

Android Basics Nanodegree Syllabus



Before You Start

This is an entry-level program. No prior programming experience required.

Project 1: Build a Single Screen App

Design and implement a single screen app that displays information about a fictional small business. Think along the lines of your favorite coffeeshop, local restaurant, or that gem of a store that sells those rare comic books or records.

Your design must include:

- Business name
- At least one photo representing the business
- Two or more other pieces of information, such as:
 - Contact information for the business (eg phone number, email address, website)
 - Address of the Business
 - Description of business
 - Hours of operation

Supporting Learning Content

Course Title	Learning Outcomes
ANDROID BASICS: USER INTERFACE	→ Create a single-screen app with text and images, install and use Android Studio

Project 2: Score Keeper App

Build a **Score Keeper app**, which gives a user the ability to keep track of the score of two different teams playing a game of your choice.

This project is about combining various ideas and skills we've been practicing throughout the course:

- Adding button code to your app
- Updating views

- Properly scoping variables
- Finding views by their ID

Supporting Course Content

Course Title	Learning Outcomes
ANDROID BASICS: USER INPUT	→ Create an Android app with buttons and text fields that a user can interact with

Project 3: Quiz App

The Quiz App project is a chance for you to combine and practice everything you learned in this section of the Nanodegree program. You will be making your own Android app - taking it from the idea stage to building out the full app. You can share your app with family and friends, as well as with other students in this course.

The goal is to create an **educational app** that quizzes a user about a certain topic of your choice. We want you to be creative about how you accomplish this. It's up to you what the quiz questions will be about and how you want to present them to your user. (We recommend about 5-10 quiz questions for a reasonable scope of your app).

This project is about combining various ideas and skills we've been practicing throughout the course. They include:

- Planning your app design before coding.
- Taking an app layout from drawing to XML code.
- Creating, positioning, and styling views.
- Creating interactivity through button clicks and Java code.
- Commenting and documenting your code.

Supporting Lesson Content

Lesson Title	Learning Outcomes
OBJECT-ORIENTED PROGRAMMING: PART 1	→ Create an object in Java and call methods on that object
OBJECT-ORIENTED PROGRAMMING: PART 2	→ Use booleans, conditions and relational operators, and practice adding intents and styles to your app

Project 4: Musical Structure App

The goal is to design and create **the structure of a Music app**. Note for this project, the app does not actually need to play music. The focus of this project is to implement Intent, New Activities, Arraylists, Loops and Custom Classes to design the user flow of a music playing app. There are many music player apps, and it will be your job to design the Java structure to store and present the user with song information as well as the user flow through the app. Will you build an app to play music from the user's library of music? Will you build an app to stream random songs from a database? Will you build a musical suggestion engine? Those choices are up to you!

This project is about combining various ideas and skills we've been practicing throughout the course. They include:

- Designing an app experience to achieve a certain goal
- Creating new activities
- Using explicit Intents to link between activities in your app
- Using OnClickListener to add behavior to buttons using Java code.
- Creating your own Custom Class
- Looping through an ArrayList
- Populating a ListView or GridView with an ArrayAdapter

Supporting Course Content

Course Title	Learning Outcomes
ANDROID BASICS: MULTI-SCREEN APPS	→ Create an app that teaches the dialect of Miwok using multiple screens, activities, event listeners and intents

Project 5: Tour Guide App

You will be making your own multi-screen Android app to share your knowledge about a city you are very familiar with.

The goal is to create a **Tour Guide app** which presents relevant information to a user who's visiting your city. The app can list top attractions, restaurants, public places, or events for the city. It can contain

all the best known secrets that only locals know. It's up to you which categories you want to provide, as well as what information to provide in each category.

This project is about combining various ideas and skills we've been practicing throughout the course. They include:

- Planning your app design and navigation before coding
- Selecting proper data structures to store lists of information
- Building layouts to display those lists of data
- Navigating between lists in Fragments using a ViewPager or Navigation Drawer*
- Creating your own custom classes
- Properly handling images or audio (if applicable)

Supporting Course Content

Course Title	Learning Outcomes
ANDROID BASICS: MULTI-SCREEN APPS	→ Add new navigation patterns with Fragments. Practice adding images, colors and visual polish to your app,

Project 6: News App, Stage 1

Create a **News feed app** which gives a user regularly-updated news from the internet related to a particular topic, person, or location. The presentation of the information as well as the topic is up to you.

This project is about combining various ideas and skills we've been practicing throughout the course. They include:

- Connecting to an API
- Parsing the JSON response
- Handling error cases gracefully
- Updating information regularly
- Using an AsyncTask
- Doing network operations independent of the Activity lifecycle

Supporting Course Content

Course Title	Learning Outcomes
ANDROID BASICS: NETWORKING	→ Parse JSON data, pull data from the cloud into your app,

handle network calls between your app and the server, and enable asynchronous tasks

Project 7: News App, Stage 2

Add a Settings Screen to the **News Feed app** you made earlier in Part 1 which will allow users to narrow down the stories displayed in from the feed. The available preference options presented to the user will be left up to you to decide (e.g. publishing time, country, topic category, etc.)

This project is about combining various ideas and skills we've been practicing throughout the course. They include:

- Implement the Preference Fragment
- Launch a Settings Activity from a menu in the Main Activity
- Use Uri.Builder class to add query parameters to the URL
- Update and display the Preference Summary

Supporting Course Content

Course Title

Learning Outcomes

**ANDROID BASIC:
NETWORKING**

→ Customize a list in your app by adding screen settings, and use the user's preferences to change URL queries.

Project 8: Inventory App, Stage 1

In this project, you'll design and create the structure of a **Inventory App** that will allow a store to keep track of its inventory of products. The app will need to store information about the product and allow the user to track sales and shipments and make it easy for the user to order more from the listed supplier.

We will split the development of this app in two stages. In Stage 1, you'll focus on what happens behind the scenes, practicing how to design and implement a simple database. *Note: This stage of the project will not have any UI components*

This project is about combining various ideas and skills we've been practicing throughout the course. They include:

- Creating a SQLite table in your app
- Populating that table with new entries
- Modifying the entries
- Displaying the contents of the table to users.

Supporting Course Content

Course Title	Learning Outcomes
ANDROID BASICS: DATA STORAGE	→ Create an app to track pets in an animal shelter, create a list of existing pets, and let users add and edit pets

Project 9: Inventory App, Stage 2

The goal is to design and create the structure of an **Inventory App** which would allow a store to keep track of its inventory. In Stage 1, you designed and implemented the backend database that stores information about the products and suppliers. In this stage, you'll build out the app UI for users to add and remove inventory.

This project is about combining various ideas and skills we've been practicing throughout the course. They include:

- Storing information in a SQLite database
- Integrating Android's file storage systems into that database
- Presenting information from files and SQLite databases to users
- Updating information based on user input
- Creating intents to other apps using stored information

Supporting Course Content

Course Title	Learning Outcomes
ANDROID BASICS: DATA STORAGE	→ Use content providers to act as a layer between your database and activities, ensuring that the data you add is valid in your app

