Syllabus

Course catalog information

Semester: Fall 2024

Course name: Mobile Device Programming

Course ID: CS 5240

Section number: 101

Credit hours: 3

Modality: face-to-face

Meeting days: MWF

Meeting time: 11am-11:50am

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 3pm - 5pm Tuesday 2pm - 4pm Thursday 10am - noon

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 messaging 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
- Create effective UI tests for mobile user interfaces
- Integrate common mobile APIs to support services such as remote data storage 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. Both a midterm and a final exam will be given as well. Deliverables for both the implementation and research projects will be due throughout the semester, while both projects will be presented at the end. 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 that cannot be completed outside of class. I will announce these days in advance, and 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}

Academic Integrity Violations

Violations of the academic integrity policy can result in various sanctions. You can learn more about the policy on the university [Academic Integrity page (https://academicintegrity.appstate.edu/)](https://academicintegrity.appstate.edu/). If you are not sure if something you are doing would violate the policy (e.g., incorporating code from StackOverflow into your or your team's codebase, using code provided by tools such as GitHub Copilot or ChatGPT), please ask.

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 2024-2025 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/2024-2025_academic_calendar.pdf)](https://registrar.appstate.edu/sites/default/files/2024-2025_academic_calendar.pdf). You can find the final exam schedule [here (https://registrar.appstate.edu/sites/default/files/app_state_fall_2024_exam_schedule_final_1.pdf)](https://registrar.appstate.edu/sites/default/files/app_state_fall_2024_exam_schedule_final_1.pdf).

Appalachian State University Policies and Statements

Appalachian State University has policies and statements including the academic integrity code, disability resources (accommodations for students with disabilities), attendance, and student engagement with courses. You can find the current version of these policies and statements on the [Academic Affairs Syllabi Policy and Statement Information page (https://academicaffairs.appstate.edu/resources-forms/syllabi-policy-and-statement-information)](https://academicaffairs.appstate.edu/resources-forms/syllabi-policy-and-statement-information).

Public Sharing of Course Materials

All course materials, including video, may be subject to intellectual property protections under applicable law and regulation and are for the sole use of students enrolled in this class. Students do not have permission to copy or record materials except for personal use in the context of this class and students do not have permission to share any class materials, including videos, in any manner on any platform without the prior express permission of the faculty member teaching this course.

Withdraw dates

Withdraw no academic penalty: Friday, August 23, 2024

Withdraw using a career drop: Wednesday, October 23, 2024

[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)