Mobile Device Application Development

COMPSCI 345

Spring 2022
Tu/Th 14:00-15:15

Professor: Drue Coles
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Office hours:

- Mo/We 11:00-12:30 in BFH 235
- Tu/Th 11:00-12:00 in Zoom
- By appointment in Zoom

Prerequisite: Advanced Java (COMPSCI 221)

Textbook: Android Developers Guide, a comprehensive online collection of tutorials, labs, and reference materials.

Course description. An introduction to Java and Kotlin-based application development for the Android platform.

Outcomes. Students successfully completing the course will be able to:

- build, test, and debug Android applications using Android Studio.
- implement user interfaces with pre-built UI components.
- create custom components with nested layouts and controls.
- apply principles of material design for visually appealing apps.
- design and build apps with audio and video resources.
- design and build apps that use graphics and animation.
- design and build apps that use the camera and motion sensors.
- design and build apps that use location sensors and maps services.

Grading. Course grades are determined by homework assignments, a presentation, and a final project.

HW 1	HW 2	HW 3	Presentation	Final Project
10%	20%	20%	20%	30%

Your weighted total for the semester will be converted to a letter grade using the following scale:

A	A-	B+	B	B-	C+	C	C-	D+	D	F
100-92	91-90	89-88	87-82	81-80	79-78	77-72	71-70	69-68	67-60	59-0

Final project. The final project involves the design and implementation of an original Android app that leverages at least two significant tools, techniques, and/or features of the Android platform not covered in class. Students also submit a written report and present their apps in class.

Presentation. When graduating seniors interview for positions in software development, they are often asked to present an example of a significant application they developed during their college years. This is an opportunity for

them to showcase technical skill, creativity, and an ability to communicate effectively. In this course, presentations of final projects are intended to serve as a dry run for this part of the interviewing process.

Tablet. Each app submitted for grading will be uploaded to BOLT as an Android Studio project folder. You will be issued a Samsung Galaxy Tab with accessories for your work in this course unless you prefer to use your own Android device, but for credit I must be able to build your project in Android Studio and install it on the course tablet. If you use a different device for development, you are still responsible for ensuring that it runs correctly on the tablet.

Announcements: Please configure BOLT to notify you by email when an announcement has been posted and when an assignment has been graded. You can do this by going to *Announcements > More Actions > Notifications*, and from there, under *Instant Notifications*, select the appropriate options.

Academic honesty: Any attempt to mislead your professor about any aspect of your work in the course is a violation of academic honesty. This includes submitting work to be graded that you did not write entirely on your own. You are permitted to discuss ideas about homework with other students and to help each other debug, but under no circumstances are you permitted to copy code written or dictated by someone else, including code found on the Internet, even if you modify it. Allowing a classmate to copy part of *your* work is also cheating and will be handled in the same way. Academic dishonesty of any kind will result in a failing grade for the course and a formal filing of the incident with the Dean of Students. Claiming to have forgotten or misunderstood course policies will not be accepted as an excuse for violating them.

There is one exception to the copying prohibition. You may use short code fragments obtained from other sources provided that you properly cite your sources and that each such code fragment comprises a relatively small part of the method or other functional unit in which it appears. This policy enables you to apply technical ideas discovered through your own research in a way that is consistent with the educational objectives of the assignment. It must be understood, however, that submitting coursework containing code written by someone else *without* acknowledging the source is plagiarism, a serious violation of academic honesty. It is perfectly fine to apply ideas that you have learned from other sources, but if you are essentially submitting someone else's knowledge instead of expressing your own, you just need to be honest about that by citing the source.

Citing code. Cite your sources in comments directly preceding the relevant code. If the source is a book, use any standard literary citation style; for online sources, provide the URL and any additional information needed to easily locate the cited code. In either case, if you have modified the code then make this clear to the reader. You may include a description of your modifications if you wish to emphasize value added on your part, but this is optional.