



- Winter Quarter AY 2015-16
- Classroom section:
  - Tuesday 5:45 9:00 pm
  - Loop Campus
- On-Line Learning (D2L)
- http://d2l.depaul.edu/
- Course Home Page
  - http://venus.cs.depaul.edu/csc471

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### Instructor



- Office: Room 843, CDM Building
  - Tel: (312) 362-6251

• Prof. Xiaoping Jia

- Fax: (312) 362-6116
- Office Hours:
  - Tuesday 4:00 5:30pm
- E-mail: xjia@cdm.depaul.edu
- Home Page: http://venus.cs.depaul.edu/xjia

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# **Prerequisites**

- Data Structures II
  - CSC403 or CSC301 or CSC383 or CSC393
- And Computer Systems II
  - CSC407 or CSC374
- Implies

On-line:

- · Proficiency in object-oriented programming in Java
- · Understanding of system fundamentals and memory models

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### **Textbooks**

- No required textbook.
- Lecture notes and sample code will be provided
- Various on-line resources and tutorials may also be helpful.
- Official iOS API, SDK references
  - Apple's iOS Development website SDK, Guides, Sample Code,

http://developer.apple.com/devcenter/ios/index.action

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### Other References

 Beginning iPhone Development with Swift – Exploring the iOS SDK, by David Mark, Jack Nutting, et al, Apress, Nov. 2014. ISBN13: 978-1-484204-10-8

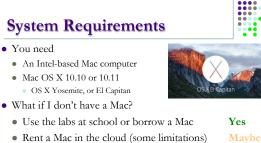
• The Swift Programming Language (Swift 2.1).

Apple Inc., eBook: available in iTune https://itunes.apple.com/

https://developer.apple.com/library/mac/ documentation/Swift/Conceptual/ Swift\_Programming\_Language/

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- - Rent a Mac in the cloud (some limitations)
  - Mac clones (hackintosh) don't always work
  - Your code needs to compile and run in Xcode

No

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### iOS Devices

- · iOS devices (iPhone, iPod, iPad) are optional
- You can use the iOS Simulator for all your assignments and project.
- Some features are not available on the iOS Simulator.
  - multi-touch gestures or motion sensors, e.g., accelerometer, gyroscope
  - You will need an iOS device to test these features
- If you do have an iOS device, you can test your apps on your device

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# Apple Developer Program

- DePaul has a Educational Developer's License
- No need to purchase the developer's license (\$99) for this
- · You can do everything with this license except for publishing to the App Store.
- Tons of developer resources
- Starting Xcode 7, you can test on devices without joining a developer program
- Developer site:
  - http://developr.apple.com/ios/

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# **Tentative Topics**

- Introduction to Xcode and iOS SDK
- Introduction to Swift programming language
- iOS application architecture Building simple UI and
- handling interactions · Storyboard, scenes and
- segues • Multi-view applications
- Tabbed views

- Popups
- · Table views
- · Adaptive and auto layout
- Tablets
- Multi-threads
- Touch events and gestures
- · 2D graphics drawing
- · Animations & transitions
- Motion sensors, accelerometers and gyroscope

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# Grading -Weekly On-Line Quizzes

- 15% Weekly on-line guizzes in D2L
  - Must be completed before 5:00pm the following Monday
  - Weight distribution:
    - Weeks 1-5: 33%
    - Weeks 6-10: 67%

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# Programming Assignments



- Weekly individual assignments
- Assignments will be posted before Tuesday lectures and usually due on 11:59pm of the following Wednesday.
  - There will be a 6-hour grace period, during which the late penalty will be waived.
- Start early and finish early!
- All submissions are through Dropbox in D2L.

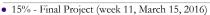
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## Grading -**Final Project**



- To develop an app of your own
- Individual or small team project
- Project proposal (10%, due week 7, February 16, 2015) Instructor approval is required!
- Deliverable (60%): project code
- Project demo (10%): a short demo video
- Documentations & final report (20%)
- No late submission will be accepted for the final

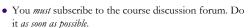
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### Grading – Late Policy

- Late policy for programming assignments
  - 10% penalty for up to 7 days. Additional 10% for each week thereafter.
  - One free pass for an one-week extension.
    - You may only use the free pass on one assignment during the entire quarter. Use it wisely.
    - The free extension pass does not apply to the final
  - The last day to submit programming assignments for partial credit is March 9, 2016 (week 10)

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### **Discussion Forum**

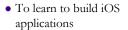


http://groups.google.com/group/csc-371-471-winter-2016

- · Post course related questions to the forum
- Students are encouraged to respond to questions
- I will monitor and respond to questions
- The discussion forum is archived.
- · If you do not wish to receive messages, you may unsubscribe, or subscribe to a digest.

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# Why Are We Here?



 To learn about Software Engineering, and Object Oriented Architecture and Design



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# The Language – Swift 2.1

- We will be using Swift 2.1
- · If you know a modern programming language Such as C++, C#, Java
- You can learn another language quickly
- Many similarities with Java/C++
  - · Loops, conditions, functions, data structures
  - Structure of programs
- Many modern programming concepts
- The Swift language ebook is a good reference

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- · The main language iOS uses is Objective-C & Swift
  - SDK, frameworks, libraries, samples
- Swift is modern
  - An alternative to Objective-C, not backward compatible
  - · Fully interoperable with Objective-C
- Swift & Objective-C share the same run-time libraries
- Interesting comparison with designs of C++ and Java
- Popularity is rising! (TIOBE Index)
  - Objective-C: 45 (2007) → 3 (March 2015) → 18 (Jan 2016)
- Swift: ∞ (Jun 2014) → 14 (January 2016)

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