Spring 2012

CS 399: iPhone Programming II

Erik Marlow Buck
Wright State University - Main Campus, erik.buck@wright.edu

I. Unit

College/School : College of Engineering & Computer Science
Department : Computer Science

II. Course Information

Course Title: iPhone Programming II
Course Abbreviation and Number: CS 399
Course Credit Hours: 4
Course Cross Listing(s) Abbreviation/Number:

Check ("x") all applicable:

General Education Course_____	Writing Intensive Course____	Service Learning Course_____
Laboratory Course____	Ohio TAG (Transfer Assurance Guide) Course _____	
Ohio Transfer Module Course_____	Others (specify)_____	

III. Course Registration

Prerequisites: CS 399 « iOS Programming I »
Corequisites: **None**
Restrictions: **None**
Other: or by permission of instructor

IV. Student Learning Outcomes

Students will develop:

- Description:
- – additional competency developing software for iOS devices including any of iPhone, iPod Touch, or iPad
- – understanding of framework, language, and operating system support for multi-threaded programming
- – understanding of robust network communication approaches
- – understanding of sensors and location technologies with tradeoffs for accuracy, speed, and user privacy
- – competency integrating sensors, image processing, and networking to implement augmented reality applications.

V. Suggested Course Materials (required and recommended)

Recommended: an iOS device (iPhone, iPod Touch, or iPad). (Software development and test using a simulator is available for students without access to an iOS device.)

Recommended: Conway, Joe and Hillegass, Aaron (2011). "iPhone Programming: The Big Nerd Ranch Guide (2nd Edition) (Big Nerd Ranch Guides)", Addison Wesley Professional, ISBN-13 978-0321773777 ISBN-10: 0321773772.

Recommended: Buck, Erik M. and Yacktman, Donald A. (2009). "Cocoa Design Patterns". Addison Wesley Professional, ISBN-10 0321535022 ISBN-13 978-0321535023

Recommended: (For students who wish to publish applications via the Apple iTunes App-store) "iOS Developer Program" subscription http://developer.apple.com/programs/

VI. Suggested Method of Instruction

Lecture.

VII. Suggested Evaluation and Policy

50% Course Projects (4)
30% Midterm examinations (0) / Quizzes (0) / Homework(10)
20% Final examination

VIII. Suggested Grading Policy

Grades will be assigned on a standard A/90%, B/80%, C/70%, D/60%, F/60%- scale. Students must demonstrate competency (70% total average) on the programming projects in order to pass the class.

IX. Suggested Assignments and Course Outline

Projects: Projects demonstrate multi-threaded programming, networking, "cloud" based data storage, advanced sensors including gyroscope, Apple's Game Kit, image processing, and augmented reality.

Modules	Topic
01	Review of iOS application architecture
02	Introduction to multi-threaded programming (how does it work; what can go wrong); Concepts of thread safety
03	Tool, framework, language, and system support for multi-threading; Best practices and guidelines
04-05	Network programming and "cloud" based data storage
06-07	Available hardware sensors (capabilities, limitations, restrictions); Implications for user privacy; Location based services
08	Apple's Game Kit for networked games; Template for other forms of networked collaboration between users
09-10	iOS support for image processing; Related signal processing
11	iOS support for 2D graphics, custom user interfaces, animation
12	iOS support for 3D graphics, 3D sound, and animation
13-14	Augmented reality

X. Other Information

N/A