



# iPhone Application Development

## ITP 499 (2 Units)

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Fall 2009

- Objective** This course is an introduction to developing applications for iPhones and iPod Touch devices. We will go through the process of building an iPhone application from start to finish using the iPhone SDK (Software Development Kit). In lecture sessions, you will learn the basics of the Objective-C programming language, how to design iPhone interfaces visually in Interface Builder, how to use the libraries to build applications that have the iPhone look and feel, how to use table views, how to design and handle user input, and other aspects as time permits. During the lab sessions, students will create applications using the Xcode IDE (Integrated Development Environment).
- Concepts** Object-oriented programming, Objective-C
- Prerequisites** ITP101, ITP109 or Basic Computer Knowledge
- Instructor** Trina Gregory
- Contacting the Instructor** Email: [trina.gregory@usc.edu](mailto:trina.gregory@usc.edu)
- Office Hours** TBD
- Lab Assistants** Elliot Lee, [elliottle@usc.edu](mailto:elliottle@usc.edu)
- Lecture** 1.5 hours/week
- Lab** 1.5 hours/week
- Course Structure** Lectures on Mondays from 2:00 to 3:20pm.  
Labs on Wednesdays and Thursdays from 2:00 to 3:20pm.
- Required Textbooks** Beginning iPhone 3 Development: Exploring the iPhone SDK  
OR Beginning iPhone Development: Exploring the iPhone SDK  
by Dave Mark, Jeff LaMarche  
\$39.99, \$26.39 on Amazon  
ISBN-13 (paperback): 978-1-4302-2459-4  
ISBN-13 (paperback): 978-1-4302-1626-1  
ISBN-13 (electronic): 978-1-4302-1627-8
- Optional Books** iPhone SDK Development by Bill Dudney and Chris Adamson  
(Beta eBook, paperback available in September)  
<http://pragprog.com/titles/amiphd/iphone-sdk-development>

**Web Site** All information including lecture notes, assignments and references will be listed on Blackboard (<http://blackboard.usc.edu>).

**Labs** There will be approximately five lab assignments which will be given in lecture and posted on Blackboard.

**Final Project** There will be a final project given which will be due during the finals time of this class. For this project, students will be in groups of approximately 3 people. Each group will build an iPhone application of that groups choosing. The ITP department has been approached by departments within USC, as well as outside non-profit organizations and companies, with requests for iPhone apps. Each group may select one of these projects or create their own idea. This gives the students a great opportunity to develop real world applications.

**Grading** The following point-structure will be used in determining the grade for the course. Final grade will be based upon the total points received, the highest total in the class, and the average of the class.

Class Participation & Attendance	10%
Lab Assignments	45%
<u>Final Project</u>	<u>45%</u>
TOTAL POSSIBLE	100%

Grading scale:

A	100-93
A-	92-90
B+	89-87
B	86-83
B-	82-80
C+	79-77
C	76-73
C-	72-70
D+	69-67
D	66-65
F	64 or below

**Policies** Exams: Exams cover material from the reading assignments, lectures, and lab projects. The exams are both closed book and closed notes. The exams will cover the material presented up to the date of the exam. Make-up policy for exams: In order to make up for a missed exam, the student must provide a satisfactory reason along with proper documentation. Usually make-ups are allowed only under extraordinary circumstances.

Assignments: It is your responsibility to turn in your assignments on, or before, the deadlines as set by the instructor.

Late assignments: Late submission of assignments will lead to loss of points. No assignments will be accepted after two weeks beyond the original due date.

Before logging off a computer, students must ensure that they have emailed or saved projects created during the class or lab session. Any work saved to the computer will be erased after restarting the computer.

ITP is not responsible for any work lost.

ITP offers Open Lab use for all students enrolled in ITP classes. These open labs are held beginning the third week of classes through the last week of classes. Please contact your instructor for specific times and days for the current semester.

**Academic Integrity**

The use of unauthorized material, communication with fellow students during an examination, attempting to benefit from the work of another student, and similar behavior that defeats the intent of an examination or other class work is unacceptable to the University. It is often difficult to distinguish between a culpable act and inadvertent behavior resulting from the nervous tension accompanying examinations. When the professor determines that a violation has occurred, appropriate action, as determined by the instructor, will be taken.

Although working together is encouraged, all work claimed as yours must in fact be your own effort. Students who plagiarize the work of other students will receive zero points and possibly be referred to Student Judicial Affairs and Community Standards (SJACS).

All students should read, understand, and abide by the University Student Conduct Code listed in SCampus, and available at:

<http://www.usc.edu/student-affairs/SJACS/nonacademicreview.html>

**Students with Disabilities**

Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to your TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m. - 5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

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### Course Outline

#### Week 1 – Introduction

- Course overview
- Overview of iPhone

**Lab:** Education Program at [developer.apple.com](http://developer.apple.com)

#### Week 2 – iPhone Development

- SDK, Xcode, Interface Builder
- First iPhone app

**Lab:** Hello iPhone

#### Week 3 – Holiday

#### Week 4 – Fundamentals and Objective-C

- Data types, methods, messaging
- Connections – IBOutlets & IBActions
- Protocols and delegates

#### Week 5 – Programming in Objective-C

- Classes
- Object-oriented programming
- Memory management
- Synthesized accessor methods
- Property attributes and dot operator

#### Week 6 – GUI Components

- Views and view controllers
- Image view, alert view
- Other GUI components such as slider, segmented control, switch

#### Week 7 – Collections and Utility App

- Arrays
- Multiple views

**Week 8** – Multiviews and Tables

- Table view
- Displaying cells

**Week 9** – Tables

- Deleting rows
- Inserting rows
- Custom cells

**Week 10** – Data Persistence

- Exploring your filesystem
- Reading Data from file
- Creating and deleting files and directories
- Writing data to files

**Week 11** – Multi-media

- Audio
- Vibration
- WebView
- User iPhone camera and photo library

**Week 12** – Accelerometers & Core Location

- Getting device orientation
- Getting raw accelerometer data
- Filtering accelerometer data

**Week 13** – Events, Multi Touch and Gestures

- Event Model
- Tracking Touches
- Tapping
- Multi-Touch Gestures

**Week 14** – Prototyping

- Designing apps
- Paper prototyping
- Using Photoshop and Interface Builder

**Week 15** – App on App Store

- Using analytics
- App Store submission

**Week 16** – Final Project Due on December 11, 2009 at 2pm

**This syllabus is subject to change.**

