

## **APT 1040: INTRODUCTION TO WEB DESIGN AND APPLICATIONS**

Prerequisite: IST 1020 Introduction to information Technology

3 Credit Units

### **Rationale**

Information is a valuable resource in organizations and society. The ability of information professionals to understand and use information in innovative and creative ways is essential in today's increasingly competitive environment. The ability to use information and information technologies requires a fundamental knowledge of an extensive range of concepts. This course is designed to introduce students to an understanding of how information and information technology can be applied across the many different types of information systems and information environments.

### **Description**

The course will expose students to scripting languages and how they are used in client-server Web applications. Skills learned include the internal and external considerations of planning, designing, creating, and maintaining dynamic interactive web sites. Students will learn how to set up and configure a web server and associated services. Topics covered will include: CGI, JavaScript, Web security tools, server-side programming metatables applets, data description languages, database connectivity, scripting languages and distributed applications Exposure to security and efficiency issues.

### **Learning outcomes**

At the completion of this course the student should be able to:

1. Describe the structure of the World Wide Web as interconnected hypertext documents.
2. Describe the importance of the HTTP protocol in Web applications.
3. Create and validate HTML/XHTML documents.
4. Use XML syntax to create documents for Web applications.
5. Describe some presentation technologies, such as, Cascading Style Sheets and DHTML.
6. Discuss and contrast data entry and validation techniques in Client-side vs. Server-side programming.
7. Discuss and contrast Client-side with Server-side security issues.
8. Describe the use of server-side backend databases in web sites and web applications.
9. Describe technologies used in Web Services, including Open Source languages and packages. Proprietary languages and packages, and Enterprise Web development and Distributed Web applications.
10. List and discuss the function of existing and emerging Web technologies, such as XML, SOAP, WSDL, UDDI, Java, C#, EJB, .NET, etc.
11. Discuss Web Standards in terms of specifications, guidelines, software, and tools

## Course Content

Getting Started with Graphics Package, Working with Objects, Adjusting Colors, Using Painting Tools, Making Selections Selecting and Modifying Graphics, Modifying Pixels and Manipulating Images. Working with Masks, Adjustment Layers, Creating Special Effects with Filters. Using Images for Rollover Menu Creating, Web Documents, Saving for the Web Digital Media; Information Architecture; Web Development; HTTP Protocol; Presentation abstractions; Web-markup and display languages; Client-side programming; Server-side programming; Creating Animation Web services; Web servers; Emerging technologies; Standards & Standard Bodies; Vulnerabilities; Social Software.

Lectures, Presentations by members of the class, Case discussions, Tutorials, Assignments, Continuous assessment tests, Practical, Library, appropriate software, manual/notes,

### Teaching Methodology

A series of lectures and laboratory exercises will be used to study the concepts. Audio-visual aids will be used in the lectures.

### Instructional Materials/Equipment

Course text, Handouts, White board, Presentation slides, Journals, and Web authorizing tools.

## Methods of evaluation

Class assignments, take-home assignments, tests, small projects to demonstrate use of software tools

Laboratory Work	20%
Project	20%
Assignments	10%
Mid-semester	20%
Final semester exams	30%
<b>Total</b>	<b><u>100%</u></b>

## Course Text

Principles of Web Design, fourth edition, by Joel Sklar, Published (2009) by Course Technology, ISBN-13: 978-0-538-74757-8

## Recommended Reading

Adobe Dreamweaver CS3 Unleashed by Zak Ruvalcaba, published October 18, 2007 by Sams, ISBN 978-0-672-32944-9.

Multimedia Web Authoring, A Design Guide, by James Gonzalez, 2003

Dreamweaver CS3: The Missing Manual by David Sawyer McFarland, published June 15, 2007 by O'Reilly, ISBN 978-0-59-651043-5.

CSS Cookbook by Christopher Schmitt, published October 1, 2006 by O'Reilly, ISBN 978-0-59-652741-9.

Transcending CSS: The Fine Art of Web Design by Andy Clarke, Molly E. Holzschlag, and Dave Shea, published November 15, 2006 by New Riders, ISBN 978-0-321-41097-9.

The JavaScript Anthology by James Edwards and Cameron Adams, published February 1, 2006 by Sitepoint, ISBN 978-0-97-524026-7.

JavaScript: The Definitive Guide, 5th Edition, by David Flanagan, published August 1, 2006 by O'Reilly, ISBN 978-0-59-610199-2.

Ajax Design Patterns by Michael Mahemoff, published June 1, 2006 by O'Reilly, ISBN 978-0-59-610180-0.

Adding Ajax by Shelley Powers, published June 1, 2007 by O'Reilly, ISBN 978-0-59-652936-9.

Instant HTML Programmer's Reference, Alex Homer, Chris Ullman & UsefulSteve Wright, Wrox, 1998, 1-861001-56-8.

Internet & World Wide Web – How to Program, H.M.Deitel, P.J.Deitel & T.R.Nieto, Prentice, Hall, 2000, 0-13- 016143-8

XML – How to Program, H.M.Deitel, P.J.Deitel, T.R.Nieto, T.M.Lin & P.Sadhu, Prentice, Hall, 2000, 0-13-028417-3