

Syllabus

Course catalog information

Semester: Fall 2023

Course name: Mobile Device Programming

Course ID: CS 5240

Section number: 101

Credit hours: 3

Modality: face-to-face

Meeting days: MWF

Meeting time: 12pm-12:50pm

Meeting location: ABH 311

Course description: Hands-on, experiential exposure developing applications for modern mobile devices. Topics include responsive web applications, web app to native app generation tools (e.g., PhoneGap), but primarily native app development for the Android or IOS platform. Native app development topics include basic application framework and process life cycle, user interface components, persistent data mechanisms, settings/preferences, services and notifications, and debugging. Advanced topics include publishing and updating apps to public distribution stores (e.g., AppleStore), and device-specific functions including gestures, accelerometer, GPS. Modern development tools are used including AndroidStudio or Xcode. Students work individually on prepared projects and a final cumulative project.

Instructor information



Instructor name: Dr. Mark Hills

Instructor office: 312-L Anne Belk Hall

Instructor phone: 828-262-7159

Instructor email: hillsma@appstate.edu (<mailto:hillsma@appstate.edu>)

Office hours: Monday 10am - 10:50am, 2pm - 2:50pm Wednesday 10am - 10:50am Friday 10am - 10:50am, 2pm - 2:50pm

Course objectives

This course provides a practical foundation for developing mobile applications, while also looking at current research in mobile application development. Students will learn the tools and techniques used to build and deploy mobile applications, including how to use common mobile services such as maps and location services, and will complete a number of related homework assignments. Students will also read, discuss, and summarize current research papers, will produce a research lesson (with presentation and report) on a topic related to the course material, and will develop (individually or in a small group) a mobile application.

After taking this course, you should be able to:

- Design and develop mobile applications for modern Android devices

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- Create effective UI tests for mobile user interfaces
- Integrate common mobile APIs to support services such as remote data storage, maps, and location services
- Understand and apply the basics of internationalization and accessibility
- Navigate current research literature related to mobile application development
- Summarize this literature effectively into a report and presentation that will be shared with other students in the class

Required materials and resources

Our main text for the course will be Android Programming: The Big Nerd Ranch Guide, 5th edition. We also have Kotlin Programming: The Big Nerd Ranch Guide, 2nd edition, for help with learning Kotlin. You can access these texts using the My Materials link under the General topic on AsULearn.

We may be using the O'Reilly Learning Platform to access material from relevant books. You can find out more about this here: <https://library.appstate.edu/find-resources/databases/oreilly-ebooks-safari-books-online> (<https://library.appstate.edu/find-resources/databases/oreilly-ebooks-safari-books-online>). You do not need to create an O'Reilly account to use this service, but it can be useful if you wish to use their mobile app. Links to the appropriate chapters of books hosted on the O'Reilly Learning Platform will be provided in the relevant topics on AsULearn. Both of our course texts are also available there.

We will be keeping track of projects on GitHub and using GitHub for our homework assignments: <https://github.com> (<https://github.com/>). You will need to create an account there if you have not done so already.

Grades

Students will be evaluated based on a midterm exam, a final exam, quizzes, homework assignments, a (solo or small group) implementation project, and a solo research project.

Grading Scale

Letter	Percentage Required
A	93
A-	90
B+	87
B	83
B-	80
C+	77
C	73
C-	70
F	< 70

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

Weighting	
Homework	20%

Quizzes	10%
Midterm Exam	15%
Final Exam	15%
Implementation Project	20%
Research Project	20%

AsULearn rounds your grade and **that rounding will be final.**

Assignment details

Homework assignments and quizzes will be due throughout the semester. More details about all assignments will be posted on AsULearn.

General course policies

Office Hours

I will hold office hours in-person. If I am with another student, please be patient and respectful to the other student by waiting your turn. There may be times throughout the semester when I must cancel or reschedule my office hours due to last minute meetings or appointments. I will make sure to announce these changes. If you cannot attend my scheduled office hours, you may email me for an appointment. You are always welcome to ask questions over email. Please be patient with me because it may take me more than 60 minutes to respond. I may not immediately answer emails sent after 5pm on weekdays or sent at any time on weekends.

Public Labs

Anne Belk Hall, Rooms 309 and 311, are available to all Computer Science majors outside of scheduled class times and during normal building hours.

Attendance Policy

It is the policy of Appalachian State University that class attendance is an important part of a student's educational experience. Students are expected to attend every meeting of their classes. However, I do understand that life happens. Attendance will be taken every lecture period by means of each student writing their name on an attendance sheet before leaving class. If you do not write your name on the attendance sheet, then you will be marked absent. There is no grade penalty for being absent **except** on days where we are doing activities in class (e.g., presentations) that cannot be completed outside of class. You will lose credit for those activities unless you have an excused absence (see below). I will not be recording our classes, and materials will not necessarily be posted to the course page. It is up to you to attend lecture and take notes. If you are absent, I suggest asking a friend for their notes or attending my office hours.

For information about excused absences, see the University policies on attendance [here](https://academicaffairs.appstate.edu/sites/academicaffairs.appstate.edu/files/printable_pdf_of_the_attendance_policy.pdf) (https://academicaffairs.appstate.edu/sites/academicaffairs.appstate.edu/files/printable_pdf_of_the_attendance_policy.pdf). Beyond the situations mentioned there, I allow excused absences for school related activities (e.g., you may have to be gone because you are traveling for a school club) and being sick enough to go to the doctor (if in doubt, contact me and stay home). Another reason an absence may be excused is if the absence is discussed with me before the absence is to occur. Other reasons could be anything deemed beneficial to student learning. Again, please be proactive and contact me in advance if possible.

Attention and Participation

You must be an agent in your learning experience by attending lecture and paying attention. Lecture materials will not necessarily be posted to the course AsULearn page, and we will be doing many different activities (such as working through challenge activities from our textbook) in class. You will also need to keep up with the reading and other activities, which are important to learning the material well. Please be sure to attend lecture.

Email and Communications

I assume that students check their ASU email several times daily. If you check a different email address more frequently than your ASU address, then set your AppalNet account so that your email gets forwarded. I will hold you responsible for all information conveyed to you through email from me. Any updates will be posted to the AsULearn Announcements forum. When an announcement is posted on AsULearn, you should also receive an email. Again, I expect you to check your official campus email with some regularity. However, if I inform you in class that an assignment will be posted, I expect you to check for that assignment online even without an email. Assignments will appear on the calendar on

the course AsUlearn page as well as being listed in the week it was assigned. I will announce assignments in lecture as well. Please check the Announcements regularly in the event that you are not receiving emails sent from the course AsUlearn page. Please use proper email etiquette when emailing me (or any professor). Use your official AppState email and include your course number or the name of the course (just "Mobile" or "Mobile Dev" is fine) in the subject line. As I am getting to know everyone in the beginning of the semester, I ask that you are sure to introduce yourself in every email. Please be respectful in your emails. I will not respond to emails that I feel are rude or lack proper etiquette. If you are unsure of how to write an email to a professor please use the template below.

Hello Professor Hills,

My name is {first name last name} and I am in your Mobile course. {insert question or comment here}

Thank you,

{first name last name}

Accommodations for Students with Disabilities (quoted from Vice Provost)

Appalachian State University is committed to providing an inclusive experience, accessible learning environments and equal opportunity to individuals with disabilities in accordance with the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. Individuals needing reasonable accommodations should contact the Office of Disability Resources (828.262.3056 or [odr.appstate.edu \(https://odr.appstate.edu/\)](https://odr.appstate.edu)).

Religious Observance Policy

Students must be allowed a minimum of two excused absences each academic year for religious observances. Students are responsible for requesting excused absences for religious observances required by the faith of a student. Except in extraordinary circumstances, student requests for excused absences for religious observances must be submitted to instructors in writing no later than three weeks after the first class day of the term. For the purposes of this policy, ASU defines the term religious observance to include religious holidays, holy days, or similar observances associated with a student's faith that require absence from class.

Student Engagement

In its mission statement, Appalachian State University aims at providing undergraduate students a rigorous liberal education that emphasizes transferable skills and preparation for professional careers as well as maintaining a faculty whose members serve as excellent teachers and scholarly mentors for their students. Such rigor means that the foremost activity of Appalachian students is an intense engagement with their courses. In practical terms, students should expect to spend two to three hours of studying for every hour of class time. Hence, a fifteen-hour academic load might reasonably require between 30 and 45 hours per week of out-of-class work.

Academic Integrity Code (quoted from Vice Provost)

Introduction

Appalachian State University's Academic Integrity Code is designed to create an atmosphere of trust, respect, fairness, honesty, and responsibility. The Academic Integrity Code outlines "user-friendly" procedures and mechanisms for resolving alleged violations of academic integrity. The Academic Integrity Code is the result of cooperation among Appalachian's faculty, students and administrators, and promotes a campus dialogue about academic integrity. All members of the Appalachian State University community are responsible for promoting an ethical learning environment.

The Academic Integrity Code

Students attending Appalachian State University agree to abide by the following Code:

- Students will not lie, cheat, or steal to gain academic advantage.
- Students will oppose every instance of academic dishonesty.

Students shall agree to abide by the Academic Integrity Code when submitting the admission application.

Class Cancellations

The university will send out an email should classes be cancelled for adverse weather. If I need to cancel class for any reason, I will notify you via email.

Special Days

Please reference the registrar's official 2023-2024 academic calendar for special days for the semester. Be aware of Add/Drop days and final exam periods. You can find the academic calendar [here \(https://registrar.appstate.edu/sites/default/files/2023-2024_academic_calendar_updated_08.01.23.pdf\)](https://registrar.appstate.edu/sites/default/files/2023-2024_academic_calendar_updated_08.01.23.pdf). You can find the final exam schedule [here \(https://registrar.appstate.edu/sites/default/files/app_state_fall_2023_exam_schedule_final.pdf\)](https://registrar.appstate.edu/sites/default/files/app_state_fall_2023_exam_schedule_final.pdf).

Withdraw dates

Withdraw no academic penalty: Friday, August 25, 2023

Withdraw using a career drop: Wednesday, October 25, 2023

[Learn more about how to withdraw in the Withdrawal Policy \(https://registrar.appstate.edu/resources/policies/academic-policies/withdrawal-policy\).](https://registrar.appstate.edu/resources/policies/academic-policies/withdrawal-policy)

[Syllabi Policy and Statement Information \(https://academicaffairs.appstate.edu/resources-forms/syllabi-policy-and-statement-information\)](https://academicaffairs.appstate.edu/resources-forms/syllabi-policy-and-statement-information)

[Additional Syllabi Policy and Statement Information \(https://academicaffairs.appstate.edu/resources-forms/optional-syllabi-policy-and-statement-information\)](https://academicaffairs.appstate.edu/resources-forms/optional-syllabi-policy-and-statement-information)