iOS Application Development
INFO I399 Current Topics in Informatics - Fall 2015 - course section 15682

**Instructor**
Mitja Hmeljak
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**Sections**
Lecture Section 15682:
Tuesday and Thursday,
2:30pm—3:45pm,
LH030 (Lindley Hall)

**Office Hours**
temporary – will change:
MW noon - 1:00PM,
SoIC Undergraduate Annex 203

**Undergraduate Instructors**
Sam Berron,
sberron@indiana.edu

Lab Section 15683:
Friday,
11:15am-12:30pm,
LH030 (Lindley Hall)

TBA

Zach Sullivan,
zsullivan@indiana.edu

Lab Section 15683:
Friday,
11:15am-12:30pm,
LH030 (Lindley Hall)

TBA

**Textbooks**

**Required:** "iOS 8 for Programmers: An App-Driven Approach with Swift, 3/E" by Paul Deitel, Harvey M. Deitel, Abbey Deitel

**Recommended:** "Swift for Programmers"
By Paul Deitel, Harvey Deitel
http://www.pearsonhighered.com/educator/product/Swift-for-Programmers/9780134021362.page

**Recommended in place of the above two books:**
"Academic Bundle iOS 8 for Programmers and Swift for Programmers"
http://www.pearsonhighered.com/educator/product/Academic-Bundle-iOS-8-for-Programmers-and-Swift-for-Programmers/9780134087757.page

**Suggested Examples:** "Beginning iPhone Development with Swift: Exploring the iOS SDK" by David Mark et al. - 2014
ISBN13: 9781484204108
http://www.apress.com/9781484204108

**Suggested Reference:** "Programming iOS 8: Dive Deep into Views, View Controllers, and Frameworks"
by Matt Neuburg - 2014
ISBN13: 9781491908730
http://shop.oreilly.com/product/0636920034261.do
There will be course handouts, and we'll primarily be using the documentation available at Apple’s iOS Developer Library. The documentation can be viewed online at http://developer.apple.com/devcenter/ios/ and is available locally in Xcode.

**Course Description:**
This course focuses on the iOS development cycle, starting with designing a GUI in the Xcode Interface Builder and ending with how to complete an entire app project.

**Topics:**
- Introduction to iOS application development.
- Development cycle: iOS application design, development, testing.
- iOS Human Interface Guidelines.
- Development tools: Xcode, Interface Builder, iOS Simulator.
- User interface layout design, app business logic connections, iOS data management.
- Model-View-Controller application design.
- Input: touch, multi-touch, geo-location, orientation and position.
- iOS user interface animation and graphics.
- App Store submission for distribution.

**Course Prerequisites:**
**Required:** Basic programming knowledge is required, such as having completed I210, C211, or equivalent experience (e.g. programming fluency in Python, JavaScript, etc.). No previous iOS programming or Mac OS X experience is required.
**Recommended:** one of the following: C, Java, JavaScript, C++ (or other C-like language) programming experience.

**Course Objectives:**
The goal of this course is to familiarize with the iOS development cycle, starting with designing a GUI in the Xcode Interface Builder and ending with how to publish an iOS app in the App Store.

**Course Work and Grading:**
There will be approximately six graded coding assignments, and a final coding project. You will be writing Swift code to program the iOS API. The “Xcode 6” IDE (Xcode 6.4 as of August 2015) as installed in LH030 will be used for code development. Other programming languages, Xcode versions, APIs or OSes will not be considered for any graded assignments. **Programming Assignments** are to be completed **in 2-student teams**. There are no separate written midterm or final exams. All coursework will be submitted through Canvas.

**Late Policy:**
Programming Assignments and Homework will be accepted up to 48 hours late with a 10% penalty for each subsequent 24 hours late period (in 10% increments). The final project can **not** be accepted late. Not turning in all required files (e.g. if any of the README files, etc. is missing from submission) will result in a 50% penalty.

**Assignments and Grades:**
- Final Project: 12%
- Coding assignments/projects (a1 - a6): 72%
- Participation, active class presence and journal note-taking (this includes in-class exercises and tasks): 10%
- Fall Symposium Presentation (instead of written final): 6%
- Extra Credit to students receiving an award at the Fall Symposium: 5%
Course Work:
This class is all about iOS Application Development. The coursework will involve both programming- and application-development-lifecycle-type activities, both are important, and both activities can very time consuming. To be successful in this class you will need to really engage in many iOS-specific development activities, work through the many examples, exercises and problems on your own, and spend a significant amount of time using Xcode and the Apple Developer Connection (ADC) web sites. Working with Xcode and ADC is a necessary requirement for writing first-class, native iOS applications. For this reason, this course requires a strict focus to Xcode-based software tools and ADC-based documentation. Please don’t hesitate voice your questions, issues, and/or concerns.

In-Class Student Tasks and Exercises:
Most classes will also include some exercise time. These in-class tasks and exercises will be worth 3 points per class, and will count for the “Participation, active class presence and journal note-taking” category. In-class tasks will be team-based, and will receive a score between 0 and 3 thus:
0 - absent or no submitted work at all (which qualifies as absent for attendance purposes--see below!)
1 - minimal work
2 - about 50% or more
3 - full completion

You will be working on lecture and lab tasks as teams. Make sure that you keep copies of the work you do in lab teams in a convenient place. If you didn’t write some of your task code during class time, take some time on your own to work through and examine how your task code works. The best way to learn is going to be practice. Not fully participating in class task work typically ends up in lower grades on assignment work.

Grades are recorded on the Canvas site. It is your responsibility to keep track of your grades on Canvas. Please be sure to check Canvas often for mistakes.

Participation:
Active class presence and journal note-taking: required!
You can miss up to 5 (five) tasks (total, during the entire semester) without any penalty. No other allowances will be made, so use them wisely.

Device Policy:
(TBA).
Course Communications:
The preferred mode of communication is through Canvas. For any questions, the best way to reach I399 instructor(s) is with an Canvas message on the I399 Canvas site, with CC to emails -- please make sure to include "I399" in the subject line. Any email communication about the course needs to be through IU addresses, i.e. sent to and from email accounts in the domains @indiana.edu, @umail.iu.edu, etc. You need to include the course number (I399) in the subject line of any message/email, or your message may not be noticed in a timely manner (or at all). You can also always get in touch by attending office hours, at other times by appointment, and briefly before or after class.

Course Policies

Students are expected to follow the Code of Student Rights, Responsibilities, and Conduct [http://www.iub.edu/~code/](http://www.iub.edu/~code/), in particular the section about academic misconduct and its application to programming courses. The standard penalty for any form of academic dishonesty in a course is failure of the course, i.e. an F grade for the course. Outside of assigned student-team work, providing or receiving help or submitting the work of another as your own constitutes academic dishonesty. There are no "small" offenses. Make sure you are familiar with the IU Student Code. All students are required to know and follow the departmental policies on Academic Integrity, dishonesty, and cheating.

All homework/programming assignments are to be performed and completed individually, unless otherwise directed: no collaborative work is permitted outside of classroom tasks.

Students may not use/reuse anyone else's program code, including code you may find on the internet. We will regularly check assignments against code from classmates and code on the internet. Cheating will result in an F for the class.

Calendar (please see separate file: calendar-I399-Fall-2015.pdf)