

George Mason University

Department of Electrical Engineering

ECE
590

Mobile Systems & Applications

Spring
2017

Background: Following rapid growth of APPs number and explosion of cellular network coverage and bandwidth, smartphone has become the consumer electronic device having the most interaction with us in the daily life. As an OS with the largest device shipment, Andorid offers an open source software stack for a larger variety of hardware and software. The course will introduce the basic structure of the Android system and then give a step-by-step training on the APP programming under Android system. The students will be also offered practical opportunities to apply the learning skills in the development of designed laboratories assignments or projects on both emulation environments and real devices with various functionalities.

Objective: In this course, students will learn the basics of Android programming, including application creation, UI design, communication and networking control, database, service management, sensors, power and performance optimization, and hardware management, through a series of hand-on practices including labs and projects.

Instructor: Xiang Chen, 209 Innovation Hall
Wednesday 4:30 pm - 7:10 pm
Office Hours: Every Wednesday 11-12.
Email: xchen26@gmu.edu

TA: N/A

Web Site: blackboard@gmu

Lectures:

Textbook: N/A

Reference: Google Android online Document

Computing: The labs/projects will be done in Java. Basic Java will be taught in a tutorial.

Grading:	Lab assignments	30%
	Project proposal	5%
	Progress report	15%+15%
	Project final review	20%
	Project final report	15%

Homework: N/A

Laboratories: 7 labs are assigned to students to practice basic skills of Android programming in development environment setup and application creating, UI design, database, service management, and networking control.

Project: One project is included to develop an Android APP using the learned comprehensive programming knowledge and skills.

Plagiarism: Students in this course will be expected to comply with the George Mason University's Policy on Academic Integrity. Any student suspected of violating this obligation for any reason during the semester will be required to participate in the procedural process, initiated at the instructor level, as outlined in the University Guidelines on Academic Integrity. This may include, but is not limited to, the confiscation of the examination of any individual suspected of violating University Policy.

Schedule: The following list indicates the topics that will be covered this semester.

Date	Topic
Jan. 25, 2017	Introduction
Feb. 01, 2017	HelloWorld", Java basics
Feb. 08, 2017	Android Basics and Setup
Feb. 15, 2017	Android UI Design and Simple App Service,
Feb. 22, 2017	Activity and Life cycle
Mar. 01, 2017	Android Data Storage
Mar. 08, 2017	Android Sensor and Jni
Mar. 15, 2017	Holiday
Mar. 22, 2017	Android Networking
Mar. 29, 2017	Android Kernel and ROM
Apr. 05, 2017	Android CPU and GPU
Apr. 12, 2017	Special Topic: Android Computing
Apr. 19, 2017	Special Topic: Android Display
May 03, 2017	Special Topic: Android Security
May 10, 2017	Project Discussion
May 17, 2017	Project Final Review B

Note: For actual conditions of the registered student, the project plan might be altered.