History of E-Commerce : Electronic Commerce - Early Business Information Interchange Efforts – Emergence of the Internet – Emergence of the World Wide Web – The Milestones - Advantages of E-commerce – Disadvantages of E-Commerce - Online Extension of a BAM Model – Transition to E-Commerce in India - The Internet and India. **Business Models for E-Commerce** : Social Networking and Facebook – Business Model – E-business Models Based on the Relationship of Transaction Parties – E-business Models Based on the Relationship of Transaction Types.

Unit II

Enabling Technologies of the World Wide Web : World Wide Web – Internet Client-Server Applications - Networks and Internets - Software Agents – Internet Standards and Specifications – Internet Service Providers(ISP) – Hypertext - JavaScripts - XML.

Unit III

e-Marketing - Google – Traditional Marketing – Identifying Web Presence Goals - The Browsing Behaviour Model – Online Marketing – E-advertising – Internet Marketing Trends – Target Markets – E-branding – Marketing strategies.

Unit IV

e-Security : Information System Security – Security on the Internet – E-business Risk Management Issues – Information Security Environments in India.

Unit V

e-Payment Systems : E-banking at ICICI Bank – Main Concerns in Internet Banking - Digital Payment Requirements – Digital Token-based e-Payment Systems – Classification of New Payment Systems - Properties of Electronic Cash(e-cash) – Cheque Payment Systems on the Internet – Risk and e-Payment Systems – Designing e-Payment Systems – Digital Signature – Online Financial Services in India.

TEXT BOOK:

1. P.T.Joseph , S . J, E-Commerce – An Indian Perspective, PHI Learning Pvt Ltd.,2013

Reference Books:

- 1 CSV Murthy, E-Commerce – Concepts Models Strategies, Himalaya Publishing House
2. Bharat Bhasker, Electronic Commerce Framework, Technologies and application, Tata Mcgraw Hill.

MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)

Semester-IV/Ppr.no.26/Allied Practical - 4

Scripting Languages

It is compulsory to complete all the exercises given in the list in the stipulated time.

1. Create a simple HTML Form covering major form elements.
2. Create a Navigation bar (with dropdown) with CSS.
3. Embed Audio and Video in an HTML page.
4. Rotate an element using CSS.
5. Build a simple quiz.

MSU/2016-17/UG-Colleges/Part-III (B.Sc. Software Engineering)

Semester-IV/ Ppr.no.27(A)/Skill Based - II (A)

Practical List – PHP

It is compulsory to complete all the exercises given in the list in the stipulated time.

1. Create a simple HTML form and accept the user name and display the name through PHP echo statement.
2. Write a PHP script to redirect a user to a different page.
3. Write a PHP function to test whether a number is greater than 30, 20 or 10 using ternary operator.
4. Create a PHP script which display the capital and country name from the given array. Sort the list by the name of the country
5. Write a PHP script to calculate and display average temperature, five lowest and highest temperatures.
6. Create a script using a for loop to add all the integers between 0 and 30 and display the total.
7. Write a PHP script using nested for loop that creates a chess board.
8. Write a PHP function that checks if a string is all lower case.
9. Write a PHP script to calculate the difference between two dates.
10. Write a PHP script to display time in a specified time zone.

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Semester-IV/Ppr.no.27(B)/Skill Based – II (B)

Practical List – XML

It is compulsory to complete all the exercises given in the list in the stipulated time.

1. Create your own XML markup, a markup describing a simple letter.
2. Create a CSS file intended to render the file created in a previous exercise
3. Use XSLT to transform the file created in a exercise1 to plain text file
4. Transform an XML document into XHTML
5. Design a simple homepage with XHTML and CSS files.
6. Create a sample XML document containing information about a few hospitals, patients, and doctors.

Reference

Getting Started with XML: A Manual and Workshop by Eric Lease Morgan.

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Semester-IV/Ppr.no.28(A) /Non Major Elective – II (A)**

Basic Program Design

Unit I

Computer Program: Introduction – Developing a program – Algorithm – Flowchart – Decision Tables.

Unit II

Program Testing and Debugging – Program Documentation – Program Paradigms: Unstructured programming, Structured programming and Object Oriented Programming – Characteristics of a Good Programming.

Unit III

Computer Languages: Evolution Programming Languages – Classification of Programming Languages – Generation of Programming Languages – Features of Good Programming language.

Unit IV

Computer Software: Software Definition – Relationship between Software and Hardware - Software Categories : System Software and Application Software – Terminology Software Firmware, Liveware, Freeware, Public Domain Software, Shareware, Commercial Software and Proprietary Software.

Unit V

Evolution of Internet - Internet Basics: Basic Internet Terms – Getting connected to Internet - Internet Applications – E-mail – Searching the Web – Internet and Viruses.

Text Book:

Introduction to Computer Science, IITL Education Solutions Limited, 2/e, Pearson

Reference Books:

1. Fundamentals of Computers, V.Rajaram, 5th Edition, PHI
2. Introduction to Computers, Peter Norton, 7/e, TMH.

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Fundamentals of Internet

Unit I

The Internet: Introduction – From Computers to the Internet - Advantages of the Internet – Major Internet Services – Hardware and Software in the Internet Age. **Evolution and Growth of the Internet:** Birth of the Internet – Current Networking Technologies – Next Generation Networking. **Working of the Internet:** The Internet Architecture – Client Server Computing – TCP/IP - The Protocols of the Internet.

Unit II

Getting Online: Types of Internet Accounts – Selecting Internet Service Providers – **Electronic Mail:** Advantages of E-mails – E-mail addresses – Mail transfer protocols – Working of E-mail system. **World Wide Web:** Architecture of the World Wide Web – Types of websites – Uniform Resource Locator – Domain Name System – Web Pages and Web Links – Visiting Web Pages – Using Internet Explorer – Searching the Web – Google and Yahoo Search Engines.

Unit III

Hosting and Promoting Websites: Structure of Websites – Web Development tools – Microsoft Front Page – Adobe Dreamweaver – Visual Studio. NET – Hosting Websites – Getting a Domain /name – Visitor Analysis and Statistics – Website Promoting methods.

Unit IV

Electronic Commerce: E-Business and E-Commerce – Types of business in the internet – M-Commerce - Marketing Strategies on the Web – Making Payments in Virtual Stores – Shopping in Virtual Stores – Cookies and E-Commerce – Major issues of E-commerce and M-Commerce – Future of E-commerce.

Unit V

Blogs and Social Networking: Blogs – Uses of Blogs – Blogs System Components – Steps for Blogging – Building a Blog site – Social Networking – Etiquette in networking sites. **Internet Security:** Importance of Internet Security – Internet Threats – Identity theft and Cybersquatting – Hacking – Spamming and Spoofing – Phishing and Pharming – Denial of Service – spyware – Viruses and worms- Security solutions – Firewalls and Intrusion Prevention Systems – Internet Security Precautions- The Information Technology Act.

Text Book:

The Internet A User's Guide Second Edition by K.L. James – PHI Learning Private Limited

Reference Books:

1. Internet, World Wide Web, How to program, 4th Edition, Paul Deital, Harvey M Deitel, Pearson
2. Learning Internet & Email, 4th Revised Rdition, Ramesh Bangia, Khanna Book Publishing Co Pvt Ltd.
3. Internet & Ecommerce, C. Nellai Kannan, NELS Publications.