COURSE DISCIPLINE :   CS/IS

COURSE NUMBER :   133

COURSE TITLE (FULL) :   Mobile Application Development – iOS

COURSE TITLE (SHORT) :   Mobile Application Dev - iOS

CATALOG DESCRIPTION

CS/IS 133 introduces the art and practice of mobile application development for the Apple iOS operating system. Students will use the Xcode IDE and Swift to create mobile applications.

Total Lecture Units: 3.00

Total Laboratory Units: 0.00

Total Course Units: 3.00

Total Lecture Hours: 54.00

Total Laboratory Hours: 0.00

Total Laboratory Hours To Be Arranged: 0.00

Total Contact Hours: 54.00

Total Out-of-Class Hours: 108.00

Prerequisite: CS/IS 112 or equivalent.

ENTRY STANDARDS

	Subject	Number	Title	Description	Include
1	CS/IS	112	Introduction To Programming Using Java	Examine problems, apply logic, and provide solutions/algorithms for the problems;	Yes
2	CS/IS	112	Introduction To Programming Using Java	show the solution/algorithm using flowcharts or pseudocode;	Yes
3	CS/IS	112	Introduction To Programming Using Java	utilize a compiler to write, debug, and test Java programs.	Yes

EXIT STANDARDS

1 Develop and test Swift classes and protocols, implementing the model-view-controller (MVC) paradigm;
2 create user interfaces using Storyboard;
3 write programs that download and consume data from web servers;
4 make iPhone applications with networked data and multiple views.

STUDENT LEARNING OUTCOMES

1 create, design and debug applications using the Apple iOS mobile development environment;
2 implement mobile applications using User interface (UI) development with Storyboard;
3 create working iPhone applications with networked data and multiple views.

COURSE CONTENT WITH INSTRUCTIONAL HOURS

	Description	Lecture	Lab	Total Hours
1	Object oriented programming in Swift • Swift fundamentals • Declarations using var and let • Strings and characters • Flow of control • Functions • Closures • Object Oriented Programming in Swift • Classes and Protocols • Properties • Methods • Init methods • Inheritance and Polymorphism • Self and super • Standard Swift collection classes • Arrays • Dictionaries • Iterating	10	0	10
2	Development using XCode • Creating projects • Command line applications • iOS Applications • Application Templates • Integrated Development Environment (IDE) Fundamentals • Project navigation • Text Editor • Utilities • Building a project • Compiling • Running applications on the simulator • Running applications on a physical device • Viewing compiler errors and runtime errors • Debugging • NSLog • Console interaction • Debugger	10	0	10

3	Fundamental UIKit Building Blocks • MVC paradigm • Views and View Controllers • Extending Views and View Controllers to customize behavior • Controls and Target actions • Delegate Pattern • Pickers, TextFields and Tables • Navigation View Controllers and Segues • Tab Controllers	10	0	10
4	User interface (UI) development with Storyboard • Outlets and Actions • Visual representation of UI objects and properties • Visual representation of segues	8	0	8
5	Persistence • NSDefaults • File system • SQLite • Core Data	8	0	8
6	Networking • Posting data to a server using NSURLConnection • Downloading data from a server using NSURLConnection • Downloading data from a server using Cocoa-pods and AFNetworking	8	0	8
				54

OUT OF CLASS ASSIGNMENTS

1   individual and/or group project (e.g. develop and deploy mobile applications such as a mashup of maps and XML).

METHODS OF EVALUATION

1   midterm examinations and quizzes;

2   performance-based assessment of student-written programs;

3   instructor evaluation of student portfolio work;

4   final examination.

METHODS OF INSTRUCTION

- ☑ Lecture
- ☐ Laboratory
- ☐ Studio
- ☐ Discussion
- ☐ Multimedia
- ☐ Tutorial
- ☐ Independent Study
- ☐ Collaboratory Learning
- ☑ Demonstration
- ☐ Field Activities (Trips)
- ☐ Guest Speakers
- ☐ Presentations

TEXTBOOKS

Title	Type	Publisher	Edition	Medium	Author	IBSN	Date
iOS 11 Swift Programming Cookbook: Solutions and Examples for iOS	Required	O'Reilly Media			Nahavandipoor, Vandad	9781491992470	2018