ECT 360
Introduction to XML
Fall 2004
Section 701
W 5:45 – 9:00 pm, Room Lewis 1111

Professor: Robin Burke
Email: rburke@cti.depaul.edu
Office: CS&T 453
Phone: 312-362-5910 (on-campus x25910)
Office hours: Mondays 10:00-11:30 am and 1:30-3:00 pm and by appointment
Prerequisites: One quarter of programming (CSC 211 or CSC 261 or equivalent) and IT 130
Course web site: http://josquin.cti.depaul.edu/~rburke/courses/f04/ect360/

Description
This course is an introduction to Extensible Markup Language (XML). We will focus particularly on web applications of XML using cascading style sheets and XSLT to render XML documents for web browsers, and introduce the XML DOM API using JavaScript. We will also cover three different technologies for XML validation: DTDs, schemas and RELAX NG.

Readings
Required: Carey, P. New Perspectives on XML (Comprehensive). Thomson Learning ISBN 0-619-10188-1. There are also on-line readings accessed from the course web site.

Note
The schedule and other information in the syllabus is subject to change. Consult the Course On-Line website and the course home page for the most up-to-date information.

Resources
Information such as lecture notes and assignments can be found on the course home page. I will try to have slides available 24 hours in advance of class, but I cannot guarantee it.

This course will use XML Spy 2004 Enterprise Edition, a full-featured XML editor. It is available at the CTI Labs and there is an older 120-day trial version included in your textbook. Several lab sessions will be scheduled during the quarter for hands-on exercises using XML Spy. We will also cover the use of the Microsoft XML processor MSMXL, which is built into Internet Explorer (versions 5.0 and later). You may use a different XML editor and processor for your coursework. However, I cannot provide support for alternate editors.

Assessment
Student progress will be assessed through a combination of regular homework assignments, a research presentation and a final project. These components will be weighted as follows:

- Homework – 40%
- Application Presentation – 30%
- Final project – 30%

The application presentation will be a project to be done in pairs in which students will investigate a particular XML application such as SVG, MathML, SOAP or any one of many other such efforts. The choice of application must be approved by the instructor to ensure no duplicate presentations. Each team will give a 20 minute presentation on their chosen application on 10/6. Additional details regarding this assignment will be given out on the first day of class.
The final project will be a group project involving the creation of a new XML application, XML content, and several XSLT stylesheets for rendering the XML content in different ways. The team need not be the same as the one for the application presentation. Details on this project will be made available no later than week 5.

Grading will be performed with the following three-part rubric:

- **Knowledge**: An assignment/exam/project should demonstrate that the student has the expected technical knowledge.
- **Reasoning**: Assignments should demonstrate that the student can reason appropriately and solve problems.
- **Communication**: Written work should communicate effectively, and work products such as programs or other artifacts should display good style and documentation.

Grades will be awarded as follows:

- **A**: Excellent work. Demonstrates thorough knowledge of the subject matter, going beyond what is covered in class. Contains well-considered and creative solutions to problems. Well-written answers and/or employment of impeccable coding style. Presentation is clear and thorough and demonstrates in-depth understanding of the material.
- **B**: Very good work. Demonstrates complete knowledge of the subject matter based on coverage in class and textbook. No major errors of reasoning in problem solutions. Competent written answers and readable coding style. Presentation may be incomplete in minor ways and/or lack depth.
- **C**: Average work. Some gaps in knowledge of subject matter. Some errors or omissions in problem solving. Written answers may contain grammatical and other errors; coding may be stylistically awkward. Presentation covers the topic only superficially, or is incomplete.
- **D**: Below average work. Substantial gaps in knowledge of subject matter. Problem solving incomplete or incorrect. Poor English in written answers; ineffective coding style. Presentation does not demonstrate adequate research into the topic.

**Tentative Schedule**

9/8: Introduction
   Introduction to the course. XML structure. XHTML.
   Reading: Tutorial 1
   Assigned: Homework #1 (XHTML) and Application Presentations

9/15: XML Validation I / XML Tools
   Defining XML languages. Document type definitions (DTDs). Lab session introducing XML Spy and MSXML.
   Reading: Tutorial 3
   Due: Homework #1 / Application Presentation Proposal
   Assigned: Homework #2

9/22: XML Validation II
   Advanced DTD topics: modularization and parameterization. XML Schemas.
   Reading: Kamthan, P. "XML Entities and Their Applications" (http://tech.irt.org/articles/js212/) and Tutorial 4 (4.1-4.30)
   Due: Homework #2
   Assigned: Homework #3

9/29: XML Validation III
   More XML schemas. Namespaces. RELAX NG as an alternative validation scheme.
   Reading: Tutorial 4 (4.30-4.58) and RELAX NG's compact syntax tutorial (Sections 1-8)
   Due: Homework #3
   Assigned: Homework #4
10/6: XML Applications
Student presentations on XML applications.
Due: Application Presentation
Assigned: Final project

10/13: XSLT 1 / XSLT Lab 1
Reading: Tutorial 6
Assigned: Homework #4

10/20: XSLT 2
Reading: Tutorial 7
Due: Homework #4
Assigned: Homework #5

10/27: XSLT 3 / XSLT Lab 2
Reading: Tutorial 8
Due: Homework #5
Assigned: Homework #6

11/3: DOM Programming
Reading: Tutorial 9
Due: Homework #6
Assigned: Homework #7

11/10: The Semantic Web
An introduction to the semantic web: motivation. Semantic web languages: RDF, RDF-S and OWL.
Reading: TBA
Due: Homework #7

11/17: Final project presentations
Due: Final project

Policies
Students are expected to attend all classes and participate in in-class exercises. Class will start promptly at 5:45 pm. Students are individually responsible for material they may have missed due to absence or tardiness.

In a team project, it is important to divide the project effort fairly among team members. Group participation will be evaluated. Student having difficulties within their project group should contact the instructor as soon as possible.

Assignments will submitted in ZIP format to the Course On-Line site. Do not submit assignments by email. **All assignments should be completed and submitted by class time on the due date.** Late assignments will be accepted up to two days after the due date with a 10% penalty per day. The final project and midterm presentation may not be submitted late.
Assignments must represent a student's individual effort. While students are permitted to discuss assignments at the conceptual level, under no circumstances should students share specific answers (electronically or otherwise). You may also not use XML or XSLT code within an assignment or project unless that code was developed by you, the only exception being when given specific permission by the instructor to do so. In presentations, diagrams and examples that are not your own work must be clearly attributed.

School Policies

Online Instructor Evaluation
Course and instructor evaluations are critical for maintaining and improving course quality. To make evaluations as meaningful as possible, we need 100% student participation. Therefore, participation in the School’s web-based academic administration initiative during the eighth and ninth week of this course is a requirement of this course. Failure to participate in this process will result in a grade of incomplete for the course. This incomplete will be automatically removed within seven weeks after the end of the course and replaced by the grade you would have received if you had fulfilled this requirement.

Email
Email is the primary means of communication between faculty and students enrolled in this course outside of class time. Students should be sure their email listed under "demographic information" at http://campusconnect.depaul.edu/ is correct.

Plagiarism:
The university and school policy on plagiarism can be summarized as follows: Students in this course, as well as all other courses in which independent research or writing play a vital part in the course requirements, should be aware of the strong sanctions that can be imposed against someone guilty of plagiarism. If proven, a charge of plagiarism could result in an automatic F in the course and possible expulsion. The strongest of sanctions will be imposed on anyone who submits as his/her own work a report, examination paper, computer file, lab report, or other assignment which has been prepared by someone else. If you have any questions or doubts about what plagiarism entails or how to properly acknowledge source materials be sure to consult the instructor.

Incomplete:
An incomplete grade is given only for an exceptional reason such as a death in the family, a serious illness, etc. Any such reason must be documented. Any incomplete request must be made at least two weeks before the final, and approved by the Dean of the School of Computer Science, Telecommunications and Information Systems. Any consequences resulting from a poor grade for the course will not be considered as valid reasons for such a request.