

St. Mary's University
Faculty of Informatics

Course Title Mobile Application Development

Course Credits Credit Hours: 3

Code CoSc-4083

Course Description

This course introduces mobile application development for the android platform. Android is a software task for mobile devices that includes an operating system, middleware and key applications. The Android SDK provides the tools and APIs necessary to begin developing applications on the android platform using the Java programming language. Student will learn skills for creating and deploying android applications, with particular emphasis on software engineering topics including software architecture, software process, usability and deployment.

Course Objectives

Understand the basic principles of mobile application development focusing primarily on the Android platform

Learning Outcomes

The program provides a knowledge and understanding of the following:

- User-interface design for mobile applications
- Begins with the basics and covers everything android developers need to know for both smartphones and tablets
- Managing Application Data
- Effective Communication Skill acquired during group work
- A hand on experience on mobile technologies
- Helps you work with Android SDK classes that are provided to facilitate persistent SQLite based database storage
- Develop skills in making network requests
- How to package and publish your applications

Chapter	Title	Detailed Content	Week
1	Introduction to Android	<input type="checkbox"/> Overview for Android <ul style="list-style-type: none"> o Definition of Android o Why Android o History of Android o Features of Android <input type="checkbox"/> Android Architecture <input type="checkbox"/> Android Core Building Blocks <input type="checkbox"/> Environmental Setup <ul style="list-style-type: none"> o Installing Android Studio o Test AVD (Android Virtual device) o Create Project <input type="checkbox"/> Android Project Structure	
2	Getting Started with Android Programming	<input type="checkbox"/> Layout <ul style="list-style-type: none"> o Views and View Groups o Color and String xml o Difference between View Groups <ul style="list-style-type: none"> • Linear Layout • Relative Layout • Frame Layout • Constraint Layout o Menu <input type="checkbox"/> Activity <ul style="list-style-type: none"> o Activity Lifecycle <input type="checkbox"/> Intent <ul style="list-style-type: none"> o Implicit intent o Explicit intent <input type="checkbox"/> List Views and Adapters <ul style="list-style-type: none"> o Array Adapter o Base Adapter o Custom Adapter <input type="checkbox"/> Dialogs <input type="checkbox"/> Fragments <ul style="list-style-type: none"> o List Fragment o Add to activities o Communicate with activities <input type="checkbox"/> RecyclerView and Card View	

3	SQLite databases	<ul style="list-style-type: none"> □ Overview of SQLite database <ul style="list-style-type: none"> ◦ Why SQLite ◦ SQLite classes ◦ Storage class and data types □ Database <ul style="list-style-type: none"> ◦ Create Database & Tables ◦ Insert records ◦ Update records □ Retrieve Information <ul style="list-style-type: none"> ◦ Get Reference to database ◦ Get data from the database(cursor) ◦ Return records □ Room Persistence Library 	
4	Networking and Web Services	<ul style="list-style-type: none"> □ Overview □ Making Network requests using third party libraries (retrofit) □ Parsing JSON data □ Consuming Restful APIs □ Handling network errors and asynchronous tasks 	

1. References

<ul style="list-style-type: none"> □ Griffiths, D. and Griffiths, D., 2017. <i>Head first Android development: A brain-friendly guide</i>. " O'Reilly Media, Inc." □ Burton, M., 2015. <i>Android App Development For Dummies</i>. John Wiley & Sons.

Attendance and Class Participation		Students must attend above 80% the lecture classes 100% of Lab/Demonstration.
Demonstration/Lab work	15%	
Tests/Quiz	15%	
Group Project	20%	
Exam	50%	
Neither late assignments nor late projects are allowed		
Lecture, Tutorial, Seminar /Demonstration ...		