SAURASHTRA UNIVERSITY

RAJKOT – INDIA

**Re-Accredited
Grade B by NAAC
(CGPA 2.93)**

CURRICULAM FOR

UGC - B.Voc. under National Skills Qualification Framework(NSQF)

Bachelor of Vocation – Applied Computer Technology

(B.Voc.- ACTech.)

(Sanctioned to Shree Manibhai Virani & Smt. Navalben Virani Science College-Rajkot)

(Semester III and Semester IV)

Effective From June – 2015

Bachelor of Vocation – Applied Computer Technology (Semester – III & IV)
Saurashtra University
Effective from June - 2015

UGC B.Voc.- Applied Computer Technology (Semester – III)

Sr. No.	Paper No.	Subject	Credit
1	ACTECH 3.1	Core Java	5
2	ACTECH 3.2	Web Development using PHP/MYSQL	5
3	ACTECH 3.3	RDBMS using MS SQL Server	5
4	ACTECH 3.4	Basic Animation using Flash	5
5	ACTECH 3.5	Practical - I (Based on 3.1 & 3.4)	5
6	ACTECH 3.6	Practical - II (Based on 3.2 & 3.3)	5
Total Credits of Semester - III			**30**

<table>
<tr><th colspan="6" align="center">ACTECH 3.1 : Core Java</th></tr>
<tr><th>Sr. No.</th><th>Topics</th><th>Details</th><th>Marks</th><th>Lec.</th></tr>
<tr><td>1</td><td>Introduction and Basic</td><td>History of Java
Basic concepts of OOP
Java Features/Buzzword of Java
JDK and its components
Byte code and JVM
Java Tokens
Data Types
Type Conversion and type casting
Garbage Collection
Array (One Dimensional, Rectangular and Jagged Array)
Conditional Statements (if, switch)
Looping Statement (while, for, do-while)
Command Line Arguments</td><td>10</td><td>5</td></tr>
<tr><td>2</td><td>Classes and Objects</td><td>Defining a class
Creating Objects
Concept of Constructor
Overloading of methods and constructors
Static members
Finalize() method
Nested class
Access specifiers : public, private and protected
Modifiers : final, abstract, static, synchronized, native, volatile, transient</td><td>10</td><td>5</td></tr>
<tr><td>3</td><td>Inheritance</td><td>Types of Inheritance (Single, Multilevel, Hierarchical)
Constructor in inheritance (super and this keyword)
Method Overriding
Abstract method and class
Final keyword (Final variable, method and class)
Defining Interface
Implementing and extending interface</td><td>5</td><td>5</td></tr>
<tr><td>4</td><td>Java Packages</td><td>Introduction of Java API
User defined package (Creating and using package)
System defined packages :
Java.lang
Java.util
Java.io
Java.net
Java.applet</td><td>10</td><td>10</td></tr>
</table>

		Java.awt Java.awt.event Javax.swing Java.lang (Object, Math, String, StringBuffer, Wrapper classes) Java.util (Date, Random, Calendar, GragorianCalendar, Vector, Enumeration interface, Stack, Hashtable)		
5	Exception Handling	Introduction to Exception Handling Types of Exception Exception handling using try, catch, finally, throw and throws Creating user defined exception class	5	3
6	Threading	Concept of Thread Life Cycle of Thread Creating Thread (Thread class and Runnable Interface) Various Thread methods Thread Priority, Synchronization and Deadlock	5	2
7	Input/Output Operation	Concept of streams Difference between CharacterStreams and ByteStreams CharacterStreams (Reader, Writer, BufferedReader, InputStreamReader, FileReader, BufferedWriter, OutputStreamReader, FileWriter, PrintWriter) ByteStreams (InputStream, FileInputStream, FilterInputStream, BufferedInputStream, DataInputStream, OutputStream , FileOutputStream, FilterOutputStream, BufferedOutputStrem, DataOutputStream, PrintStream) Other Classes (RandomAccessFile, StreamTokenizer, File)	10	6
8	Applet Basic	What is an Applet Applet Lifecycle Applet class, passing parameters to applet Use of Graphics, Color and Font class and its various methods	10	4
9	AWT Controls and Event Handling	AWT Controls(Label, Button, Checkbox, Choice, List, TextField, TextArea, Scrollbar) Event Delegation Model or Event Class Hierarchy All classes and interfaces of Event	10	7

		Delegation. Concept of Adapter Class, Inner Class and Anonymous Inner Class Programmers related to event handling		
10	Layout Managers	What is Layout Managers FlowLayout BorderLayout GridLayout GridBagLayout CardLayout	5	3
11	GUI using Swing	What is swing, Swing Vs. AWT Container class Swing Components (JLabel, JButton, JCheckBox, JCheckboxgroup, JChoice, JTextField, JTextArea, JList, JScrollbar, JPanel, JFrame, JMenu, JMenuBar, JMenuItem, JPasswordField, JRadioButton)	20	10
		Total	**100**	**60**

Student Seminar   – 5 Lectures
Expert Talk   – 5 Lectures
Student Test   – 5 Lectures

Total Lectures   60 + 15 = 75

Reference Books:
1. Complete JAVA2 Certification
2. JAVA2 Black Book
3. A Programmer Guide to JAVA Certification by Khalid A. Mughal
4. Programming in JAVA - E Balaguruswamy
5. Programming with JAVA – Bharat & Co.
6. Programming with JAVA – C Jamanadas

ACTECH 3.2 : Web Development using PHP/MYSQL
Sr. No.	**Topics**	**Details**	**Marks**	**Lec.**
1	Introduction	Intro. Webpage, Website Static and Dynamic Web Client side & Server Side Scripting Introduction to other server side languages Web server (IIS & Apache) HTTP & HTTPS protocol FTP ISP and its Services Web Hosting, Virtual Host, Multi-Homing Distributed Web Server Overview, Document Root	10	5
2	PHP Basic	Introduction to PHP PHP configuration in IIS & Apache Web server Understanding of PHP.INI and PHP.htaccess file PHP Variable Static & global variable GET & POST method PHP Operator Conditional Structure & Looping Structure Array **User Defined Functions**: argument function default arument variable function return function **Variable Length Argument Function** Func_num_args func_get_arg, func_get_args **Variable Function** Gettype, settype, isset, unset, strval, floatval, intval, print_r **String Function** Chr, ord, strtolower, strtoupper, strlen, ltrim, rtrim trim, substr, strcmp, strcasecmp, strops, strrpos, strstr, stristr, str_replace, strrev, echo, print, explode(), implode(), join(), md5(), str_split(), str_shuffle(), strcspn(), strpbrk(), substr_compare(), substr_count(), ucfirst(), ucwords()	55	34

		Math Function : Abs, ceil, floor, round, fmod, min, max, pow, sqrt, rand, cos(), acos(), sin(), asin(), tan(), atan(), bindec(), decbin(), hexdec(), dechex(), is_finite(), is_infinite(), log(), base_convert(), deg2rad() **Date Function** Date, getdate, setdate, Checkdate, time, mktime, date_add(), date_create(), date_format(), gmdate(), localtime(), strftime(), strptime(), strtotime(), gettimeofday(), **Array Function** Count, list, in_array, current, next, previous, end, each, sort, rsort, assort, arsort, array_merge, array_reverse, array_diff(), array_merge_recursive(), array_shift(), array_slice(), array_unique(), array_unshift(), array_keys(), array_key_exists(), array_push(), array_pop(), array_multisort(), array_search() **Miscellaneous Function** define, constant, include, require, header, die, exit **File handling Function** fopen, fread, fwrite, fclose, file_exists, is_readable, is_writable, fgets, fgetc, file, file_get_contents, fputcsv, fputs, file_putcontents, ftell, fseek, rewind, copy, unlink, rename, move_upload_file		
3	Handling Form & Session tracking	Handling form with GET & POST Cookies Session Server variable	5	3
4	PHP Components	PHP GD Library PHP Regular expression Sending mail using mail() Sending mail using smtp() Using php mailer function Pdf creation using php	5	3

5	Interacting with MySQL	Working with MySQL using PhpMyAdmin PHP-MySQL Connectivity PHP-MySQL Functions mysql_connect, mysql_close, mysql_error, msyql_errno, mysql_select_db, mysql_query, mysql_fetch_array, mysql_num_Rows, mysql_affected_Rows, mysql_fetch_assoc ,mysql_fetch_field , mysql_fetch_object, mysql_fetch_row ,mysql_insert_id ,mysql_num_fields ,mysql_result, mysql_tablename ,mysql_list_tables, mysql_list_fields, mysql_field_type ,mysql_db_name , mysql_db_query , mysql_data_seek Advanced mysql : Import and Export database Create and Drop database Use of group by order by Create trigger stored procedure	25	15
			100	60

Student Seminar   – 5 Lectures
Expert Talk   – 5 Lectures
Student Test   – 5 Lectures

Total Lectures   60 + 15 = 75

Reference Books:
1. Beginning PHP5 by Wankyu Choi, Allan Kent, Chris Lea, Ganesh Prasad,
   Chris Ullman - WROX
2. PHP Bible, 2nd Edition by Tim Converse, Joyce Park – Wiley Publication
3. Beginning PHP, Apache, MySQL Web Development by Michael K. Glass,
   Yann Le Scouarnec, Elizabeth Naramore, Gary Mailer, Jeremy Stolz, Jason Gerner - WROX
4. Beginning MySQL by Robert Sheldon, Geoff Moes – WROX
5. Web Development using PHP/MYSQL - Bharat & Co.
6. Web : www.w3schools.com

ACTECH 3.3 : RDBMS using MS SQL Server				
Sr. No.	**Topics**	**Details**	**Marks**	**Lec.**
1	RDBMS Basics	What is RDBMS? Importance of E-R diagram in Relational World E.F Codd's Rules Normalization	10	8
2	Introduction to SQL Server	Overview of SQL Server 2008 Features & Components SQL Server Installation & Configuration SQL Server Editions	5	5
3	SQL Server Database	Database Architecture Understanding SQL Server Database(System) Files & Filegroups Architecture Creating and Managing User Database SQL Server Data Types Creating and Managing Tables Import and Export Database	15	10
4	Accessing and Modifying Data	Data Accessing using SELECT Statement with WHERE Clause, GROUP BY Clause, ORDER BY Clause, HAVING Clause, DISTINCT Operator Joins Subqueries	20	14
5	Data Integrity	Types of Data Integrity PRIMARY KEY Constraint FOREIGN KEY Constraint UNIQUE KEY Constraint NOT NULL CHECK Constraint	15	5
6	Data Access Control and Transaction Control Commands	Grant and Revoke Concept of Transaction Commit Rollback SavePoint	5	3
7	Managing and Manipulating data	What is PL/SQL? SQL v/s PL/SQL Block Structure of PL/SQL and its Examples Control Structures Conditional Statement Looping Statement Sequential Statement Cursor (Implicit & Explicit)	15	10

8	Other Database Object	Implementation of Objects like
		    View
		    Sequence
		    Index
		    Procedures
		    Triggers
			15	5

		Total	**100**	**60**

Student Seminar   – 5 Lectures
Expert Talk   – 5 Lectures
Student Test   – 5 Lectures

Total Lectures   **60 + 15 = 75**

Reference Books:

1. Beginning Microsoft SQL Server 2008 Administration
   By Chris Leiter, Dan Wood, Michael Cierkowski, Albert Boettger
2. Professional Microsoft SQL Server 2008 Programming - By Robert Vieira
3. Microsoft SQL Server 2008 For Dummies

Sr. No.	Topics	Details	Marks	Lec.
ACTECH 3.4 : Basic Animation using Flash				
1	Flash Environment	Flash 8 Interface Menu Bar Timeline Layers Work Area Views or Zooms Panels	5	3
2	Text & Sound	Properties of the Texts Text Effects Importing Sounds Sound Properties Inserting a Sound	5	3
3	Working Layers with Objects	Working with Layers. Layer Type The Objects. Initiation Object Property and Selection Info Panel Groups	10	6
4	Symbols, Graphics & Vector	The Libraries Graphics types What are the Symbols How to create symbols Symbol Effects : Filters & Blends Creating graphics and its properties Exporting a Flash object as bitmap	10	10

5	Animation	What is Animation?
		Type of Animation
		  • Frame by Frame Animation
		  • Motion Tween Animation
		  • Shape Tween
		How to run Animation File?
		  • Scrubbing
		  • Playing
		  • Test Movie
		Animated Masks and Filters
		Effect of Animation
		  • Brightness
		  • Tint
		  • Alpha
		Advanced Animation Techniques
			30	13

6	File Types	Publishing Animation
		Animation File Types
		  • Bitmaps in Flash
		  • Video
			20	11

		• Web Page in Flash Movie Clip properties Creating a new Movie Clip Importing and Exporting Movie Clips			
7	Action Script	What is Action Script? Button • Creating a Buttons Shapes • Text Buttons • Including Clip in a Button • Bitmaps and buttons • Actions in Buttons • Including a sound in a Button Actions Panel Operators Actions Objects Properties	20	14
		Total	100	60

Student Seminar   – 5 Lectures
Expert Talk   – 5 Lectures
Student Test   – 5 Lectures

Total Lectures   60 + 15 = 75

Reference Books:
1. Macromedia Flash 8 On Demand Paperback – by Andy Anderson, Steve Johnson
2. Sams Teach Yourself Macromedia Flash 8 in 24 Hours Paperback
3. Macromedia Flash 8 For Dummies Paperback
4. http://www.teacherclick.com/flash8

ACTECH 3.5 : Practical - I (Based on ACTECH 3.1 & ACTECH 3.4)	
Topics	**Marks**
ACTECH 3.1	**50**
ACTECH 3.4	**50**

ACTECH 3.6 : Practical – II (Based on ACTECH 3.2 & ACTECH 3.3)	
Topics	**Marks**
ACTECH 3.2	**50**
ACTECH 3.3	**50**

Bachelor of Vocation – Applied Computer Technology (Semester – III & IV)
Saurashtra University
Effective from June - 2015

UGC B.Voc.- Applied Computer Technology (Semester – IV)

Sr. No.	Paper No.	Subject	Credit
1	ACTECH 4.1	Value Education	5
2	ACTECH 4.2	Advance PHP (OOP, CMS, Wordpress)	5
3	ACTECH 4.3	Advance Web Designing (JQuery, CSS framework, AJAX, Responsive Layout)	5
4	ACTECH 4.4	Project Work - I	5
5	ACTECH 4.5	Practical - I (Based on ACTECH 4.2)	5
6	ACTECH 4.6	Practical - II (Based on ACTECH 4.3)	5
		Total Credits of Semester - IV	**30**

ACTECH 4.1 : Value Education				
Sr. No.	**Topics**	**Details**	**Marks**	**Lec.**
1	Introduction to Value Education	• understanding the need, basic guidelines content and process for Value Education • Self-exploration – its content and process; 'Natural Acceptance' and Experiential Validation – as the mechanism for self-exploration • Continuous Happiness and Prosperity – A look at basic human aspirations • Right understanding, Relationship and Physical Facilities – The basic requirements for fulfillment of aspirations of every human being • Understanding Happiness and Prosperity aspirations: Understanding and living in harmony at various levels • Method to fulfill the above human aspirations: Understanding and living in harmony at various levels	20	12
2	Harmony in the Human Being	• Understanding human being as a co-existence of the sentient 'I' and the material 'Body' • Understanding the needs of Self('I') and 'Body' – *sukh* and *suvidha* • Understanding the Body as an instrument of 'I' (I being the doer, seer and enjoyer) • Understanding the characteristics and activities of 'I' and harmony in 'I' • Understanding the harmony of 'I' with the Body: *Sanyam* and *Swasthya*; correct apraisal of physical needs, meaning of prosperity in detail • Program to ensure *Sanyam* and *Swasthya*	20	12

| 3 | Harmony in the Family and Society | • Understanding harmony in the Family – the basic unit of human interaction

• Understanding values in human-human relationship; meaning of *Nyaya* and program for its fulfillment to ensure *Ubhay – tripti*; Trust (*Vishwas*) and Respect (*Samman*) as the foundational value of relationship

• Understanding the meaning of *Vishwas*; Difference between intention and competence

• Understanding the meaning of *Samman*, Difference between respect and differentiation; the other salient values in relationship

• Understanding the harmony in the society (society being an extension of family): *Samadhan, Samridhi, Abhay, Sah-astitva* as comprehensive Human Goals

• Visualizing a universal harmonious order in society – Undivided Society (*Akhand samaj*), Universal Order (*Sarvabhaum Vyavastha*) from family to world family. | 20 | 12 |
| 4 | Harmony in the Nature (Existence) | • Understanding the harmony in the Nature

• Interconnectedness and mutual fulfillment among the four orders of nature – recyclability and self-regulations in nature

• Understanding existence as co-existence (*Sah-astitva*) of mutually interacting units in all-pervasive space

• Holistic perception of harmony at all levels of existence | 20 | 12 |

5	Implications of the Holistic Understanding – A Look at Professional ethics	• Natural acceptance of human values
		
		 • Definitiveness of Ethical Human Conduct
		
		 • Basis for Humanistic Education, Humanistic Constitution and Universal Human Order
		
		 • Competence in Professional Ethics:
		    o Ability to utilize the professional competence for augmenting universal human order,
		    o Ability to identify the scope and characteristics of people-friendly and eco-friendly production systems, technologies and management models
		
		 • Case studies of typical holistic technologies, management models and production systems
		
		 • Strategy for transition from the present state to Universal Human Order:
		    o At the level of individual: as socially and ecologically responsible engineers, technologist and managers
		    o At the level of society: as mutually enriching institutions and organizations
			20	12

		Total	**100**	**60**

Student Seminar   – 5 Lectures
Expert Talk   – 5 Lectures
Student Test   – 5 Lectures

Total Lectures   **60 + 15 = 75**

Reference Books:
1. Human Values and Professional ethics – Teacher's Manual By R.R. Gaur, R Sangal G.P. Bagaria - Excel Books
2. Human Values and Professional ethics By R.R. Gaur, R Sangal G.P. Bagaria - Excel Books

Sr. No.	Topics	Details	Marks	Lec.
		ACTECH 4.2 : Advance PHP (OOP, CMS, Wordpress)		
1	OOP with PHP	PHP with OOPS Class, constructor, inheritance, serialize objects Database Handling with OOPS Defining Class Properties and methods Visibility In PHP (Public, Private and Protected) Inheritance in PHP Abstract class, function overriding, static method, interface, Auto load, Final keyword, object iteration, magic methods Insert, update, delete, listing and searching with the oops	15	10
2	Web Services	SOAP 　　PHP Web Services, 　　Web service Technology Stack, 　　SOAP Soup, 　　Web services with PHP, 　　Installing NuSOAP, 　　Building a SOAP SERVER, 　　Consuming a Web service, 　　Generating WSDL Dynamically, 　　Understanding Generated WSDL, 　　WSDL and SOAP Proxies Json 　　Introduction of json, 　　Uses of JSON, JSON - Comparison with XML, 　　JSON – Syntax, 　　JSON – DataTypes, 　　JSON – Objects, 　　JSON with PHP, 　　json_encode, json_decode 　　json webservice	12	6
3	Introduction to CMS	What is a Content Management System (CMS)? Introduction to CMS WordPress, Joomla and drupal etc….. FIRST POST What Is WordPress? Popularity of WordPress Current State Intersecting the Community WordPress and the GPL	8	5

		Content and Conversation WordPress as a Content Management System Creating Conversation **Getting Started** Hosting Options **Tools for Component Administration** Getting Your Development Stack Adding WordPress to the Local Install **Finishing Up** First-Time Administration		
4	The core of Wordpress	**Using the Core as a Reference** Inline Documentation Finding Functions Exploring the Core Deprecated Functions **WordPress Codex and Resources** What Is the Codex? Using the Codex Function Reference WordPress APIs Codex Controversy **Don't Hack the Core!** Why Not? Alternatives to Hacking the Core	6	2
5	Working with Wordpress	**Downloading** Download Locations Available Formats Release Archive **Directory and File Structure** **WordPress Configuration** Managing the Web Server Document Tree Enabling Debug Information wp-confi g.php File Handling Local and Production Database Advanced wp-confi g Options .htaccess The .maintenance File **wp-content User Playground** Plugins Themes Creating Virtual Local Server Names Uploads and Media Directory Upgrade Directory Custom Directories Creating simple website	15	10

6	The Loop	**Understanding the Loop** From Query Parameters to SQL Understanding Content in WordPress Putting the Loop in Context Flow of the Loop **Customizing the Loop** Using the WP_Query Object Building a Custom Query Adding Paging to a Loop Using query_posts( ) Using get_posts( ) Resetting a Query **Global Variables** Post Data, Author Data, User Data, Environmental Data, Global Variables or Template Tags **Working Outside the Loop**	6	3
7	Data Management	**Database Schema** **Table Details** WordPress Content Tables WordPress Taxonomy Tables **WordPress Database Class** Simple Database Queries Complex Database Operations Dealing with Errors **Direct Database Manipulation**	5	2
8	Custom Post Types, Custom Taxonomies and Metadata	**Understanding Data in WordPress** What Is a Custom Post Type? Register Custom Post Types Setting Post Type Labels Working with Custom Post Types Custom Post Type Template Files Special Post Type Functions **WordPress Taxonomy** Default Taxonomies Taxonomy Table Structure Understanding Taxonomy Relationships **Building Your Own Taxonomies** Custom Taxonomy Overview Creating Custom Taxonomies Setting Custom Taxonomy Labels Using Your Custom Taxonomy **Metadata** What Is Metadata? Adding Metadata Updating Metadata Deleting Metadata Retrieving Metadata	15	10

9	Plugin Development	**Plugin Packaging** Creating a Plugin File Creating the Plugin Header Plugin License Activating and Deactivating Functions Internationalization Determining Paths **Plugin Security** Data Validation and Sanitization **Know Your Hooks: Actions and Filters** Actions and Filters Popular Filter Hooks Popular Action Hooks **Plugin Settings** Saving Plugin Options Array of Options Creating a Menu and Submenus Creating an Options Page **WordPress Integration** Creating a Meta Box Creating a Widget Creating a Dashboard Widget Creating Custom Tables Uninstalling Your Plugin **Creating a Plugin Example** **Publishing to the Plugin Directory** Restrictions Submitting Your Plugin Creating a readme.txt File Setting Up SVN Publishing to the Plugin Directory Releasing a New Version	15	10
10	User Roles	Subscriber Role, Contributor Role Author Role, Editor Role, Administrator Role, Super Admin Role, Role Overview, Extending Roles	3	2
		Total	**100**	**60**

Student Seminar   – 5 Lectures
Expert Talk   – 5 Lectures
Student Test   – 5 Lectures

Total Lectures   60 + 15 = 75

Reference Books:

1. Head First Wordpress 1st Edition
2. WordPress Complete - Packt Publishing
3. Professional WordPress: Design and Development **-**
   By Hal Stern, David Damstra, Brad Williams
4. Beginning WordPress 3 (Expert's Voice in Web Development) Paperback –
   By Stephanie Leary
5. Professional WordPress Plugin Development by Brad Williams, Ozh Richard, Justin Tadlock
6. Web : www.wordpress.org

Sr. No.	Topics	Details	Marks	Lec.
ACTECH 4.3 : Advance Web Designing (JQuery, AJAX, CSS framework, Responsive Layout)
1	jQuery	What is jQuery ? Need and purpose of JQuery? jQuery and JavaScript, jQuery Install, jQuery Syntax	7	5
2	jQuery Selectors	Identifying DOM elements, Constructing jQuery Selectors The element Selector, The #id Selector, The .class Selector.	10	6
3	jQuery Events	Binding event handlers, Removing event handlers, User Interface/ Mouse events, Event Manipulation, Methods, $(document).ready(),click(), blclick(), mouseenter(), mouseleave(), mousedown(), mouseup(), hover(), focus(), blur()	12	6
4	jQuery Effects	jQuery Hide/Show, jQuery Fade, jQuery Slide, jQuery Animate, jQuery stop(), j Query Callback, jQuery Chaining.	10	7
5	jQuery HTML	jQuery Get, jQuery Set, jQuery Add, jQuery Remove, jQuery CSS Classes, jQuery css().jQuery and AJAX calls Using the ajax() API, Ajax events,Loading data with GET & POST,Working with JSON data.	10	7
6	AJAX	PHP with AJAX What is AJAX. How AJAX Works with PHP Working With Ajax as Background Process	6	4
7	Bootstrap Overview	What is Twitter Bootstrap? History Why use Bootstrap? What Bootstrap Package Includes? Bootstrap Environment Setup Download Bootstrap File structure PRECOMPILED BOOTSTRAP HTML Template	5	3
8	Bootstrap Grid System	What is a Grid? What is Bootstrap Grid System? Mobile first strategy Working of Bootstrap Grid System Media Queries	10	5

		Grid options Bootstrap Grid System Example: Stacked-to-horizontal, Medium and Large Device, Mobile, Tablet, Desktops		
9	Bootstrap CSS Overview	HTML5 doctype Mobile First Responsive images Typography and links, Normalize Containers Bootstrap Typography Headings Lead Body Copy Emphasis Abbreviations, Abbreviations, Abbreviations, Lists	10	5
10	Bootstrap Tables	Basic table, striped table Bordered table, hover table, condensed table Form Layout Vertical and basic forms, Form Control Sizing Supported Form Controls like inputs, textarea, checkboxes and radios Static control, Form Control States, input focus, disabled inputs, validation state	10	6
11	Bootstrap Buttons and Bootstrap Button Groups	Button Tags, Button Size, Button State Basic Button Group, Button Toolbar, Button Size, Nesting.	5	3
12	Bootstrap Navbar	Default navbar Responsive navbar, Static top, Inverted navbar Forms in navbar, Buttons in navbar, Text in navbar, Non-nav links Component alignment, Fixed to top, Fixed to bottom	5	3
		Total	100	60

Student Seminar	–	5 Lectures
Expert Talk	–	5 Lectures
Student Test	–	5 Lectures

Total Lectures   60 + 15 = 75

Reference Books:
1. jQuery for Dummies
2. jQuery Pocket Reference Paperback - by David Flanagan
3. Jquery in Action Paperback – by Bear Bibeault, Yehuda Katz
4. Ajax Black Book Paperback – by Kogent Solutions Inc.
5. Head First Ajax Paperback – by Riordan
6. Bootstrap Paperback - by Jake Spurlock
7. web : http://www.w3schools.com

ACTECH 4.4 : Project Work - I	
Topics	Marks
ACTECH 4.4	100

ACTECH 4.5 : Practical - I (Based on ACTECH 4.2)	
Topics	Marks
ACTECH 4.2	100

ACTECH 4.6 : Practical – II (Based on ACTECH 4.3)	
Topics	Marks
ACTECH 4.3	100