St. Xavier’s College – Autonomous Mumbai

Syllabus
For 3rd Semester Courses in
Information Technology
(June 2014 onwards)

Contents:
Theory Syllabus for Courses:
  S.ITS.3.01 - Logic and Discrete Mathematical Structures (LDMS)
  S.ITS.3.02 - Web Designing And Programming
  S.ITS.3.03 - Advanced Structured Query Language (ASQL)
  S.ITS.3.04 - Object Oriented Programming with Java
  S.ITS.3.05 - Embedded System
Practical Course Syllabus for: S.ITS.3.PR
S.Y. B.Sc.IT  
Course: S.ITS.3.01  
Title: Logic and Discrete Mathematical Structures (LDMS)

Learning Objective:  
To develop logical reasoning and analytical mind

Number of lectures: 75

UNIT 1  
Fundamentals and Logic (10 lectures)  
- Sets and subsets  
- Operations on sets  
- Sequences mathematical structures  
- The inclusion exclusion principle  
- Mathematical induction  
- Logic – propositions and logical operations  
- Conditional statements  
- Methods of proof

UNIT 2  
Counting Principles (10 lectures)  
- Permutations  
- Combinations  
- The pigeon hole principle  
- Recurrence relation  
- Elements of probability

UNIT 3  
Relations and Digraphs (10 lectures)  
- Relations and digraphs  
- Paths in relation and digraphs  
- Properties of relation  
- Equivalence relations  
- Computer representation of relations and digraphs  
- Transitive closure and Warshalls algorithm.

UNIT 4  
Functions, Graph theory and Trees (15 lectures)  
- Functions for computer science  
- Permutations functions  
- Growth of functions  
- Graph  
  - Eulers paths and circuits  
  - Hamiltonian paths and circuits  
- Trees  
  - Labeled trees  
  - Tree searching  
  - minimal spanning trees

UNIT 5  
Order relations and Structures (15 lectures)  
- Partially ordered sets  
- Lattices
S.Y. B.Sc.IT

Title: Web Designing and Programming

Learning Objective:
To learn Web page designing and programming using JavaScript, jQuery, HTML, CSS, XML, PHP technologies for the WWW.

Number of lectures: 75

UNIT 1
Internet and WWW (10 lectures)

What is Internet?
- Introduction to internet and its applications
- E-mail, telnet, FTP, ecommerce, video conferencing, e-business

Internet service providers
- Domain name
- Server
- Internet address

World Wide Web (WWW)
- World Wide Web and its evolution
- Exploring the Uniform resource locator (URL) and its components
Browsers
Google Chrome, Mozilla Firefox, Opera,
Apple Safari, Internet Explorer 9

Search engine
Web server
Apache, IIS, proxy server, xampp, HTTP protocol method

UNIT 2
HTML and Graphics (15 lectures)
HTML Tag Reference, Global Attributes,
Document Structure Tags, Formatting Tags,
Text Level formatting,
Understanding the difference between a tag, element and attributes in HTML

Organizing Text in HTML
Preformatted Text, DIV Element, SPAN Element
Creating Lists (Definition, Unordered and Ordered)

Imagemaps
What are Imagemaps?
Client-side Imagemaps, Server-side Imagemaps,
Using Serverside and Client-side Imagemaps together,
Alternative text for Imagemaps,

Hyperlink tags
Exploring the Hyperlinks, href attribute, target attribute (_blank, _parent, _self, _top)
and id attribute, Images and text as hyperlinks,

Tables
Understanding Tables, Describing the TABLE Element,
CAPTION, COLGROUP, COL, TBODY, THEAD,
TFOOT, TR, TD, TH, Spanning Rows and Columns,
Placing images and text in a table, Nested Tables

Frameset and iframe
Introduction to Frames, Applications,
The <FRAMESET> tag, Nesting<FRAMESET> tag,
Placing content in frames with the <FRAME> tag,
Targeting named frames,

iframes

Forms
Creating Forms using <FORM> tag and its attributes,
The <INPUT> tag, Single and Multiple lines text fields,
Password Field, Radio Button, Checkboxes, Submit button,
Select element, Hidden Text, Text Area, File Upload,
Button, Label, fieldset, legend, Option, Optgroup,
Disabled and read-only fields, Form field event handlers,
Passing form data

HTML5 new elements
Canvas for 2D drawing, video, audio,
Content specific elements:
article, footer, header, nav, section, wbr, datalist, output

Form controls:
Calendar, date, time, email, url, search

Style Sheets using CSS3
Evolution of CSS, Understanding the CSS Syntax, Exploring CSS Selectors (universal, type, class, id, child, descendant, adjacent sibling), Inserting CSS in an HTML document: The Internal Style Sheet The External Style Sheet The Inline Style Sheet Defining Inheritance in CSS Backgrounds and Color Gradients, Fonts and Text Styles, Creating Boxes and Columns, Displaying, Positioning, Floating an Element, List Styles, Table Layouts Pseudo-classes and Pseudo-elements

**UNIT 3**

**Java Script & jQuery**

(15 lectures)

**Introduction**

Client-Side JavaScript, Server-Side JavaScript,

**Operators**

Assignment Operators, Comparison Operators, Arithmetic Operators, % (Modulus), ++ (Increment), -- (Decrement), - (Unary Negation), Logical Operators, Short-Circuit Evaluation, String Operators, Special Operators, ?: (Conditional operator), , (Comma operator), delete, new, this, void

**Statements**

Break, comment, continue, delete, function, return, switch, var

**Core JavaScript (Properties and Methods of Each)**

Array, Boolean, Date, Function, Math, Number, Object, String, regExp

**Events and Event Handlers**

General Information about Events, Defining Event Handlers, Event, onAbort, onBlur, onChange, onClick, onDblClick, onDragDrop, onError, onFocus, onKeyDown, onKeyPress, onKeyUp, onLoad, onMouseDown, onMouseMove, onMouseOut, onMouseOver, onMove, onReset, onResize, onSelect, onSubmit, onUnload

**jQuery**

Fundamentals of jQuery, Loading and using jQuery, jQuery Syntax, jQuery Selectors, Element properties and attributes, Methods to access HTML Attributes, Methods for Traversing, jQuery Events, CSS using jQuery

**UNIT 4**

**XML**

(10 lectures)

**Introduction to XML**

Anatomy of an XML document Creating XML Documents
Creating XML DTDs, XML Schemas, XSL

**UNIT 5**

**PHP**  
(12 lectures)

Why PHP and MySQL?  
Server-side web scripting, Installing PHP,  
Adding PHP to HTML, Syntax and Variables,  
Passing information between pages, Strings,  
Arrays and Array Functions, Numbers,  
Basic PHP errors/problems

**UNIT 6**

**Advanced PHP and MySQL**  
(13 lectures)

PHP/MySQL Functions, Displaying queries in tables,  
Building Forms from queries,  
PHP/MySQL Efficiency, PHP/MySQL Problems,  
Advanced Array Functions,  
String and Regular Expressions,  
File System and System Functions,  
Sessions, Cookies and HTTP,  
Type and Type Conversions, PHP Mathematics,  
E-Mail

Steps to deploy a website

**Continuous Internal Assessment**

Assignments / Project  
Mid Term test.

**List Of Text Books**

2. HTML5 covers CSS3, JavaScript, XML, PHP, jQuery Black Book, dreamtech press  
3. HTML and XHTML The Complete Reference by Thomas Powell, Tata McGraw Hill  
5. jQuery in Action second edition by Bear Bibeault and Yehuda Katz, dreamtech press  
7. Beginning PHP and MySQL by W. J. Gilmore, Apress  
8. http://www.w3schools.com/browsers/

**List of Recommended Reference Books**

2. Programming the Web using HTML and JavaScript by Larry Randles Lagerstrom, TataMcGraw Hill  
3. JavaScript Step by Step by Suehring, PHI  
5. PHP: A beginners guide by VikramVaswani, Tata McGraw Hill  
6. PHP: The Complete Reference by Steven Holzner, Tata

**S.ITS.3.02 Assignment Guidelines**

- Topics have to be one step beyond the syllabus, For example: An assignment on Java script could include an in depth study on JavaScript Frameworks like Backbonejs, EmberJS, AngularJS rather than just JQuery.
Develop thoughts logically.
- Do not merely repeat the author’s position and content—evaluate the author’s position from your own point of view and experiments.
- You are encouraged to both agree and disagree with the authors of course materials. Explain why you agree or disagree.
- Write at a college level, using appropriate vocabulary, grammar, and spelling. Avoid using the second person (you). Avoid generalizations, idioms, and slang.
- Consult reference works, including standard dictionaries, to accurately define terms.
- Express concepts in your own words as much as possible. Document all quotations, paraphrases, and important ideas that are not your own, even if they are from course materials.
- Clearly identify UID, Roll no and assignment topic on a title page.
- Reference list must not include Google and Wikipedia.
- Assignment submission must be accompanied with its corresponding plagiarism report. (viper or turnitin websites may be used).

---

**S.Y. B.Sc.IT**  
**Course:** S.ITS.3.03  
**Title:** Advanced Structured Query Language (ASQL)

**Learning Objective:**
To develop the skill of data base programming using advanced concepts.

**Number of lectures:** 75

**Unit 1**  
(12 lectures)  
Writing Basic SQL Select Statements,  
Restricting and Sorting Data, Single-Row Functions,  
Joins (Displaying Data from Multiple Tables),  
Aggregating Data using Group Functions, Manipulating Data,  
Creating and Managing Tables, Including Constraints,  
Creating Views, inline views,  
Controlling User Access, grant, revoke, rollback.  
Creating Other Database Objects (Sequences, Indexes and Synonyms)

**Unit 2**  
(10 lectures)  
**Group by clause advanced concepts:**  
Using SET operators, Enhancements to Group by clause,  
cube, Rollup and Grouping.

**Advanced Sub queries:**  
Multiple column sub queries,  
Sub queries in FROM clause,  
IN,ALL,ANY,EXISTS operators,  
Scalar and correlated sub queries

**Unit 3**  
(13 lectures)  
**Procedure language:**  
Types of PL/SQL blocks,  
Identifiers, types of Identifiers,  
Declarative Section, variables,
Scalar Data Types, The %TYPE Attribute,
Bind Variables, Sequences in PL/SQL Expressions,
Executable Statements, PL/SQL Block Syntax,
Deployment of SQL Functions in PL/SQL,
Nested Blocks, Operators.

Control Structures:
Conditional processing using IF Statements and CASE Statements,
Loop Statement, While Loop Statement, For Loop Statement,
the Continue Statement, Composite Data Types
Exception Handling, Handle Exceptions with PL/SQL,
Trap Predefined and non-predefined Oracle Server Errors,
User-Defined Exceptions, Propagate Exceptions,
RAISE_APPLICATION_ERROR Procedure,

Unit 4
(13 lectures)
Stored Procedures:
What is procedure? Syntax of crating procedure,
Creating procedure with parameters, IN parameter,
OUT parameter, methods of passing parameter,
Invoking procedure from other procedure,
The PL/SQL Execution Environment,
Differences between Anonymous Blocks and Subprograms,
Declaring subprograms, Handled exceptions, removing procedures

Functions:
Basic concept of functions, different types of functions,
Advantages of using Stored Functions,
the steps to create a stored function,
Invoke User-Defined Functions in SQL Statements,
Restrictions when calling Functions,
Control side effects when calling Functions,
View Functions Information, Functions and Procedures,

Unit 5
(12 lectures)
Packages:
overview of packages, components of packages,
referencing package objects, developing a package,
creating package specification, declaring public constructs,
creating package body, public and private constructs,
removing packages, advantages of packages.
Overloading using forward declarations,
user defined package,
invoking user defined package from a SQL statement.

Large Objects:
objectives, LOB, anatomy of LOB,
contrasting Long and Lob Data types,
adding LOB columns to a table,
populating LOB columns removing LOB,
BFILE, loading BFILE,

Unit 6
(15 lectures)
Dynamic SQL:
Cursor:
objectives, explicit cursor functions,
declaring the cursor, opening the cursor,
fetching data from the cursor, closing the cursor,
extit cursor attributes, the %ISOPEN attribute,
cursor FOR loops

Triggers:
Definition, the Trigger Event Types and Body,
Business Application Scenarios for Implementing Triggers,
Create DML Triggers using the CREATE TRIGGER Statement and SQL Developer,
Body, and Firing (Timing),
Statement Level Triggers and Row Level Triggers,
Creating Compound, DDL and Event Database Triggers,
Compound Trigger Structure for Tables and Views,
instead of trigger, DDL trigger.
Comparison of Database Triggers and Stored Procedures,

List Of Text Books
1. Murach’s Oracle SQL and PL/SQL by Joel Murach, Murach and Associates.
2. Oracle Database 11g PL/SQL Programming Workbook By: Michael Mc Laughlin, John Harper

List of Recommended Reference Books
1. Oracle PL/SQL Programming Fifth Edition By Steven Feuerstein, Bill Pribyl
2. Oracle 11g: SQL Reference Oracle press

Term Work:
Assignments/Tests

S.Y. B.Sc.IT Course: S.ITS.3.04
Title: Object Oriented Programming with Java

Learning Objective:
To learn a Core Java fundamentals, To understand how java is used in object oriented
programming. To develop strong foundation for building projects in java. To understand how
Java differs from other programming languages.
Design Patterns skill is useful in designing projects.

Number of lectures: 75

Unit 1 (10 lectures)
Overview of Java
Difference between C++ and java
Architecture of java -- portability
Features of java, Data types in java
Variables in java, Scope and lifetime of variable
Arrays in java- 1D, 2D. Different ways to declare an array.
Arithmetic operators, Boolean operators, Assignment operator, ? operator
Control statements –while, do-while, for, if-else, switch

**Unit 2**

**Classes, Methods and Object Oriented Features (10 lectures)**

Class fundamentals, Objects,
Assigning Object Reference Variables, Methods,
Passing parameter to method, Constructors,
this and super keyword, garbage collection,
Inheritance, Polymorphism,
String, StringBuffer, StringTokenizer,
Wrapper Classes

**Unit 3**

**Interface and Packages (10 lectures)**

Packages, Access Protection,
Importing Packages, Interface
Defining a Package, Finding Packages and CLASSPATH
A Short Package Example, Access Protection,
An Access Example, Importing Packages,
Interfaces, Defining an Interface
implementing Interfaces, Nested Interfaces,
Applying Interfaces, Variables in Interfaces,
Interfaces Can Be Extended

**Unit 4**

**Exceptional Handling, JDBC and Thread (15 lectures)**

Exceptional Handling fundamentals,
Exception Types Uncaught Exceptions,
try and catch, multiple catch clauses,
nested try statements, throw, throws
finally, java built in exception,
creating your own exception subclasses
Understanding Type I driver of JDBC, Examples using JDBC,
Understanding ResultSetMetaData, PreparedStatement, CallableStatement interface
Java thread model, main thread, creating a thread, creating
multiple threads, using isAlive(), join(), Thread priorities,
synchronization, interthread communication

**Unit 5**

**Collection Framework and Design Pattern (15 lectures)**

Collections Overview
The Collection Interface -List Interface, Set Interface
The Collection Classes-
    ArrayList class,
    Linked List class,
    Vectors and Hashtable

**Design Pattern**

Singleton Pattern, Adapter Pattern, Façade Pattern
Factory Pattern, Proxy Pattern

**Unit 6.**

**I/O, Applets and Swing (15 lectures)**

I/O basics, Reading console inputs,
writing console output, PrintWriter class
Reading and writing files.
Applet fundamentals, Life cycle of Applet, Programs using applets,
Introduction to swing. Difference between swing and Applet.
JLabel and ImageIcon, JTextField, JButton, JToggleButton
Check Boxes, Radio Buttons, JTabbedPane, JScrollPane, JList
 JComboBox, Trees, JTable and event handling

**Continuous Internal Assessment**
Assignments / Project
Mid Term test.

**List of Text Books:**
1. Java 2 Complete Reference by Herbert Schildt -- TMH Publication
2. Design pattern in Java—steven john metsker -- Pearson publication

**List of Recommended Reference Books**
1. OCJP—by Kathy Sierra
2. Java2 by Ivan Bayross -- bpb publication
3. Java2 by Balaguruswamy -- TMH

---

**S.Y. B.Sc.IT**

**Course: S.ITS.3.05**

**Title: Embedded System**

**Learning Objective:**
To learn the importance of Embedded system. Write programs for embedded system.

**Number of lectures: 75**

**UNIT 1**
**Introduction**
Review of 8051 microcontroller
Introduction to embedded system?
Variations on the theme,
C : The least common denominator
Introduction about hardware

**UNIT 2**
**Real Time Operating System**
OS Services
Interrupt Routines Handling
Task Scheduling Models
Handling of Task Scheduling and Latency and Deadlines as Performance Metrics
Inter Process Communication and Synchronization
Shared Data Problem – Use of Semaphore(s)
Priority Inversion Problem and Deadlock Situations
UNIT 3
RTOS and Embedded Programming (12 lectures)
Inter Process Communications using Signals
Semaphore Flag or Mutex as Resource key
Message Queues
Compiling, linking and locating,
The Build Process
Writing Embedded C Programs
Difference between programs and embedded programs

UNIT 4
Memory (13 lectures)
Types of memory, Memory testing,
Validating memory contents,
Working with Flash Memory

UNIT 5
Memory (13 lectures)
Types of memory, Memory testing,
Validating memory contents,
Working with Flash Memory

UNIT 6
Peripherals (12 lectures)
Control and status Registers,
The device driver philosophy,
A simple timer driver.

Continuous Internal Assessment
Assignments / Project
Mid Term test.

List Of Text Books
1. Programming Embedded systems in C and C++, O.reilly

List Of Recommended Reference Books
2. Shibu K., Introduction to Embedded Systems
S.Y. B.Sc.IT  
Course: S.I.TS.3.PR  

Practical – I:  

ASQL  

EMBEDDED SYSTEM  

Number of lectures: 90  

ADVANCED SQL  

Learning Objective: To develop database using advanced SQL concepts.  

For a 1.5 credit course a minimum of 8 programs should be executed. A journal of the printouts of the programs and its output should be maintained. Certified journal will have to be presented at the time of practical exam.  

Advanced SQL practicals  

I) Select queries and joins  
   a. Select queries on single table using alias, where and order by clause.  
   b. Select queries on single table using aggregate functions and group by clause.  
   c. Querying data from multiple Tables using ROLLUP, CUBE operators.  
II) Sub queries, DML and DDL  
   a. Querying single and multiple tables using sub queries.  
   b. Manipulating data (Insert, update and delete)  
   c. Creating simple tables and tables with constraints.  
III) Creating database objects,  
   Controlling user access and using set operators  
   b. Granting and revoking privileges on user objects.  
IV) Working with advanced sub queries  
   a. Multiple column sub queries, sub queries in from clause,  
   b. Scalar sub queries and correlated sub queries,  
   c. correlated sub query  
V) Basic PL/SQL,  
   a. Creating anonymous PL/SQL blocks.  
   b. manipulating data using PL SQL  
   c. Process a number of rows from a table and populate another table with the results using a cursor FOR loop.  
VI) Cursors, Exceptions and procedures issuing DML and query commands.  
   a. Cursors with parameters to process a number of rows from multiple tables.  
   b. Create exception handlers for specific situations.  
   c. Create procedures that issue DML and query commands.  
VII) Functions and Stored Procedures  
   a. Creating and invoking functions from SQL statements.
b. Creating and invoking stored procedures.
c. Create inbuilt functions using Cursor.

VIII) Working with packages
a. Create package specifications and package bodies. Invoke the constructs in the packages.
b. Create a package containing an overloaded function.
c. Implementation of LOB data type.

IX) Working with triggers
a. create a trigger to update a table only during office timing.
b. Create row triggers for updating values.
c. Create procedures that will be invoked from the triggers.

X) Working with INSTEAD OF triggers, business rules and recompiling procedures, functions, packages and views.
a. Create instead of triggers for views.
b. Implement business rules.
c. Create trigger for automatic updating tables.

EMBEDDED SYSTEM

Learning Objective:
To learn to program using assembly language / embedded C, Arduino and Microcontroller Kits.

Any three from the each of the following categories should be implemented

Using Simulator

1. Write a program to flash single LED at P1 from right-to-left and left-to-right.
2. Write a program to search a number from given set of numbers
3. Add two numbers stored in R0 and R1. If the sum is greater than FF, port p1.0 will be “ON”.
4. Add four numbers stored in RAM location 40 to 43 display the result in binary at port0(MSB) and port1 (LSB).
5. Write a program to toggle all the bits of P1 continuously after every 1s. Use Timer0, mode 1 (16 bit timer/counter) to create the delay.
   - Using polling method
   - Using interrupt driven method

Using Arduino Kit

1. Programming using LED.
2. Programming using LDR
3. Programming using LCD
4. Programming using REMOTE CONTROL
5. Programming using the serial command prompt as display and the remote control.

Using Microcontroller Kit.
1. Configure timer control registers of 8051 and develop a program to generate given time delay.
2. Port I/O: Use one of the four ports of 8051 for O/P interface to eight LED’s. Simulate binary counter (8-bit) on LED’s.
3. 8051 with D/A converter and generate square wave of given frequency on oscilloscope.
4. Interface stepper motor with 8051 and write a program to move the motor through a given angle in clockwise or counter clockwise direction.
5. Generate traffic signal

A journal of the printouts of the programs and its output should be maintained. Certified journal will have to be presented at the time of practical exam.

Continuous Internal Assessment
MCQ / Viva test during practicals
Mid Term practical test.

S.Y. B.Sc.IT Course: S.ITS.3.PR

Practical – II: OOP with JAVA
WEB DESIGNING AND PROGRAMMING

Number of lectures: 90

For a 1.5 credit course a minimum of 8 programs should be executed. A journal of the printouts of the programs and its output should be maintained. Certified journal will have to be presented at the time of practical exam.

OOP with JAVA

Learning Objective: To apply the concepts learnt in object oriented programming using java.

Number of lectures: 45

Minimum 8 programs should be implemented.

I) Design a program to implement concept of class, constructor and inheritance
Design a class to represent a bank account to display name and balance using
Members:
   a. Account name
   b. Depositor name
   c. Type of account
   d. Balance amount in account
Methods:
   a. to assign initial value
   b. to deposit an amount
   c. to withdraw an amount after checking balance

II) Write a program to calculate sum of the digits of a number
III) Create a login screen and authenticate the user by matching username and password through database
IV) Write Java code to design four radio buttons and whenever user clicks on a particular button the selected button should be known by text message. Implement the Listener
V) Design the screen using Swing to accept the roll number and marks in three subjects and on click of the button it shows the average of marks on the text
VI) Write a program for exception handling. Implement user-defined exception. Create, throw and catch user-defined exception and handle runtime exception
VII) Write a Java program to find whether the string is a palindrome or not
VIII) Write Java program for arranging the strings in alphabetical order
IX) Write Java program to arrange the numbers in decreasing order but the numbers should be stored using Vector
X) Write a Java program to read data from a file and copy it to another file.

A journal of the printouts of the programs and its output should be maintained. Certified journal will have to be presented at the time of practical exam.

WEB DESIGNING AND PROGRAMMING

Learning Objective:
To be able to design and develop a dynamic website.

Number of lectures: 45

For a 1.5 credit course a minimum of 8 programs should be executed. A journal of the printouts of the programs and its output should be maintained. Certified journal will have to be presented at the time of practical exam.

I) Design a web page using a text editor with different text formatting tags and save it as aboutme.html extension in a folder called Prac_1 in the D-drive.

II) Lists, Links & Images:
Design a HOME page called index.html with links to different pages and allow navigation between pages. Elements: your page must use some lists (numbered and/or un-numbered and/or description), as well as a table, and a variety of headings. The page must also include some images and some links to other websites like ww.xaviers.edu. The web page title must reflect what the page is: example “John White’s Home Page”
Make the top level heading of the web page the same as the title. Content: the page should comprise of your personal information like
   Academic/Employment status: I am a student
   Courses that you are studying (make use of table tag)
   Write about your interests (nice place for some lists or perhaps an image as well?)
   Write about where you come from (perhaps you could find some images, and use
III) Design a web page with image maps.
   **Journal entry:** The World Wide Web Consortium (W3C) has an HTML validation service. Give the steps on How does one validate an HTML page and the purpose behind this validation?

IV) **Tables:** Design a web page with different tables. Design a web page using tables so that the content appears well placed.

V) **Form & CSS:** Create the Registration form using all types of controls. Create the CSS file and Implement the CSS with HTML.

VI) **Frames & CSS:** Design a web site using a frameset and open different pages in the frames. Make use of an external/linked style sheet so that the pages have uniform style.

VII) **Javascript:**
   - Create an HTML form that accepts an integer value from the user and then using JavaScript, prints its factorial.
   - Design an HTML form for the canteen coffee counter that accepts the item, quantity and using JavaScript calculates the total along with taxes and displays back to the user. (make use of list box/check box/radio button/text box etc)
   - Design a form with a text box and a command button. Using JavaScript, write a program to check whether the number entered in the text box is a prime number or not.

VIII) Design a form and validate all the controls placed on the Registration form using JavaScript and regular expressions.

IX) **jQuery introduction:**
   a. hello world example
   b. calling a function in jQuery and JavaScript
   c. Loading jQuery form Google Journal entry: why is it better to load the library using Google code?
   d. Applying styles to a table using jQuery CSS
   e. Design a web page to create the sliding effect using the slideup(), slidetoggle() and slidetoggle() methods
   f. Make use of the `toggleClass( class )` method that adds the specified class styling when clicked upon and removes the specified class styling when clicked for the second time.

X) **XML:**
   a. Design a DTD, corresponding XML document and display it in browser using CSS.
   b. Design an XML document and display it in browser using XSL.
   c. Design XML schema and corresponding XML document.

XI) **PHP:**
   a. Design a php page to process a form.
b. Design a php page for authenticating a user.

XII) Design a complete dynamic website with all validations.

#Note: Keeping the SYBSc.IT students in mind, although care has been taken to cover the significant areas of Web designing and Programming, but being a vast subject, one semester is not sufficient to cover all the sub-topics during lectures and practical sessions. Hence students are encouraged to do research and practicals on their own in their leisure time, through various books, online sites as advised by the course instructor at the end of every session, in order to gain an in-depth knowledge of this paper.

Continuous Internal Assessment
MCQ / Viva test during practicals
Mid Term practical test.