

Syrian Arab Republic	 الجامعة الافتراضية السورية SYRIAN VIRTUAL UNIVERSITY	الجمهورية العربية السورية
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Mobile Programming Course Definition File

1- Basic Information:

Course Name	Mobile Programming
Course ID	IWB303
Contact Hours (Registered Sessions)	18
Contact Hours (Synchronized Sessions)	18
Mid Term Exam	NO
Exam	2
Registered Sessions Work Load	36
Synchronized Session Work Load	18
Credit Hours	4

2- Pre-Requisites:

Course	ID
Web Application Development	IWB202

3- Course General Objectives:

This course teaches the necessary skills to develop Android based applications using the Android Studio Integrated Development Environment.

At the end of this course, students will learn how to:

1. Build mobile applications.
2. Deal with various widgets.
3. Use graphics and animation.
4. Use Google maps and geographical location.
5. Deal with Web APIs.

Intended Learning Outcomes (ILO):

Learning Outcomes codes	Learning Outcomes
LO1	Building mobile applications using Android Studio
LO2	Using main widgets, menus and events
LO3	Dealing with widgets and Action Bar
LO4	Using Layouts
LO5	Building Activities and Intents

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LO6	Manage activity states
LO7	Building lists, using Text to Speech and Speech to Text tools
LO8	Using fragments
LO9	Creating graphics and animation
LO10	Responding to mouse gestures and swiping
LO11	Using Google maps
LO12	Creating notifications
LO13	Building services
LO14	Building SQLite databases
LO15	Connecting to Web APIs

4- Course Content

LO	Course Syllabus	Recorded Sessions	Synchronized Sessions	Type	Additional Notes
LO1	Building mobile applications using Android Studio	1	2	<input type="checkbox"/> Exercises <input type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	Android Studio
LO2	Using main widgets, menus and events	2	4	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	Android Studio
LO3	Dealing with widgets and Action Bar	1	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	Android Studio
LO4	Using Layouts	1	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars	Android Studio

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				<input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
LO5	Building Activities and Intents	1	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	Android Studio
LO6	Manage activity states	2	3	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	Android Studio
LO7	Building lists, using Text to Speech and Speech to Text tools	1	3	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	Android Studio
LO8	Using fragments	1	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	Android Studio
LO9	Creating graphics and animation	1	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	Android Studio
LO10	Responding to mouse gestures and swiping	1	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	Android Studio
LO11	Using Google maps	1	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars	Android Studio

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				<input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	
LO12	Creating notifications	1	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	Android Studio
LO13	Building services	1	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input type="checkbox"/> Others	Android Studio
LO14	Building SQLite databases	1	2	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input checked="" type="checkbox"/> Others	Android Studio
LO15	Connecting to Web APIs	2	4	<input checked="" type="checkbox"/> Exercises <input checked="" type="checkbox"/> Assignments <input type="checkbox"/> Seminars <input checked="" type="checkbox"/> Projects <input checked="" type="checkbox"/> Practices <input checked="" type="checkbox"/> Others	Visual Studio 2013 Android Studio

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5- Assessment Criteria (Related to ILOs)

LO Code	LO	Assessment Type				
		Interactive Synchronized Collaboration	Practice	Exams	Presentations And Face-to-Face Assessments	Reports
LO1	Building mobile applications using Android Studio	X	X			
LO2	Using main widgets, menus and events	X	X	X		
LO3	Dealing with widgets and Action Bar	X	X	X		
LO4	Using Layouts	X	X	X		
LO5	Building Activities and Intents	X	X	X		
LO6	Manage activity states	X	X	X		
LO7	Building lists, using Text to Speech and Speech to Text tools	X	X	X		
LO8	Using fragments	X	X	X		
LO9	Creating graphics and animation	X	X	X		
LO10	Responding to mouse gestures and swiping	X	X	X		
LO11	Using Google maps	X	X	X		
LO12	Creating	X	X	X		

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	notifications					
LO13	Building services	X	X	X		
LO14	Building SQLite databases	X	X	X		
LO15	Connecting to Web APIs	X	X	X		

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6- Course Syllabus (18 hours of total synchronized sessions)

Chapter	Contents	
(1) Building mobile applications using Android Studio	Android Studio	<ul style="list-style-type: none"> • Android • Android Studio • Virtual Devices • Building applications • Application parts • Activity • View • Layout • Widgets • Events • Action Bar • Notification Area
	Example	Example
(2) Main widgets, menus and events	Example 1: Calculator	Example 1: Calculator
	Example 2: Game	Example 2: Game
(3) Widgets and Action Bar	Widgets	<ul style="list-style-type: none"> • Button • ImageView • EditText • CheckBox • RadioButton • Spinner
	Action Bar	Action Bar
(4) Layouts	Layouts	<ul style="list-style-type: none"> • LinearLayout • Gravity • Weight • Widget Box Model • Sizing • Padding • Margin • Grid Layout • Nested layout

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		<ul style="list-style-type: none"> • RelativeLayout • FrameLayout
(5) Building Activities and Intents	Activities	<ul style="list-style-type: none"> • Activity lifecycle • Activity states
	Intents	Intents
	Example	Example
(6) Manage activity states	Activity states	<ul style="list-style-type: none"> • Activity instance state • Lost activity state • Handling rotation • non-persistent/ permanent state • non-persistent state • Preferences
	Files	<ul style="list-style-type: none"> • Internal storage • File • Streams • External storage • Accessing web data
	Camera	Using the Camera
(7) Building lists, using Text to Speech and Speech to Text tools	Lists	<ul style="list-style-type: none"> • ListView • Static Lists • Dynamic Lists • List Adapter • List events
	Text to Speech and Speech to Text	<ul style="list-style-type: none"> • Text to Speech • TextToSpeech Class • speak • Speech to Text
	Example	Example
(8) Fragments	Fragments	<ul style="list-style-type: none"> • Situation-Specific folders • Fragment lifecycle • Fragment Template

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	Example	• Activities and intents
(9) Creating graphics and animation	Graphics	<ul style="list-style-type: none"> • Custom View Template • Canvas Object Methods • Paint • Typeface • Bitmap Images
	Animation	<ul style="list-style-type: none"> • Threads • Mouse and touch events • Keyboard events • Sprite class • Collision detection • WakeLock • Full screen mode
(10) Mouse gestures and swiping	Swiping	Swiping
(11) Using Google maps	Google Maps	<ul style="list-style-type: none"> • MapFragment • Google Map methods • The map camera • Latitude and longitude • Set camera in XML • Set camera in Java code • Placing markers • Lines and paths • Accessing phone's location • Location update events • Emulator location
(12) Notifications	Notifications	• Notification properties

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		<ul style="list-style-type: none"> • Notification events
(13) Services	Services	<ul style="list-style-type: none"> • Service lifecycle • Intent actions • Broadcasting a result • Receiving a broadcast
	Threads	<ul style="list-style-type: none"> • Threads and services • Android thread helper classes
(14) SQLite databases	SQLite databases	<ul style="list-style-type: none"> • Create database • Create tables • SQL statements
(15) Connecting to Web APIs	Web APIs	<ul style="list-style-type: none"> • Create Web APIs using Visual Studio 2013 • Hosting Web APIs • Connecting to Web APIs

7- Practice Tools:

Tool Name	Description
Android Studio	
Visual Studio 2013	

8- References

Android Studio Development Essentials, Neil Smyth, Techotopia, July 2014
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