



# Module Presenter's Manual

*for*

## **Developing Applications for Wireless Devices (Android 6 Marshmallow)**

***Effective From: September 2017  
Ver. 1.0***

### Amendment Record

Version No.	Effective Date	Change	Replaced Pages
1.0	September 2017	New	-

## Table of Contents

Sr. No.	Details	Page No.
1.	<a href="#">Introduction</a>	1
2.	<a href="#">Information on Session Allocation</a>	1
3.	<a href="#">Module Deliverables available on OnlineVarsity</a>	1
4.	<a href="#">Week-wise Session Schedule</a>	3
5.	<a href="#">Session Coverage</a>	4
6.	<a href="#">Library References</a>	12

## 1. Introduction

At the end of this course, students will be able to:

- Understand Android and system requirements
- Understand the major benefits of Android
- Design the UI of an android application
- Work with Media and Databases
- Create Hyperlinks and Anchors
- Use Style and Themes
- Work with Google API
- Send and receive SMS
- Publish applications

## 2. Information on Session Allocation

Module	Online Hours
Developing Mobile Applications using Android	40

Throughout this Presenter's Manual, the module **Developing Mobile Applications using Android** will be referred to as **ANDRD**.




## 3. Module Deliverables available on OnlineVarsity

To aid the learning process, following are the deliverables

### Student Deliverables:

1. Learner's Guide (eBook)

Resources available on OnlineVarsity for Students:

Icons	Feature - Description/Functionality
	<b>Download Book</b> - Student has the option to download the subject related e-book and read offline.
	<b>Glossary</b> - Student can access a list of subject related specialized words with their definitions.
	<b>FAQ</b> - Student can access frequently asked questions and their answers.

	<p><b>Show Me How</b> - Student can view a step-wise simulation/demonstration of the module related topics.</p>
	<p><b>Practice 4 Me</b> - Student can test and evaluate their understanding of module related topics.</p>
	<p><b>Work Assignments</b> - Student can solve scenario based lab assignments (Hands-on). The faculty will evaluate and give their feedbacks.</p>
	<p><b>Download Source code/Files</b> – Student can download courseware related source files.</p>
	<p><b>References</b> - Student can access additional subject related material for reading.</p>
	<p><b>Feedback</b> - Student can provide feedback on the course material.</p>
	<p><b>Ask to Learn</b> – Student can submit subject related technical queries. Queries submitted will be directed to the particular course coordinator/head.</p>

#### 4. Week-wise Session Schedule

---

- A Session has duration of 2 hrs

➤ **Week-Wise Schedule**

Wk	Day 1	Day 2	Day 3	Day 4
1	Session 1 ANDRD – TL1	Session 2 ANDRD – TL2	Session 3 ANDRD – TL3	Session 4 ANDRD – TL4
2	Session 5 ANDRD – TL5	Session 6 ANDRD – TL6	Session 7 ANDRD – TL7	Session 8 ANDRD – TL8
3	Session 9 ANDRD – TL9	Session 10 ANDRD – TL10	Session 11 ANDRD – TL11	Session 12 ANDRD – TL12
4	Session 13 ANDRD – TL13	Session 14 ANDRD – TL14	Session 15 ANDRD – TL15	Session 16 ANDRD – TL16
5	Session 17 ANDRD – TL17	Session 18 ANDRD – TL18	Session 19 ANDRD – TL19	Session 20 ANDRD – TL20

## 5. Session Coverage

Session No.	Session Title	Session Details	Deliverables' Mapping
1	ANDRD – TL1	<p>All the topics as listed below from Session 1 to Session 4 of <i>Android Application Development</i> book should be covered in this session.</p> <p><b><u>Session 1 – Introduction to Android</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain Android</li> <li>➤ Explain the history of Android</li> <li>➤ Describe the architectural framework of Android</li> <li>➤ Explain the downloading and installation process of Android SDK</li> </ul> <p><b><u>Session 2 – Getting Started with Android</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain the process of creating an Android application</li> <li>➤ Explain the fundamentals of Android application</li> <li>➤ Explain the composition of Android applications framework</li> <li>➤ Explain communication components</li> <li>➤ Explain pre-existing components</li> </ul>	<p><b><u>Android Application Development</u></b></p> <p>SG - Session 1,2,3 &amp; 4 XP - Session 1,2,3 &amp; 4 TG - Session 1,2,3 &amp; 4</p>
2	ANDRD – TL2	<p>The workshop lessons of Session 1 and Session 2 of <i>Android Application Development</i> course should be covered in this session.</p>	<p><b><u>Android Application Development</u></b></p> <p>Session 1 &amp; 2</p>
3	ANDRD – TL3	<p>All the topics as listed below from Session 3 and Session 4 of <i>Android Application Development</i> book should be covered in this session.</p> <p><b><u>Session 3 – Android System Overview</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain Preferences</li> </ul>	<p><b><u>Android Application Development</u></b></p> <p>SG - Session 3 &amp; 4 XP - Session 3 &amp; 4 TG - Session 3 &amp; 4</p>

Session No.	Session Title	Session Details	Deliverables' Mapping
		<ul style="list-style-type: none"> <li>➤ Explain Shared Preferences Storage Structure</li> <li>➤ Explain the Android File System</li> <li>➤ Explain Notifications</li> </ul> <p><b><u>Session 4 – Android User Interface (UI)</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain the process to create the UI for Android applications</li> <li>➤ Describe the views, layouts, UI components, styles and themes</li> <li>➤ Explain the procedure for handling user events</li> </ul>	
4	ANDRD – TL4	The workshop lessons of Session 3 and Session 4 of <i>Android Application Development</i> course should be covered in this session.	<p><b><u>Android Application Development</u></b></p> <p>Session 3 &amp; 4</p>
5	ANDRD – TL5	<p>All the topics as listed below from Session 5 of <i>Android Application Development</i> book should be covered in this session.</p> <p><b><u>Session 5 – More UI Elements</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain the use of adapters</li> <li>➤ Identify the different types of adapters</li> <li>➤ Describe the advanced and complex UI Components</li> <li>➤ Explain the use of custom dialogs</li> <li>➤ Explain and create Custom Widgets</li> <li>➤ Explain and use Material Design Philosophy</li> </ul> <p><b><u>Session 6 – Media Handling</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain the use of graphics in Android</li> <li>➤ Explain animation</li> <li>➤ Explain OpenGL and OpenGL rendering</li> <li>➤ Explain playing of audio and video with Media Player</li> </ul>	<p><b><u>Android Application Development</u></b></p> <p>SG - Session 5,6 XP - Session 5,6 TG - Session 5,6</p>



Session No.	Session Title	Session Details	Deliverables' Mapping
		<ul style="list-style-type: none"> <li>➤ Explain the process of capturing image and video using camera</li> <li>➤ Explain the process of creating a live wallpaper</li> </ul>	
6	ANDRD – TL6	The workshop lessons of Session 5 and Session 6 of <i>Android Application Development</i> course should be covered in this session.	<b><u>Android Application Development</u></b>  Session 5, 6
7	ANDRD – TL7	<p>All the topics as listed below from Session 7 and 8 of <i>Android Application Development</i> book should be covered in this session.</p> <p><b><u>Session 7 – Data Handling and Content Providers</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain the process of saving and loading preferences.</li> <li>➤ Explain persistence of data to file</li> <li>➤ Explain external storage</li> <li>➤ Explain internal storage</li> <li>➤ Explain SQLite Database</li> <li>➤ Explain the process of storing and retrieving data from the database</li> <li>➤ Explain Content Providers</li> <li>➤ Make and use content providers</li> <li>➤ Explain Resources and assets</li> </ul> <p><b><u>Session 8 – Services, Broadcast Receivers, and Intent Filters</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain services</li> <li>➤ Explain service lifecycle</li> <li>➤ Describe broadcast receiver and its working</li> <li>➤ Explain filters</li> <li>➤ Explain intent matching and its rules</li> <li>➤ Explain filters in manifest file and broadcast receivers</li> </ul>	<b><u>Android Application Development</u></b>  SG – Session 7,8 XP – Session 7,8 TG – Session 7,8

Session No.	Session Title	Session Details	Deliverables' Mapping
8	ANDRD – TL8	The workshop lessons of Session 7 and Session 8 of <i>Android Application Development</i> course should be covered in this session.	<b><u>Android Application Development</u></b>  Session 7 & 8
9	ANDRD – TL9	<p>All the topics as listed below from Session 9 and 10 of <i>Android Application Development</i> book should be covered in this session.</p> <p><b><u>Session 9 – Google API</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain API and its uses</li> <li>➤ Explain Google API</li> <li>➤ Explain location based service</li> </ul> <p><b><u>Session 10 – Web Services in Android</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain and use Web Services</li> <li>➤ Explain standards for Web Services Communication</li> <li>➤ Use third party API</li> <li>➤ Create Web Services</li> <li>➤ Understand the correct use of Web Service</li> <li>➤ Explain and use Text to Speech and Voice Recognition</li> </ul>	<b><u>Android Application Development</u></b>  SG - Session 9, 10 XP - Session 9, 10 TG - Session 9, 10
10	ANDRD – TL10	The workshop lessons of Session 9 and 10 of <i>Android Application Development</i> course should be covered in this session.	<b><u>Android Application Development</u></b>  Session 9 & 10
11	ANDRD – TL11	<p>All the topics as listed below from Session 11 of <i>Android Application Development</i> book should be covered in this session.</p> <p><b><u>Session 11 – Wireless and Networking</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain Bluetooth, Network, Wi-Fi, and NFC</li> <li>➤ Explain the process of using Bluetooth</li> <li>➤ Explain network management and Internet connectivity</li> <li>➤ Explain working with Wi-Fi</li> </ul>	<b><u>Android Application Development</u></b>  SG - Session 11, 12 XP - Session 11, 12 TG - Session 11, 12

Session No.	Session Title	Session Details	Deliverables' Mapping
		<ul style="list-style-type: none"> <li>➤ Explain working with NFC</li> </ul> <p><b><u>Session 12 – Telephony, SMS, and VoIP</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain Telephony</li> <li>➤ Explain Telephony Manager</li> <li>➤ Explain SMS</li> <li>➤ Explain the process of sending SMS messages programmatically from within your application</li> <li>➤ Explain the process of receiving incoming SMS messages</li> <li>➤ Explain SIP and VoIP</li> <li>➤ Use the SIP Framework to make a VoIP application</li> </ul>	
12	ANDRD – TL12	The workshop lessons of Session 11 and Session 12 of <i>Android Application Development</i> course should be covered in this session.	<p><b><u>Android Application Development</u></b></p> <p>Session 11 &amp; 12</p>
13	ANDRD – TL13	<p>All the topics as listed below from Session 13 of <i>Android Application Development</i> book should be covered in this session.</p> <p><b><u>Session 13 – Sensors</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain various types of Sensors</li> <li>➤ Use Motion Sensors</li> <li>➤ Use Position Sensors</li> <li>➤ Use Status Sensors</li> <li>➤ Explain Context aware services based on sensor information</li> </ul> <p><b><u>Session 14 – Google Play Store</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain the requirement for Google Play Store</li> <li>➤ Explain the different versions and feature set</li> </ul>	<p><b><u>Android Application Development</u></b></p> <p>SG - Session 13, 14 XP - Session 13, 14 TG - Session 13, 14</p>

Session No.	Session Title	Session Details	Deliverables' Mapping
		<ul style="list-style-type: none"> <li>➤ Explain the share of Android in the market</li> <li>➤ Explain different kinds of devices available in the market</li> <li>➤ Describes the making of an .apk file</li> <li>➤ Explain the process of publishing the .apk file in Google Play Store</li> <li>➤ Explain the best practices to be followed</li> </ul> <p>Explain good marketing and promotion strategies</p>	
14	ANDRD – TL14	The workshop lessons of Session 13 and Session 14 of <i>Android Application Development</i> course should be covered in this session.	<p><b><u>Android Application Development</u></b></p> <p>Session 13 &amp; 14</p>
15	ANDRD – TL15	<p>All the topics as listed below from Session 15 of <i>Android Application Development</i> book should be covered in this session.</p> <p><b><u>Session 15 – Android Studio 2.1 and Android 6.0 Marshmallow</u></b></p> <ul style="list-style-type: none"> <li>➤ Identify the updated features of Android Studio 2.1</li> <li>➤ Explain the updated and new features of Android 6.0 Marshmallow</li> </ul> <p><b><u>Session 16 – Material Design</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain material design</li> <li>➤ Describe the material design environment elements</li> <li>➤ Describe various material design elements</li> </ul>	<p><b><u>Android Application Development</u></b></p> <p>SG - Session 15, 16 XP - Session 15, 16 TG - Session 15, 16</p>
16	ANDRD – TL16	The workshop lessons of Session 15 and Session 16 of <i>Android Application Development</i> course should be covered in this session.	<p><b><u>Android Application Development</u></b></p> <p>Session 15 &amp; 16</p>

Session No.	Session Title	Session Details	Deliverables' Mapping
17	ANDRD – TL17	<p>All the topics as listed below from Session 17 and Session 18 of <i>Android Application Development</i> book should be covered in this session.</p> <p><b><u>Session 17 – Android Interface Definition Language</u></b></p> <ul style="list-style-type: none"> <li>➤ Explain the AIDL Interface</li> <li>➤ Explain how to create an AIDL file</li> <li>➤ Explain how to implement the interface</li> <li>➤ Explain the process of communication through IPC</li> <li>➤ Explain how the IPC method is invoked</li> </ul> <p><b><u>Session 18 – Android Native Development Kit (NDK)</u></b></p> <ul style="list-style-type: none"> <li>➤ Describe app components</li> <li>➤ Explain the process to install the NDK</li> <li>➤ Explain the steps to create and test a sample native app</li> </ul>	<p><b><u>Android Application Development</u></b></p> <p>SG - Session 17 &amp; 18 XP - Session 17 &amp; 18 TG - Session 17 &amp; 18</p>
18	ANDRD – TL18	<p>The workshop lessons of Session 17 of <i>Android Application Development</i> course should be covered in this session.</p>	<p><b><u>Android Application Development</u></b></p> <p>Session 17</p>
19	ANDRD – TL19	<p>All the topics as listed below from Session 18 of <i>Android Application Development</i> book should be covered in this session.</p> <p><b><u>Session 18 – Android Native Development Kit (NDK)</u></b></p> <ul style="list-style-type: none"> <li>➤ Describe app components</li> <li>➤ Explain the process to install the NDK</li> <li>➤ Explain the steps to create and test a sample native app</li> </ul>	<p><b><u>Android Application Development</u></b></p> <p>SG - Session 18 XP - Session 18 TG - Session 18</p>

Session No.	Session Title	Session Details	Deliverables' Mapping
20	ANDRD – TL20	The workshop lessons of Session 18 of <i>Android Application Development</i> course should be covered in this session.	<b><u>Android Application Development</u></b>  Session 18

## 6. Library References

---

- |  |
|--|
| ➤ <b>Android 6 for Programmers: An App-Driven Approach (3rd Edition)</b> by Paul Deitel, Harvey Deitel, and Alexander Wald |
| ➤ <b>Android 6 Essentials</b> by Yossi Elkrief   |

~~ End of Document ~~

For Aptech Centre Use Only