

CS 544 Web-based Database Application
California Lutheran University
Winter 2012 Term

Number of Credits:	4
Instructor:	Prof. Taehyung (“George”) Wang
Instructor Email:	taehyung@callutheran.edu
Live Chat (Office hour):	Session 1: 7 – 8 pm Tuesday in Pacific Time Session 2: 8 – 9 pm , Tuesday in Pacific Time
Drop Date:	Dec. 5 (check academic calendar at registrar website)
Course Webpage:	http://clu.learninghouse.com/
Class Delivery Format:	On-Line

Course Description:

This course will address the concepts, principles, specifications, and applications of XML and its supporting technologies such as XPATH, XSLT, XQUERY, DOM, JDOM, and SAX, which have been widely used for representing, transferring, storing, transforming, querying, and retrieving web data and documents.

1. This course uses the Moodle environment by Learning House which provides 24 x 7 technical support to students and the instructor.
 - The username and password you use to access your fully-online courses at <http://clu.learninghouse.com> is the same as those used for CLU’s campus email.
 - Learning House tutorial is available at <http://clu.learninghouse.com/file.php/1/a-gettingstarted.html>.
2. On line components to be used of the class on a weekly basis:
 - Pre recorded audio lecture accompanying PowerPoint slides. 2 - 2 ½ hours per week. Students can view any time.
 - Live Chat session with audio. It will be held on 7 – 8 pm (Session 1) 8 – 9 pm (Session 2) **Tuesday at 8:00 PM in Pacific Time**. A change to the time can be made after the first week to a different time mutually agreed upon between students and the instructor.
 - Asynchronous communication by online forum discussions and emails. About one hour per week should be spent.
3. Students need to have a computer with a high speed internet connection, a microphone and speakers.
4. Students will have a chance to participate in an on-line live training session to become familiar with the Learning House Moodle environment. This will take place one or two weeks before a term starts.

Textbook:

Anders Moller and Michael Schwartzbach. *An Introduction to XML and Web Technologies*. Addison-Wesley, 2006. ISBN: 0-321-26966-7.

Reference book (not required):

Jim Melton and Stephen Buxton. *Querying XML: XQuery, XPath, and SQL/XML*. Morgan Kaufmann, 2006. ISBN: 1-55860-711-0.

Course Outcomes:

At the end of this course, students will be able to:

- Describe the concepts and principles of XML and its supporting technologies.
- Analyze and discuss the specifications of XML and its supporting technologies.
- Apply XML and supporting technologies to XML application development.

The course meets following CLU's Student Learning Outcomes (SLO):

- Quantitative literacy
- Information literacy
- Critical thinking

The course meets following MSCS program learning outcomes:

- Acquire advanced concepts and practical components in XML and Web technology topics.
- Being able to choose appropriate and necessary technology as a tool to solve problems.

Course Contents:

A. HTML and Web Pages

- The history of HTML
- URLs and related schemes
- HTML and CSS
- Limitations of HTML
- Unicode representation
- W3C

B. XML Documents

- The concept of XML
- The XML data model and its textual representation
- The XML namespace mechanism
- Applications of XML

C. Navigating XML Trees with XPATH

- Location steps and paths for navigating around XML documents
- Abbreviations
- General expressions

D. Schema Languages

- The purpose of using schemas
- The schema languages DTD and XML Schema
- Regular expressions

E. Transforming XML Documents with XSLT

- Rendering XML documents
- Transforming XML documents with XSLT
- XPath used in XSLT
- Introduction to XSL Formatting Objects

F. Querying XML Documents with XQUERY

- Generalization of relational databases using XML
- The XQUERY language
- Supporting XML in relational databases

G. XML Programming

- Manipulation of XML data from general-purpose programming languages using DOM and JDOM
- Data binding for mapping from schemas to programming languages
- Streaming with SAX for handling large documents
- Integration XML into programming languages

Course Assignments/Requirements:

To pass this course, you must meet the following requirements:

Quizzes:

There will be seven online quizzes with each typically covering the one preceding chapter. The quizzes will test the students' understanding of the lecture content.

Homework Assignments:

There will be seven homework assignments with each typically covering the one preceding chapter. The homework assignments will test hands-on knowledge of the lecture content.

Exams:

There will be two exams – the first exam will cover chapters 1 – 3 and the second will cover chapters 4 – 7. The exams will test concepts /principles and detailed knowledge on the lecture content. The exams may use multiple choices, short-answer, essay, and coding based on the textbook and other course materials.

Class participation:

Class participation is a key factor for the success of this course. Class participation will be assessed by your degree of activities through participation in live chat and discussion activities.

Grading:

The following weights will be applied to calculate your final score:

Quizzes	20%
Homework assignments	20%
Exam I	20%
Exam II	20%
Class participation	20%
Total	100%

The score will be mapped to your course one-letter grade as follows:

Range	Grade	Range	Grade	Range	Grade
[93, 100]	A	[80, 83)	B-	[65, 70)	D+
[90, 93)	A-	[77, 80)	C+	[60, 65)	D
[87, 90)	B+	[73, 77)	C	[0, 60)	D-
[83, 87)	B	[70, 73)	C-		

Class Schedule:

Wk	Date	Topic/Quiz/Homework/Exam
1	Nov. 21 - 25	<ul style="list-style-type: none">• Read syllabus• Chapter 1: HTML and Web Pages
2	Nov. 28 - Dec. 2	<ul style="list-style-type: none">• Quiz 1: Chapter 1• HW Assignment 1: Chapter 1• Chapter 2: XML Documents
3	Dec. 5 - 9	<ul style="list-style-type: none">• Quiz 2: Chapter 2• HW Assignment 2: Chapter 2• Chapter 3: Navigating XML Trees with XPath (Section 3.1 to 3.2)
4	Dec. 12 - 16	<ul style="list-style-type: none">• Chapter 3: Navigating XML Trees with XPath (Section 3.3 to 3.5)
5	Jan. 2 - 6	<ul style="list-style-type: none">• Quiz 3: Chapter 3• HW Assignment 3: Chapter 3• Exam I: Chapters 1 – 3• Chapter 4: Schema Languages (Sections 4.1 to 4.4)
6	Jan. 9 - 13	<ul style="list-style-type: none">• Quiz 4: Chapter 4• HW Assignment 4: Chapter 4• Chapter 5: Transforming XML Documents with XSLT (Sections 5.1 to 5.5)
7	Jan. 16 - 20	<ul style="list-style-type: none">• Chapter 5: Transforming XML Documents with XSLT (Sections 5.6 to 5.10)
8	Jan. 23 - 27	<ul style="list-style-type: none">• Quiz 5: Chapter 5• HW Assignment 5: Chapter 5• Chapter 6: Querying XML Documents with XQUERY (Sections 6.1 to 6.5)
9	Jan. 30 - Feb. 3	<ul style="list-style-type: none">• Quiz 6: Chapter 6• HW Assignment 6: Chapter 6• Chapter 7: XML Programming (Sections 7.1 to 7.3)
10	Feb. 6 - 10	<ul style="list-style-type: none">• Chapter 7: XML Programming (Sections 7.4 to 7.5)
11	Feb. 13 - 16	<ul style="list-style-type: none">• Quiz 7: Chapter 7• HW Assignment 7: Chapter 7• Exam II: Chapters 4 – 7

Class Participation and Attendance

Class participation and attendance – in the discussion board and live chats – is weighted heavily in this course because discussion and exchange of diverse ideas is what enriches our learning experience. Student grades for class participation will be assessed on their ability to: provide clear explanations, ask pertinent questions, contribute to overall class learning, participate and contribute to weekly learning activities, and critically discuss and analyze issues. Participation is expected, and student engagement in this process will be monitored. Please notify the instructor in advance if you will be absent from discussion and live chats.

Evaluating Class Participation

17-20 – Outstanding

Outstanding effort on all discussion board (asynchronous) activities, weekly activities were always completed by the due dates and the student consistently attended the live chat or listened to the archive each week. The student showed outstanding effort in each of the individual exercises and meaningfully elevated class learning both in asynchronous and synchronous activities.

13-16 – Commendable

Excellent effort on all discussion board and assessments, the activities were always completed by the due dates, consistently attended the live chat or listened to the archive each week and posted meaningful comments to the discussion board, and actively participated in group projects. The student demonstrated commendable effort in each of the individual exercises and fully engaged and contributed to class learning.

9-12 – Average

Completed most discussion board assignments and assessments by the due dates, attended the live chat or listened to the archive most weeks and generally posted his or her comments to the discussion board. The student's effort on the individual exercises was satisfactory, often he or she engaged with other students and sometimes a contribution was made to overall class learning.

5-8 – Below Average

Failed to complete numerous discussion board assignments and assessments by the due dates, only attended some of the live chats or failed to listen to the archive each week and post his or her comments to the discussion board. The student was not engaged and did not contribute to overall class learning. Effort on individual exercises was below average.

0-4 – Unacceptable

Failed to complete most of the discussion board assignments and assessments by the due dates, failed to attend most of the live chats or listen to the archive each week and post his or her comments to the discussion board. The student was not engaged and subtracted from class learning. Overall effort on individual exercises was unsatisfactory.

Course Evaluations Statement:

All course evaluations are conducted online. Your feedback is important to us. You will receive an email message reminding you when the website is open for your feedback. The link is: <http://courseval.callutheran.edu>.

Disability Statement:

California Lutheran University is committed to providing reasonable accommodations in compliance with ADA of 1990 and Section 504 of the Rehabilitation Act of 1973 to students with documented disabilities. If you are a student requesting accommodations for this course, please contact your professor at the beginning of the semester and register with the Accessibility Resource Coordinator, Wendy Perkins, for the facilitation and verification of need. The Accessibility Resource Coordinator is located in the Center for Academic and Accessibility Resources (CAAR) Office in the Pederson Administration building, and can be contacted by calling 805.493.3878 or emailing wperkins@callutheran.edu.

Statement on Academic Honesty:

The educational programs of California Lutheran University are designed and dedicated to achieve academic excellence, honesty and integrity at every level of student life. Part of CLU's dedication to academic excellence is our commitment to academic honesty. Students, faculty, staff and administration share the responsibility for maintaining high levels of scholarship on campus. Any behavior or act which might be defined as "deceitful" or "dishonest" will meet with appropriate disciplinary sanctions, including dismissal from the University, suspension, grade F in a course or various forms of academic probation. Policies and procedures regarding academic honesty are contained in the faculty and student handbooks.

Plagiarism, cheating, unethical computer use and facilitation of academic dishonest are examples of behavior which will result in disciplinary sanctions. Plagiarism includes, but is not limited to:

- word for word copying without using quotation marks or presenting the work as yours
- using the ideas or work of others without acknowledgement
- not citing quoted material. Students must cite sources for any information that is not either the result of original research or common knowledge.

Pearson Library

At Cal Lutheran we won't tell you what to think — we'll teach you how to think. You'll learn how to gather information, analyze and synthesize. Don't worry about the "gathering"... that's the easy part. We have technicians, information specialists, and trainers to help you find the information you need. Pearson Library provides access to scholarly books, journals, ebooks, and databases of full text articles from scholarly journals. To begin using these materials, visit the library web page <http://www.callutheran.edu/iss/research/>. Librarians are available to assist you at the Thousand Oaks campus or via Meebo chat on the Library's home page or emailing CLULibrary@callutheran.edu. You may contact the library at (805) 493-3250. If you attend classes at one of CLU's satellite locations, see <http://www.callutheran.edu/iss/research/satellite.php> for the full range of services provided.

CLU Writing Center

Experienced Writing Center tutors help CLU's undergraduate and graduate students with their writing projects: reading free writes to find the best ideas; refining thesis statements; showing students how to structure paragraphs; and using specific exercises to improve sentence syntax. They work with whole classes as well as with individual students on the style guidelines required for papers in the various disciplines.

All enrolled CLU students are invited to make use of our services. For additional information, please visit http://www.callutheran.edu/writing_center/, call 805-493-3257, [book online at GenBook](#), or stop by the Writing Center (The Darling Collaboration Suite in the library) to schedule an appointment.