

## COURSE DESCRIPTION

Dept., Number	<b>CSCI 409</b>	Course Title	<b>Advanced Web Application Development</b>
Semester hours	3	Course Coordinator	John Stamey
		URL (if any):	

### Current Catalog Description

(Prereq: Grade of **C** or better in Computer Science 203) Advanced topics in the development and deployment of web-based applications. Topics include advanced middleware programming concepts and development of dynamic websites. Students will write a full-scale web application as their final project.

### Textbook

*Internet and World Wide Web – How to Program* by H.M. Deitel and P.J. Deitel

### References

--

### Course Goals

1. To enable students to develop internet applications with AJAX
2. To enable students to understand MVC and MVC2 architectures used in Internet application development
3. To enable students to integrate database development, AJAX and middleware into a web development project
4. To convey the architecture of Ecommerce systems to students
5. To enable students to understand basic security issues in Internet development

### Prerequisites by Topic

1. Experience programming in a procedural and object-oriented programming language
2. Experience developing an AJAX-based content management system with PHP

Major Topics Covered in the Course

- |   |
|---|
| <ol style="list-style-type: none"> <li>1. Basic and Advanced Internet Architectures (Web 1.0/2.0) – 3 hours</li> <li>2. Advanced PHP topics – 6 hours</li> <li>3. Advanced JavaScript programming and debugging – 6 hours</li> <li>4. XMLHttpRequest Object, programming conventions and associated architecture</li> <li>5. 3 hours</li> <li>6. Fundamentals of Ecommerce architecture – 6 hours</li> <li>7. Database concepts for Internet Application Development – 3 hours</li> <li>8. Security Issues – 6 hours</li> </ol> |
|---|

Laboratory projects (specify number of weeks on each)

- |  |
|--|
| <ol style="list-style-type: none"> <li>1. Developing and reading an XML-based RSS Feed (2 weeks)</li> <li>2. JavaScript form validation (1 week)</li> <li>3. Server-side form validation (1 week)</li> <li>4. Payment gateway simulation (2 weeks)</li> <li>5. Ecommerce system (6 weeks)</li> </ol> |
|--|

Estimate Curriculum Category Content (Semester hours)

Area	Core	Advanced	Area	Core	Advanced
Algorithms			Data Structures		
Software Design		2	Prog. Languages		1
Comp. Arch.					

Oral and Written Communications

Every student is required to submit at least \_\_\_\_\_ written reports (not including exams, tests, quizzes, or commented programs) of typically \_\_\_\_\_ pages and to make \_\_\_\_\_ oral presentations of typically \_\_\_\_\_ minute’s duration. Include only material that is graded for grammar, spelling, style, and so forth, as well as for technical content, completeness, and accuracy.

Social and Ethical Issues

Please list the topics that address the social and ethical implications of computing covered in all course sections. Estimate the class time spent on each topic. In what ways are the students in this course graded on their understanding of these topics (e.g., test questions, essays, oral presentations, and so forth)?

<p>Privacy policies and issues in Ecommerce Security are discussed and are to be included as part of the group project.</p>
---

### Theoretical Content

Please list the types of theoretical material covered, and estimate the time devoted to such coverage.

Internet architecture, software engineering (70% of the course)

### Problem Analysis

Please describe the analysis experiences common to all course sections.

Each assignment requires the analysis of requirements as the programming solutions are created.

### Solution Design

Please describe the design experiences common to all course sections.

Each programming assignment requires the design of code used in modern web development.