CSC 437 – Dynamic Web Development

1. CSC 437 – Dynamic Web Development

2. credit units 4  contact hours 6

3. Course Coordinator: Clint Staley

4. Textbook (or other required material): None

5. a. Course Description:
Project-based study of web-based three-tiered applications, including current best practices and tools for design, implementation and testing of browser interface, server-side business logic, object-relational mapping, databases, and web services. 3 lectures, 1 laboratory.

b. Prerequisite: CPE/CSC 357 with a grade of C- or better and CSC 365 with a grade of C- or better; or consent of instructor.

c. Required/Elective/Selective Elective for CPE, CSC, EE, SE

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6. a. Course Learning Objectives
The student will be able to:

- Understand and implement code using scripting language features such as closure and prototypes, evidenced by mastery of the JS scripting language.
- Apply modern website design principles, e.g. ORMs, REST, HTTP AJAX, and be able to modify existing website designs.
- Read, debug, and modify existing website code, and to write original client and server-side code.
- Describe the software engineering issues surrounding websites and rapid development cycles.
- Work in a team to develop full stack web applications using principles learned from class.

b. Level at which Student Outcomes are addressed
(“B” = Basic level, “I” = Intermediate level, “A” = Advanced level)

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7. Major Topics Covered: (number of lecture hours per)
(3 hrs) Scripting language (JS or other) Fundamentals
(5 hrs) Scripting language (JS or other) Advanced Features
(5 hrs) HTTP, REST design and automated serverside testing
(6 hrs) Server implementation using a standard serverside framework (e.g. Node/Express)
(5 hrs) Fundamentals of clientside: HTML, CSS, DOM
(4 hrs) Intermediate clientside frameworks, e.g. JQuery, Bootstrap
(6 hrs) Advanced clientside frameworks, e.g. Redux, React
(3 hrs) Software engineering and design principles illustrated in Web design.
(2 hrs) Testing