CSCI 4540: Mobile Computing
CSCI 6905: Topics in Computer Science
Fall 2017

Class Meeting	Tuesday and Thursday, 9:30am – 10:45am Brewster Building, Room B-201
Instructor	Dr. Mark Hills
Office	Science & Technology Building, C-110
Office Hours	Tuesday 3:30pm – 5:00pm Wednesday 10:00am – 12:00pm Thursday 3:30pm – 5:00pm
Phone	252-328-9692
Email	hillsma@ecu.edu (response within 24 hours during the week, possibly longer on weekends)
Course web page	https://blackboard.ecu.edu
Slack	https://ecu-csci-4540.slack.com

Course Summary

The catalog description for this course is as follows:

> *Mobile computing and mobile application development. Mobile computing applications, technologies and wireless communication. Computing in environments with limited resources and low power, fault tolerance, and persistence. Mobile application frameworks and development environments. User interface design and evaluating user experience.*

This course provides a practical foundation for developing mobile applications as well as an introduction to the research literature in this area. Students will learn the tools and techniques used to build and deploy mobile applications, including how to use common mobile services (e.g., maps and location services, local databases, RESTful APIs), while also exploring the basics of mobile networking. Students are required to complete both a team project and a series of homework assignments over the course of the semester.

Prerequisites

The prerequisite for this course is CSCI 3010, Computer Networks, which has CSCI 2530 as a prerequisite. This course will focus more on development instead of networking, so any networking content will be self-contained and CSCI 3010 is not actually required. CSCI 3030 is not required but some of the techniques from that, or a similar course (e.g., SENG 6230), could be helpful. You should be fairly proficient in Java.

Learning Outcomes

After taking this course, you should be able to:

- Design, develop, and test mobile applications
- Work with common mobile APIs such as data, maps, and location services
- Integrate your application with web-based, RESTful interfaces
- Understand the basics of internationalization and accessibility
- Navigate the research literature developing around mobile development

Tools and Applications

The following applications may be used in this course:

- App Development: Java JDK 8 and Android Studio
- Source Control: Git and GitHub
- Testing: JUnit, Mockito, and Espresso for testing
- Alternative Languages: Kotlin and/or React Native, if time permits

Textbooks

The required textbook for this course is *Android Programming: The Big Nerd Ranch Guide (3rd Edition)*, by Bill Phillips, Chris Stewart, and Kristin Marsicano. This book is available through Amazon.com at https://www.amazon.com/Android-Programming-Ranch-Guide-Guides/dp/0134706056 and should also be available through the ECU campus bookstore.

Other helpful material, including references to books, conference or journal articles, tutorials on the web, and videos will be posted as the course progresses.

Exams

The midterm exam for the course will be on **Thursday, October 5th,** from **9:30am – 10:45am** in our normal classroom. More details about the exam will be available closer to the exam date. The exam will be a closed book exam, but you will be allowed to bring one page (letter size, front and back) of hand-written notes..

The final exam for the course will be on **Wednesday, December 6th,** from **8am – 10:30am** in our normal classroom. More details about the exam will be available closer to the exam date. The exam will be a closed book exam, but you will be allowed to bring one page (letter size, front and back) of hand-written notes. We will review for the exam on Thursday, November 30th, which is the last day of class.

If you are taking the course online, you must have a proctor for the midterm and for the final exam. You must use the University of North Carolina Proctoring Network. More information can be found at:

Grading for Undergraduate Students

Students will be evaluated based on the combination of class activities. For undergraduates, the final grade will be assessed with the following criteria:

Grading	
A	≥ 94
A-	≥ 90
B+	≥ 87
B	≥ 83
B-	≥ 80
C+	≥ 77
C	≥ 73
C-	≥ 70
D+	≥ 67
D	≥ 63
D-	≥ 60
F	< 60

This grade is based on the following relative weights of the various activities:

Weighting	
Midterm Exam	20%
Final Exam	20%
Weekly Quizzes	10%
Homework Assignments	25%
Group Project	25%

Homework assignments will be due roughly every two weeks. Due dates for group project deliverables, as well as a breakdown of how the group project will be graded, will be posted early in the semester.

Grading for Graduate Students

Students will be evaluated based on the combination of class activities. For graduate students, the final grade will be assessed with the following criteria:

Grading	
A	≥ 90
B	≥ 80
C	≥ 70
F	< 70

This grade is based on the following relative weights of the various activities:

Weighting	
Midterm Exam	20%
Final Exam	20%
Weekly Quizzes	10%
Homework Assignments	20%
Group Project	20%
Research Project/Lesson	10%

Homework assignments will be due roughly every two weeks. Due dates for group project deliverables, as well as a breakdown of how the group project will be graded, will be posted early in the semester. Details on the research project/lesson will also be discussed early in the semester, with specific dates and deliverables worked out in consultation with me.

Starfish

This course uses the Starfish system to provide you with information on your performance within the course. For more information, please see http://www.ecu.edu/cs-acad/advising/upload/Starfish-Student-Getting-Started.pdf.

Student conduct

Smoking is not permitted in classrooms. Please turn off telephones while in class. Laptops and tablets can be used for taking notes, but should not be used for other work (or recreational browsing, playing games, etc).

Students are expected to abide by the university's Student Honor Code. The homework that you do is a critical part of your education. Each student is expected to do his or her own work, except where teamwork is explicitly allowed or required. That does not mean you are not allowed to discuss your ideas with other students. Working in groups can be beneficial, and I encourage you to talk through ideas with other students. But outright copying is plagiarism and is unacceptable. Students who copy other students' work, or who allow their work

to be copied, or who copy their work from other sources, such as the internet, are violating the ECU academic integrity policy. Not only that, if you are copying your answers instead of doing the work yourself, you are essentially missing the entire point of this course, which will come back to haunt you when you don't know this material at a future employer.

Other potential academic integrity violations are cheating, falsification, multiple submissions of the same work in different classes, and attempts at any of these violations. Please see http://www.ecu.edu/cs-studentlife/policyhub/academic_integrity.cfm for more details.

Academic integrity violations can result in a grade penalty up to and including an F for the course.

Other Policies

No incompletes will be issued in this course except for extraordinary circumstances, and even then only if you are nearly done already, and have done work of acceptable quality, so that you have a realistic change to pass the course.

All group project deliverables, homework assignments, and quizzes are due by the posted due date and time. Late submissions will not generally be accepted. If for some reason you are not able to complete the assignment on time, you must contact me directly with an explanation and request an extension before the deadline. If something comes up and you are having trouble keeping up with the class, talk to me right away, ***don't wait until the end of the semester!***

Course participation is an important part of the course, especially since most in-class time will be spend actively working on exercises. If you do not participate you will make it harder to have the kinds of discussions and experiences we need to make the class interesting. Please read any assigned readings in a timely fashion, do the assignments promptly, and come to class prepared to talk and work.

Success in the class is directly correlated with class attendance, so I highly recommend that you attend and actively participate. If for some reason you cannot attend, please let me know – my expectation is that you will watch the lecture online and ask me questions about the material if you have any. For online students, I recommend that you watch the lecture the day it is given and send any questions before the next class session (so I can address them in class). Falling behind will make the course more difficult than it would otherwise be. I will be taking attendance at regular points in the class for my own records.

All code, test scripts, and other software artifacts for your group project and for your homework assignments must be stored in GitHub (**this is not optional**). I will not accept assignments submitted through Blackboard or emailed to me. If you have questions about your code, check it in to the related GitHub repository, that way I can easily look at it.

Weather emergencies

In the event of a weather emergency, information about ECU can be obtained through the following sources:

ECU emergency notices http://www.ecu.edu/alert
ECU emergency information hotline 252-328-0062

Students with disabilities

East Carolina University seeks to comply fully with the Americans with Disabilities Act (ADA). Students requesting accommodations based on a disability must be registered with the Department for Disability Support Services located in Slay 138 ((252) 737-1016 (Voice/TTY)).

For more information, please see http://www.ecu.edu/cs-studentlife/dss/.

Retention Requirements

Academic requirements for retention have changed. Please be aware of the following new GPA requirements. Please discuss the retention requirements, entrance to major requirements, and your goals with your academic advisor.

GPA Hours at ECU (identified in Transcript in Banner Self Service) plus transferred credit hours	"Old" Retention Requirement All courses taken at ECU	New Retention Requirements Effective with Fall 2011 grades All courses taken at ECU
1-29 semester hours	1.6 GPA	1.8
30-59 semester hours	1.8 GPA	1.9
60-74 semester hours	1.9 GPA	2.0
75 or more semester hours	2.0 GPA	2.0

Caveats

Occasionally, it may be necessary to revise this syllabus due to extenuating circumstances. I reserve the right to revise this syllabus if the need arises. If I do so, I will provide you with advance notice.