

## CPSC 575 – Android Mobile Computing

**Instructor:** Keith Perkins

**Office:** Luter 201-D

**Office Hours:**

Google Meet: <https://meet.google.com/mgu-bodg-xhd?pli=1&authuser=1>

MWF 2-2:55 PM

TTH 11 AM -12 PM

All office hours are virtual at the above Google Meet link. I will also be available in person, in Luter 201-D, for MWF office hours. Or, drop me an email and we can set up something that works for you.

**E-mail:** keith.perkins@cnu.edu

**Purpose:** This course covers core concepts of the Android programming platform and its key components using the Android SDK and the Java and Kotlin programming languages. Topics include application lifecycle, user interface design, activities and intents, data persistence, networking, messaging, location-based applications, and android services.

**Objective:** As computer systems migrate from desktop to mobile devices it is necessary for PCSE majors to be versed in programming for these new environments. This course addresses that need by providing a lecture based, project intensive introduction to android programming. Upon course completion students will be able to develop a variety of complex Android applications.

### Notes and Assignments:

Course material will come from lecture notes, scholar, and the web.

**Required Hardware:** None.

**Required Text:** None.

### Exams

There will be 1 exam during the semester and 1 final exam at the end of the semester. The final exam is comprehensive.

### Projects

There will be up to 5 projects assigned throughout the semester. Due dates will be clearly noted and rigorously observed. Projects turned in up to 1 week late will be penalized 50%. Projects later than 1 week will not be accepted.

### Significant differences between graduate and undergraduate versions of this course

All graduate student projects must be professional and significantly more polished than undergraduate student projects. They must be well researched and designed. They must be rigorously tested against edge condition input as well as typical input.

Additionally, students taking the graduate version of this course will be expected to research and present a 2 lecture sequence on cross platform mobile application development using either Flutter or React Native. This should consist of; architecture market share, design patterns supported, provision for native development (for needs not

supported by flutter or react Native). And a tutorial that builds a working example that you will demonstrate in class.

### **Make Ups**

I will not give make-up exams or accept any late projects except in cases of documented illness or valid justification.

### **Grading Policy:**

Final grades will be based on the following weighting distribution.

Projects ..... 40%  
Midterm .....25%  
Final Exam.....25%  
Research presentation and paper .....10%

### **Project List (Complete project description and requirements will be available on scholar)**

**15 pts - Project 1:** Develop Local, User Interface Intensive, Mobile application

**20 pts - Project 2:** Develop a Camera and Messaging Based application

**20 pts - Project 3:** Develop a Networked, Multithreaded application

**20 pts - Project 4:** Develop a Networked, multithreaded data display application

**25 pts - Project 5:** Develop a Graphical widget tracking application using Android services, broadcast receivers and intents.

### **Numerical Grading Scale**

A	94-100
A-	90-93
B+	87-89
B	84-86
B-	80-83
C+	77-79
C	74-76
C-	70-73
F	< 70

**Honor Code**

The Honor Code will be strictly observed. All work must be done individually (except for assignments that explicitly allow teamwork). Cheating on any work will result in either a score of zero or an F for the course, and/or the filing of a case in the CNU honor court. Violation of the honor code may result in dismissal from the University.

**Class Conduct:**

Treat others in the class with respect. Please feel free to ask questions. Please arrive to class on time. Please turn off cell phones and beepers.

**University Statement on Diversity and Inclusion:**

The Christopher Newport University community engages and respects different viewpoints, understands the cultural and structural context in which those viewpoints emerge, and questions the development of our own perspectives and values, as these are among the fundamental tenets of a liberal arts education.

Accordingly, we affirm our commitment to a campus culture that embraces the full spectrum of human attributes, perspectives, and disciplines, and offers every member of the University the opportunity to become their best self.

Understanding and respecting differences can best develop in a community where members learn, live, work, and serve among individuals with diverse worldviews, identities, and values. We are dedicated to upholding the dignity and worth of all members of this academic community such that all may engage effectively and compassionately in a pluralistic society.

If you have specific questions, suggestions or concerns regarding diversity on campus please contact [Diversity.Inclusion@CNU.edu](mailto:Diversity.Inclusion@CNU.edu)

**Disabilities/Accessibility:**

In order for a student to receive an accommodation due to a disability, that disability must be on record in the Office of Student Affairs, 3<sup>rd</sup> Floor, David Student Union (DSU). If you have a diagnosed disability, please contact Jacquelyn Barnes, Student Disability Support Specialist in Student Affairs (594-7160) to discuss your needs.

Students with documented disabilities are to notify the instructor at least seven days prior to the point at which they require an accommodation (the first day of class is recommended), in private, if accommodation is needed. The instructor will provide students with disabilities with the reasonable accommodations approved and directed by the Office of Student Affairs. Work completed before the student notifies the instructor of his/her disability may be counted toward the final grade at the sole discretion of the instructor.

**Success:**

I want you to succeed in this course and at Christopher Newport. I encourage you to contact me during office hours or to schedule an appointment to discuss course content or to answer questions you have. If I become concerned about your course performance, attendance, engagement, or well-being, I will contact you first. I also may submit a referral through our Captains Care Program. The referral will be received by the Center for Academic Success as well as other departments when appropriate (Counseling

Services, Office of Student Engagement). If you are an athlete, the Manager of Athletic Academic Success Programs will be notified. Someone will contact you to help determine what will help you succeed. Please remember that this is a means for me to support you and help foster your success at Christopher Newport.

## **Public Health**

The university will provide guidance on public health issues and students will be expected to comply with university protocols.

## **Academic Support:**

The Center for Academic Success offers free tutoring assistance for Christopher Newport students in several academic areas. Center staff offer individual assistance and/or workshops on various study strategies to help you perform your best in your courses. The center also houses the Alice F. Randall Writing Center. Writing consultants can help you at any stage of the writing process, from invention, to development of ideas, to polishing a final draft. The Center is not a proofreading service, but consultants can help you to recognize and find grammar and punctuation errors in your work as well as provide assistance with global tasks. Contact them as early in the writing process as you can!

You may contact the Center for Academic Success to request a tutor, confer with a writing consultant, obtain a schedule of workshops, or make an appointment to talk with a staff member about study skills and strategies. The Center is located in Christopher Newport Hall, first floor, room 123. You may email [academicsuccess@cnu.edu](mailto:academicsuccess@cnu.edu) or call (757) 594-7684.

## **Course Materials:**

**All content created and assembled by the faculty member and used in this course is to be considered intellectual property owned by the faculty member and Christopher Newport University. It is provided solely for the private use of the students currently enrolled in this course. To ensure the free and open discussion of ideas, students may not make available any of the original course content, including but not limited to lectures, discussions, videos, handouts, and/or activities, to anyone not currently enrolled in the course without the advance written permission of the instructor. This means that students may not record, download, screenshot, or in any way copy original course material for the purpose of distribution beyond this course. A violation may be considered theft. It is the student's responsibility to protect course material when accessing it outside of the physical classroom space.**