UNIVERSITY OF NEW YORK IN TIRANA
Course Syllabus
Fall 2007

Course: Web Design (4 credit hours)
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Description:

The use of the Internet has experienced tremendous growth over the past few years in almost all areas, including academic, business and leisure. With many IT systems being developed or converted for Internet access, and the growing concept of e-Business, it is essential that CS graduates have an understanding of programming this platform. Many of the concepts and tools used in programming the Internet are not readily covered in other programming subjects and need to be explored separately.

Aims:

This course targets one of the most exciting and revolutionary areas today. The course covers much that professionals need to know in order to build advanced Internet sites, including XHTML, JavaScript, VBScript, DHTML, PHP, Database interconnectivity, advanced Scripting as well some of the more recent technologies and the application of design patterns to Internet database development.

Learning Outcomes:

Students will gain some competency in this innovative, breakthrough field and in the techniques used by professionals for programming applications including e-Commerce, on-line education and communications in the Internet environment.

At the end of this module students will be able to:

- **Build effective, well designed Web sites that are content rich**
- **Understand the requirements for building advanced interactive sites**
- **Be familiar with the tools, techniques and latest standards for application to Internet Programming**
- **Be able to effectively interface back-end databases to web sites to achieve database functionality**
- **Understand and apply the latest technology in user/ web interactivity**
- **Understand the application of the MVC design pattern to build scalable web database systems**

Textbook and Software:

Deitel, H.M., Deitel, P.J., Goldberg, A.B., "Internet & World Wide Web How to Program", Prentice Hall, 4th/3rd edition, 2004

Other References

Garrett (2005), Garrett, J.J., "Ajax: A New Approach to Web Applications", Adaptive Path publications, Feb 2005, http://adaptivepath.com/publications/essays/archives/000385.php, accessed May 2006

Heinle, N., Pena, B., (2001), Designing with JavaScript, 2nd edition, O'Reilly, 2001

Lerdorf, R., (2003), PHP Pocket Reference, 2nd edition, O'Reilly

McLaughlin, B., (2001),,Java & XML, 2nd Edition: Solutions to Real-World Problems, O'Reilly

Musciano, C., Kennedy, B., (2001) HTML & XHTML : The Definitive Guide, 4th edition, O'Reilly

Ullman, L., (2003), PHP and MySQL for dynamic web sites, Peachpit Press, 2003

Wong, B. (2003), Building Database Interfaces, Zend (The php Company), Accessed October 2006, http://www.zend.com/zend/tut/tutorial-wong4.php

During this course additional material and links to online resources will be provided.

Recommended Prior Knowledge:

None required, (though a knowledge of basic programming principles would be helpful)

Recommended Preparatory Reading:

None required

Detailed Syllabus

1. Introduction to XHTML and Internet Programming

The objectives of this lecture are to introduce you some of the important concepts of the Internet and some of the requirements for programming in this environment. As most programming on the Internet revolves around Web pages you will also cover in this seminar, the basics and some intermediate XHTML scripting.

At the end of this lecture you should understand the difficulties and challenges of programming in the Internet environment.

- **Be familiar with some of the software tools that you will need in order to program the Internet.**
- **Understand the structure of a Web page and how it is delivered by the browser.**
- **Understand the concept of basic XHTML tags and hyperlinks, and their use within the Web page.**
- **Be familiar with the use of Web page frames.**

Workload

- **Stage 1 of the Project: Prepare the Group proposal**
- **Assignment -1**

2. Advanced XHTML Concepts

The objectives of this lecture are to cover in further detail XHTML concepts introduced in the first seminar. Further, to introduce you to XHTML forms which form the basis of communication between the Web page reader and the programs and databases in any interactive communication. You will also cover the use of HTML events.

At the end of this lecture you should be able to build Web pages using XHTML forms, and understand how the Web server processes them.

- **Understand the use of Style sheets in Web pages as specified in the latest development standard.**
- **Be familiar with HTML events and their use.**

Workload

- **Work on design of HTML Pages**
- **Assignment -2**

3. Dynamic XHTML and JavaScript

The objectives of this lecture are to introduce the concept of dynamic XHTML. That is the concept of interactivity with Web pages. You will also be introduced Java Script which is what we will use as a major tool for programming client-side interactivity within Web pages.

At the end of this lecture you should be familiar with the concept of Web page interactivity.

Be familiar with the current Java Script standard and Java Script programming concepts.
Be able to build interactive Web pages incorporating Java Script code to perform a variety of tasks.

<u>Workload</u>

- **Stage 2 of the Project: Make available the group static Web pages**
- **Assignment -3**

4. Advanced JavaScript programming

The objectives of this lecture are to continue to explore the more advanced aspects of programming with Java Script. You will also be introduced to the concept of the "Document Model" for Web pages and its use in Java Script programming. You will also learn about cookies and the differences between Client-side and Server-side Internet programming.

At the end of this seminar you should be familiar with the concept of the Document Model.

- **Be able to effectively use the Document Model in Java Script programming in your Web pages.**
- **Be familiar with the use of cookies for Web-browsers and how to program them with Java Script.**
- **Be familiar with Client-side and Server-side programming concepts.**

5. VB Script

The objectives of this lecture are to continue to explore the more aspects of programming with VB Script.

6. PHP and Database Connectivity

The objectives of this lecture are twofold: to introduce students to PHP, which is one of the most widely used scripting languages for server-side programming for creating dynamic web pages; to introduce students to the concept of Database connectivity for Web applications. In this seminar and the next, you will study how to add database connectivity to web applications using embedded SQL statements in PHP server-side scripts. You will also study database access and techniques for connection to ODBC databases sources within Web pages.

At the end of this lecture you should be familiar with database access techniques for building Web based applications.

- **Be familiar with using ODBC compliant databases in Web applications**
- **Be able to use server-side PHP scripting to add further dynamic interactivity to Web pages.**
- **Be familiar with techniques and aspects of Server side scripting**

Workload

Stage 3 of Project: Make available the interactive components of the project

7. Database Connectivity and Programming with PHP

The objectives of this lecture are to introduce students to Web database programming using PHP. ODBC and other database functionality will be discussed. This seminar extends the knowledge gained on PHP scripting and Web accessible databases gained in the previous seminar

At the end of this lecture you should be able:

- **To use PHP scripting to interact with a database via PHP function calls through a Web page.**
- **To effectively interact with a database for retrieval and update of information through Web forms.**
- **To use SQL embedded in PHP calls effectively.**

Workload

Stage 4 of Project: All Groups should submit their database to be used in the final stage.

8. Advanced PHP and Database issues

The objective of this lecture is to discuss the use of PHP in implementing a database interface model to help in reducing complexity and increase maintainability of Web based database software as such system grow larger.

At the end of this seminar, students should understand and be able to apply the Model View Controller (MVC) design pattern to partition their Web scripts into model and controller components. Students will also gain a familiarity in utilizing OO techniques in PHP in implementing the MVC design pattern

9. AJAX Programming/Introduction to XML/SMIL (Synchronized Multimedia Integration Language).

In this lecture students will introduced to a relatively new topic in the Internet programming arena, that of AJAX programming. AJAX stands for Asynchronous JavaScript And XML and is a web development technique for creating interactive web applications using a combination of: XHTML, the Document Object Model, JavaScript and the XMLHttpRequest objects to interchange and manipulate data asynchronously with the web server.

At the end of this lecture students should be familiar with basic the basic concepts of AJAX programming and the techniques required to perform simple asynchronous interchange tasks.

Course Requirements

Participation: Participation extends beyond mere attendance. Expect your instructor to keep track of how often you contribute to class discussion (as a whole), particularly during the panel discussion section. You may miss up to three classes without penalty - your first two absences count whether you have a good excuse or not. Each absence beyond the first three will cost you points off of your participation grade. The only exceptions to this rule are severe illness (doctor's note required) and UNYT approved trips/activities. Appropriate documentation for absences beyond the first three is necessary the class day directly before or after the one you miss. In general: this class is intensive and interactive. Missing class could seriously affect your grade! Students are reminded not to approach the instructor for copies of the previous week's materials during immediately before, during, or immediately after class. Students are expected to collect materials from their classmates or see the instructor during consultation hours.

Exams: Two examinations will be taken, a midterm and a final exam covering all course content during the final examination period. Test format may combine a mixture of short answer, true/false, matching, sort answer, and one or two essay questions covering *all* readings, lecture, hand-out and class discussion content.

Final Examination: TBA.

General Requirements

Late assignments and absence from tests will *not* be tolerated. *In the event of illness or emergency, contact your instructor IN ADVANCE to determine whether special arrangements are possible. The University's rules on academic dishonesty (e.g. cheating, plagiarism, submitting false information) will be strictly enforced. Please familiarize yourself with the STUDENT HONOUR CODE, or ask your instructor for clarification.*

Grading Scale

Letter Grade	Percent (%)	Generally Accepted Meaning
A	96-100	Outstanding work
A-	90-95	
B +	87-89	Good work, distinctly above average
B	83-86	
B-	80-82	
C +	77-79	Acceptable work
C	73-76	
C-	70-72	
D +	67-69	Work that is significantly below average
D	63-66	
D-	60-62	
F	0-59	Work that does not meet minimum standards for passing the course

Criteria for Determination of Grade, including Evaluation Methods

Assignments	15%
Quiz	10%
Project	30%
Lab Practice	15%
Final	30%

Note:

1. Project work will be graded every week. You shall be provided with a feedback to your e-mail not later that Sunday every week.

This feedback would include your grading on:

a) Assignments
b) Project Work
c) Lab Practice

2. Attendance to classes is directly related to Lab Practice. So if you are absent from class, your grade for lab practice would be directly affected.

Course &Tentative Lecture Schedule for Fall 2007

Web Design

Lecture	Topics	Deadlines for Project	Assignments
Lecture 1	Introduction to XHTML and Internet Programming		Assignment-1
Lecture 2	Advanced XHTML Concepts	Initial Project Proposal	Assignment-2
Lecture 3	Dynamic XHTML and CSS		Assignment-3
Lecture 4	JavaScript	Static Web Pages Design	Assignment-4
Lecture 5	Advanced JavaScript programming		Assignment-5
Lecture 6	Advanced JavaScript programming		Assignment-6
Lecture 7	VB Script		Assignment-7
Lecture 8	Quiz	Form Validation for all Pages	Assignment-8
Lecture 9	PHP and Database Connectivity Part-1		Assignment-9
Lecture 10	PHP and Database Connectivity Part-2	Submission of database design	Assignment-10
Lecture 11	Advanced PHP and Database issues Part-1		Assignment-11
Lecture 12	Advanced PHP and Database issues Part-2	Interactive Forms	Assignment-12
Lecture 13	Introduction to XML/SMIL	Final Deadine	Last date for Submission of Course Project
Lecture 14	Introduction to AJAX Programming		
	Final Examination		

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Final Examination: To be Announced

General Requirements

Late assignments and absence from tests will *not* be tolerated. *In the event of illness or emergency, contact your instructor IN ADVANCE to determine whether special arrangements are possible. The University's rules on academic dishonesty (e.g. cheating, plagiarism, submitting false information) will be strictly enforced. Please familiarize yourself with the STUDENT HONOUR CODE, or ask your instructor for clarification.*

Criteria for Determination of Grade, including Evaluation Methods

Quizzes	15%
Assignments(Home & Lab Practice)	15%
Midterm	30%
Final	40%

Grading Scale

Letter Grade	Percent (%)	Generally Accepted Meaning
A	96-100	Outstanding work
A-	90-95	
B +	87-89	Good work, distinctly above average
B	83-86	
B-	80-82	
C +	77-79	Acceptable work
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C-	70-72	
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D	63-66	
D-	60-62	
F	0-59	Work that does not meet minimum standards for passing the course

Date: November 3, 2007. **Prepared by: Narasimha Rao V.**