

**ATTACHMENT 5.**

**Kingdom of Saudi Arabia**  
**The National Commission for Academic Accreditation &**  
**Assessment**

**14014105-3 Mobile Applications**  
**(CS)**

## Course Specifications

Institution	Umm Al Qura University	Date	7 / 7 / 1437
College/Department	College of Computers and Information Systems		

### A. Course Identification and General Information

1. Course title and code: 14014105-3 Mobile Applications			
2. Credit hours 3			
3. Program(s) in which the course is offered. Computer Science			
4. Name of faculty member responsible for the course Curriculum Committee			
5. Level/year at which this course is offered 4th year / (level 9 or 10)			
6. Pre-requisites for this course (if any) 14013104-3 Internet Applications 14014302-3 Database II			
7. Co-requisites for this course (if any)			
8. Location if not on main campus Al-Abidiyah campus (Boys) and Al-Zaher campus (Girls), Makkah Al Mukarramah			
9. Mode of Instruction (mark all that apply)			
a. traditional classroom	<input checked="" type="checkbox"/>	What percentage?	<input type="text" value="100"/>
b. blended (traditional and online)	<input type="checkbox"/>	What percentage?	<input type="text"/>
c. e-learning	<input type="checkbox"/>	What percentage?	<input type="text"/>
d. correspondence	<input type="checkbox"/>	What percentage?	<input type="text"/>
f. other	<input type="checkbox"/>	What percentage?	<input type="text"/>
Comments:			

## B Objectives

<p>1. What is the main purpose for this course?</p> <p>By completing this course the students should be able to:</p> <ol style="list-style-type: none"> <li>1. Use the Java Programming skills to design and implement a complete mobile application for the Android platform.</li> <li>2. Use built-in sensors, messaging, local database access and networking features to handle advanced mobile applications.</li> <li>3. Publish android applications to the cloud.</li> </ol>
<p>2. Briefly describe any plans for developing and improving the course that are being implemented. (e.g. increased use of IT or web based reference material, changes in content as a result of new research in the field)</p> <ol style="list-style-type: none"> <li>1. Increase the use of the latest Web-based reference material and textbooks.</li> <li>2. Review and update the course materials as part of preparation to teach this course.</li> <li>3. Gather students' opinions about their success in achieving course objectives by the end of the semester. This is done through number of survey questions that map one-to-one with course objectives.</li> <li>4. Review and indicate which assessment instrument(s) to be used for assessing each course outcome, and what grading rubric will be used for each instrument.</li> </ol>

## C. Course Description (Note: General description in the form used in Bulletin or handbook)

<p><b>Course Description:</b></p> <p><i>This course teaches students how to design, implement, test, debug and publish mobile applications. Topics include development environment, phone emulator, key programming paradigms, UI design including views and activities, data persistence, messaging and networking, embedded sensors, location based services (e.g., Google Maps), cloud programming, and publishing applications. Concepts are reinforced through a set of weekly programming assignments and group projects.</i></p>
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1. Topics to be Covered		
List of Topics	No. of Weeks	Contact hours
Introduction to Mobile Applications Programming	1	2
Basics of Android Framework	1	2
Building First Android Application in Eclipse	1	2
Activities and Intents	1	2
Getting to know the Android User Interface	1	2
Designing User Interface Using Views	1	2
Displaying Pictures and Menus with Views	1	2

Data Persistence and SQLite Database Programming	2	2
Accessing built-in Sensors and Data Storage	2	2
Messaging and Networking	1	2
Location-Based Services	1	2
Developing Android Services and Testing through Android Emulator	1	2
Publishing Android Applications	1	2

2. Course components (total contact hours and credits per semester):

	Lecture	Tutorial	Laboratory or Studio	Practical	Other:	Total
Contact Hours	30	0	30			60
Credit						

3. Additional private study/learning hours expected for students per week.

6
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4. Course Learning Outcomes in NQF Domains of Learning and Alignment with Assessment Methods and Teaching Strategy

On the table below are the five NQF Learning Domains, numbered in the left column.

**First**, insert the suitable and measurable course learning outcomes required in the appropriate learning domains (see suggestions below the table). **Second**, insert supporting teaching strategies that fit and align with the assessment methods and intended learning outcomes. **Third**, insert appropriate assessment methods that accurately measure and evaluate the learning outcome. Each course learning outcomes, assessment method, and teaching strategy ought to reasonably fit and flow together as an integrated learning and teaching process. (Courses are not required to include learning outcomes from each domain.)

Code #	NQF Learning Domains And Course Learning Outcomes	Course Teaching Strategies	Course Assessment Methods
<b>1.0</b>	<b>Knowledge</b>		
1.1	Students will be able to use the Java Programming skills to design and implement a complete mobile application for the Android platform.	Lectures, tutorial, labs, assignments	Quiz, lab evaluation, projects, assignment evaluation
1.2	Students will be able to use built-in sensors, messaging, local database access and networking features to handle advanced mobile applications.	Lectures, tutorial, labs, assignments	Quiz, lab evaluation, projects, assignment evaluation
1.3			
<b>2.0</b>	<b>Cognitive Skills</b>		
2.1			
2.2			
<b>3.0</b>	<b>Interpersonal Skills &amp; Responsibility</b>		
3.1			
3.2			
<b>4.0</b>	<b>Communication, Information Technology, Numerical</b>		
4.1			
4.2			
<b>5.0</b>	<b>Psychomotor</b>		
5.1	Students will be able to publish android applications to the cloud.	tutorial, labs, assignments	lab evaluation, projects, assignment evaluation
5.2			

5. Map course LOs with the program LOs. (Place course LO #s in the left column and program LO #s across the top.) (I = Introduction P = Proficient A = Advanced)

Course LOs #	Program Learning Outcomes (Use Program LO Code #s provided in the Program Specifications)										
	a	b	c	d	e	f	g	h	i	j	k
<b>1.1</b>	P	A	A	A	I				A	A	I
<b>1.2</b>	A	P	A	P	P				A	A	P
<b>5.1</b>	A	A	A	A	A	P	P		A	A	A

6. Schedule of Assessment Tasks for Students During the Semester

Assessment task (e.g. essay, test, group project, examination, speech, oral presentation, etc.)	Week Due	Proportion of Total Assessment

1	Quiz1	4	5
2	Quiz 2	7	5
3	Quiz 3	9	5
4	Midterm	10	20
5	Group Project	14	25
6	Final	16	40

#### D. Student Academic Counseling and Support

1. Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice. (include amount of time teaching staff are expected to be available each week)

Office hours between 4-6 hours per week.

#### E Learning Resources

##### 1. List Required Textbooks

Slides and lab documentation

Bill Phillips, Chris Stewart, Brian Hardy, and Kristin Marsicano, Android Programming: The Big Nerd Ranch Guide, Big Nerd Ranch LLC, 2nd edition, 2015.

The Busy Coder's Guide to Android Development, Mark L. Murphy, CommonsWare, LLC, 2014.

Christian Keur and Aaron Hillegass, iOS Programming: The Big Nerd Ranch Guide, 5th edition, 2015.

##### 2. List Essential References Materials (Journals, Reports, etc.)

<https://cloud.google.com/solutions/mobile/>

<https://aws.amazon.com/mobile/>

##### 3. List Recommended Textbooks and Reference Material (Journals, Reports, etc)

Professional Android Application Development, Reto Meier, ISBN-10: 1502311135, CreateSpace Independent Publishing Platform (September 9, 2014).

Professional Mobile Application Development, Jeff McWherter, Scott Gowell, ISBN: 978-1-118-20390-3, September 2012, Wrox, Wiley.

The Everything Guide to Mobile Apps: A Practical Guide to Affordable Mobile App Development for Your Business, Peggy Anne Salz, Jennifer Moranz, ISBN-10: 1440555338, Adams Media (March 18, 2013).

PhoneGap Build: Developing Cross Platform Mobile Applications in the Cloud, Bintu Harwani, ISBN 9781466589742, November 21, 2013, Auerbach Publications.

Beginning iOS 6 Development: Exploring the iOS SDK, David Mark, Jack Nutting, Jeff LaMarche, Fredrik Olsson, Apress (2013), ISBN 978-1430245124

Learn HTML5 and JavaScript for iOS: Web Standards-based Apps for iPhone, iPad, and iPod touch, Scott Preston, Apress (2012), ISBN 978-1430240389

Programming in Objective-C, Fifth Edition, Stephen G. Kochan, Pearson Education, Inc. (2013), ISBN 978-0321887283

Maximiliano Firtman, Programming the Mobile Web, 2nd ed., O'Reilly Media, 2013.

Mobile Cloud Computing: Architectures, Algorithms and Applications, Debashis De, ISBN 9781482242836, December 24, 2015, Chapman and Hall/CRC.

Beginning Android Application Development, Wrox, by Wei-Meng Lee; ISBN: 978-1-1180-1711-1, April 2011.

Java: How to Program, 9th Edition, Paul Deitel, Harvey Deitel, 2011

#### 4. List Electronic Materials, Web Sites, Facebook, Twitter, etc.

<http://developer.android.com/index.html>.

<http://developer.android.com/sdk/index.html>.

<http://developer.android.com/resources/index.html>.

<http://developer.android.com/resources/browser.html?tag=tutorial>.

#### 5. Other learning material such as computer-based programs/CD, professional standards or regulations and software.

<http://cs76.tv/2013/summer/>

#### F. Facilities Required

Indicate requirements for the course including size of classrooms and laboratories (i.e. number

of seats in classrooms and laboratories, extent of computer access etc.)
<p>1. Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)</p> <p>Lecture room (max 40 students) Computer lab (max 20 students) Overhead projector and internet connection</p>
<p>2. Computing resources (AV, data show, Smart Board, software, etc.)</p> <p>Emulators for mobile applications Actual mobile phones (both Android and iOS) Mobile applications development tools</p>
<p>3. Other resources (specify, e.g. if specific laboratory equipment is required, list requirements or attach list)</p> <p><a href="https://www.genymotion.com/">https://www.genymotion.com/</a></p>

#### G Course Evaluation and Improvement Processes

<p>1 Strategies for Obtaining Student Feedback on Effectiveness of Teaching</p> <p>A student-feedback form is distributed at the end of the course.</p>
<p>2 Other Strategies for Evaluation of Teaching by the Instructor or by the Department</p>
<p>3 Processes for Improvement of Teaching</p> <p>Adapting teaching style and material based on market trend, state of the art in mobile phone development and student feedback.</p>
<p>4. Processes for Verifying Standards of Student Achievement (e.g. check marking by an independent member teaching staff of a sample of student work, periodic exchange and remarking of tests or a sample of assignments with staff at another institution)</p>



5 Describe the planning arrangements for periodically reviewing course effectiveness and planning for improvement.

Name of Instructor: \_\_\_\_\_

Signature: \_\_\_\_\_ Date Report Completed: \_\_\_\_\_

Name of Course Instructor \_\_\_\_\_

Program Coordinator: \_\_\_\_\_

Signature: \_\_\_\_\_ Date Received: \_\_\_\_\_