



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
Hamiltonion paths and circuits

Trees

Labeled trees
Tree searching
minimal spanning trees

UNIT 5

Order relations and Structures

(15 lectures)

Partially ordered sets
Lattices

Finite Boolean algebra
Functions on Boolean algebra
Semi groups
Groups
Coding of binary information and error detection
Decoding and error correction

UNIT 6

Languages and Finite state machines

(15 lectures)

Languages
Representation of special languages and grammars
Finite state machines
Machines and regular languages

Continuous Internal Assessment

Problem solving / MCQ
Midterm test

List Of Text Books

Discrete structures by B Kolman RC Busby, S Ross Pvt.ltd

List Of Recommended Reference Books

1. Discrete structures by Liu
2. Discrete mathematics for computerscientists and mathematicians ---Joe L Mott
3. Discrete mathematics, schaum's outline series --- Seymour Lipschutz , Marc Lipson.

S.Y. B.Sc.IT

Course: S.ITS.3.02

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, onDbClick,

onDragDrop, onError, onFocus, onKeyDown, onKeyPress,

onKeyUp, onLoad, onMouseDown, onMouseMove,

onMouseOut, onMouseOver, onMouseUp, 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

1. Web Design The Complete Reference by Thomas Powell, Tata McGraw Hill
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
4. JavaScript: A Beginners guide by John Pullock, Tata McGraw Hill
5. jQuery in Action second edition by Bear Bibeault and Yehuda Katz, dreamtech press
6. XML: The Complete Reference by Williamson, Tata McGraw Hill
7. Beginning PHP and MySQL by W. J. Gilmore, Apress
8. <http://www.w3schools.com/browsers/>

List of Recommended Reference Books

1. HTML for the WWW with XHTML and CSS: Visual Quickstart Guide 5th Edition, Pearson Education.
2. Programming the Web using HTML and JavaScript by Larry Randles Lagerstrom, TataMcGraw Hill
3. JavaScript Step by Step by Suehring, PHI
4. XML: A beginners guide by StevenHolzner Tata McGraw Hill
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 creating 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,
explicit 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 PLSQLby 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 variables
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 (10 lectures)

Classes , Methods and Object Oriented Features

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 (10 lectures)

Interface and Packages

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 (15 lectures)

Exceptional Handling, JDBC and Thread

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 (15 lectures)

Collection Framework and Design Pattern

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. (15 lectures)

I/O , Applets and Swing

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

(12 lectures)

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

(13 lectures)

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
2. <http://www.ece.cmu.edu/~koopman/iccd96/iccd96.html>

List Of Recommended Reference Books

1. Rajkamal, "Embedded Systems Architecture, Programming and Design", Tata McGraw Hill.
2. Shibu K., Introduction to Embedded Systems

S.Y. B.Sc.IT

Course : S.ITS.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) ISub 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
 - a. Creating Views, Sequences, Indexes and synonyms.
 - 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 an 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.

- D) 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:
 - b. Account name
 - c. Depositor name
 - d. Type of account
 - e. 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 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

them as links?

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 from 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(), slidedown() 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.