

**College of San Mateo**  
**Official Course Outline**

1. **COURSE ID:** CIS 128    **TITLE:** Mobile Web App Development  
**Units:** 4.0 units    **Hours/Semester:** 48.0-54.0 Lecture hours; 48.0-54.0 Lab hours; and 96.0-108.0 Homework hours  
**Method of Grading:** Grade Option (Letter Grade or Pass/No Pass)  
**Recommended Preparation:**  
    Eligibility for ENGL 838 or ENGL 848 or ESL 400.  
    Completion of CIS 111 or CIS 254.
2. **COURSE DESIGNATION:**  
**Degree Credit**  
**Transfer credit:** CSU; UC
3. **COURSE DESCRIPTIONS:**  
**Catalog Description:**  
    Employ HTML5, CSS and JavaScript to develop mobile web apps for smart phones and tablet/pad devices. Topics include CSS media queries, mobile user interfaces, platform-independent development, and best practices. Also covers geolocation, maps, audio, video, drawing, animation and offline apps. Provides an introduction to open-source mobile development frameworks, emulators, conversion to native apps, performance and testing. Intended for students with previous programming experience.
4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**  
    Upon successful completion of this course, a student will meet the following outcomes:
  1. Define and identify the types and uses of various mobile devices, including smart phones and tablets/pads.
  2. Design and create web applications for display on a variety of mobile devices and screens.
  3. Apply appropriate user-interface design techniques and standards to create intuitive and effective designs.
  4. Use media queries to optimize sites for display on different-sized devices.
  5. Select and use the appropriate technology to make applications available offline.
  6. Use available technology to package a web application built with HTML, CSS, and JavaScript for deployment as a native app on Android or iOS.
5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**  
    Upon successful completion of this course, a student will be able to:
  1. Define and identify the types and uses of various mobile devices, including smart phones and tablets/pads.
  2. Design and create web applications for display on a variety of mobile devices and screens.
  3. Apply appropriate user-interface design techniques and standards to create intuitive and effective designs.
  4. Use media queries to optimize sites for display on different-sized devices.
  5. Select and use the appropriate technology to make applications available offline.
  6. Use available technology to package a web application built with HTML, CSS, and JavaScript for deployment as a native app on Android or iOS.
6. **COURSE CONTENT:**  
**Lecture Content:**
  1. Introduction to mobile platforms and devices
  2. HTML5 markup
  3. CSS overview
  4. JavaScript variables, functions, arrays and objects
  5. JavaScript and the Document Object Model (DOM)
  6. Events and event handlers
  7. CSS media queries
  8. Mobile user interface design
  9. HTML5 geolocation and maps
  10. HTML5 audio and video API
  11. HTML5 drawing and animation API
  12. Mobile emulators
  13. Offline applications with cache manifest
  14. Performance and testing
  15. Mobile development frameworks
  16. Best practices
  17. Converting web apps to native apps using a mobile framework.**Lab Content:**
  1. Develop simple mobile web apps using HTML5, CSS and JavaScript

2. Test web apps using mobile devices and emulators
3. Create mobile web apps using mobile development frameworks
4. Employ HTML5 audio and video in mobile web apps
5. Create mobile web apps that draw and animate using the HTML5 API
6. using developer tools to examine the performance of mobile web apps
7. Deploy a mobile web app as a native app using a mobile development frameworks such as PhoneGap

#### 7. REPRESENTATIVE METHODS OF INSTRUCTION:

Typical methods of instruction may include:

- A. Lecture
- B. Lab
- C. Activity
- D. Directed Study
- E. Discussion
- F. Other (Specify): • Student reading of textbooks and supplemental course materials • Individual and team programming projects • Review of subject matter videos

#### 8. REPRESENTATIVE ASSIGNMENTS

Representative assignments in this course may include, but are not limited to the following:

**Writing Assignments:**

Students will complete and submit exercises and programming assignments on a weekly or biweekly basis.

**Reading Assignments:**

Students will read assigned chapters in the textbook and supplemental handouts.

#### 9. REPRESENTATIVE METHODS OF EVALUATION

Representative methods of evaluation may include:

- A. Exams/Tests
- B. Group Projects
- C. Homework
- D. Lab Activities
- E. Projects
- F. Quizzes
- G. Written examination

#### 10. REPRESENTATIVE TEXT(S):

Possible textbooks include:

- A. Matthews & Gliser. *Creating Mobile Apps with jQuery Mobile*, 2nd ed. Packt Publishing, 2015
- B. Saleh. *JavaScript Mobile Application Development*, 1st ed. Packt Publishing, 2014
- C. Firtman. *High Performance Mobile Web: Best Practices for Optimizing Mobile Web Apps*, 1st ed. O'Reilly Media, 2016
- D. Castledine, Eftos & Wheeler. *Build Mobile Websites and Apps for Smart Devices*, 1st ed. SitePoint, 2016

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**Course Originator:** Melissa Green