

CSE 4901 (Approved): Project: Design, Development, and Documentation of Web Applications

Course Description

Intensive group project involving design, development, and documentation of a web application; client-side and server-side scripting; communication skills emphasized; builds programming maturity.

Transcript Abbreviation: Proj: Web Apps

Grading Plan: Letter Grade

Course Deliveries: Classroom

Course Levels: Graduate

Student Ranks: Masters, Doctoral

Course Offerings: Autumn, Spring

Flex Scheduled Course: Never

Course Frequency: Every Year

Course Length: 14 Week

Credits: 4.0

Repeatable: No

Time Distribution: 3.0 hr Lec, 1.0 hr Lab

Expected out-of-class hours per week: 8.0

Graded Component: Lecture

Credit by Examination: No

Admission Condition: No

Off Campus: Never

Campus Locations: Columbus

Prerequisites and Co-requisites: Programming maturity and graduate standing

Exclusions: Not open to CSE and CIS majors; not open to students with credit for CSE 3901

Cross-Listings:

The course is required for this unit's degrees, majors, and/or minors: No

The course is a GEC: No

The course is an elective (for this or other units) or is a service course for other units: Yes

Subject/CIP Code: 14.0901

Subsidy Level: Doctoral Course

Course Goals

Be competent in the development of dynamic web applications using Java-based technologies.
Be competent in the development and formatting of static web content.
Be competent with writing, organizational, and presentation skills.
Be competent with analyzing the intended audience for a written document and writing an audience profile.
Be familiar with making engineering decisions involving tradeoffs.
Be familiar with the use of SQL to access database content.
Be familiar with defining the purpose (persuade, inform, etc.) of a written document and select the appropriate rhetorical devices.
Be familiar with writing several pieces of documentation that have different purposes and using an appropriate organization to tie them together.
Be familiar with group project organization techniques including conducting group meetings, recording minutes, and tracking project progress.
Be familiar with using one structured approach to large software design to carry out a large group project.
Be exposed to the use of application frameworks for the deployment of web applications.

Be exposed to some basic security vulnerabilities sometimes found in web applications.
Be exposed to methods for internationalizing web applications.

Course Topics

Topic	Lec	Rec	Lab	Cli	IS	Sem	FE	Wor
Static web and networking (HTTP)	2.0		1.0					
Document content and formatting (HTML, XHTML, XML, CSS)	6.0		1.0					
Client-side scripting with JavaScript	3.0		1.0					
Databases (MySQL, JDBC)	3.0		1.0					
Model-view-controller design pattern	2.0		1.0					
Server-side scripting with servlets and Java Server Pages	6.0		2.0					
Sessions and state (JavaBeans)	2.0		1.0					
Tag libraries (JSTL)	2.0		1.0					
Authentication and security (SSL, SQL injection attacks, Cross-site scripting attacks)	3.0		1.0					
Deployment frameworks (eg Struts, Webwork, Hibernate, Spring)	3.0		1.0					
Internationalization and localization	1.0							
Performance considerations	1.0							
Technical writing	3.0							
Improving responsiveness with asynchronous requests (Ajax)	3.0		1.0					
Introduction to web services (SOAP/WSDL/UDDI)	3.0							

Representative Assignments

An on-line task list organizer
An interview-day batch scheduling application

Grades

Aspect	Percent
Lab assignments	60%
Midterm	15%
Exam	25%

Representative Textbooks and Other Course Materials

Title	Author
<i>Head First Servlets & JSP (2nd ed)</i>	Kathy Sierra, Bert Bates, Bryan Basham

ABET-EAC Criterion 3 Outcomes

Course Contribution	College Outcome
**	a An ability to apply knowledge of mathematics, science, and engineering.
	b An ability to design and conduct experiments, as well as to analyze and interpret data.

Course Contribution		College Outcome
***	c	An ability to design a system, component, or process to meet desired needs.
***	d	An ability to function on multi-disciplinary teams.
**	e	An ability to identify, formulate, and solve engineering problems.
*	f	An understanding of professional and ethical responsibility.
**	g	An ability to communicate effectively.
	h	The broad education necessary to understand the impact of engineering solutions in a global and societal context.
*	i	A recognition of the need for, and an ability to engage in life-long learning.
	j	A knowledge of contemporary issues.
***	k	An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

Additional Notes or Comments

* Moved exclusion from General Information to Exclusions. --rowland

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