2309 CS210/SE410 Course Outline

Subject Code   :   CS210/SE410
Subject Title   :   Mobile Application Development
Course Type   :   Compulsory/ Elective
Level   :   4
Credits   :   3
Teaching Activity   :   Lecture   30 hours
                                  Lab   15 hours

Prior Knowledge*   :   (CS110/SE110CS121/SE121/SE220/CS220) COMPUTER PROGRAMMING/ DATA STRUCTURES\DESIGN AND ANALYSIS OF ALGORITHMS

Class Schedule   :

Class	Week	Time	Classroom	Date
D1	MON	12:30-15:20	C309	2023/09/04-2023/12/17
D1	TUE	12:30-15:20	C309	2023/09/04-2023/12/17
D2	TUE	15:30-18:20	C309	2023/09/04-2023/12/17

Instructor   :   Ye Ben
Contact Number   :   8897-3022
E-mail Address   :   bye@must.edu.mo
Office   :   A307b
Office Hour   :

MON	10:30—12:30
TUE	9:30—12:30
WED	14:30—17:30
THUR	10:30—12:30

COURSE DESCRIPTION

This subject introduces students to programming technologies, design and development related to mobile applications in Android OS. It discusses the fundamental concepts needed to develop application using Android Software Development Kit (SDK). Topics include accessing device capabilities, industry standards, operating systems, programming for mobile applications, useful GUI and media controls, web services and other important components.

Mobile application development is the process of making software for smartphones, tablets and digital assistants, most commonly for the Android and iOS operating systems. The software can be preinstalled on the device, downloaded from a mobile app store or accessed through a mobile web browser. The programming and markup languages used for this kind of software development include Java, Kotlin.

TEXTBOOK

D.Griffiths, and D.Griffiths, Head First Android Development: A Brain-Friendly Guide, 2nd Edition, O'Reilly Media, 2017.

REFERENCES

1) Bill Phillips, Chris Stewart, Brian Hardy, and Kristin Marsicano, Android Programming: The Big Nerd Ranch Guides; 4 edition (November 4, 2019).
2) R. Meier, L.Lake, Professional Android, 4th Edition, Wrox, 2018.

ONLINE RESOURCES

Android Developers: https://developer.android.com/

INTENDED LEARNING OUTCOMES

Upon successful completion of this subject, students will be able to:
1. Understand the knowledge of the evolution of modern mobile operating platforms and their operating systems
2. Analyze the characterization and architecture of mobile applications
3. Ability to create a program for a mobile device using the right programming techniques
4. Ability to define the mobile application development related problems.
5. Ability to find the software, technical documentation and information necessary to complete the development tasks related to mobile platforms
6. Ability to understand the enterprise scale requirements of mobile applications
7. Design and develop mobile applications using a SDK

Weekly Schedule

Week	Topic	Hours	Teaching Method
1	Intro to Mobile Application Development Android Overview	3	lecture/lab
2	Android Application Fundamentals Android Component Lifecycle Android Task and Back Stack	3	lecture/lab
3	Android User Interface The MVC Framework	3	lecture/lab
4	Android UI: Fragments Process, Threads and AsyncTask	3	lecture/lab
5	Services in Android Multimedia Techniques in Android	3	lecture/lab
6	Graphics Support in Android	3	lecture/lab
7	Data Storage Support in Android	3	lecture/lab
8	Location Services and Maps Support in Android	3	lecture/lab
9	Android Networking and Connectivity	3	lecture/lab

10	Client-Server Communication Web Applications	3	lecture/lab
11	Sensors Support in Android	3	lecture/lab
12	Memory Management	2	lecture/lab
13	Testing in Android	2	lecture/lab
14	Deployment of applications	3	lecture/lab
15	Review	3	lecture/lab
16	Project Demo (Final Exam)	…	Exam Week

ASSESSMENT APPROACH

Assessment method (Tentative)	% weight
1. Attendance (Class participation)	10%
2. In-class (Lab) exercise	20%
3. Midterm Exam	20%
4. Project (Final Exam)	50%
Total	100 %

Guideline for Letter Grade:

Marks	Grade
93-100	A+
88-92	A
83-87	A-
78-82	B+
72-77	B
68-71	B-
63-67	C+
58-62	C
53-57	C-
50-52	D
0-49	F
Marks	Grade

Notes:

Students will be assessed on several assessment items (i.e., attendance, class

participation, assignment, in-class (lab) exercise, midterm exam, and the final project.).

The attendance (class participation) evaluates the student's participation of discussion in the classes.

The in-class (lab) exercise is used to evaluate the student's ability to solve spot problems and to make learning lively.

The midterm exam evaluates the student's understanding of the concepts of mobile application development.

The project is used to evaluate the student's ability to apply the knowledge to solve practical problems in mobile application development.