

College of San Mateo

Course Outline

- New Course
 Update/No change
 Course Revision (Minor)
 Course Revision (Major)

Date: November 1, 2009

Department: CIS

Number: 114

Course Title: Internet Programming: JavaScript/Ajax Units: 4.0

Total Semester Hours: Lecture: 48 Lab: 48 Homework: 96 By Arrangement: 0

Length of Course

- Semester-long
 Short course (Number of weeks 8)
 Open entry/Open exit

Grading

- Letter
 Pass/No Pass
 Grade Option (letter or Pass/No Pass)

Faculty Load Credit (To be completed by Division Office; show calculations.): 5.1 FLC

1. Prerequisite (Attach Enrollment Limitation Validation Form.)

CIS 111 or CIS 254 or equivalent

2. Corequisite (Attach Enrollment Limitation Validation Form.)

None

3. Recommended Preparation (Attach Enrollment Validation Form.)

ENGL 838/848

4. Catalog Description (Include prerequisites/corequisites/recommended preparation. For format, please see model course outline.)

CIS 114 Internet Programming: JavaScript/Ajax (4 units)
(Pass/ No Pass or letter grade option.) Minimum 48 lecture hours and 48 lab hours per term.
Prerequisite: CIS 111 or CIS 254 or equivalent. Recommended Preparation: eligibility for ENGL 838/848. Study of the JavaScript programming language. Provides an overview of XHTML and CSS, client-side programming, variables, arrays, functions, closures, event handlers, objects, form validation, cookies, and the DOM. Introduces Ajax (Asynchronous JavaScript and XML) technologies, XML, and XMLHttpRequest, Ajax design patterns, server-side programming, RSS, JSON, browser issues, and advanced topics such as open-source Ajax toolkits, mashups, security, performance, and Web Services. (AA, CSU)

5. Class Schedule Description (Include prerequisites/corequisites/recommended preparation. For format, please see model course outline.)

CIS 114 - Internet Programming: JavaScript/Ajax (4) Study of the JavaScript programming language. Provides an overview of XHTML and CSS, client-side programming, variables, arrays, functions, closures, event handlers, objects, form validation, cookies, and the DOM. Also covers Ajax (Asynchronous JavaScript and XML) technologies, XML, and XMLHttpRequest, Ajax design patterns, server-side programming, RSS, JSON, browser issues, and advanced topics such as open-source Ajax toolkits, mashups, security, performance, and Web Services. Prerequisite: CIS 111 or CIS 254 or equivalent. Recommended preparation: ENGL 838/848. Pass/No Pass or letter grade option. (AA, CSU)

6. **Student Learning Outcomes** (Identify 1-6 expected learner outcomes using active verbs.)

Upon successful completion of the course, the student will be able to:

1. Develop interactive Web applications that integrate XHTML with JavaScript using event handlers.
2. Explain object-based programming and the Document Object Model (DOM).
3. Create JavaScript applications that use cookies to track and save Web preferences.
4. Develop interactive Web applications that integrate client- and server-side programming using JavaScript and a server-side language.
5. Employ XMLHttpRequest to fetch XML, RSS, or JSON data asynchronously from the server.
6. Explain Ajax design patterns and illustrate how they are used to create various Ajax applications.
7. Create an advanced project using the various Ajax technologies, with attention to security and performance.

7. **Course Objectives** (Identify specific teaching objectives detailing course content and activities. *For some courses, the course objectives will be the same as the student learning outcomes. In this case, "Same as Student Learning Outcomes" is appropriate here.*)

Same as Student Learning Outcomes

8. **Course Content** (Brief but complete topical outline of the course that includes major subject areas [1-2 pages]. Should reflect all course objectives listed above. In addition, a sample course syllabus with timeline may be attached.)

See attached topical outline

9. **Representative Instructional Methods** (Describe instructor-initiated teaching strategies that will assist students in meeting course objectives. Describe out-of-class assignments, required reading and writing assignments, and methods for teaching critical thinking skills. **If hours by arrangement are required, please indicate the additional instructional activity which will be provided during these hours, where the activity will take place, and how the activity will be supervised.**)

The course will include the following instructional methods as determined appropriate by the instructor:

- Lecture will be used to introduce new topics;
- Teacher will model problem-solving techniques;
- Class will solve a problem together, each person contributing a potential "next step";
- Students will participate in short in-class projects (in teacher-organized small groups) to ensure that students experiment with the new topics in realistic problem settings;
- Teacher will invite questions AND ANSWERS from students, generating discussion about areas of misunderstanding;
- Teacher will create and manage an Internet conference for discussion of course topics; and
- Students will work in small groups to solve programming assignments.

10. **Representative Methods of Evaluation** (Describe measurement of student progress toward course objectives. Courses with required writing component and/or problem-solving emphasis must reflect critical thinking component. If skills class, then applied skills.)
- Bi-weekly quizzes (short answer--from textbook material) to provide feedback to students and teacher on objectives 1 - 6;
 - Assessment of student contributions during class discussion and project time to assess objectives 1-4;
 - Individual programming assignments to assess objectives 1, 3, 4, 5, and 7;
 - Midterm and Final exams (short answer (textbook material), general problem solving (similar to in-class work), short program segments (similar to programming assignments)) to assess objectives 1-6;
 - Assessment of group participation on course projects, including peer-assessment of participation and contribution to the group effort to assess objectives 4 and 7.

11. **Representative Text Materials** (With few exceptions, texts need to be current. Include publication dates.)

Ajax in Action, Crane, Pascarello & James, Manning ISBN 1-932394-61-3, 2006

Ajax Construction Kit, Morrison, Prentice Hall ISBN 0-13235008-4, 2007

JavaScript and DOM Scripting, Harris, Murach ISBN 1-890774-55-4, 2009

New Perspectives on JavaScript and Ajax, Carey & Canovatchel. Course Technology ISBN 1-4390440-3-1, 2009

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