

Spring 2020

## CS 388-002: Android Application Development

Iulian Neamtii

Follow this and additional works at: <https://digitalcommons.njit.edu/cs-syllabi>

---

### Recommended Citation

Neamtii, Iulian, "CS 388-002: Android Application Development" (2020). *Computer Science Syllabi*. 67.  
<https://digitalcommons.njit.edu/cs-syllabi/67>

This Syllabus is brought to you for free and open access by the NJIT Syllabi at Digital Commons @ NJIT. It has been accepted for inclusion in Computer Science Syllabi by an authorized administrator of Digital Commons @ NJIT. For more information, please contact [digitalcommons@njit.edu](mailto:digitalcommons@njit.edu).

# Course Syllabus

[Jump to Today.](#)

 [Edit](#)

## Course

Number: 388

Section: 002

Title: Android Application Development

Catalog description, course (learning) outcomes: This course introduces mobile application development for the Android platform. Students will learn skills necessary for creating and deploying applications with the Android Software Development Kit (SDK). The course is designed to introduce and familiarize students with programming in the Android environment. It starts with an examination of the basic components and concepts that define the Android platform, and then moves on to cover the specific structure that comprises an Android application. An overview of the most common tools and techniques for writing Android applications is included. The Android approach to user interfaces is described along with a discussion of some of the more common user-interface elements. Storage strategies for persistent information are also covered, including the use of the available SQLite Database features. The unique characteristics of programming for a mobile environment are introduced and explained. Hands on experience in the form of exercises and programming projects are included throughout the course to reinforce material that has been presented in lecture form.

Topics: Introduction; The Android Development Environment; Application Fundamentals; Permissions; Fragments ; Lifecycle-Aware Components; Broadcast Receivers; Notifications; Threads AsyncTasks \& Handlers; Alarms; Networking; Graphics; Animations; Testing; Firebase; Multi-touch; Gestures; MultiMedia; Sensors; Location; Maps; The ContentProvider Class; The Service Class

Lectures: in the first part of the lecture, the professor will present the topic du jour (see Topics above); in the second part, we will present and discuss papers.

Research papers: instead of a textbook, we will rely on the lecture material and study research papers; the papers will be chosen specifically to be accessible at 388 level. There will be 2-3 papers per lecture. While the professor will present the majority of the papers, students are expected to choose and present 1-2 papers (depending on the # of papers and enrollment). Students will turn in papers summaries/discussion points at the beginning of each class.

Meeting-by-meeting outline: see "Modules"

## Instructor

Iulian Neamtii, Associate Professor, <https://web.njit.edu/~ineamtiu/> [. \(https://web.njit.edu/~ineamtiu/\).  
ineamtiu@njit.edu \(mailto:ineamtiu@njit.edu\)](mailto:ineamtiu@njit.edu)

Office hours: Mon&Wed 10:40am--12:00pm, GITC 4108

## TA

Raina Samuel

[res9@njit.edu \(mailto:res9@njit.edu\)](mailto:res9@njit.edu)

## Materials

required and optional textbooks: none

## Exams

Midterm: in-class, March 9

Final: TBD

Make-up policy: no make-up. If you miss the midterm, your final will be comprehensive. No make-up for the final.

## Grading policy

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

Quiz 15%

Paper summaries and class participation 5%

Project 20%

Homeworks 10%

Midterm 20%

Final 30%.

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

$x < 60$  : F

$60 \leq x < 63$  : D

$63 \leq x < 73$  : C

$73 \leq x < 77$  : C+

$77 \leq x < 83$  : B

$83 \leq x < 87$  : B+

$87 \leq x$  : A

I do not curve.

## 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 academic code of integrity policy that is found at: <http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf> (<http://www5.njit.edu/policies/sites/policies/files/academic-integrity-code.pdf>).*”**

*Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. **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 Dean of Students Office at [dos@njit.edu](mailto:dos@njit.edu) (<mailto:dos@njit.edu>).*”

## Quiz 1 (Java Proficiency)

Given on Feb. 3, worth 15% of the grade. This class is about Android Development, not Java programming. I assume students are competent Java programmers already. We will use Kotlin and Java. There will be no programming help with either the homework or the project.

## Homework assignments

Up to 11 (one a week) covering the Topics above. Could be fewer than 11, but 11 is an upper bound. Homeworks are individual.

## Project

Applying an Android analysis tool to commercial apps, e.g., Facebook, Yelp, Etsy, Uber, e.g., to find vulnerabilities. The project will be due in three stages, and a 3-pages write-up will be the final project report. You can pursue an individual project or a pair project, of course with the expectation that pair projects will be roughly double the effort of an individual project. Project deadlines:

Topic sent to professor for approval:

First try: Monday April 6 at 5pm

Second try, if first topic was declined: Thursday April 9 at 5pm







1-page write-up: Thursday April 23 at 5pm

(2+)-page write-up: Monday May 4 at 12pm

Write-up: 10-point font, single space.

- You do not need an Android HW device (phone or tablet) . We will use the Android Emulator.

## Course Summary:

| Date             | Details   |                |
|------------------|---|----------------|
| Thu Mar 5, 2020  |  <b><u>Homework 2, due Thursday March 5 at 5pm</u></b><br><a href="https://njit.instructure.com/courses/11208/assignments/40212">(<a href="https://njit.instructure.com/courses/11208/assignments/40212">https://njit.instructure.com/courses/11208/assignments/40212</a>)</a>     | due by 5pm     |
| Mon Mar 9, 2020  |  <b><u>Midterm</u></b><br><a href="https://njit.instructure.com/courses/11208/assignments/41607">(<a href="https://njit.instructure.com/courses/11208/assignments/41607">https://njit.instructure.com/courses/11208/assignments/41607</a>)</a>                                     | due by 11:59pm |
| Thu Mar 26, 2020 |  <b><u>Homework 3, due Thursday March 26th at 5 pm</u></b><br><a href="https://njit.instructure.com/courses/11208/assignments/40958">(<a href="https://njit.instructure.com/courses/11208/assignments/40958">https://njit.instructure.com/courses/11208/assignments/40958</a>)</a> | due by 5pm     |
| Thu Apr 2, 2020  |  <b><u>Homework 4 , due Thursday April 2 at 5 pm</u></b><br><a href="https://njit.instructure.com/courses/11208/assignments/44385">(<a href="https://njit.instructure.com/courses/11208/assignments/44385">https://njit.instructure.com/courses/11208/assignments/44385</a>)</a> | due by 5pm     |
|                  |  <b><u>Homework 1 , due Thursday Feb 27 at 5pm</u></b><br><a href="https://njit.instructure.com/courses/11208/assignments/39568">(<a href="https://njit.instructure.com/courses/11208/assignments/39568">https://njit.instructure.com/courses/11208/assignments/39568</a>)</a>   |                |
|                  |  <b><u>Quiz</u></b> ( <a href="https://njit.instructure.com/courses/11208/assignments/38225">https://njit.instructure.com/courses/11208/assignments/38225</a> )  |                |