

# **Syllabus**

## **for**

### **B. Voc. in**

# **Software Development**



**Dr. Babasaheb Ambedkar Technological University,  
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## Semester I Structure

Sr. No	Course Code	Name of the Course	Teaching scheme			Evaluation Scheme			Credits	Total Marks
			L	T	P	IA	MSE	ESE		
<b>General Education</b>										
			<b>Theory</b>							
1	BVSWC101	IT Foundation and Programming Concepts	3	0	0	10	0	40	3	50
2	BVSWC102	Web Designing	3	0	0	10	0	40	3	50
3	BVSWC103	Programming in C	3	0	0	10	0	40	3	50
4	BVSWC104	Operating System (OS)	3	0	0	10	0	40	3	50
		<b>Total</b>							<b>12</b>	<b>200</b>
<b>Skill Components</b>										
			<b>Lab/Practical</b>							
5	BVSWL105	Web Designing Lab	0	0	1	25	0	25	1.5	50
6	BVSWL106	C Programming Lab	0	0	1	25	0	25	1.5	50
		<b>On-Job-Training (OJT)/Qualification Packs (Any One)</b>							<b>Group GSD1</b>	
7	BVSWE117	Technical Writer (SSC/Q0505)	200 (Any One)						15	200
8	BVSWE128	Infrastructure Engineer (SSC/Q0801)								
9	BVSWE139	Associate – CRM (SSC/Q2202)								
		<b>Total</b>							<b>18</b>	<b>300</b>

## Semester II Structure

Sr. No	Course Code	Name of the Course	Teaching scheme			Evaluation Scheme			Credits	Total Marks
			L	T	P	IA	MSE	ESE		
<b>General Education</b>										
<b>Theory</b>										
1	BVSWC201	Data Structures	3	0	0	10	0	40	3	50
2	BVSWC202	Concepts of Data Mining	3	0	0	10	0	40	3	50
3	BVSWC203	OOPs with Java	3	0	0	10	0	40	3	50
4	BVSWC204	Multimedia Tools & Applications	3	0	0	10	0	40	3	50
<b>Total</b>									<b>12</b>	<b>200</b>
<b>Skill Components</b>										
<b>Lab/Practical</b>										
5	BVSWL205	Data Structure Lab	0	0	1	25	0	25	1.5	50
	BVSWL206	Java Lab	0	0	1	25	0	25	1.5	50
<b>On-Job-Training (OJT)/Qualification Packs (Any one more QP to be opted from the QPs mentioned in the semester I)</b>									<b>Group GSD2</b>	
7	BVSWE217	Web Developer (SSC/Q0503)	200 (Any one)						15	200
8	BVSWE228	Test Engineer (SSC/Q1301)								
<b>Total</b>									<b>18</b>	<b>300</b>

**Semester**

**I**

**Syllabus**

<b>Subject Name: IT foundation and Programming Concepts</b>		
<b>Course Code :BVSWC101</b>		<b>Semester: I</b>
<b>Weekly Teaching Hours: TH: 03 Tut: 00</b>		<b>Scheme of Marking TH: 40 IA: 10 Total: 50</b>
<b>TH Exam Duration: 02 Hours</b>		<b>Scheme of Marking PR: --</b>
<b>Credit :03</b>		
<b>Content</b>		<b>Hours</b>
<b>Unit – I</b>	<b>1.0 Computer System Characteristics And Capability</b>	06
	Basic structure, ALU, memory, CPU, I/O devices. Development of computers. Classification of computers:(Micro, mini frame, super computer, pc, server, workstations)	
<b>Unit – II</b>	<b>2.0 Data Representation With in Computer</b>	06
	BIT, BYTE, WORD, ASCII, EBCDIC, BCD Code. Introduction to Number system: Binary, Octal, Decimal and Hexadecimal. Conversation from one number system to another number system. Introduction to Basic Gates.	
<b>Unit – III</b>	<b>3.0 Input Devices and Output Devices</b>	06
	Keyboard, Direct Entry: Card readers, scanning devices (BAR CODE, OMR, MICR), Voice input devices, Light pen, Mouse, Touch Screen, Digitizer, scanner. CRT, LCD/TFT, Dot matrix printer, Inkjet printer, Drum plotter, Flatbed plotter	
<b>Unit – IV</b>	<b>4.0 Memory Devices</b>	06
	RAM, ROM, PROM, EPROM, EEPROM. - Base memory, extended memory, expanded memory, Cache memory - Storage devices Tape, FDD, HDD, CDROM, Pen Drive.	
<b>Unit – V</b>	<b>5.0 Algorithm&amp; Flowcharts</b>	06
	Definition and properties, Principles of flowcharting, Flowcharting symbols, Converting algorithms to flowcharts	
<b>Unit – VI</b>	<b>6.0 Introduction To Programming Environment</b>	06
	History of languages, high-level, Low level, Assembly languages etc. ,Compilers, Interpreters, Assemblers, Linkers, Loaders	

<b>Text Books</b>		
<b>Name of Authors</b>	<b>Title of the Book</b>	<b>Publisher</b>
R. Hunt And Shell Y.	Computers And Commonsense	BPB Publications
V.Rajaraman	Computer Fundamentals	PHI Learning
<b>Reference Books</b>		
Ashok Arora	Fundamentals of Computer Systems.	
Russell A Stultz	Fundamentals of Computer Systems	

Name of the Subject : Web Designing		
Course Code : BVSWC102		Semester:
Weekly Teaching Hours: TH: 03 Tut: 00		Scheme of Marking TH: 40 IA: 10 Total: 50
TH Exam Duration: 02 Hours		Scheme of Marking PR: --
Credit :03		
Content		Hours
<b>Unit – I</b>	<b>Web Design Principles</b>	5
	Basic principles involved in developing a web site, Planning process, rules of web designing, designing a navigation bar, Page design, Home Page Layout, Design Concept, Brief History of Internet, what is World Wide Web, Why create a website, Web Standards	
<b>Unit – II</b>	<b>Introduction to HTML</b>	7
	What is HTML, HTML Documents, Basic structure of an HTML document, Creating an HTML document, Markup Tags, Heading-Paragraphs, Line Breaks, Introduction to elements of HTML, Working with Text, Working with Lists, Tables and Frames, Working with Hyperlinks, Images and Multimedia, Working with Forms and controls.	
<b>Unit – III</b>	<b>Introduction to Cascading Style Sheets</b>	7
	Concept of CSS, Creating Style Sheet, CSS Properties, CSS styling (Background, Text Format, Controlling Fonts), Working with block elements and objects, Working with Lists and Tables, CSS Id and Class, CSS Color	
<b>Unit – IV</b>	<b>JavaScript</b>	7
	Javascript Basics, Javascript Events, Javascript conditions and loop control structures, Alert, Prompt and Confirm statements, Javascript validation	
<b>Unit – V</b>	<b>Introduction to Web Publishing or Hosting</b>	7
	Creating the WebSite, Saving the site, Working on the website, Creating website structure, Themes-Publishing web sites.	
<b>Unit – VI</b>	<b>Introduction to Bootstrap</b>	7
	History, Fundamentals of Bootstrap, Bootstrap Grid System, Bootstrap Form and Form Components, Introduction JQuery, Element Selector, Document ready function, Events, Event handling with Html or Bootstrap components	

Text Books		
Name of Authors	Title of the Book	Publisher
Kogent Learning Solutions Inc.	HTML 5 in simple steps	Dreamtech Press
Murray, Tom/Lynchburg	Creating a Web Page and Web Site	College, 2002
Murray, Tom/Lynchburg	Creating a Web Page and Web Site	College, 2002
Reference Books		
	Web Designing & Architecture-Educational Technology Centre	University of Buffalo
Steven M. Schafer	HTML, XHTML, and CSS Bible, 5ed	Wiley India
John Duckett	Beginning HTML, XHTML, CSS, and JavaScript	Wiley India
Ian Pouncey, Richard York	Beginning CSS: Cascading Style Sheets for Web Design	Wiley India

Subject Name: Programming in C		
Course Code :BVSWC103		Semester: I
Weekly Teaching Hours: TH: 03 Tut: 00		Scheme of Marking TH: 40 IA: 10 Total: 50
TH Exam Duration: 02 Hours		Scheme of Marking PR: – 25 Practical 25 Term
Credit :3		
Contents		Hours
<b>Unit – I</b>	<b>1.0 Introduction and Basic elements of C programming</b>	06
	Introduction to problem solving through algorithm and flowchart, Overview, Character set, Keywords and Identifiers, Constants and Variables, Data types, Operators and Expressions, Operator precedence and associativity, Type casting.	
<b>Unit – II</b>	<b>2.0 Data I/O, Control Structures</b>	06
	Basic structure of C program, Formatted and Unformatted Input and Output, Conditional branching - if, switch statement, Iterative loops – while, do while and for statement, break and continue statement, goto statement.	
<b>Unit –</b>	<b>3.0 Arrays</b>	06
	Introduction, Declaration and Initialization, Accessing Array elements, Memory, representation of Array, One dimensional Arrays, Two dimensional Arrays ,Character Arrays and Strings.	
<b>Unit –</b>	<b>4.0 Functions</b>	06
	Introduction, Standard Library Functions, User Defined Functions (UDF) – Declaration, Definition, Function call, Parameter Passing - by value and by reference, Recursion, Storage Classes.	
<b>Unit – V</b>	<b>5.0 Structure, Union and Pointers</b>	06
	Defining Structure, Declaration, Initialization, Array of Structures, Structure and Functions, Nested Structures, Unions , Enumerated data type, typedef, Pointers and Dynamic Memory Allocation	
<b>Unit –</b>	<b>6.0 File Handling</b>	06

Text Books		
Name of Author	Title of the Book	Publisher
YashavantKanetkar	Let us C	BPB Publication
E. Balagurusamy	Programming in ANSI C	Tata McGraw Hill
Reference Books		
Byron Gottfried	Programming with C	Tata McGraw Hill
YashavantKanetkar	Exploring C	BPB Publication
Kernighan BW, Dennis M.	The C Programming Language	PrenticeHall
Digital Reference		
1. <a href="http://www.cprogramming.com/tutorial/c-tutorial.html">http://www.cprogramming.com/tutorial/c-tutorial.html</a>		
2. <a href="http://nptel.ac.in/courses/106104128/">http://nptel.ac.in/courses/106104128/</a>		
3. <a href="http://nptel.ac.in/courses/106105085/1">http://nptel.ac.in/courses/106105085/1</a>		

	File system basics, File operations, File opening modes, String I/O in files, and Record I/O in files, Text and Binary files, Command Line Arguments	
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<b>Subject Name: Operating System</b>	
<b>Course Code :BVSWC104</b>	<b>Semester: I</b>
<b>Weekly Teaching Hours: TH: 03 Tut: 00</b>	<b>Scheme of Marking TH: 40 IA: 10 Total: 50</b>
<b>TH Exam Duration: 02 Hours</b>	<b>Scheme of Marking PR: --</b>
<b>Credit:3</b>	

<b>Content</b>		<b>Hours</b>
<b>Unit – I</b>	<b>Introduction to Operating System</b>	06
	What is an operating system? History of operating system, Computer hardware & Software, Different operating systems, Various System Software associated with Operating Systems, Shell and Kernel, Systems Calls and Theirs types and implementation	
<b>Unit – II</b>	<b>Process &amp; Threads</b>	06
	Processes, PCB, Process States, Threads & TCB, difference and Similarities in Threads and Process. Inter-process communication, CPU scheduling, IPC problems.	
<b>Unit – III</b>	<b>Process Synchronization &amp; deadlocks</b>	06
	Critical Section Problems & Semaphores, Classical Problems of process Synchronization, Introduction to deadlocks, Deadlock detection and recovery, Deadlock avoidance, Deadlock prevention, issues	
<b>Unit – IV</b>	<b>Memory Management</b>	06
	Address Spaces and Address Translation, Swapping & memory allocation, Paging & Segmentation, Virtual Memory & Demand Paging, Page Replacement Algorithm, Thrashing	
<b>Unit – V</b>	<b>File Management</b>	06
	File Systems: Files, directories, file system & Directories implementation, file-system management and optimization, File Allocation Methods, MS-DOS file system, UNIX V7 file system	
<b>Unit – VI</b>	<b>Disk Management &amp; Case Study</b>	06
	Disk Structure ,Disk Scheduling Algorithm (FCFS, RAID, Network Operating System, Real Time Operating System, Distributed Operating System	

<b>Text Books</b>		
<b>Name of Authors</b>	<b>Title of the Book</b>	<b>Publisher</b>
Silberschatz, Galvin, Gagne	Operating System Principles	Wiley
William Stalling	Operating System-Internal and Design Principles	Pearson Education India
Andrews Tanenbaum	Modern Operating System	Pearson Education India
<b>Reference Books</b>		
DhanjayDhamdhare	Operating System –A Concept-Based Approach	McGraw Hill Education
Dietel, Chofenes	Operating System	Pearson Education India
Achyut Godbole & Atul Kahate	Operating System	McGraw Hill Education



### **Lab-Web Designing**

Course Code : <b>BVSWL105</b>	Semester: <b>I</b>
Weekly Practicals: PR: <b>01</b> Tut: <b>00</b>	Scheme of Marking TH: --
TH Exam Duration:--	Scheme of Marking PR: <b>25</b> , IA: <b>25</b> , Total: <b>50</b>
Credit:1.5	

#### **Content**

1. Introduction to HTML Tags :- Working of Web browser, Introduction to static Web pages and dynamic web pages, HTML body structure, HTML Tags:- Elements, Attribute, Heading tag, Paragraph tag, Formatting tags (Bold text, Important text, Italic text, Emphasized text, Marked text, Small text, Deleted text, Inserted text, Subscripts, Superscripts), Background color, image, font color, effects, Table tag List.
2. Advance HTML tags :- Frames iframes, anchor tag, Multimedia
3. Create Static Website by using all HTML Tags.
4. Introduction to Internal CSS
5. Introduction to External CSS
6. HTML Form tags(Elements, Attributes, properties, etc)
7. Introduction to JAVA Script(Programming basics)
8. Advance JAVA Script programming basics(Alert, Confirm, prompt) and Validations.
9. Create 3 Web page using Bootstrap framework use bootstrap table, image and form elements etc.
10. Create the web page using JQuery effects, events on different elements.

### Lab-Programming in C

Course Code : <b>BVSWL105</b>	Semester: <b>I</b>
Weekly Practicals: PR: <b>01</b> Tut: <b>00</b>	Scheme of Marking TH: --
TH Exam Duration:--	Scheme of Marking PR: <b>25</b> , IA: <b>25</b> , Total: <b>50</b>
Credit:1.5	

#### Content

##### **Suggested List of Experiments:**

1. Programs based on input output statements (Formatted and Unformatted I/O)
2. Programs based on various operators
3. Programs based on control statement (if, switch)
4. Programs based on various loops (for, while, do-while)
5. Programs based on 1-D Array (For ex - Sorting, Searching)
6. Programs based on 2-D Array (For ex - Matrix operations)
7. Programs based on Function (Library functions and User Defined Function, Recursion)
8. Programs based on Pointer, Array, Function
9. Programs based on Structure and Union
10. Programs based on Files and Command Line Arguments (File handling functions)

Note: Minimum 3 programs from above list should be carried out (Preferably on Linux platform)

**Semester I - On-Job-Training (OJT)/Qualification Packs ( Any One)**

**Group GSD1 of Qualifier Packs**

<b>Subject Name:</b> Technical Writer	
Course Code : <b>BVSWE117</b>	Semester: <b>I</b>
Weekly Skilling Hours: PR: <b>24</b> Tut: <b>00</b>	Scheme of Marking TH: <b>00</b> , IA: <b>00</b> , Total: <b>00</b>
PR Exam Duration: <b>06 Hours</b>	Scheme of Marking PR: <b>200</b> , IA: <b>00</b> , Total: <b>200</b>
Credit: <b>15</b>	<b>Choose any one from specified Group GSD1 of Qualification Packs</b>
<b>Syllabus for this qualifier Pack is available on</b> <a href="http://www.sscnasscom.com/qualification-pack/SSC/Q0505/">http://www.sscnasscom.com/qualification-pack/SSC/Q0505/</a>	

<b>Subject Name:</b> Infrastructure Engineer (SSC/Q0801)	
Course Code : <b>BVSWE128</b>	Semester: <b>I</b>
Weekly Skilling Hours: PR: <b>24</b> Tut: <b>00</b>	Scheme of Marking TH: <b>00</b> , IA: <b>00</b> , Total: <b>00</b>
PR Exam Duration: <b>06 Hours</b>	Scheme of Marking PR: <b>200</b> , IA: <b>00</b> , Total: <b>200</b>
Credit: <b>15</b>	<b>Choose any one from specified Group GSD1 of Qualification Packs</b>
<b>Syllabus for this qualifier Pack is available on</b> <a href="http://www.sscnasscom.com/qualification-pack/SSC/Q0801/">http://www.sscnasscom.com/qualification-pack/SSC/Q0801/</a>	

<b>Subject Name:</b> Associate – CRM (SSC/Q2202)	
Course Code : <b>BVSWE139</b>	Semester: <b>I</b>
Weekly Skilling Hours: PR: <b>24</b> Tut: <b>00</b>	Scheme of Marking TH: <b>00</b> , IA: <b>00</b> , Total: <b>00</b>
PR Exam Duration: <b>06 Hours</b>	Scheme of Marking PR: <b>200</b> , IA: <b>00</b> , Total: <b>200</b>
Credit: <b>15</b>	<b>Choose any one from specified Group GSD1 of Qualification Packs</b>
<b>Syllabus for this qualifier Pack is available on</b> <a href="http://www.sscnasscom.com/qualification-pack/SSC/Q0202/">http://www.sscnasscom.com/qualification-pack/SSC/Q0202/</a>	

**\*Skill Practical assessment will be done rules/ procedure of respective Skill Sector Council of India.**

**Semester**

**II**

**Syllabus**

<b>Subject Name :Data Structure</b>		
<b>Course Code :BVSWC201</b>		<b>Semester: II</b>
<b>Weekly Teaching Hours: TH: 03 Tut: 00</b>		<b>Scheme of Marking TH: 40 IA: 10 Total: 50</b>
<b>TH Exam Duration: 02 Hours</b>		<b>Scheme of Marking PR: --</b>
<b>Credit:3</b>		
<b>Content</b>		<b>Hours</b>
<b>Unit – I</b>	<b>Introduction</b>	06
	Introduction: Data Structures types, Importance of Data Structure, Abstract data Type. Algorithms: Complexity, Time space Trade-offs, Arrays: Operation Performed on array Dynamic Memory Allocation	
<b>Unit – II</b>	<b>Searching Techniques</b>	06
	Searching Techniques: List Searches using Linear Search, Binary Search, Sorting Techniques: Basic concepts, Sorting by: Bubble, Insertion and selection. Hash Function: Address calculation techniques, Common hashing Functions, Collision resolution, Linear probing, quadratic probing	
<b>Unit –III</b>	<b>Unit 3</b>	06
	Stack: LIFO structure, PUSH and POP operations, Polish Notation, Queue: FIFO structure, Circular Queue, Operations on Queues.	
<b>Unit – IV</b>	<b>Unit IV</b>	06
	Introduction, single linked list, Operations on a Single linked list, Advantages and disadvantages of single linked list, circular linked list, Double linked list	
<b>Unit – V</b>	<b>Unit V</b>	06
	Tree: General tree terminology, Tree traversal, Operation on Binary Tree Heap : Heap Sort	
<b>Unit – VI</b>	<b>Unit 6</b>	06
	Graphs: Graph Storage structure (Adjacency Matrix, Adjacency List)Operations on graphs Traverse Graph (Depth-First, Breadth-First), Minimum Spanning Tree, Kruskal's algorithm, Prim's algorithm,	

<b>Text Books</b>		
<b>Name of Authors</b>	<b>Title of the Book</b>	<b>Publisher</b>
Ellis Horowitz Sartaj Sahani, Susan Anderson Freed	Fundamentals of Data Structures in C 12 nd Edition]	Universities Press.
Lipschut	Data structure	MGH
<b>Reference Books</b>		
A. Tanenbaum	Data and file structure	PHI

<b>Subject Name :Concepts of Data Mining</b>	
<b>Course Code :BVSWC202</b>	<b>Semester: II</b>
<b>Weekly Teaching Hours: TH: 03 Tut: 00</b>	<b>Scheme of Marking TH: 40 IA: 10 Total: 50</b>
<b>TH Exam Duration: 02 Hours</b>	<b>Scheme of Marking PR: --</b>
<b>Credit : 3</b>	

<b>Content</b>		<b>Hours</b>
<b>Unit – I</b>	<b>1.0 Data Mining Introduction</b>	06
	Introduction to Data Mining, Need of Mine Data, Evolution of Data Mining, Data Mining Tasks, Classification, Clustering, Association Mining, Challenges of Data Mining	
<b>Unit – II</b>	<b>2.0 Preprocessing</b>	06
	Data, Attribute Values, Measurement of Length, Types and Properties of Attributes & data , Data Preprocessing	
<b>Unit – III</b>	<b>3.0 Data Exploration</b>	06
	Data Exploration Techniques, Summary Statistics, Frequency and Mode, Percentiles, Mean and Median, Visualization, Histograms, Box Plots	
<b>Unit – IV</b>	<b>4.0 Classification</b>	06
	OLAP, OLAP Operations, Data Mining Classification, Decision Trees, Naive Bayes	
<b>Unit – V</b>	<b>5.0 Data Mining Association</b>	06
	Data Mining Association Analysis, Association Rule Mining, Frequent Item set Generation, FP-growth Tree Algorithm, Cluster Analysis	
<b>Unit – VI</b>	<b>6.0Data Mining Tools</b>	06
	WEKA (Waikato Environment for Knowledge Analysis): is a well-known suite of machine learning software that supports several typical data mining tasks, particularly data preprocessing, clustering, classification, regression, visualization, and feature selection.  RapidMiner: Formerly called YALE (Yet another Learning Environment), is an environment for machine learning and data mining experiments that is utilized for both research and real-world data mining tasks.	

<b>Text Books</b>		
<b>Name of Authors</b>	<b>Title of the Book</b>	<b>Publisher</b>
Jiawei Han, Micheline Kamber	Data Mining: Concepts and Techniques	Morgan Kaufmann Publishers
<b>Reference Books</b>		
Tan, Steinbach, Kumar	Introduction to Data Mining	Pearson Addison Wesley, 2006
David Hand, Heikki Mannila & Padhraic Smyth	Principles of Data Mining	PHP Publication

Subject Name :OOPs with Java		
Course Code :BVSWC203		Semester: II
Weekly Teaching Hours: TH: 03 Tut: 00		Scheme of Marking TH: 40 IA: 10 Total: 50
TH Exam Duration: 02 Hours		Scheme of Marking PR: --
Credit : 3		
Content		Hours
Unit – I	<b>1.0 Basics of Java</b>	06
	History of java, Advantages of java, JVM, Java Environment Setup, Programming Structure and naming conventions, Variables and Data types, Operators, Decision and Control Statements, Arrays and Strings	
Unit – II	<b>2.0 Object Oriented Programming with Java</b>	08
	Object Oriented Programming, Features of OOPS, Class and Object, Access modifiers, Methods, , Static variables and static methods, Overloading methods, Passing and returning object as argument, Constructors and Overloading constructors	
Unit –	<b>3.0 Inheritance</b>	04
	Use of inheritance, IS-A,HAS-A,USES-A relationship, Method overriding, Super keyword and Final keyword, Abstract classes and methods, Packages, nterfaces	
Unit –	<b>4.0 Exception handling and Multithreading</b>	06
	Exceptions and their types ,Handling exceptions, Use of Multithread programming, Thread class and Runnable interface, Thread priority, Thread synchronization	
Unit – V	<b>5.0 File handling and JDBC</b>	06
	Stream classes, Class hierarchy, Creation of text file, Reading and writing text files, JDBC Architecture, JDBC Drivers, Java Database Connectivity using JDBC	
Unit –	<b>6.0 GUI Applications</b>	06
	Applets and its life cycle, Graphics Class, AWT, Layout managers, Event handling classes and interfaces, SWING and Its Components	

Reference Books		
Name of Authors	Title of the Book	Publisher
Herbert Schildt	Java™: The Complete Reference, Seventh Edition	TMH
Cay S Horstmann, Fary Cornell	Core Java Vol I	Sun Microsystems Press
Ken,D.Holmers, J. Gosling, P. Goteti	The Java Programming Language 3rd Edition	Sun Microsystems Press
Deitel&Deitel	How To Program JAVA	Pearson Education
Text Books		
E Balguruswamy	Programming with Java- A Primer	TMH
Steven Holzner	JAVA 2 Programming Black Book,	Wiley India

Reference Website:<http://www.tutorialspoint.com>, <http://www.javatpoint.com>, <http://www.roseindia.net>, <http://www.studytonight.com/>

<b>Subject Name : Multimedia Tools and Applications</b>	
<b>Course Code :BVSWC204</b>	<b>Semester: II</b>
<b>Weekly Teaching Hours: TH: 03 Tut: 00</b>	<b>Scheme of Marking TH: 40 IA: 10 Total: 50</b>
<b>TH Exam Duration: 02 Hours</b>	<b>Scheme of Marking PR: --</b>
<b>Credit : 3</b>	

<b>Content</b>		<b>Hours</b>
<b>Unit – I</b>	<b>1.0 Multimedia System</b>	06
	Multimedia elements, □Multimedia applications, Global structure, Evolving Technologies for Multimedia systems	
<b>Unit – II</b>	<b>2.0 Multimedia: Media &amp; Data Streams</b>	06
	Medium, Multimedia: media & data streams, Main properties of a multimedia system, Traditional data stream characteristics, Data stream characteristics for continuous media, Information units	
<b>Unit – III</b>	<b>3.0 Sound / Audio</b>	06
	Basic sound concepts, Music: MDI basic concepts, MIDI devices, MIDI messages, MIDI software, Speech: Speech generation, Speech Analysis, Speech Transmission	
<b>Unit – IV</b>	<b>4.0 Image And Graphics</b>	06
	Digital Image Representation, Image Formats, Graphics Formats, Computer Image, Processing: Image Synthesis, Image Analysis, Image Transmission, Image File Formats: BMP, JPEG, TIFF, PNG.	
<b>Unit – V</b>	<b>5.0 Video &amp; Animation</b>	06
	Basic concepts, Television (Conventional systems, Enhanced definition systems, High Definition system), Computer based Animation.	
<b>Unit – VI</b>	<b>6.0Data Compression</b>	06
	Storage space, Coding requirements, Source Entropy& Hybrid coding, Basic compression techniques, Introduction to following compression techniques: JPEG, H.261, (PX64), MPEG ,DVI	

<b>Name of Authors</b>	<b>Title of the Book</b>	<b>Publisher</b>
P. K. ANDLEIGH, KIRAN THAKRAR	MULTIMEDIA SYSTEM DESIGN	
RALF STEINMETZ, & KLARA NASHTEDT	MULTIMEDIA COMPUTING COMMUNICATION & APPLICATION	
<b>Reference Books</b>		
K sayood	Introduction to data compression	



## LAB -Data Structure Using C

Course Code : <b>BVSWL205</b>	Semester: <b>II</b>
Weekly Practical: PR: <b>01</b> Tut: <b>00</b>	Scheme of Marking TH: --
TH Exam Duration:--	Scheme of Marking PR: <b>25</b> , IA: <b>25</b> , Total: <b>50</b>
Credit: 1.5	

### **Contents**

#### Suggested List of Experiments:

1. Write a program to demonstrate insertion, deletion, search and displaying of an element in an array,
2. Write a program to demonstrate sorting algorithm. (using any one of these techniques: bubble, Insertion, selection)
3. Write a program to demonstrate operations performed on stack.
4. Program to convert infix expression to postfix and infix to postfix.
5. Write a program to demonstrate operations on queue.
6. Write a program to demonstrate operations on singly link list.
7. Write a program to implement Stack as Linked List.
8. Write a program to implement operations on double link list.
9. Write a program to demonstrate creation, traversing and searching in Binary Search Tree.
10. Write a program to traverse a graph using DFS with an adjacency matrix.
11. Write a program to traverse a graph using BFS with an adjacency matrix.

#### References:

1. Unix Concepts and Applications by Sumitabha Das
2. <http://www.ossec.net/>
3. [www.linuxmanpages.com/man1/pflogsumm.1.php](http://www.linuxmanpages.com/man1/pflogsumm.1.php)
4. [www.webalizer.org/](http://www.webalizer.org/)
5. [http://www.computersecuritystudent.com/SECURITY\\_TOOLS/DVWA/](http://www.computersecuritystudent.com/SECURITY_TOOLS/DVWA/)
6. <https://www.wireshark.org/#learnWS>
7. <https://wiki.openssl.org>

<b>Lab - Java</b>	
Course Code : <b>BVSWL206</b>	Semester: <b>II</b>
Weekly Practicals: PR: <b>01</b> Tut: <b>00</b>	Scheme of Marking TH: --
TH Exam Duration:--	Scheme of Marking PR: <b>25</b> , IA: <b>25</b> , Total: <b>50</b>
Credit:1.5	
<b>Contents</b>	
<ul style="list-style-type: none"> <li>• Design a simple java class with appropriate programming structure and naming conventions</li> <li>• Sample programs on conditional statements and loop controls</li> <li>• Demonstrate class, object and methods with various access modifiers</li> <li>• Sample program on static variables and static methods</li> <li>• Sample program on passing and returning object as argument</li> <li>• Demonstrate constructors overloading</li> <li>• Demonstrate types of inheritance</li> <li>• Abstract classes and methods</li> <li>• Program on Packages and Interfaces</li> <li>• Demonstration of threads using Thread class and Runnable Interface</li> <li>• Sample programs on file handling operations</li> <li>• CRUD operations using JDBC</li> </ul>	

<b>Reference Books</b>		
Name of Authors	Title of the Book	Publisher
Herbert Schildt	Java™: The Complete Reference, Seventh Edition	TMH
Cay S Horstmann, Fary Cornell	Core Java Vol I	Sun Microsystems Press
Ken,D.Holmers, J. Gosling, P. Goteti	The Java Programming Language 3rd Edition	Sun Microsystems Press
Deitel&Deitel	How To Program JAVA	Pearson Education
<b>Text Books</b>		
E Balguruswamy	Programming with Java- A Primer	TMH
YashavantKanetkar	“Let Us Java	BPB
Steven Holzner	JAVA 2 Programming Black Book,	Wiley India

**Semester II - On-Job-Training (OJT)/Qualification Packs ( Any One)**

**Group GSD2 of Qualification Packs**

<b>Subject Name:</b> Web Developer (SSC/Q0503)	
Course Code : <b>BVSWE217</b>	Semester: <b>II</b>
Weekly Skilling Hours: PR: <b>24</b> Tut: <b>00</b>	Scheme of Marking TH: <b>00</b> , IA: <b>00</b> , Total: <b>00</b>
PR Exam Duration: <b>06 Hours</b>	Scheme of Marking PR: <b>200</b> , IA: <b>00</b> , Total: <b>200</b>
Credit: <b>15</b>	<b>Choose any one from specified Group GSD2 of Qualification Packs</b>
<b>Syllabus for this qualifier Pack is available on</b> <a href="http://www.sscnasscom.com/qualification-pack/SSC/Q0503/">http://www.sscnasscom.com/qualification-pack/SSC/Q0503/</a>	

<b>Subject Name:</b> Test Engineer (SSC/Q1301)	
Course Code : <b>BVSWE228</b>	Semester: <b>II</b>
Weekly Skilling Hours: PR: <b>24</b> Tut: <b>00</b>	Scheme of Marking TH: <b>00</b> , IA: <b>00</b> , Total: <b>00</b>
PR Exam Duration: <b>06 Hours</b>	Scheme of Marking PR: <b>200</b> , IA: <b>00</b> , Total: <b>200</b>
Credit: <b>15</b>	<b>Choose any one from specified Group GSD2 of Qualification Packs</b>
<b>Syllabus for this qualifier Pack is available on</b> <a href="http://www.sscnasscom.com/qualification-pack/SSC/Q1301/">http://www.sscnasscom.com/qualification-pack/SSC/Q1301/</a>	