

CSCI 4931.03 Mobile Application Development

Fall 2011

Instructor: Dr. Pradeep Buddharaju
Room: Delta 204
Semester Dates: 08/23/2011 – 12/8/2011
Day/Time: Tuesdays and Thursdays 4:00 p.m. – 5:20 p.m.
Email: WebCT or buddharaju@uhcl.edu
WebCT Address: <http://courses.cl.uh.edu:8900>
Phone: (281) 283-3881
Office Hours: Tuesdays 5:30 pm – 7:30 pm, in D173, by appointment.
Teaching Assistant: Sudharshan Dhomne, Email: dhomne@uhcl.edu
TA's Office Hours: Monday 10am-3pm, Tuesday 10am-3pm, Friday 10am-2pm.
Textbook: All material used in the course can be downloaded for free from the Apple's developer website at <http://developer.apple.com/iphone>

Course Description: This course teaches students the ins and outs of software engineering for mobile platforms, especially the iOS platform. In the recent years, computing has moved from desktops to users pockets with proliferation of smart devices such as smart phones (iPhone, iPad, Android, Windows 7 etc), smart electronics (gadgets in the car), mobile gaming (PSP etc), etc. This course will present the challenges faced to efficiently develop software for such mobile devices along with state of the art solutions by using iOS platform as an example.

Course Format: Lectures with homework and project assignments.

Objectives: After completing the course, students are expected to be able to accomplish the following:

1. Acquire the skills needed to build mobile applications targeting the iOS mobile platforms, making use of the substantial set of existing application and system level frameworks that come with iOS.
2. Get proficient with Objective-C programming, and know how and when to use the model-view-controller, delegation, target-action, and other software design patterns that are commonly used in the Cocoa Touch Framework.
3. Learn how to take a mobile development project from concept to final, robust implementation by considering the limitations and necessary tradeoffs involved in designing software applications for resource-constrained platforms (such as the mobile platforms targeted by the course).
4. Gain the experience of presenting their ideas and approaches to an audience of their peers.

Attendance: Students are strongly encouraged to attend all classes.
Appraisal: Appraisal is solely merit-based. Scores and grade are calculated with the weighing factors below:

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|----------------------|-----|
| Project | 40% |
| Homework Assignments | 25% |
| Midterm Exam | 15% |
| Final Exam | 20% |

The instructor will not consider any other factors in the calculation of the final grade. For example, the following factors will not be considered: the need for maintaining certain GPA, obtaining financial aid or keeping the "student" status.

Grading: Grade conversion table:

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|-------|-------|
| Score | Grade |
| ≥ 93 | A |

| | |
|-------------|----|
| 90.0 – 92.9 | A- |
| 87.0 – 89.9 | B+ |
| 83.0 – 86.9 | B |
| 80.0 – 82.9 | B- |
| 77.0 – 79.9 | C+ |
| 73.0 – 76.9 | C |
| 70.0 – 72.9 | C- |
| 67.0 – 69.9 | D+ |
| 63.0 – 66.9 | D |
| 60.0 – 62.9 | D- |
| < 60.0 | F |

Prerequisites: CSCI 3134 or CSCI 3233

- Other policies:
1. The students of the course will be divided into groups of 3 students per group, and each group is required to develop an app as part of the course project under the supervision of the instructor.
 2. Assignments must be completed individually. The assignments must be submitted using WebCT. Note that one second after the due time is considered as late. The score for a late *project assignment* will be deducted at a rate of five points per day after the due date. No project assignment will be accepted one week after the due date. The last project assignment will not be accepted late. No late *homework assignment* will be accepted.
 3. No make-up exam except in verified emergencies with immediate notification.
 4. No “I” grade will be given as the final grade.
 5. Mobile phones and pagers must be turned off during the classes. No phone calls should be made during the exams, except in verified emergencies with instructor's approval.

Honesty Code

The Honesty Code is the university community’s standard of honesty and is endorsed by all members of the University of Houston-Clear Lake academic community. It is an essential element of the University’s academic credibility. It states:
I will be honest in all my academic activities and will not tolerate dishonesty.
Dishonesty in an assignment or an examination will be the cause for receiving the grade of F for the course.

For details on the honesty code, read the document at this link:
http://prtl.uhcl.edu/portal/page/portal/PRV/FORMS_POLICY_PROCEDURES/STUDENT_POLICIES/Academic_Honesty_Policy

6 Drop Rule Limitation - Students who entered college for the first time in Fall 2007 or later should be aware of the course drop limitation imposed by the Texas Legislature. Dropping this or any other course between the first day of class and the census date for the semester/session does not affect your 6 drop rule count. Dropping a course between the census date and the last day to drop a class for the semester/session will count as one of your 6 permitted drops. You should take this into consideration before dropping this or any other course. Visit <http://www.uhcl.edu/records> for more information on the 6 drop rule and the census date information for the semester/session.

Disability Accommodation Statement

If you are certified as disabled and are entitled to accommodation under the ADA Act., Sec. 503, please see the instructor as soon as possible. If you are not currently certified and believe that you may qualify, please contact the Coordinator of Disabled Services, at (281) 283-2627, in Health and Disability Services.

Class Schedule of CSCI 4931.03 Fall 2011

| Class | Date | Topic | Assignment | Due |
|-------|-------------------------|---|----------------------|-----|
| 1 | 8/23/2011, Tuesday | Introduction to Mobile Application Development | | |
| 2 | 8/25/2011, Thursday | Xcode Tutorial | | |
| 3 | 8/30/2011, Tuesday | Objective-C Tutorial | Final Project Topics | |
| 4 | 9/1/2011, Thursday | Memory Management in Objective-C | | |
| 5 | 9/6/2011, Tuesday | Cocoa Framework | | |
| 6 | 9/8/2011, Thursday | Sample Cocoa Application | HW1 | |
| 7 | 9/13/2011, Tuesday | iOS Overview & Technologies | | |
| 8 | 9/15/2011, Thursday | Sample iPhone and iPad Application | | |
| 9 | 9/20/2011, Tuesday | Student Presentations – Project Proposal | | |
| 10 | 9/22/2011, Thursday | iPhone User Interface Guidelines | | HW1 |
| 11 | 9/27/2011, Tuesday | iPad User Interface Guidelines | | |
| 12 | 9/29/2011, Thursday | Programming Views | | |
| 13 | 10/4/2011, Tuesday | View Controller Programming | | |
| 14 | 10/6/2011, Thursday | Table View Programming | | |
| 15 | 10/11/2011, Tuesday | Midterm Exam | | |
| 16 | 10/13/2011, Thursday | Event Handling | HW2 | |
| 17 | 10/18/2011, Tuesday | Graphics and Drawing | | |
| 18 | 10/20/2011, Thursday | Core Data Programming | | |
| 19 | 10/25/2011, Tuesday | Audio and Video Technologies | | |
| 20 | 10/27/2011, Thursday | Student Presentations – Project Progress | | HW2 |
| 21 | 11/1/2011, Tuesday | Hardware Features | | |
| 22 | 11/3/2011, Thursday | Map Kit Programming | HW3 | |
| 23 | 11/8/2011, Tuesday | Address Book Programming | | |
| 24 | 11/10/2011, Thursday | Application Preferences | | |
| 25 | 11/15/2011, Tuesday | Game Kit Programming | | |
| 26 | 11/17/2011, Thursday | Multitasking | | HW3 |

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|----|-------------------------|--|--|-----------------------|
| 27 | 11/22/2011, Tuesday | Tuning App Performance with Instruments | | |
| 28 | 11/24/2011, Thursday | Thanksgiving Holiday | | |
| 29 | 11/29/2011, Tuesday | Transition to iPad | | |
| 30 | 12/1/2011, Thursday | Final Project and Final Exam Review | | |
| 31 | 12/6/2011, Tuesday | Final Exam | | |
| 32 | 12/8/2011, Thursday | Student Presentations – Final Project | | Final Project Code |