

IT 535 – 2021-22/3

Mobile Programming

Course Overview

Course Objective

The main objective of the course is to give students an introduction to Android programming and provide information about approaching and solving coding problems on limited devices.

Projected Outline (May 6th – Jul 7th)

<ul style="list-style-type: none">1. Overview of Mobile Computing<ul style="list-style-type: none">a. Best Practices2. Projects and Targets<ul style="list-style-type: none">a. Project Structureb. Manifest Filec. Creating a Projectd. Using Android Development Toolse. Display Sizesf. Emulators and Targetsg. Logging3. User Interfaces<ul style="list-style-type: none">a. Resource Filesb. Using UI Widgetsc. Containers and Layoutsd. Menuse. Activitiesf. Dialogsg. Listsh. Event Managementi. Fragmentsj. RecyclerViewk. Tablet Screens and Screen Orientation	<ul style="list-style-type: none">4. Dealing With Threads<ul style="list-style-type: none">a. Handlersb. Concurrency in Android5. Communicating with Internet<ul style="list-style-type: none">a. Webviewb. REST operationsc. HTTP with HttpURLConnectiond. Parsing Responses6. Web Services<ul style="list-style-type: none">a. A General Overview of RESTful Web Servicesb. Consuming Restful Web Servicesc. Downloading Images7. Persistence (Optional)<ul style="list-style-type: none">a. Using SQLiteb. ContentProviders8. Broadcast Receivers & Services (Optional)<ul style="list-style-type: none">a. Systemwide Information Broadcastingb. Background Servicesc. Notifications
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Online Presentation Project

Each student is expected to submit a presentation of a subject assigned by the instructor. Some of the project subjects are as follows:

<ul style="list-style-type: none">• Programming IOS/ iPhone• One of Gaming Frameworks<ul style="list-style-type: none">◦ Cocos2d◦ Libgdx◦ Unity◦ Unreal Engine◦ Godot◦ GameMaker Studio◦ Or any other• One of hybrid mobile platforms<ul style="list-style-type: none">◦ Ionic◦ React Native◦ Xamarin◦ Flutter◦ Or any other• Blockchain Tech<ul style="list-style-type: none">◦ Smart Contracts (Ethereum, etc)◦ Decentralized Applications (Dapp's)	<ul style="list-style-type: none">• Single Board Computers and Microcontrollers<ul style="list-style-type: none">◦ Raspberry PI◦ Arduino• Simple Web Servers: NodeJS• Android Related<ul style="list-style-type: none">◦ Android Wear Programming◦ Android TV◦ Android Car Programming◦ Android with Kotlin◦ GPS and Android Location Services◦ Android Sensors◦ Android VR
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Students should mention *at least* a brief history of the technology, technical overview, usages-real life examples, market statistics, competitors, trends and how to code.

For subjects related with coding, how to code can be a general "Hello World" tutorial.

Presentations must take max 20 minutes.

Grading

Labs 25%
Homework 25%
Presentation Project 25%
Final Exam 25%

Reading Materials

- developer.android.com, *resources for Developers – ALL OF THE BEST*
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