## Course Change Proposal

### Form A

<table>
<thead>
<tr>
<th>Academic Group (College):</th>
<th>Engineering &amp; Computer Science</th>
<th>Academic Organization (Department):</th>
<th>Computer Science Department</th>
<th>Date: May 14, 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Course Proposal:</td>
<td>New ____ Change <em>X</em> Deletion ____</td>
<td>Department Chair: Du Zhang</td>
<td>Submitted by: Du Zhang</td>
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<tr>
<td>Does this course fulfill a requirement for single-subject or multiple subject credential students?</td>
<td>Yes ____ No <em>X</em></td>
<td>For Catalog Copy: Yes <em>X</em> No ____</td>
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<td>CCE:</td>
<td>Yes ____ No <em>X</em></td>
<td>Semester Effective:</td>
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<td>Fall ____ Spring <em>X</em>, 2008</td>
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This course replaces experimental course Subject Area (prefix) and Catalog Number (course number):

This Catalog Number (course number) is being replaced:

### Change from:

| Subject Area (prefix) & Catalog No. (course no.): | CSC 121 | Title: Using Scripts On The Web | Units: 3 |

### Change to:

| Subject Area (prefix) & Catalog No. (course no.): | CSC 121 | Title: Client-Side Web Programming | Units: 3 |

### JUSTIFICATION:

Course description, title, and prerequisite have been changed to reflect updated content; however, it remains the same course overall.

### NEW COURSE DESCRIPTION:

(Not to exceed 80 words, and language should conform to catalog copy. See http://www.csus.edu/acaf/univmanual/crspsl.htm - Guidelines for Catalog Course Description)


### Note:

Prerequisite: CSC 22 and CSC 80, or equivalents.
Enforced at Registration: Yes _X_ No ____
Corequisite:
Enforced at Registration: Yes ____ No ____

### CAN (California Articulation Number):

Graded: Letter _X_ Credit/No Credit ____

Instructor Approval Required? Yes ____ No _X_ ____

Course Classification (e.g., lecture, lab, seminar, discussion): 04

Title for SIS+/CMS (not more than 30 characters)

CLIENT-SIDE WEB PROGRAMMING

Cross Listed? Yes ____ No _X_ ____

If yes, do they meet together and fulfill the same requirement, and what is the other course?

How Many Times Can This Course be Taken for Credit? Once ____

Can the course be taken for Credit more than once during the same term? Yes ____ No _X_ ____
FOR NEW COURSE PROPOSALS OR SUBSTANTIVE CHANGES ONLY:

Description of the Expected Learning Outcomes: Describe outcomes using the following format: “Students will be able to: 1), 2), etc.” See the example at http://www.csus.edu/acaf/example.htm

Students will have a thorough understanding of:
- Javascript programming language and DHTML.
- Event-driven programming.
- Form validation.
- Web animation with Javascript and DHTML.
- Web browser objects, Javascript objects and DOM objects.
- Design and implementation of websites using Javascript and DHTML.
- Fundamental syntax of the programming language used in the course.
- Concepts of data types and dynamic data types.
- Dynamic arrays of objects.
- Concepts of assignment; arithmetic, relational, and Boolean expressions.
- Parameter passing and its implications.
- Number system conversions and Unicode (bases 10, 16).
- Debugging techniques, including the use of a symbolic debugger.

And a basic understanding of:
- Use of classes/objects/methods to solve problems.
- Design and implementation of classes.
- Program development process.
- Stepwise refinement and modularity.
- Regular expression
- DOM.
- Recursion.
- Scope rules.
- Strings.
- Interactive text I/O.
- Standard algorithms such as: sequential search, simple sorts.

**Attach a list of the required/recommended course readings and activities [Note: it is understood that these are updated and modified as needed by the instructor(s).] This attachment should be forwarded only to your Dean's office, not Academic Affairs.

Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above:

Tests, lab assignments, production of websites, and oral presentations.

For whom is this course being developed?

<table>
<thead>
<tr>
<th>Majors in the Dept</th>
<th>Majors of other Depts</th>
<th>Minors in the Dept</th>
<th>General Education</th>
<th>Other</th>
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<td>X</td>
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Is this course required in a degree program (major, minor, graduate degree, certificate)? Yes X No

If yes, identify program(s): Managing Information on the World Wide Web Certificate Program

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer facilities, faculty, etc.)? Yes X No

If yes, attach a description of resources needed and verify that resources are available.

Indicate which department or programs will be affected by the proposed course (if any).

The Department Chair's signature below indicates that affected programs have been sent a copy of this proposal form.

Approvals: If proposed change, new course or deletion is approved, sign and date below. If not approved, forward without signing to the next reviewing authority, and attach an explanatory memorandum to the original copy.

Signatures:  

Date

Department Chair:

College Dean or Associate Dean:

CPSP (for school personnel courses ONLY)

Associate Vice President and Dean for Academic Programs

Distribution: Academic Affairs (original), Department Chair and College Dean. Dean's office to send original after approval to Academic Affairs, at mail zip 6016. An electronic copy must also be sent.
CSC 121. Using Scripts On The Web. Provides the student experience in developing interactive Web pages. Scripting tools are most useful to both Internet and Intranet developers. They provide the quickest, easiest way to create windows and documents with dynamic features and to develop forms with user interface elements to capture user input and management of information on the Web. Students will work with Navigator, MIME Types, plug-in objects, Web security and cookies. Lecture 3 hours. Prerequisite: CSC 080 or instructor permission. Graded: Graded Student. Units: 3.0.
COURSE DESCRIPTION

Department and Course Number: CSC 121  
Course Coordinator: Kwai-Ting Lan  
Course Title: Client-Side Web Programming  
Total Credits: 3

Catalog Description: Client-side Web programming using JavaScript, DHTML, and client-side Web technologies. Event-driven programming, dynamic data types, control structures, and introduction to object-oriented programming and program design. Use of cookies and built-in objects. Validation and processing of forms. Basic features of the Document Object Model. Prerequisites: CSC 22 and CSC 80; or equivalent. 3 units.


Supplemental Material: Various public websites and online resources.

Course Goals
Study various aspects of client-side Web programming and website design that include:

1. fundamentals of client-side Web programming;
2. basic concepts of dynamic HTML (DHTML);
3. understanding of number systems, data types, control structures, and procedural abstraction;
4. basic concepts of event-driven programming;
5. fundamentals of browser objects, Javascript objects and Document Object Model (DOM) objects;
6. client-side form validation and regular expression;
7. creating web pages with standard script programming language and DHTML;
8. designing, implementing, testing, and documenting computer programs using an object-oriented approach, modularity, and stepwise refinement;
9. introduction to data abstraction through the development and use of classes;
10. basic concepts of dynamic data type;
11. teamwork experience on website design projects;

Prerequisites by Topic

Thorough understanding of:

- Any structured programming language including its control structures, expressions, statements and subroutines.
- HTML and XHTML
- Web color and hexadecimal notation
- Hyperlinks and anchors
- Cascading Style Sheets (CSS)
- Lists, tables, frames and forms
- Images, animated images and image maps
- Multimedia, sound and video files
- HTML editors and tools
- Webpage design and layout
- Website and site map design
- Testing and debugging web pages
Basic understanding of:

- Webpage design trends
- Web protocols: FTP, HTTP, TCP/IP and URL
- Web client and server software
- ASCII code and Unicode

Major Topics Covered in the Course

1. Course overview and introduction (1 hour)
2. Using classes/objects, including class libraries (2 hours)
3. Designing and developing classes/objects, data abstraction (3 hours)
4. Designing, developing, and documenting programs using classes/objects (2 hours)
5. Algorithm development, detailed design (3 hours)
6. Program testing and debugging (1 hour)
7. Javascript compiling, executing, interpreting; and virtual machine (1 hour)
8. Basic data types, dynamic data types, dynamic array and objects (3 hour)
9. Strings and string manipulation (2 hour)
10. Interactive input/output (2 hour)
11. Operators, expressions, assignments (1 hour)
12. Boolean expressions, conditional statements (2 hours)
13. Iteration and recursion (2 hours)
14. Scope of identifiers, lifetime of variables (1 hour)
15. Procedural abstraction, methods (functions), stepwise refinement, parameters (2 hours)
16. Use of sorting and searching algorithms (2 hours)
17. Document Object Model (2 hours)
18. DHTML and event-driven programming (5 hours)
19. Use regular expressions (2 hours)
20. Creating and applying events to form objects and form validation (3 hours)
21. Cookies and Web project design discussion (1 hour)
22. Website project demo and presentation (2 hours)

Laboratory Projects

Examples:

1. Scientific calculator webpage design and implementation.
2. Photo album and slide show website design and implementation.
3. Digital alarm clock, including time and date information.
4. Tic-Tac-Toe: Two-Player strategy Web game design and implementation.
5. Magic square
6. Form design, validation, and implementation.
7. Web animation: Short movie design and implementation.
8. Design and implement a professional quality website and make an oral presentation to the class.

Outcomes

Thorough understanding of:

- Javascript programming language and DHTML.
- Event-driven programming.
- Form validation.
- Web animation with Javascript and DHTML.
- Web browser objects, Javascript objects and DOM objects.
Design and implementation of websites using Javascript and DHTML.
Fundamental syntax of the programming language used in the course.
Concepts of data types and dynamic data types.
Dynamic arrays of objects.
Concepts of assignment; arithmetic, relational, and Boolean expressions.
Parameter passing and its implications.
Number system conversions and Unicode (bases 10, 16).
Debugging techniques, including the use of a symbolic debugger.

Basic understanding of:

- Use of classes/objects/methods to solve problems.
- Design and implementation of classes.
- Program development process.
- Stepwise refinement and modularity.
- Regular expression
- DOM.
- Recursion.
- Scope rules.
- Strings.
- Interactive text I/O.
- Standard algorithms such as: sequential search, simple sorts.

Exposure to:

- Program testing techniques.
- Concept of a virtual machine.
- XML.
- Flash.
- ASP.NET.

Estimated CSAB Category Content

Core Advanced

Data Structures
Algorithms
Software Design
Computer Organization and Architecture
Concept of Programming Languages

Oral and Written Communications

Every student is required to design a professional quality website and to make an oral presentation to the class.

Social and Ethical Issues

Copyright and legal issues of intellectual property, Web software, and Web documents.

Theoretical Content

No significant component.
Analysis and Design

Projects require students to design and analyze various alternatives to make usability and performance choices.

Kwai-Ting
4/30/07
COURSE APPROVAL CHECKLIST

Please answer all questions (enter NA if not applicable)

1. Course number and title:  
   CSC 121, Client-Side Web Programming

2. Old course number and title:  
   CSC 121, Using Scripts on the Web

3. Name of person in charge:  
   Jinsong Ouyang and Kwai-ting Lan

4. Is the course ______ required ______ elective  X service/GE

5. Check as appropriate: ______ new ______ change from 96/196/296
   X Change in description to reflect change in content
   X Change in prerequisite
   ____ Change in course format (e.g. lectures to lecture/lab)
   ____ Minor editing change in description
   ____ Change in number
   X Change in title

6. If offered as 96/196/296: ______ number of times ______ average enrollment

7. Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer facilities, faculty, etc.)?  No  If yes, attach description of resources needed, including lab room number if appropriate, and verify that these resources are available.

8. For all changes (except change in number, title, or minor editing change in description), attach and check off here:
   X detailed syllabus  X justification  X old description

9. If there are related course changes, state numbers here and submit as a package:

10. Date of department curriculum committee approval (if any):

11. Date of department faculty approval (if any):  May 9, 2007

FOR NEW COURSES (Including changes from 96/196/296):

Is the course related to or similar to any existing course? ______ If so, include explanation with justification.

Describe the target group of students:

NOTE:

1. Syllabus should include title, author and date of text, name of instructor, main topics, amount or percentage of time devoted to each, description of special features such as term projects, and ABET or CAC content category.

2. For required courses the justification must indicate how the new course fits into the overall curriculum and why changes are being made or the new course is being added.