School of Computing and Information Sciences

Course Title: Mobile Application Development **Date:** 10/4/19

Course Number: COP-4655

Number of Credits: 3

Subject Area: Mobile Computing	**Subject Area Coordinator:** Kip Irvine **email:** irvinek@cs.fiu.edu
Catalog Description: Design and development of mobile applications. Introduction to the mobile application frameworks, including user interface, sensors, event handling, data management and network interface. This course requires an additional fee.	
Textbook: iOS Programming: The Big Nerd Ranch Guide (6th Edition) by Christian Keur, Aaron Hillegass ISBN-10: 0134682335	
References: Apple iOS Reference Library Apple Developer Website http://developer.apple.com	
Prerequisites Courses: (CEN-3721 and COP-4814) or (CAP-4104 and CEN-4010)	
Corequisites Courses: None	

Type: Elective

Prerequisites Topics:

- Master the design and implementation of classes using inheritance and polymorphism
- Master the use and implementation of interfaces
- Master analyzing problems and writing programs in an object oriented language providing solutions to those problems using the above features

Course Outcomes:

1. Master the mobile applications framework
2. Master the development of mobile user interfaces.
3. Master controller management.
4. Be familiar with data management techniques
5. Be familiar with network communications and sensors

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Relationship between Course Outcomes and Program Outcomes

BS in IT: Program Outcomes	Course Outcomes
a) Demonstrate practical hands-on expertise in selection, installation, customizing and maintenance of the state-of-the-art computing infrastructure.	
b) Demonstrate practical proficiency in selection, installation, customizing and maintenance of the state-of-the-art software systems.	1,2
c) Demonstrate general understanding of at least one field where Information Technology plays a central role.	1, 2, 3, 4, 5
d) Demonstrate understanding of the social and ethical concerns of the practice of Information Technology.	
e) Demonstrate the ability to work cooperatively in teams.	
f) Demonstrate effective communication skills.	
g) Demonstrate familiarity with fundamental ideas and issues in the arts, humanities and social sciences.	

Assessment Plan for the Course & how Data in the Course are used to assess Program Outcomes

Student and Instructor Course Outcome Surveys are administered at the conclusion of each offering, and are evaluated as described in the School's Assessment Plan: http://www.cis.fiu.edu/programs/undergrad/it/assessment/

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Outline

Topic	Number of Lecture Hours	Outcome
1. Mobile application framework a. Object oriented language concepts b. Model View Controller c. Core OS functions and APIs d. Specialized Devices and Sensor e. Application packaging and execution	3	1
2. Mobile Software Development a. Interactive Development Environment Overview b. Desktop Simulator introduction c. Debugging process d. Application Deployment to device	3	1
3. Views and Drawing a. View controller b. Drawing objects c. Controlling object behavior	6	1,2,3
4. Event Management a. Event controller b. Touch and Multi-touch handling c. Optimization	6	1,2,3
5. Navigation, Scroll and Tabs a. U/I interface management techniques b. API extensions	3	1,2,3
6. Data management a. Database storage techniques b. Simple file management	3	4
7. Images, Audio and Video a. Audio management b. Image and Camera control c. Video record and playback	3	3,4,5
8. Web and Social Networking a. Networking API b. Web browsing API c. Social Networking API	3	3,5
9. Controlling Sensors a. Managing the Accelerometer b. Managing the Gyroscopes	3	5
10. Gaming Aspects a. 2D/3D Animation b. User interface controls c. Sensor integration	3	2

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Course Outcomes Emphasized in Laboratory Projects / Assignments

	Outcome	Number of Weeks
1	User Interface Development and Design Outcomes: 1, 2	2
2	Complex Event Handling w/ Touch Outcomes: 1, 2	2
3	Audio/Visual Storage Management Outcomes: 2, 3, 4	2
4	Social networking using Web APIs Outcomes: 3, 5	2
5	Social Game Development Outcomes: 3, 4, 5	2

Oral and Written Communication: No significant coverage

Number of written reports:

Approximate number of pages for each report:

Number of required oral presentations:

Approximate time for each presentation:

Social and Ethical Implications of Computing Topics

No significant coverage

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Estimate Curriculum Category Content (credit hours)

Fundamental IT Area	Core	Advanced
Human computer interaction	0.5	
Information management	0.5	
Web systems and technologies	0.5	
System administration and maintenance		
Programming	0.5	
Networking	0.5	
Information assurance and security	0.5	
System integration and architecture		

Theoretical Contents

No Significant Coverage

Problem Analysis Experiences

No Significant Coverage

Solution Design Experiences

1. Implementation of mobile applications
2. Real-time Device Control
3. User Interface Design