iOS DEVELOPER PROGRAM

A ten-week program covering iOS development for Apple® devices, including iPhone® and iPad®, for IT professionals and software developers

DePaul University’s iOS Developer Program is designed for IT professionals and software developers who want to understand the fundamental principles of iOS mobile development and be able to apply them to their business. These principles underpin the processes, strategies, and skills necessary to solve business problems through rapid prototyping and business logic implementation within a mobile application. The program is also suitable for developers wanting to make the transition from Objective-C® to Swift™. Participants will learn about and understand Apple’s human interface guidelines and native application development in use today. The program also provides a broad overview of Apple’s foundational frameworks that are supported within the iOS operating system. In addition, the program will include techniques that are used in the industry relating to data storage, RESTful session communication with back-end servers, iCloud® interaction, Keychain® secure data storage, multimedia, gesture handling, GPS location interaction, application debugging, and techniques for fine-tuning applications for efficient performance. The program will prepare students with the necessary skills to create efficient applications for Apple devices that run on the iOS operating system.

Program content consists of lectures and demonstrations complemented with hands-on labs. Students will use a variety of tools and techniques such as Xcode, Interface Builder, and Instruments to learn best practices and real-world scenarios. Reading assignments, case studies, group discussions, and projects will be assigned. Students are expected to either have an Apple laptop (preferred) or easy access to an Apple desktop or laptop running the latest versions of Mac OS X® and Xcode®. Students who wish to make their application available in Apple’s App Store® should expect to pay Apple’s $99.00 fee, but it is not a requirement of the program.

YOU WILL BE ABLE TO:

- Rapidly prototype business solutions from detailed requirements
- Develop applications for iOS using the Swift language
- Understand and experience to discover the various application notification techniques provided by Apple
- Understand the capabilities provided by various frameworks integrated within the iOS operating system
- Learn the techniques required to prepare your application for User Acceptance Testing and production-ready distribution
- Use various performance tools to fine-tune your application
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CURRICULUM
Each student will have a flexible environment to access different tools along with sample code and scripts to learn best practices and real-world scenarios. In order to maximize learning, students will be required to bring their own Apple laptop computer running Mac OS X and Xcode to every class session. Classroom lectures and demonstrations will be complemented by reading assignments, hands-on exercises, case studies, and projects. A final class project will be the completion of an iOS application that can run in the Xcode simulator.

iOS DEVELOPMENT OVERVIEW
Introduce the iOS development cycle. Cover The Xcode development tool, Swift programming language, Interface Builder GUI tool and Instruments performance tools. Discuss mobile development and user experience considerations.

THE SWIFT LANGUAGE
The Swift language for iOS development is the newly designed objective language, developed by Apple. While not a replacement for Objective C, it is rapidly gaining popularity in the industry and becoming the language of choice for some businesses for new mobile applications.

INTERFACE BUILDER
Since its creation in 1987 for NeXTSTEP, Interface Builder has evolved into a powerful GUI tool that easily integrates with the underlying source code logic. This ease of integration allows for applications to be designed with significantly less developer-written code compared to other mobile platforms.

FOUNDATION FRAMEWORKS
Acquire hands on experience with Apple’s Foundation frameworks, providing the standard components and processes involved with device interaction.

DATA STORAGE
Understand the several options for data persistence on an iOS device. The technology that will be covered includes Core Data as well as Property Lists. For the need of secure, encrypted local data storage the Keychain will be demonstrated.

RAPID PROTOTYPING BUSINESS SOLUTIONS
Discover ways to quickly prototype a working application from business requirements.

GPS LOCATION AND MAPS
With the use of the MapKit, Core Location and Core Motion frameworks, learn how to integrate GPS information into your application.

NOTIFICATION PROCESSING
Examine Apple’s notification processing, including Local and Remote Notification, delegation and block usage.
APPLICATION DISTRIBUTION
Observe and discuss the application distribution tools and processes for you to distribute your application to others. For testing, TestFlight® will be highlighted. For production, Enterprise and App Store distribution will be highlighted.

TEST CASE IMPLEMENTATION
Through XCTest and automation tool, techniques on how to add the “Test Case” process to your applications will be discussed. Asynchronous process testing through the use of expectations will also be illustrated.

GENERAL INFORMATION

ADMISSION
The program is suitable for IT professionals and software developers who want to explore and experience the area of mobile development for Apple’s iPhone/iPad running the iOS operating system. Experience with Mac OS X is assumed. A minimum of six months of professional programming experience with at least one object-oriented language, among Objective-C, Swift, C++, or Java, is required. In addition, students must bring their own laptop computers running the latest Mac OS X operating system to class. A laptop running Windows will not be acceptable as Xcode will only run on an Apple computer.

A substantial commitment of time is required for this intensive course of study. Final admission will be determined by the admissions committee on the basis of an applicant's overall qualifications, including work history and educational background.

FACILITIES
To promote the learning process, the Institute maintains special-purpose laboratories as well as dedicated classrooms equipped with state-of-the-art audio/visual equipment.

In addition, the college’s unique Course OnLine (COL) technology allows students to replay classes over the Internet. COL captures and replays five components of the classroom experience—audio, video, PC screen, whiteboard, and document camera input—and incorporates them into one interface to provide an innovative rebroadcast system.

SCHEDULE
The Institute offers one section of the program each quarter. Classes meet one evening per week and in the morning on approximately half of the Saturdays during the program. The option to take the program entirely online is also available.

FACULTY
The program is taught by Gene Backlin. Mr. Backlin has been an adjunct lecturer at DePaul University for many years, and has more than 35 years in the IT industry providing custom solutions for environmental, telecommunications, financial and retail industries, to name a few. Since 2007 he has been providing mobile solutions for Apple’s iPhone and iPad devices that was built on a foundation established with his developing solutions for the NeXTSTEP Computer since 1989. He also has published three books; Developing NeXTSTEP Applications (SAMS 1995), Professional iPhone and iPad Application Development (WROX 2010) and iPhone and iPad 24-Hour Trainer (WROX 2012). Mr. Backlin will be available throughout the program both in person and through electronic mail.
The college, through its School of Cinematic Arts, School of Computing, and its School of Design, offers a variety of programs at the undergraduate and graduate levels. Over 3,000 students are enrolled in the college’s bachelor’s programs and over 2,700 students are enrolled in the master's and Ph.D. programs making the college’s graduate program one of the largest in the country. The college offers more than 300 courses each quarter, many in the evening, and primarily in the Loop and Lincoln Park Campuses. Most of the degree programs are also available exclusively online.

Offerings at the undergraduate level include:
- Animation B.A. / B.F.A.
- Computer Science B.S.
- Computing B.A.
- Cyber-Physical Systems Engineering B.S.
- Cybersecurity B.S.
- Data Science B.S.
- Film and Television B.A. / B.F.A.
- Game Design B.S.
- Game Programming B.S.
- Graphic Design B.F.A.
- Information Systems B.S.
- Information Technology B.S.
- Interactive and Social Media B.S.
- Math and Computer Science B.S.
- Network Engineering and Security B.S.

Offerings at the graduate level include:
- Animation M.A.
- Applied Technology M.S.
- Business Information Technology M.S.
- Computational Finance M.S.
- Computer Science M.S.
- Cybersecurity M.S.
- Digital Communication and Media Arts M.A.
- E-Commerce Technology M.S.
- Experience Design M.A.
- Film and Television M.S.
- Game Programming M.S.
- Health Informatics M.S.
- Human-Computer Interaction M.S.
- Information Systems M.S.
- IT Project Management M.S.
- Network Engineering and Security M.S.
- Predictive Analytics M.S.
- Product Innovation and Computing M.S.
- Software Engineering M.S.
- J.D./M.S. in Computer Science Technology

Master’s of Fine Arts
- Animation
- Creative Producing
- Film and Television
- Documentary
- Game Design
- Screenwriting

Ph.D. in Computer and Information Sciences
- Ph.D. in Human Centered Design

The Institute for Professional Development was formed by the college in 1984 to assist both individuals and businesses in keeping pace with the rapid development of computer technologies. The Institute currently offers a variety of intensive certificate programs in these areas:

- Advanced SQL
- Big Data and NoSQL
- Big Data Using Hadoop
- Big Data Using Spark
- Cloud Computing Technologies
- Data Science for Business
- Introduction to SQL
- IPv6
- Java™ Developer
- Modern Information Technology
- Modern .NET Web Developer
- SQL Server® Business Intelligence
- SQL Server® Database Administration
- Technology and Innovation
- Web Development with JavaScript and HTML5

APPLICATION PROCEDURE:
You do not have to be an existing DePaul student to take this certificate program. All interested parties must apply for admission. Prospective students may complete the online application and pay the (non-refundable) $40.00 application fee online during the application process. Alternatively, prospective students may print, complete and return the printable application via mail or email (ipd@cdm.depaul.edu), and mail the (non-refundable) $40.00 application fee (check or money order made payable to DEPAUL UNIVERSITY) to:

DePaul University
Institute for Professional Development
243 S. Wabash Avenue, Room 301
Chicago, IL 60604-2300

The words “App Store”, “Apple”, “iOS”, “iPad”, “iPhone”, “Java”, “Keychain”, “Mac”, “NeXTSTEP”, “Objective-C”, “OS X”, “Swift”, “TestFlight” and “Xcode” are registered or unregistered trademarks in the United States of America and/or other countries. The iOS Developer Program at DePaul University is an independent program of study and is not affiliated with, nor has it been authorized, sponsored, or otherwise approved by Apple or any other external entities.