

## Course Calendar (Lab Part)

Course No: IT412P  
Course Title: Mobile Computing  
Lecturer: Mervat Abu-Elkheir & Noha A.Hikal  
IS

First Semester: 2017/2018  
Credit hours: 3  
Year: Senior (4<sup>th</sup> year) IT and  
IS

### Course Description

The course teaches the principles of mobile computing. Topics covered include the mobile and wireless networking paradigms, cellular networks, handoff and location management, the basics of satellite networks, the basics of wireless sensor networks, the basics of mobile ad hoc and vehicular networks, multiple radio access protocols, and wireless routing protocols. Mobile application development frameworks and platforms are also touched upon.

### Textbook/Readings

1. **Book 1:** Mobile Computing Principles: Designing and Developing Mobile Applications with UML and XML, R. B'Far, ISBN10: 0521817331, ISBN13: 978-0521817332, Cambridge University Press, 2005.
2. **Book 2:** Introduction to Wireless and Mobile Systems, 3rd Edition, D.P. Agrawal and Q-An Zeng, ISBN10: 1439062056, ISBN13: 978-1439062050, CL Engineering, 2011.
3. **Book 3:** Handbook of wireless networks and mobile computing, J. Zhang, ISBN13: 978-0471419020, John Wiley & Sons, Inc., 2002.
4. **Book 4:** Introduction to Arduino, A. G. Smith, ISBN10: 1463698348, ISBN13: 978-1463698348, available for free at: <http://www.introtoarduino.com>

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5. **Book 4:** Android Tutorial book, available at: [www.tutorialspoint.com/android](http://www.tutorialspoint.com/android).
6. **Resource 1:** Android WiFi, available at: [http://www.tutorialspoint.com/android/android\\_wi-fi.htm](http://www.tutorialspoint.com/android/android_wi-fi.htm). Android Google Maps, available at: <http://www.vogella.com/tutorials/AndroidGoogleMaps/article.html>.
7. **Resource 2:** Android sensors, available at: [http://www.tutorialspoint.com/android/android\\_sensors.htm](http://www.tutorialspoint.com/android/android_sensors.htm).
8. **Resource 3:** Simple Wireless Sensor Network for Temperature Sensing: <http://duino4projects.com/simple-wireless-sensor-network-for-temperature-sensing/>
9. **Resource 4:** Turn Your Android Phone into a Wireless Sensors Hub for Arduino: <http://www.instructables.com/id/SensoDuino-Turn-Your-Android-Phone-into-a-Wireless/>
10. **Resource 5:** Communicate with Your Arduino Through Android: <http://www.allaboutcircuits.com/projects/communicate-with-your-arduino-through-android/>
11. **Resource 6:** XML parsing in Android, available at: <http://www.sitepoint.com/learning-to-parse-xml-data-in-your-android-app/>.

**Note:** The students are responsible for acquiring the textbook without any interference or responsibility on the side of the course lecturer. The lecturer has nothing to do with the textbook other than providing its title to students.

Week	Start Date	Lab Sessions	Assignment	
			No.	Deadline
2	29-9-2018	Revision on Java programming		
3	6-10-2018	Book 4: Android environment setup <ul style="list-style-type: none"> <li>• Setup Java Development Kit (JDK)</li> <li>• Setup Android SDK</li> <li>• Setup Eclipse IDE</li> <li>• Setup Android Development Tools (ADT) Plugin</li> <li>• Create Android Virtual Device</li> </ul>		
4	13-10-2018	Book 4: Application components		

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		<ul style="list-style-type: none"> <li>Activities</li> <li>Services</li> <li>Broadcast receivers</li> <li>Content providers</li> <li>Hello World example</li> </ul>		
5	20-10-208	Book 4: Accessing and organizing resources <ul style="list-style-type: none"> <li>Accessing resources in code</li> <li>Creating activities</li> <li>Creating services</li> </ul>	HW1	
6	27-10-2018	Book 4: Intents and filters <ul style="list-style-type: none"> <li>Intent objects</li> <li>Data</li> <li>Category</li> <li>Component name</li> <li>Types of Intents</li> <li>Intent filters</li> </ul>		
7	4-11-2018	Resource 3: Simple Wireless Sensor Network for Temperature Sensing		
8	11-11-2018	Book 4: UI layouts <ul style="list-style-type: none"> <li>Android layout types</li> <li>Relative layout attributes</li> <li>GridView attributes</li> <li>Sub-activity example</li> <li>View identification</li> </ul> Book 4: UI controls <ul style="list-style-type: none"> <li>TextView</li> <li>AutoCompleteTextView</li> <li>Button</li> <li>CheckBox</li> <li>ToggleButton</li> <li>RadioButton and Group</li> <li>Create UI controls</li> </ul>		
9	18-11-2018	Book 4: Event handling		

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		<ul style="list-style-type: none"> <li>• Event listeners and event handlers</li> <li>• Registration of event listeners</li> </ul>		
10	25-11-2018	Book 4: Styles and themes <ul style="list-style-type: none"> <li>• Defining styles</li> <li>• Using styles</li> <li>• Style inheritance</li> <li>• Android themes</li> </ul>		
11	2-12-2018	Book 4: Location Based Services Book 4: Google Maps Resource 1: Accessing WiFi and Google Maps in Android	HW2	
12	9-12-208	Book 4: Android Sensors Tutorial Resource 2: Accessing sensors in Android		
13	16-12-2018	Resource 4: Turn Your Android Phone into a Wireless Sensors Hub for Arduino Resource 5: Communicate with Your Arduino Through Android Resource 6: Parsing XML data in Android		
14	23-12-2018	ORAL & Lab EXAM		
15	1-1-2019	Final Exam		