CSCI 6312 Advanced Internet Programming

Section 01, Spring 2018, W, 5:55pm - 8:25pm

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Office hours: W 1–3pm, TR 10:45-12pm, or by appointment

Course web site:

All course information, materials and announcements:
http://faculty.utrgv.edu/emmett.tomai/courses/6312/

Course Description (from the UTRGV Course Catalog):

CSCI 6312 Advanced Internet Programming: Course covers theoretical and practical methods and techniques for programming on the Internet with a focus on the web server side. Students will be able to develop highly interactive web-based applications.

Textbook:

This course does not use a traditional textbook. Web programming is a fast-moving field, and the most current resources are online. We will be relying on those in class.

Course Topics:

This course presents a comprehensive introduction to web application programming. It covers a wide range of Web and Internet standards, architectural patterns, application frameworks, and programming languages that are used to deliver modern web sites. Students will gain hands-on experience developing web application components with specific technologies, including a semester-long project to create a complete web application. They will also gain the skills and understanding to extrapolate to the "next" technology in a rapidly changing landscape. Topics include:

- Basic concepts: website, web browser, web application, rich internet application, web server, database server, architectural patterns, application frameworks, client-side programming, server-side programming
- XHTML (EXtensible HyperText Markup Language)
- CSS (Cascading Style Sheets)
- HTTP (Hypertext Transfer Protocol)
- PHP (PHP: Hypertext Preprocessor) and other server-side scripting languages
- Session management
- Encryption and other security topics
- SQL (Structured Query Language)
- The MVC (model view controller) pattern

- JavaScript and the DOM (Document Object Model)
- JavaScript libraries/frameworks such as jQuery
- JSON (JavaScript Object Notation), XML (EXtensible Markup Language) and other data encoding languages
- AJAX (Asynchronous JavaScript And XML)
- HTML5
- Web application frameworks

Course objectives:

Students will:

- Understand how web technologies interact, from the browser to the backend servers.
- Gain familiarity with numerous languages and standard protocols.
- Learn database design basics and SQL access.
- Implement dynamic content web pages using two- and three-tier architectures.
- Become familiar with the range of browser application clients
- Gain practical experience in a selected set of Web technologies.
- Learn how to keep pace with the rapidly changing landscape of web application development.
- Implement a web application with database content and a dynamic client.

Course Requirements:

Lectures: You are expected to attend every lecture period for this course. If you know you are going to be unable to attend, contact the instructor **beforehand** to arrange your absence. If you do not do so, you will not be given extensions or make-ups for any exercises, exams or other activities.

Lab exercises: Part of most class meetings will take place in the computer lab so that we can do hands-on explorations and exercises as a class. These will be completed during class time and turned in at the end of class. Labs will often lead into the weekly assignments. You are expected to attend and take part in these exercises.

Assignments and project: The work in this class will be divided into weekly homework assignments where you read and respond to articles, research web topics, and design and develop web application code. At the end of the term, the weekly assignments will be replaced by a more substantial group project. Assignments will be announced in class and posted on the class website.

Exams: There will be a midterm and a final examination in this course. The purpose of these exams is to demonstrate mastery of the material covered by the weekly assignments.

Scoring and Grading:

Lab exercises	10%
Assignments & Project	55%

Midterm and final	35%

Total possible score (max):	100%

Final grade:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
0-59%	F

Note: Grades on assignments and exams may be curved to reflect the overall performance of the class.

Course schedule (subject to change)

1. Introduction to web programming
2. XHTML & CSS
3. JavaScript, jQuery and the DOM
4. jQuery UI
5. AJAX
6. JSON and XML
7. Midterm
8. Publishing and PHP
9. PHP
10. RDBMS and SQL
11. PHP Data Objects
12. MVC
13. Session and security
14. Project: Development Frameworks
15. Project: Development Frameworks
16. Final

Learning outcomes

Throughout this course, students will begin to develop:

(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

(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.

(k) An ability to apply design and development principles in the construction of software systems of varying complexity.

Course Policies

Late Work Policy:

No work in this course will be accepted late unless specifically extended by the instructor, or arranged beforehand by the student and instructor.

Make-up Policy:

No make-up exams or quizzes will be given except for university sanctioned excused absences. If you miss an exam (for a good reason), it is your responsibility to contact me before the exam, or as soon after the exam as possible.

Academic Integrity Policy:

The University expects a student to maintain a high standard of individual honor in his/her scholastic work. Unless otherwise required, each student is expected to complete his or her assignment individually and independently. Although study together is encouraged, the work handed in for grading by each student is expected to be his or her own. Any form of academic dishonesty will be strictly forbidden and will be punished to the maximum extent. Copying an assignment from another student in this class or obtaining a solution from some other source will lead to disciplinary action. Allowing another student to copy one's work will be treated as an act of academic dishonesty, leading to the same penalty as copying.

Drop Class Policy:

It is the student's responsibility to Drop the class if desired, and be aware of the drop deadline.

Note to students with disabilities:

Students with disabilities are encouraged to contact the Student Accessibility Services office for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Texas Rio Grande Valley to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, contact SAS: University Center 108, sas@utrgv.edu, 956-665-7005. http://www.utrgv.edu/en-us/student-experience/student-academic-success/student-accessibility-services/

Mandatory course evaluation period:

Students are required to complete an ONLINE evaluation of this course, accessed through your UTPA account (https://my.utrgv.edu/); you will be contacted through email with further instructions on the evaluation process. Students who complete their evaluations on time will have priority access to their grades.

Computer use policies:

Please read and be aware of University policies for computer use, which can be found at: http://www.utrgv.edu/is/_files/documents/utrgv-aup.pdf.