Bachelor of Science (Computer Science) (Semester – 3 and Semester – 4)
Saurashtra University
Effective from June - 2017

B.Sc. (C.S.) (Semester – 3)

**Objective:** Through this subject student will learn about the fundamental of Networking and will learn in detail about Internet, HTML, CSS, Dreamweaver tool, and JavaScript language.

<table>
<thead>
<tr>
<th>Unit No.</th>
<th>Topic</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Internet</td>
<td>Computer Network, Type of Computer Network, Network Topology, OSI Reference Model, TCP/IP Internet Terminology, ISP (Internet Service Provider), Intranet, VSAT (very small aperture terminal), URL, Portal, Domain Name Server</td>
</tr>
<tr>
<td>2</td>
<td>Application of Internet</td>
<td>World Wide Web (WWW), Search Engine, Remote Login, Telnet, FTP, Electronic Mail (Email), E-Commerce and E-Business, E-Governance</td>
</tr>
<tr>
<td>3</td>
<td>Basic of HTML &amp; Advance HTML</td>
<td>Fundamental of HTML, Basic Tag and Attribute, The Formatting Tags, The List Tags, Link Tag inserting special characters, adding images and Sound, lists types of lists, Table in HTML, Frame in HTML, Forms</td>
</tr>
<tr>
<td>4</td>
<td>Cascading Style Sheet</td>
<td>Introduction to CSS, Types of Style Sheets, Class &amp; ID Selector, CSS Font Properties, CSS Text Properties, CSS Background Properties, CSS List Properties, CSS Margin Properties, CSS Comments</td>
</tr>
</tbody>
</table>
| 5        | Macromedia Dream weaver | Getting Started With Dreamweaver MX, Opening Dreamweaver MX, Different Views Program Layout, Change Workspace, Panels Managing Panels, The Insert Bar, Making a Page
  - Web Pages and Their Relation to Each Other
  - Multiple Pages With Similar Style Page Properties, Text and Text Properties, Links, Link Properties, Creating a Link to Another Site Creating a Link to a Page in Your Site, Making an Image a Link, Linking to Other Media, Making Anchors Publishing, Managing Your Workspace Creating a New Site, Defining a New Site in Basic Mode Defining a New Site in Advanced Mode Uploading Your Files to the Web, Edit Sites Templates
  - Creating a New Template
  - Uneditable & Editable Regions
  - Saving Your Template
  - Creating a New Page From a Template
  - Changes to a Template |
<table>
<thead>
<tr>
<th>6</th>
<th>Java Script</th>
<th>Introduction to JavaScript Variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>- JavaScript Operators</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Conditional Statements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- JavaScript Loops</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- JavaScript Break and Continue Statements</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Dialog Boxes</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- JavaScript Arrays</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- JavaScript User Define Function</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Built in Function</td>
</tr>
</tbody>
</table>

**Reference Books:**

1. NETWORKING & INTERNET ENVIRONMENT by Bharat & Company.
2. Internet The Complete Reference – Young.
4. Internet For Every One – Leon.
5. Practical Html 4.0 –Lee Philips.
6. MCSE Networking Essential Training Guides.
7. Mastering In FrontPage – BPB.
Bachelor of Science (Computer Science) (Semester – 3 and Semester – 4)

Saurashtra University

Effective from June - 2017

B.Sc. (C.S.) (Semester – 4)

<table>
<thead>
<tr>
<th>Unit No.</th>
<th>Topic</th>
<th>Details</th>
</tr>
</thead>
</table>
| 1        | History, Introduction and Language Basics | - History and Features of Java  
- Java Editions  
- JDK, JVM and JRE  
- JDK Tools  
- Compiling and Executing basic Java Program  
- Java IDE (Netbeans and Eclipse)  
- Data Type (Integer, Float, Character, Boolean)  
- Java Tokens (Keyword, Literal, Identifier, Whitespace, Separators, Comments, Operators)  
- Operators (Arithmetic, Relational, Boolean Logical, Bitwise Logical, Assignment, Unnary, Shift, Special operators)  
- Type Casting  
- Decision Statements (if, switch)  
- Looping Statements (for, while, do..while)  
- Jumping Statements (break, continue, return)  
- Array (One Dim., Rectangular, Jagged)  
- Command Line Argument Array |
| 2        | Classes and Objects                        | - OOP Concepts (Class, Object, Encapsulation, Inheritance, Polymorphism)  
- Creating and using Class with members  
- Constructor  
- finalize() method  
- Static and Non-Static Members  
- Overloading (Constructor & Method)  
- VarArgs |
| 3        | Inheritance                                | - Universal Class (Object Class)  
- Access Specifiers (public, private, protected, default, private, protected)  
- Doing Inheritance  
- Constructors in inheritance  
- Method Overriding  
- Interface  
- Nested and Inner Class  
- Abstract and Final Class |
| 4        | Java Packages                              | - Normal import and Static Import  
- Introduction to Java API Packages and imp. Classes |
<table>
<thead>
<tr>
<th>Page</th>
<th>Exception Handling and Threading</th>
<th>Streams (Input and Output)</th>
<th>Applets</th>
<th>Layout Managers</th>
<th>Event Handling</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>Introduction to exception handling</td>
<td>Stream and its types (Input, Output, Character, Byte)</td>
<td>- Introduction to Applet</td>
<td>- FlowLayout</td>
<td>- Introduction to Event Handling</td>
</tr>
<tr>
<td></td>
<td>try, catch, finally, throw, throws</td>
<td>File and RandomAccessFile Class</td>
<td>- Applet Life Cycle</td>
<td>- BorderLayout</td>
<td>- Event Delegation Model</td>
</tr>
<tr>
<td></td>
<td>Creating user defined Exception class</td>
<td>Reading and Writing through Character Stream Classes</td>
<td>- Implement &amp; Executing Applet with Parameters</td>
<td>- CardLayout</td>
<td>- Event Packages</td>
</tr>
<tr>
<td></td>
<td>Thread and its Life Cycle (Thread States)</td>
<td>FileReader, BufferedReader, FileWriter, BufferedWriter</td>
<td>- Graphics class</td>
<td>- GridLayout</td>
<td>o AWT Event Package</td>
</tr>
<tr>
<td></td>
<td>Thread Class and its methods</td>
<td>Reading and Writing through Byte Stream Classes (InputStream, FileInputStream, BufferedInputStream, DataInputStream, OutputStream, FileOutputStream, BufferedOutputStream, DataOutputStream)</td>
<td></td>
<td>- GridBagLayout with GridBagConstraints</td>
<td>o Swing Event Package</td>
</tr>
<tr>
<td></td>
<td>Synchronization in Multiple Threads (Multithreading)</td>
<td>StreamTokenizer Class</td>
<td></td>
<td>- Intro. to BoxLayout, SprigLayout, GroupLayout</td>
<td>- Event Classes (ActionEvent, ItemEvent, FocusEvent, MouseEvent, MouseWheelEvent, TextEvent, WindowEvent, etc.)</td>
</tr>
</tbody>
</table>
- Listener Interfaces (ActionListener, ItemListener, FocusListener, KeyListener, MouseListener, MouseMotionListener, TextListener, WindowListener, etc.)
- Adaptor Classes (FocusAdaptor, KeyAdaptor, MouseAdaptor, MouseMotionAdaptor)

Reference Books:
2. Complete JAVA2 Certification
3. JAVA2 Black Book
4. A Programmer Guide to JAVA Certification By Khalid A. Mughal