EE 443 / EE 593 Mobile Application Development (3 credits)
Spring 2018
Klipsch School of Electrical and Computer Engineering
College of Engineering
New Mexico State University

Instructor and Class Information

Instructor: Prof. Phillip De Leon, Goddard Hall 310A, (575) 646-DSP1 (3771), pdeleon@nmsu.edu
Class Days and Times: Tuesday and Thursday 1:10 – 2:25pm, T&B 303
Office Hours: Monday 1:30 – 2:30pm and Thursday 9:30 – 10.30am. Office hours may be held at the Engineering Learning Communities in Engineering Complex III Room 300.
Teaching Assistant (TA): Mr. Ty Vincent, tvincent@nmsu.edu
TA Office Hours: Monday, Wednesday 8:00 – 9:00am, Goddard Annex 176

Course Description from the Undergraduate Course Catalog

Introduction to mobile application development. Students will develop applications for iOS devices including iPhone and iPad. Topics include object-oriented programming using Swift, model-view-controller (MVC) pattern, view controllers including tables and navigation, graphical user interface (GUI) design, data persistence, GPS and mapping, camera, and cloud and web services.

Prerequisite

Any object-oriented programming course such as CS271 Object Oriented Programming, CS451 C++ Programming, CS452 Java Programming, or CS454 Python Programming II.

Textbook and Other Required Materials

Required (Print or Electronic): *iOS Apprentice Sixth Edition: Beginning iOS development with Swift 4* by M. Hollemans and F. Farook (ISBN-13: 978-1942878391)

Optional: *App Development with Swift,* Apple Inc. (free download)
https://itunes.apple.com/us/book/app-development-with-swift/id1219117996?mt=11

Students will be invited to join the iOS University Program free of charge. Joining the (regular) iOS Developer Program is $99/year and optional. You can only submit to the AppStore if you are a regular iOS Developer.

Laboratory Resources

It is expected that students have their own personal Macintosh computers with Xcode. There are a limited number of Macintosh computers with Xcode in T&B 203. If you need assistance, please contact the course TA or Mr. Jerry Navarro, navarro@nmsu.edu

Online Resources

EE 443 / EE 593 Web Page
http://wordpress.nmsu.edu/pdeleon/teaching/ee443

Course announcements and student grades will be posted on Canvas
http://learn.nmsu.edu

A great website to get answers to practical coding questions
http://stackoverflow.com

Note: Please do not email Prof. De Leon through Canvas--use the email address listed above.

Course Objectives

The objective of this course is to gain an understanding of mobile application development including:

- Swift
- Model-View-Controller (MVC) pattern
- Memory management
- View controllers
- Frameworks: Foundation, CoreGraphics, CoreLocation, MapKit, UIKit, WebKit

This objective is achieved through an undergraduate- and graduate-level treatment of mobile application development.

Contribution of EE 443 / EE 593 to Meeting the Professional Component

Mobile Application Development is an undergraduate EE elective (computers) within the Electrical Engineering curriculum. Students in EE 443 will apply techniques learned in class through assigned homework, software development projects, and in-class discussions. Techniques learned in this class will provide students with a broadening of their knowledge base through application of basic mathematics and engineering science techniques to mobile application development, preparation for capstone design project, and by providing a basis for career employment or graduate school. Discussion of design issues relate the class theory to practical societal issues. Class provides 3 credits of engineering science credit.

Relationship of the Course to Program Objectives

Mobile Application Development builds upon mathematics and engineering techniques learned in previous courses to provide an electrical engineering elective to give students

- an understanding of actual products (applications for mobile devices)
- a basis for capstone design classes
- a preparation for career employment or graduate school
- an opportunity to use computers in engineering problem solving

This will allow students to further explore their major specialty as well as seeing applications of basic techniques learned from computer programming, embedded systems, signals and systems, and other engineering classes.

Topics Covered / Course Schedule

The topics covered and course schedule are described in the Course Schedule section of this syllabus.

Grading

Homework - In each chapter, students will develop and submit the tutorial application. Homework will be worth 25% of the final grade. Late homework is not accepted except in the case of an absence due to a medical or other very serious reason.

Class Lectures - Each week, students will present course material in class (lecture). Student lectures will be worth 10% of the final grade.

Mid-Term App Proposal - The mid-term app proposal (3-5 pg) will describe the mid-term app including the purpose, similar applications (if any), description, operation, and user interface (including storyboard). The mid-term app proposal is worth 5% of the final grade.

Mid-Term App - The mid-term app, developed individually by the student, is worth 25% of the final grade.

Final App Proposal - The final app proposal (3-5 pg) will describe the final app including the purpose, similar applications (if any), description, operation, and user interface (including storyboard). The final app proposal is worth 5% of the final grade.

Final App - The final app, developed individually by the student, is worth 25% of the final grade.

Final Project Presentation - There will be a final project presentation where the student will present and demonstrate their application to the class. The final project presentation is worth 5% of the final grade.

Final Grade – Final grade will be assigned as follows.

A+	>100%	C+	79 – 76%
A	100 – 95%	C	75 – 73%
A–	94 – 90%	C–	72 – 70%
B+	89 – 86%	D+	69 – 66%
B	85 – 83%	D	65 – 63%
B–	82 – 80%	D–	62 – 60%

Policies

Disputes regarding grades must be submitted in writing to Prof. De Leon for review within 7 days after graded work has been returned or posted.

As a courtesy to the instructor and fellow students, please silence your cell phones. Any student who disrupts class due to the use of an unwelcomed electronic device will be asked to leave.

Academic Misconduct

The Student Code of Conduct defines academic misconduct, non-academic misconduct and the consequences or penalties for each offence. The Student Code of Conduct is available in the NMSU Student Handbook online:

http://studenthandbook.nmsu.edu/

Academic misconduct is explained here:

http://studenthandbook.nmsu.edu/student-code-of-conduct/academic-misconduct

The College of Engineering has additional language and policies related to academic misconduct that may be found here:

https://engr.nmsu.edu/academic-integrity

Discrimination and Disability Accommodation

Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act (ADA) covers issues relating to disability and accommodations. If a student has questions or needs an accommodation in the classroom (all medical information is treated confidentially), contact:

Trudy Luken, Director
Student Accessibility Services (SAS) - Corbett Center, Rm. 208
Phone: (575) 646-6840 E-mail: sas@nmsu.edu
Website: http://sas.nmsu.edu/

NMSU policy prohibits discrimination on the basis of age, ancestry, color, disability, gender identity, genetic information, national origin, race, religion, retaliation, serious medical condition, sex, sexual orientation, spousal affiliation and protected veterans status. Furthermore, Title IX prohibits sex

discrimination to include sexual misconduct: sexual violence (sexual assault, rape), sexual harassment and retaliation. For more information on discrimination issues, Title IX, Campus SaVE Act, NMSU Policy Chapter 3.25, NMSU's complaint process, or to file a complaint contact:

Lauri Millot, Title IX Coordinator or Agustin Diaz, Title IX Deputy Coordinator
Office of Institutional Equity (OIE) - O'Loughlin House, 1130 University Avenue
Phone: (575) 646-3635 E-mail: equity@nmsu.edu
Website: http://eeo.nmsu.edu

Other NMSU Resources

NMSU Police Department:	(575) 646-3311	www.nmsupolice.com
NMSU Police Victim Services:	(575) 646-3424	
NMSU Counseling Center:	(575) 646-2731	
NMSU Dean of Students:	(575) 646-1722	
For Any On-campus Emergencies:	911	

Prepared
Phillip De Leon, 17 January 2018.

EE 443 / EE 593 Spring 2018 Course Schedule

This schedule is an estimate of the topics covered each week throughout the course. The following chapters are from *iOS Apprentice Sixth Edition: Beginning iOS development with Swift 4* by M. Hollemans and F. Farook (ISBN-13: 978-1942878391)

Week 1 January 14, 2018
Intro to Swift - (DeLeon)

Week 2 January 21, 2018
Intro to Swift, Ch 1-3 - (DeLeon)

Week 3 January 28, 2018
Ch 4-6 (DeLeon)

Week 4 February 4, 2018
Ch 9-10 (Richeson, DeLeon)

Week 5 February 11, 2018
Ch 11-12 (Grajeda, Williams)

Week 6 February 18, 2018
Ch 13-14 (Osorno, Larranaga)

Week 7 February 25, 2018
Ch 15-16 (Lykins, Gallante)
Mid-Term App proposal due March 1

Week 8 March 4, 2018
Ch 17-18 (Humphrey, Levendosky)

Week 9 March 11, 2018
No class (mid-term app development)
Mid-Term App due 5:00pm March 16

Week 10 *March* 18, 2018
Spring Break!

Week 11 March 25, 2018
Ch 22-23 - (Torres, Bakarich)

Week 12 April 1, 2018
Ch 25-26 - (White, Arafa)

Week 13 April 8, 2018
Ch 27-28 - (Castillo, Wilson)

Week 14 April 15, 2018
Ch 29-30 - (Varela, Mendoza)
Final App Proposal due April 19

Week 15 April 22, 2018
Ch 34-36 (Delgado, DeLeon)

Week 16 April 29, 2018
No class (final app development)
Final App due 5:00pm May 4

Week 17 May 6, 2018
Final App Presentations
May 8, 1:00pm – 3:00pm, T&B 303
May 8, 3:30pm – 5:30pm, T&B 303
May 9, 3:30pm – 5:30pm T&B 303