

Department of Computer Science

# Course Information Sheet CSCI 4300

### Web Programming

## Brief Course Description (50-words or less)

Client-side and server-side techniques for use on the World Wide Web. Interactive, dynamically-generated, and database-enabled web pages are discussed. Course content changes frequently to incorporate new Internet technologies.

## Extended Course Description / Comments

Not open to students with credit in CSCI 4350/6350.

Important technologies that have been covered in recent course offerings: Model-View-Control architectural pattern, persistence providers such as HIbernate, Service-Oriented Architecture, Web Services Ajax, and JavaScript toolkits.

This course is part of the BS-CS Teamwork Requirement; students In CSCI 4300 are required to work in teams of size greater than 2.

#### Pre-Requisites and/or Co-Requisites

**CSCI 1302** 

Software Development in Java

#### **Approved Textbooks**

(if more than one listed, the textbook used is up to the instructor's discretion)

Author(s): Andrea Steelman and Joel Murach

Title: Murach's Java Servlets and JSPs

Edition: 2nd

ISBN-13: 978-1890774448

## Specific Learning Outcomes (Performance Indicators)

At the end of the semester, all students will be able to do the following:

- 1. Define and use terms relevant to Web development.
- 2. Recognize and interpret HTTP response codes.
- 3. Author HTML documents conforming to language standards promulgated by the World-Wide Web Consortium
- 4. Design and develop Web applications incorporating multiple dynamically generated pages and role-based permissions.
- 5. Design and develop database-enabled Web applications.
- 6. Handle error conditions in Web applications.
- 7. Create HTML documents that change structure in response to user events
- 8. Create HTML documents that change structure in response to asynchronous events.

#### Relationship Between Student Outcomes and Learning Outcomes

	Student Outcomes											
		a	b	С	d	е	f	g	h	i	j	k
Learning Outcomes	1						•					
	2	•										
	3		•							•		
	4		•	•	•		•			•	•	•
	5	•	•	•	•		•			•	•	•
	6	•	•	•						•		•
	7	•	•	•						•		•
	8	•	•	•								•

#### **Student Outcomes**

- a. An ability to apply knowledge of computing and mathematics appropriate to the discipline.
- b. An ability to analyze a problem, and identify and define the computing requirements appropriate to its solution.
- c. An ability to design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs.
- d. An ability to function effectively on teams to accomplish a common goal.
- e. An understanding of professional, ethical, legal, security and social issues and responsibilities.
- f. An ability to communicate effectively with a range of audiences.
- g. An ability to analyze the local and global impact of computing on individuals, organizations, and society.
- h. Recognition of the need for and an ability to engage in continuing professional development.
- i. An ability to use current techniques, skills, and tools necessary for computing practice.
- j. An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
- k. An ability to apply design and development principles in the construction of software systems of varying complexity.

Major Topics Covered (Approximate Course Hours)	HTTP and the TCP-IP protocols	2		
, , ,	HTML and Cascading Stylesheets	2		
3 credit hours = 37.5 contact hour 4 credit hours = 50 contact hours	Test-driven development	3		
	Iava Server Pages	3		
Note: Exams count as a major top covered	<sup>oi</sup> favaBeans	4		
	Expression language	2		
	Java Standard Tag Library	3		
	Java Servlets Model-View-Controller development			
	Database design and Web application	2		
	2			
	Web application development on servers	4		
	Logging and Filtering	3		
	Web services and Service-Oriented			
	Architecture	3		
	Exception handling	3		
	Client-side scripting	6		
	Tests	3		

#### **Assessment Plan for this Course**

Each time this course is offered, the class is initially informed of the Course Outcomes listed in this document, and they are included in the syllabus. At the end of the semester, an anonymous survey is administered to the class where each student is asked to rate how well the outcome was achieved. The choices provided use a 5-point Likert scale containing the following options: Strongly agree, Agree, Neither

agree or disagree, disagree, and strongly disagree. The results of the anonymous survey are tabulated and results returned to the instructor of the course.

The course instructor takes the results of the survey, combined with sample student responses to homework and final exam questions corresponding to course outcomes, and reports these results to the ABET committee. If necessary, the instructor also writes a recommendation to the ABET committee for better achieving the course outcomes the next time the course is offered.

How Data is Used to Assess Program Outcomes

Each course Learning Outcome, listed above, directly supports one or more of the Student Outcomes, as is listed in "Relationships between Learning Outcomes and Student Outcomes". For CSCI 4300, Student Outcomes (a), (b), (c), (d), (f), (i), (j), and (k) are supported.

Course Master Course History

Dr. Daniel Everett

01/2007 Course Approval in CAPA

02/2012 Course Information Sheet Prepared

12/7/2012 Course added to BS-CS Teamwork Requirement block