Course Syllabus

✎ Edit

Students: please apply for a CodePath account here:

https://apply.codepath.com/cohorts/fc-and102-fa25/versions/student/ (https://urldefense.com/v3/__https://apply.codepath.com/cohorts/fc-and102-fa25/versions/student/__;!!DLa72PTfQgg!KtTBLH5ublwkc4bsvWo1xPpOnErbLolx2YWEahs55fO1M1SFXrxuInBl4O4M8LCk1TqZooPH1j4vd1NdRWpTbjilwlQ$)

Please select **New Jersey Institute of Technology** in the location dropdown menu to ensure you choose the correct university. Please allow 24 hours for processing, and only after that contact admissions@codepath.org (mailto:admissions@codepath.org) for assistance.

Course Information

Course Number: CS 388

Course Title: Android Application Development

Prerequisite: CS 288 with a grade C or better.

Contact Information

Instructor: Iulian Neamtiu, Professor; ineamtiu@njit.edu (mailto:ineamtiu@njit.edu)

Office Hours: Mondays and Wednesdays 9:10am-10:30am, GITC 4417

TA: Glenn Merritt; gmm46@njit.edu (mailto:gmm46@njit.edu) GitHub**:** gmerr3

Office Hours: Wednesdays and Fridays 1:00pm-2:20pm, GITC 4325

Grading Policy

Grading: raw score *x* = a weighted average of:

CodePath 60%
Project (individual component) 25%
Labs 10%
Attendance 5%

Assuming *x* is your raw score, your grade will be:

x<60 : F
60≤x<65 : D
65≤x<75 : C
75≤x<80 : C+
80≤x<85 : B
85≤x<90 : B+
90≤x : A

I do not curve.

The CodePath grading as detailed below will be weighed as 60% of the final grade. Please be advised that the contribution of the CodePath grade to your final grade cannot exceed 60%, even if you get more than 100% as your CodePath grade,

The remaining 40% of the final grade will be determined as follows:

- Your individual contribution to the final group project (presentation, commits, contribution sheet) will be 25% of the final grade
- You will have to submit the weekly labs. They will be reviewed and will be 10% of the final grade. The labs need to be completed in class, and your grade will be based on your throughput. If you are absent from class for a *justified* reason (approved by the Dean of Students before the lab) you will be able to complete and submit the lab within 72 hours of the scheduled lab.
- Attendance is 5%

Exams

The course has no final or midterm exams.

Statement on use of [generative] AI

Bottom line, use this test to gauge whether your intended use of AI is allowed: *"If you asked this question of another person, would that be cheating?"*

Please see **https://courses.codepath.org/courses/and102/pages/ai_welcome (https://courses.codepath.org/courses/and102/pages/ai_welcome)** for details

Allowed
1. Brainstorm ideas/pair programming
2. Mock data generation
3. Simplifying difficult concepts
4. Optimizing code
5. Test/Debugging code

Prohibited
1. Using AI as the source of truth
2. Copying and pasting code without understanding
3. Over-reliance on AI for solutions
4. Ignoring best practices
5. Confirmation Bias

Student Absences for Religious Observations: NJIT is committed to supporting students observing religious holidays. Students must notify their instructors in writing of any conflicts between course requirements and religious observances, ideally by the end of the second week of classes and no later than two weeks before the anticipated absence.

Absence/missed work excusals

https://www.njit.edu/dos/student-excusals (https://www.njit.edu/dos/student-excusals)

Do not contact the professor. Instead, please contact the DOS who will verify the circumstances and inform the professor on your behalf.

"Students who miss class due to bereavement, medical concerns, military activity, legal obligations, or university-sponsored events must provide the Office of the Dean of Students (DOS) with official and verifiable documentation related to the absences within 14 days and complete the online **Student Absence Excuse Request Form. (https://forms.gle/8ExUeswm24M4Tkaa9)**

Students can also stop by the Office of the Dean of Students located at 255 Campus Center or email **dos@njit.edu (mailto:dos@njit.edu)** .

Once the absence has been verified, the DOS will communicate on your behalf to your professor(s).

[...]

The DOS will not seek absence excusals for pre-planned vacations, trips, weddings, graduations, or non-NJIT activities."

Statement on academic integrity

*"Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the code of Academic Integrity policy that is found at: **NJIT Academic Integrity Code (https://t.e2ma.net/click/zzkslnb/36whoovf/bpod05x) . (https://t.e2ma.net/click/zzkslnb/36whoovf/rhpd05x)***

*Please note that it is my professional obligation and responsibility to report any academic misconduct to the Office of the Dean of Students. Any student found in violation of the code by cheating, plagiarizing, or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Office of the Dean of Students at **dos@njit.edu." (mailto:dos@njit.edu)***

The material below is the CodePath description of the course and any grading information below refers to the CodePath portion of the grading.

Course description

This course is a semester long project-based exploration into Android mobile app development.

In the first part of the course, students develop skills by completing coding labs and building four fully functional app assignment projects.

In the second half of the course students will apply their skills, working together in small teams, to design and and build an original app from the ground up. The course culminates in a Demo Day event where teams will present their finished apps in a live demo.

Course Expectations

Prerequisites and eligibility

Students should...

- have completed an intermediate object oriented programming course, data structures course, or similar
- be pursuing a course of study related to computer science or software
- complete the pre-work task

Time Commitment

- **Live session attendance:** Classes meet for two 1.5-hour session every week over the duration of the semester.
- **Outside of class time:** Students should plan to spend 5-10 hours outside of class working on weekly assignments and their final group project.

Topics Covered

1. **Basics**
    1. Kotlin
    2. Android Studio
2. **Views and Activities**
    1. Constructing View Layouts (LinearLayout, RelativeLayout, ConstraintLayout)
    2. Using common views (buttons, labels, images)
    3. Using RecyclerViews
3. **Event Handling, ActionBar, and Intents**
    1. Multi-screen applications
    2. Explicit vs implicit intents
    3. Passing data between activities
4. **Networking and Persistence**
    1. Authentication
    2. Networking APIs
    3. Shared Preferences using Room
    4. Databases
5. **Fragments and Navigation**
    1. Bottom navigation menu
    2. Switching between fragments
6. **Project Management**
    1. Product Specs
    2. Wireframing

Coursework and Grading

CodePath courses focus on developing student's habits and skills in order to be successful in the tech industry. Success in industry goes beyond proficiency in technical domains; The ability to be punctual, meet project deadlines and work effectively in a collaborative team are equally important skills. The following policies around attendance and coursework submissions are meant to encourage professional behavior.

Coursework Weighting

All coursework grading and accountability is handled by CodePath. The following table outlines how each coursework section is weighted in calculating a student's final grade. See **Coursework Grading (https://courses.codepath.org/snippets/and102/grading)** for a breakdown of scores for individual coursework items.

Weight	Section	Description
50%	Assignments	Weekly individual app projects
50%	Group Project App Milestones	Original app project and presentation

Bonus points

A student can earn bonus points on an app assignment by completing extra app features ("stretch features") beyond that which is indicated as required. Bonus points will only be applied within the given coursework section they are earned and won't increase the impact of a given section beyond its designated weight. For instance, no amount of bonus points will increase the impact of the *Assignments* section beyond 50% of the final grade.

Attendance

CodePath courses focus on developing student's habits and skills in order to to be successful in the tech industry. Success in industry goes beyond proficiency in technical domains; The ability to be punctual, meet project deadlines and work effectively in a collaborative team are equally important skills. Attendance is 5% of the grade.

(https://courses.codepath.org/snippets/and102/syllabus#heading-completing-the-course)

Completing the Course

(https://courses.codepath.org/snippets/and102/syllabus#heading-codepath-requirements-for-course-completion) CodePath Requirements for Course Completion

CodePath holds all professional and college students to the same high bar of quality coursework and professionalism. In order to be considered CodePath alumni and receive recognition for successful completion of the course from CodePath, **students must complete the course with a final CodePath grade of 60% or above**.

Students meeting the above requirements will:

1. Receive a (digital) CodePath certificate of completion.
2. Be considered CodePath alumni and gain access to alumni networks.
3. Gain full access to the CodePath career center and be eligible for mentorship opportunities with CodePath professional alumni.

(https://courses.codepath.org/snippets/and102/syllabus#heading-grade-reports)

Grade Reports

Students will have access to their CodePath grades through the learning portal.

The NJIT professor will have full discretion and the final decision for any grades a student receives in the course. Students should defer to NJIT for specific add/drop, course withdrawal and grading policies.

- CodePath will provide the NJIT professor with all grades and student data from the course.
- The final grade given to a student is decided by the NJIT professor and is independent of the final grade determined by CodePath.

(https://courses.codepath.org/snippets/and102/syllabus#heading-other-policies)

(https://courses.codepath.org/snippets/and102/syllabus#heading-student-privacy) Student Privacy

CodePath adheres to best practices and complies with all regulations regarding student information and data privacy as outlined by FERPA.

- Private student information and assessment data will only be shared with relevant team members within the CodePath organization and the professor of record for the participating college.
- Students who wish to have their data shared with any 3rd parties must grant CodePath explicit consent of such data sharing.
- Public facing leaderboards, such as Cybersecurity Capture the Flag Competitions, will use aliases and not contain student identifiable information.

(https://courses.codepath.org/snippets/and102/syllabus#heading-device-requirements)

Device Requirements

- You must have access to a system with the ability to download and run **Android studio** (https://developer.android.com/studio#downloads) .
- On CodePath, go to Getting Started -> System Requirements

Virtual Device guide: per CodePath "There is no specific API version or virtual device manager requirement for this course. For the smoothest experience, we encourage students to use the latest stable versions available".
My advice: select a Pixel 8. In Android Studio 2025.1.2. you can access the device manager from Projects->More Actions->Virtual Device Manager

Support Channels:

- Get support from professionals, TAs and other students by posting technical questions on our **Discussions System** or the Slack channel.

- **support.codepath.org (https://support.codepath.org)**
  - Browse our ever expanding FAQ based on topic or search by keyword
  - For general inquiries, send us a message 📬 to **support@codepath.org (mailto:support@codepath.org)**

Course Format

This course teaches Android development in a project-based format over a 14-week period. Each week builds on the skills and knowledge from the previous week.

Each 1-week unit will consist of:

- **2x 80 minutes of In-Class Time**, consisting of:
  - **Mondays: Lecture.**
  - **Wednesdays: Lab.** In weekly class sessions, students will follow guides to learn new concepts through hands-on programming, collaboratively building apps.

- **Weekly Project.**
  - *Estimated time: 5-10 hours (asynchronous)*
  - For weeks 1-6, a mobile app specification is assigned to each student as an individual project. This is the student's chance to demonstrate what they have learned that week!
  - For weeks 7-14, students will be divided into teams of 3-4 students to scope, design and build a larger project applying everything they've learned in the course. Groups will:
    - share apps with classmates during week 10
    - showcase their apps on *demo day* during week 14
  - Read more about the **course-wide group project (https://courses.codepath.org/courses/and102/pages/group_project)**.

Throughout the course, students will have access to:

- **Code Review.** We will briefly review each app and provide feedback on their code.
- **Online Support.** Students can post questions and get support through our Discussions System.
- **Github-based Online Learning Portal.** Students will have access to a custom learning portal with videos, code samples, and comprehensive documentation library.

(https://courses.codepath.org/snippets/and102/overview_14week#heading-unit-overview)

Unit Overview

Unit	Coursework	Content Description
1	**Lab:** Tap Counter Game **Project:** Wordle Game	• Kotlin and Android Studio • Constructing View Layouts • UI Interaction
2	**Lab:** Gmail Clone **Project:** Wishlist App	• RecyclerView • Debugging in Android Studio
3	**Lab:** NYT Book Search **Project:** Flixster+ Part 1: Movies	• Using APIs • Loading images with Glide
4	**Lab:** NYT Article Browser **Project:** Flixster+ Part 2: Your Design	• Advanced RecyclerView • Paging • Passing Data with Intents
5	**Lab:** Data Persistence (TBA) **Project:** BitFit Part 1	• Data Persistence • Room • Shared Preferences
6	**Lab:** NYT Combined App **Project:** BitFit Part 2	• Fragments • Navigation
7	**Lab:** Group Project Planning **Group Project:** Sprint 1 - Design	• Product Specs • Wireframing
8	**Group Project:** Sprint 2 - Design	

Unit	Coursework	Content Description
9	**Group Project:** Sprint 3 - Development	
10	**Group Project:** Sprint 4 - Development **Class Activity:** App Demos	• Giving and taking feedback
11	**Group Project:** Sprint 5 - Development	
12	**Group Project:** Sprint 6 - Testing	
13	**Group Project:** Sprint 7 - Testing	
14	**Demo Day!!!** 📱	• Voting for Best App Categories

(https://courses.codepath.org/snippets/and102/overview_14week#heading-projects)

Unit Schedule

Unit	Lecture	Coursework	Deadline
	Wednesday, September 3, 11:30am		
Unit 1	Monday, September 8, 11:30am Wednesday, September 10, 11:30am	Lab 1 Project 1	Wednesday, September 10, 12:50pm Tuesday, September 16, 11:59pm
Unit 2	Monday, September 15, 11:30am Wednesday, September 17, 11:30am	Lab 2 Project 2	Wednesday, September 17, 12:50pm Tuesday, September 23, 11:59pm
Unit 3	Monday, September 22, 11:30am Wednesday, September 24, 11:30am	Lab 3 Project 3	Wednesday, September 24, 12:50pm Tuesday, September 30, 11:59pm
Unit 4	Monday, September 29, 11:30am Wednesday, October 1, 11:30am	Lab 4 Project 4	Wednesday, October 1, 12:50pm Tuesday, October 7, 11:59pm
Unit 5	Monday, October 6, 11:30am Wednesday, October 8, 11:30am	Lab 5 Project 5	Wednesday, October 8, 12:50pm Tuesday, October 14, 11:59pm
Unit 6	Monday, October 13, 11:30am Wednesday, October 15, 11:30am	Lab 6 Project 6	Wednesday, October 15, 12:50pm Tuesday, October 21, 11:59pm
Unit 7	Monday, October 20, 11:30am Wednesday, October 22, 11:30am	Group Project Milestone 1	Tuesday, November 4, 11:59pm
Unit 8	Monday, October 27, 11:30am Wednesday, October 29, 11:30am		
Unit 9	Monday, November 3, 11:30am Wednesday, November 5, 11:30am	Group Project Milestone 2	Tuesday, November 11th, 11:59pm
Unit 10	Monday, November 10, 11:30am Wednesday, November 12, 11:30am	Group Project Milestone 3	Tuesday, November 25, 11:59pm
Unit 11	Monday, November 17, 11:30am Wednesday, November 19, 11:30am		

Unit 12	Monday, November 24, 11:30am		
Unit 13	Monday, December 1, 11:30am Wednesday, December 3, 11:30am Monday, December 8, 11:30am Wednesday, December 10, 11:30am		
	Demo day	Group Presentation	**Monday, December 8/Wednesday, December 10**

Projects

Each week, students will build an Android app in order to apply the concepts they have learned. Weekly apps will take around 5-10 hours outside of class session times to complete.

Homework assignments are due at 11:59pm local time 1 day before the first session of the following week. (Specific due dates will be posted on your course's project page.)

Click the titles below to view details on each Project:

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▸ Wordle

▸ Wishlist App

▸ Flixster+

▸ BitFit

(https://courses.codepath.org/snippets/and102/overview_14week#heading-labs) ## Labs

In the weekly labs, students are guided through building apps to introduce new concepts in a hands-on environment, and reinforce previous concepts they have learned. Students will be encouraged to collaborate using a Pair Programming approach.

Lab Apps:

- Idle Tap Game: An app that counts the times a user taps on the screen. Inspired by games like Cookie Clicker.
- Gmail clone: An app that simulates a client for browsing a list of emails.
- NY Times Lab series: A series of labs using the NY Times API to build out a functional book and article browsing app.