Web Technologies and Applications

Winter 2001

CMPUT 499: Introduction

Dr. Osmar R. Zaïane

University of Alberta

Class and Office Hours

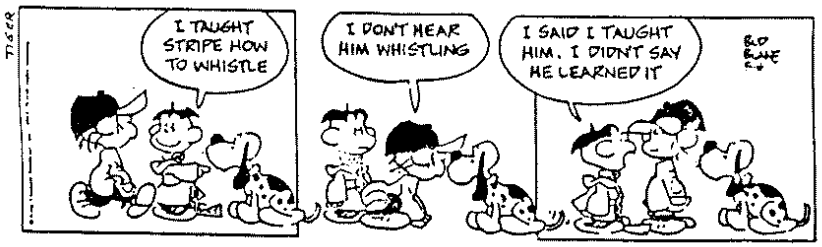
Class:
Tuesdays and Thursdays from 11:00 to 12:20

Office Hours:
Tuesdays and Thursdays from 16:00 to 17:00
By appointment:
E-mail zaiane@cs.ualberta.ca
Tel: 492 2860
Office: GSB 779

TA:
John Anvik (janvik@cs.ualbreta.ca)
Office hours: **Mondays 14:00-15:00** (CAB 484) *tentative*

Course Requirements

- Students who are taking this course need to have knowledge about database management systems and expertise in structured programming.
- CMPUT 291 and CMPUT 204 are required pre-requisites
- CMPUT 391, CMPUT 414 are ideal but not necessary



Concepts to Learn

- You have the opportunity to contribute to the syllabus.
- What do you expect from this course?
- What do you want to learn?
- Let's discuss and enrich the course content together.

Concepts to Learn

DNS
C#
DOM
Servlet
Web server management
WAP
Applets
Apache
Flash
Cascading Style Sheets
HTML
XML
CGI
Java
Search Engines
Python
Dynamic pages
Perl
CORBA
HTTP
.Net
ActiveX
TCP/IP
RDF
Internet
Security
SSL
Databases
Animation
Web Mining
E-Commerce
SOAP
TCP/IP
Java Script
SGML
World-Wide Web
Hypertext

Course Objectives

The objectives of the course are to introduce the students to the issues related to the design and implementation of web-based applications and acquaint the students with current technologies for information publishing and information exchange on the Internet. Students are introduced to concepts and techniques for constructing elegant and robust applications for the World-Wide Web.

After completing the course, students should be aware of prevailing technologies for web design and should be capable of building professional solutions for web-based applications.

Students are expected to learn by themselves by investigating beyond the basics covered in class, but will be guided in this process **and Have Fun!**

Course Content

- Introduction
- Internet and WWW
- Protocols
- HTML and beyond
- Animation & WWW
- Java Script
- Dynamic Pages
- Perl
- Java Applets
- Databases & WWW
- SGML / XML
- Managing servers
- Search Engines
- Web Mining
- CORBA & SOAP
- Security Issues
- Selected Topics
- Projects

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- **Introduction**
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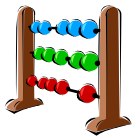
Objectives of Lecture 1

Introduction

- Get a rough initial idea about the content of the course:
  - Lectures;
  - Resources
  - Activities;
  - Evaluation.
- Introduce the participants (learners=instructor + students)

Evaluation and Grading

Your final grade will depend on the entire profile of the grades in your lecture section and a particular composite score does not guarantee a particular final grade. However, your composite score will be computed using the following weights:



• Assignments	21% (7 assignments, 3% each)
• Term Examination	15% (after reading week)
• Class presentation	10% (10 minutes on relevant topic)
• Project	39% (team work)
• Epilogue	15% (one hour, based on project)

There is not final exam for this course.

More About Evaluation

Re-examination.

None, except as per regulation.

Collaboration.

Collaborate on assignments; do not merely copy.
Projects are team work: 5 groups of 4 members.

Plagiarism.

Work submitted by a student that is the work of another student or a tutor is considered plagiarism. Read **Sections 26.1.4** and **26.1.5** of the University of Alberta calendar. Cases of plagiarism are immediately referred to the Dean of Science, who determines what course of action is appropriate.

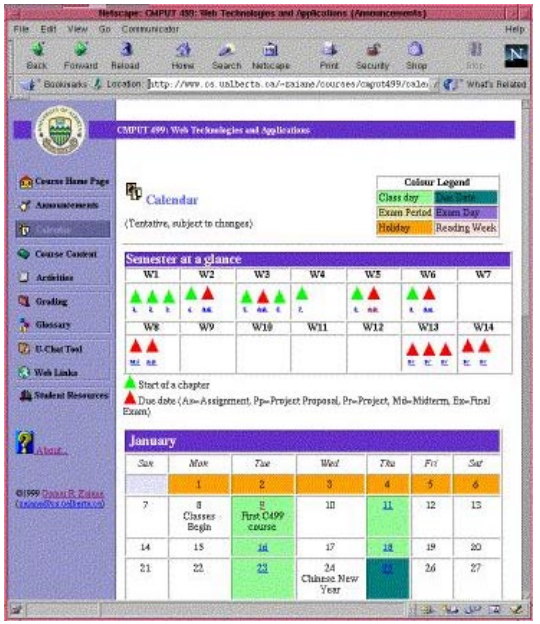
Notes and Textbook

Course home page:

http://www.cs.ualberta.ca/~zaiane/courses/cmput499/

Textbook:

There is no textbook for this course but there are many resources. I will try to distribute photocopies of articles or provide references to book chapters whenever possible.



Legend of Link Icons

- Link to an HTML page (default)
- Link to a text file
- Link to a page to be displayed in a new browser window
- Link to a Portable Document Format (PDF) file
- Link to a Postscript (PS) file
- Link to slides presentation
- Link to a compressed (gz or zip) file
- Link to an image
- Link to a video
- Link to a C/C++ program listing
- Link to a Java class file
- Link to a data file
- Link to password protected html page
- Link to a page under construction

On-line Resources

- CMPUT 499 web page
- Course slides
- Web links
- Glossary
- Student submitted resources
- Student spaces
- U-Chat
- Frequently asked questions

Course Schedule

(Tentative, subject to changes)

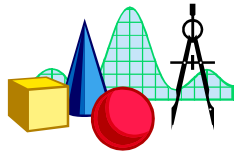
There are 14 weeks from January 8th to April 11th.
Week 7 is reading week (Feb. 19-23)

There are no lab exercises but assignments that you can do in the lab or at home. However, implementation assignments should be demonstrated in the lab.

Assignment 1 distribution **week 1** due **week 2** (web page design)
Assignment 2 distribution **week 1** due **week 3** (web page implementation)
Assignment 3 distribution **week 4** due **week 5** (web forms and shopping cart)
Assignment 4 distribution **week 5** due **week 6** (form validation with JavaScript)
Assignment 5 distribution **week 6** due **week 8** (ER model)
Assignment 6 distribution **after reading week** (XML)
Assignment 7 distribution **after reading week** (Java script and shopping cart)

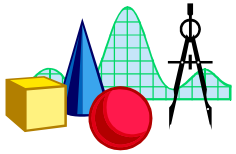
Midterm **week 8 (February 27)**
Epilogue test Week 14 (April 10th) last day of class

Course Project



- The objectives of the course project are to gain hands-on experience in design and implementation of Web-based information systems and develop team work skills.
- Important factors for project evaluation:
  - Scalability (use of database management system)
  - System and design quality (user interface, functionality, ease of use, robustness
  - Component-based design

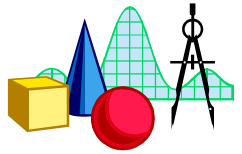
Course Project



- The whole course should revolve around the implementation of a term project.
- The project will be built step by step and new concepts will be incorporated as they are covered in class.

- The project are team projects with 4 students per team. All teams will implement the same project.

Course Project

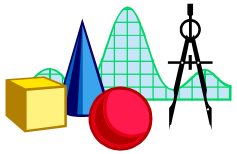


- Projects will be demonstrated in class at the end of the semester.
- The idea is to build a web-based application from the ground up with technologies such as:

Databases, dynamic pages, secure transactions, servlets, java script, HTML forms, etc.

- We will decide about a topic together (on-line retailer for clothes, on-line bookstore,…)

Course Project

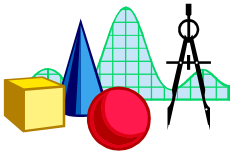


- The project implementation will have two major modules:

  - Retail (What the customers see)
    - Selecting, ordering, shopping cart, personalization, recommendation, etc.

  - Management (what the store manager sees)
    - customer management, shipping, billing, stock, etc.
- Teams will divide as they wish to implement these modules

Course Project



- Demonstration of the projects:
  - Will be scheduled for the last days of the semester, probably on week 13.
  - 30 minutes per team
  - The demos will be in the classroom.
  - Web server can be anywhere
  - Use Oracle database server of the department

Class Presentation

- There will be class presentations (by students) on a variety of relevant technologies:
  - VeriSign, Instant Messaging, ActiveX, ASP, PhP, RDF, Streaming Video, ATM, Flash, .Net, WAP.
- 2 students per topic presented, working together
- 10 minutes per presentation, as well as a report to be put on-line.
- Evaluation based on Report, Presentation and Peer evaluation.

Quick Tour of the Course Web Site

http://www.cs.ualberta.ca/~zaiane/courses/cmput499/