Lovely Professional University, Punjab

Course Code	Course Title	Course Planner	Lectures	Tutorials	Practicals	Credits
CSE224	FUNDAMENTALS OF ANDROID	21482::Amarinder Kaur	2	0	2	3
Course Weightage	ATT: 5 CAP: 45 ETP: 50	**Exam Category: X6: Mid Term Exam: Not Applicable – End Term Exam: Practical**				

Course Outcomes :Through this course students should be able to

CO1 :: recall various components of Android system architecture

CO2 :: illustrate the different layouts used in android applications

CO3 :: classify the device architecture and build the permissions model required to maintain privacy

CO4 :: evaluate android mobile apps running on emulators and physical devices

CO5 :: summarize the prepared activities into single app

CO6 :: apply different menus based on application theme and user interface

	TextBooks (T)		
Sr No	**Title**	**Author**	**Publisher Name**
T-1	BEGINNING ANDROID PROGRAMMING WITH ANDROID STUDIO	J. F. DIMARZIO	WILEY

	Reference Books (R)		
Sr No	**Title**	**Author**	**Publisher Name**
R-1	ANDROID APPLICATION DEVELOPMENT ALL-IN-ONE FOR DUMMIES	BARRY BURD	WILEY

Relevant Websites (RW)		
Sr No	**(Web address) (only if relevant to the course)**	**Salient Features**
RW-1	http://www.tutorialspoint.com/android/	Learn how to program in android environment
RW-2	https://developer.android.com/	Structure of Android Project

Software/Equipments/Databases		
Sr No	**(S/E/D) (only if relevant to the course)**	**Salient Features**
SW-1	Android Studio	IDE for developing android app

LTP week distribution: (LTP Weeks)	
Weeks before MTE	7
Weeks After MTE	7
Spill Over (Lecture)	4

Detailed Plan For Lectures

Week Number	Lecture Number	Broad Topic(Sub Topic)	Chapters/Sections of Text/reference books	Other Readings, Relevant Websites, Audio Visual Aids, software and Virtual Labs	Lecture Description	Learning Outcomes	Pedagogical Tool Demonstration/ Case Study / Images / animation / ppt etc. Planned	Live Examples
Week 1	Lecture 1	Introduction to Android and Kotlin(Introduction to Kotlin)	T-1		Lecture 0 + Introduction to Android Platform + Kotlin basics	Usage of Android Environment	Live Demonstration using Android Studio	Can we think our life without smart phones?
	Lecture 2	Introduction to Android and Kotlin(Variable, Data type, Operator, Control Flow, Function, Array, String, OOPs Concept)	T-1 R-1	RW-1	Discuss all the variables, data types, operators and data flow control statements ,Function, Array, String, OOPs Concept of Kotlin	Usage of Android variables, data types, operators , data flow control statements ,Function, Array, String, OOPs Concept of Kotlin	Live Demonstration using Android Studio	
Week 2	Lecture 3	Introduction to Android and Kotlin(Variable, Data type, Operator, Control Flow, Function, Array, String, OOPs Concept)	T-1 R-1	RW-1	Discuss all the variables, data types, operators and data flow control statements ,Function, Array, String, OOPs Concept of Kotlin	Usage of Android variables, data types, operators , data flow control statements ,Function, Array, String, OOPs Concept of Kotlin	Live Demonstration using Android Studio	

Week 2	Lecture 4	Introduction to Android and Kotlin(Variable, Data type, Operator, Control Flow, Function, Array, String, OOPs Concept)	T-1 R-1	RW-1	Discuss all the variables, data types, operators and data flow control statements ,Function, Array, String, OOPs Concept of Kotlin	Usage of Android variables, data types, operators , data flow control statements ,Function, Array, String, OOPs Concept of Kotlin	Live Demonstration using Android Studio	
Week 3	Lecture 5	Introduction to Android and Kotlin(The Activity and its Life Cycle)	T-1		Activity life cycle and its programming	Usage of Android Environment	Live Demonstration using Android Studio	
	Lecture 6	User Interfaces(Layout: Linear, Relative, Grid and Constraint)	T-1 R-1		Introduction to application's Layouts (Both Ways),Working on All components(View Components/Widgets Button, TextView, EditText, ImageView, CheckBox, RadioButtton, Spinner, ListView) of android	To use layouts, Components and the activity classes for designing Apps	Live Demonstration using Android Studio	Organization of icons on the screen/Image view of live apps like calculator
Week 4	Lecture 7	User Interfaces(Layout: Linear, Relative, Grid and Constraint)	T-1 R-1		Introduction to application's Layouts (Both Ways),Working on All components(View Components/Widgets Button, TextView, EditText, ImageView, CheckBox, RadioButtton, Spinner, ListView) of android	To use layouts, Components and the activity classes for designing Apps	Live Demonstration using Android Studio	Organization of icons on the screen/Image view of live apps like calculator
	Lecture 8	User Interfaces(Layout: Linear, Relative, Grid and Constraint)	T-1 R-1		Introduction to application's Layouts (Both Ways),Working on All components(View Components/Widgets Button, TextView, EditText, ImageView, CheckBox, RadioButtton, Spinner, ListView) of android	To use layouts, Components and the activity classes for designing Apps	Live Demonstration using Android Studio	Organization of icons on the screen/Image view of live apps like calculator

Week 5	Lecture 9	User Interfaces(Layout: Linear, Relative, Grid and Constraint)	T-1 R-1		Introduction to application's Layouts (Both Ways),Working on All components(View Components/Widgets Button, TextView, EditText, ImageView, CheckBox, RadioButtton, Spinner, ListView) of android	To use layouts, Components and the activity classes for designing Apps	Live Demonstration using Android Studio	Organization of icons on the screen/Image view of live apps like calculator
	Lecture 10	User Interfaces(Layout: Linear, Relative, Grid and Constraint)	T-1 R-1		Introduction to application's Layouts (Both Ways),Working on All components(View Components/Widgets Button, TextView, EditText, ImageView, CheckBox, RadioButtton, Spinner, ListView) of android	To use layouts, Components and the activity classes for designing Apps	Live Demonstration using Android Studio	Organization of icons on the screen/Image view of live apps like calculator
Week 6	Lecture 11	User Interfaces(Layout: Linear, Relative, Grid and Constraint)	T-1 R-1		Introduction to application's Layouts (Both Ways),Working on All components(View Components/Widgets Button, TextView, EditText, ImageView, CheckBox, RadioButtton, Spinner, ListView) of android	To use layouts, Components and the activity classes for designing Apps	Live Demonstration using Android Studio	Organization of icons on the screen/Image view of live apps like calculator
	Lecture 12	Localize your app(App localization)	T-1		Introduction to App Localization and Log	Students will be able to learn how to Use different methods of Log	Live Demonstration using Android Studio	
		Localize your app(Log)	T-1		Introduction to App Localization and Log	Students will be able to learn how to Use different methods of Log	Live Demonstration using Android Studio	
Week 7	Lecture 13	Localize your app(Snackbar)	T-1		Introduction and use of Snack Bar	Learning to program for Snack Bar	Live Demonstration using Android Studio	
		SPILL OVER						
Week 7	Lecture 14				Spill Over			

An instruction plan is only a tentative plan. The teacher may make some changes in his/her teaching plan. The students are advised to use syllabus for preparation of all examinations. The students are expected to keep themselves updated on the contemporary issues related to the course. Upto 20% of the questions in any examination/Academic tasks can be asked from such issues even if not explicitly mentioned in the instruction plan.

		MID-TERM						
Week 8	Lecture 15	Intents and Toast(Intent Class)	T-1	RW-2	The Intent class which include both Implicit and explicit intent	To write app code using Intent class	Live Demonstration using Android Studio	
	Lecture 16	Intents and Toast(Intent Class)	T-1	RW-2	The Intent class which include both Implicit and explicit intent	To write app code using Intent class	Live Demonstration using Android Studio	
Week 9	Lecture 17	Intents and Toast(Implicit and explicit Intent)	T-1	SW-1	Introduction to the customized toast	Usage of these Toast and customized toast in real life apps	Live Demonstration using Android Studio	
		Intents and Toast(Toast event implementation)	T-1		Introduction to the customized toast	Usage of these Toast and customized toast in real life apps	Live Demonstration using Android Studio	
	Lecture 18	Intents and Toast(Implicit and explicit Intent)	T-1	SW-1	Introduction to the customized toast	Usage of these Toast and customized toast in real life apps	Live Demonstration using Android Studio	
		Intents and Toast(Toast event implementation)	T-1		Introduction to the customized toast	Usage of these Toast and customized toast in real life apps	Live Demonstration using Android Studio	
Week 10	Lecture 19	Intents and Toast(Implicit and explicit Intent)	T-1	SW-1	Introduction to the customized toast	Usage of these Toast and customized toast in real life apps	Live Demonstration using Android Studio	
		Intents and Toast(Toast event implementation)	T-1		Introduction to the customized toast	Usage of these Toast and customized toast in real life apps	Live Demonstration using Android Studio	
	Lecture 20	Intents and Toast(Action Bar)	T-1		Introduction to the Action Bar	Usage of these Action Bar	Live Demonstration using Android Studio	
Week 11	Lecture 21	Intents and Toast(Action Bar)	T-1		Introduction to the Action Bar	Usage of these Action Bar	Live Demonstration using Android Studio	

Week 11	Lecture 22	Permissions and App chooser(Request App Permissions)	T-1		Introduction to handle the permissions request response	Student will be able to learn the how to response the permission request	Live Demonstration using Android Studio	
		Permissions and App chooser(Handle the permissions request response)	T-1		Introduction to handle the permissions request response	Student will be able to learn the how to response the permission request	Live Demonstration using Android Studio	
Week 12	Lecture 23	Permissions and App chooser(Request App Permissions)	T-1		Introduction to handle the permissions request response	Student will be able to learn the how to response the permission request	Live Demonstration using Android Studio	
		Permissions and App chooser(Handle the permissions request response)	T-1		Introduction to handle the permissions request response	Student will be able to learn the how to response the permission request	Live Demonstration using Android Studio	
	Lecture 24	Permissions and App chooser(App chooser)	T-1		Introduction to handle the permissions request response	Student will be able to learn the how to response the permission request	Live Demonstration using Android Studio	
Week 13	Lecture 25	Menus and Dialogs(Option Menu)	T-1		Introduction to all types of Menu	Students will be able to use all types of Menus in their applications	Live Demonstration using Android Studio	
		Menus and Dialogs(Context Menu)	T-1		Introduction to all types of Menu	Students will be able to use all types of Menus in their applications	Live Demonstration using Android Studio	
		Menus and Dialogs(Popup Menu)	T-1		Introduction to all types of Menu	Students will be able to use all types of Menus in their applications	Live Demonstration using Android Studio	
	Lecture 26	Menus and Dialogs(Option Menu)	T-1		Introduction to all types of Menu	Students will be able to use all types of Menus in their applications	Live Demonstration using Android Studio	
		Menus and Dialogs(Context Menu)	T-1		Introduction to all types of Menu	Students will be able to use all types of Menus in their applications	Live Demonstration using Android Studio	
		Menus and Dialogs(Popup Menu)	T-1		Introduction to all types of Menu	Students will be able to use all types of Menus in their applications	Live Demonstration using Android Studio	

Week 14	Lecture 27	Menus and Dialogs(Alert Dialog)	T-1		Introduction to all types of Menu	Students will be able to use all types of Menus in their applications	Live Demonstration using Android Studio	
		Menus and Dialogs(Custom Alert Dialog)	T-1		Introduction to all types of Menu	Students will be able to use all types of Menus in their applications	Live Demonstration using Android Studio	
		SPILL OVER						
Week 14	Lecture 28				Spill Over			
Week 15	Lecture 29				Spill Over			
	Lecture 30				Spill Over			

Scheme for CA:

CA Category of this Course Code is:A0203 (2 best out of 3)

Component	Weightage (%)	Mapped CO(s)
BYOD-Practical 1	50	CO1, CO2
BYOD-Practical 2	50	CO3, CO4
BYOD-Practical 3	50	CO5, CO6

Details of Academic Task(s)

Academic Task	Objective	Detail of Academic Task	Nature of Academic Task (group/individuals)	Academic Task Mode	Marks	Allottment / submission Week
BYOD-Practical 1	To enhance the logical and Programming skills of the students	Lecture 1 to Lecture 11, code based test	Individual	Online	30	5 / 6
BYOD-Practical 2	To enhance the logical and Programming skills of the students	Lecture 12 to Lecture 21 , code based test	Individual	Online	30	8 / 9
BYOD-Practical 3	To enhance the logical and Programming skills of the students	Lecture 22 to Lecture 27 , code based test	Individual	Online	30	12 / 13

MOOCs/ Certification etc. mapped with the Academic Task(s)

Academic Task	Name Of Certification/Online Course/Test/Competition mapped	Type	Offered By Organisation
BYOD-Practical 1	KOTLIN FOR JAVA DEVELOPER	MOOCs	COURSERA
BYOD-Practical 2	GOOGLE ASSOCIATE ANDROID DEVELOPER CERTIFICATION	Industry Certification	GOOGLE DEVELOPER CERTIFICATION
BYOD-Practical 3	GOOGLE ASSOCIATE ANDROID DEVELOPER CERTIFICATION	Industry Certification	GOOGLE DEVELOPER CERTIFICATION

Where MOOCs/ Certification etc. are mapped with Academic Tasks:
1. Students have choice to appear for Academic Task or MOOCs etc.
2. The student may appear for both, In this case best obtained marks will be considered.

Detailed Plan For Practicals

Practical No	Broad topic	Subtopic	Other Readings	Learning Outcomes
Practical 1	Basic of Kotlin	Create an application which will contain the basic concepts of Kotlin.	RW-1	Usage of Android variables, data types, operators , data flow control statements ,Function, Array, String, OOPs Concept of Kotlin
Practical 2	Basic of Kotlin	Create an application which will contain the basic concepts of Kotlin.	RW-1	Usage of Android variables, data types, operators , data flow control statements ,Function, Array, String, OOPs Concept of Kotlin
Practical 3	Basic of Kotlin	Create an application which will contain the basic concepts of Kotlin.	RW-1	Usage of Android variables, data types, operators , data flow control statements ,Function, Array, String, OOPs Concept of Kotlin
Practical 4	Basic of Kotlin	Create an application which will contain the basic concepts of Kotlin.	RW-1	Usage of Android variables, data types, operators , data flow control statements ,Function, Array, String, OOPs Concept of Kotlin
Practical 5	Basic of Kotlin	Create an application which will contain the basic concepts of Kotlin.	RW-1	Usage of Android variables, data types, operators , data flow control statements ,Function, Array, String, OOPs Concept of Kotlin
Practical 6	Basic of Kotlin	Create an application which will contain the basic concepts of Kotlin.	RW-1	Usage of Android variables, data types, operators , data flow control statements ,Function, Array, String, OOPs Concept of Kotlin
Practical 7	Layouts	Create an application which will contain different types of layouts like linear, relative etc.		To use layouts and the activity classes for designing Apps
Practical 8	Layouts	Create an application which will contain different types of layouts like linear, relative etc.		To use layouts and the activity classes for designing Apps

Practical 9	SnackBar	Create an application based on snackbar	RW-1	Learning to use Snack Bar in the apps
Practical 10	SnackBar	Create an application based on snackbar	RW-1	Learning to use Snack Bar in the apps
Practical 11	BYOD-Practical 1			
Practical 12	BYOD-Practical 1			
Practical 13	Intents	Create an application based on implicit intent and explicit intent.	RW-2	to use of implicit intent and explicit intent.
Practical 14	Intents	Create an application based on implicit intent and explicit intent.	RW-2	to use of implicit intent and explicit intent.
Practical 15	Intents	Create an application based on implicit intent and explicit intent.	RW-2	to use of implicit intent and explicit intent.
Practical 16	Intents	Create an application based on implicit intent and explicit intent.	RW-2	to use of implicit intent and explicit intent.
Practical 17	BYOD-Practical 2			
Practical 18	BYOD-Practical 2			
Practical 19	Toast	Create an application which will display toast in the application.		Learning to use toast in the applications.
Practical 20	Toast	Create an application which will display toast in the application.		Learning to use toast in the applications.
Practical 21	Menus	Create an application which will contain different types of Menus like option, context etc.	RW-2	Learning to use of different types of menu in the apps.
Practical 22	Menus	Create an application which will contain different types of Menus like option, context etc.	RW-2	Learning to use of different types of menu in the apps.
Practical 23	BYOD-Practical 3			
Practical 24	BYOD-Practical 3			
Practical 25	Dialogs	Create an application to implement different types of dialogs.	RW-1	Students will be able to use all types of Alert Dialog in their applications
Practical 26	Dialogs	Create an application to implement different types of dialogs.	RW-1	Students will be able to use all types of Alert Dialog in their applications
Practical 27	Dialogs	Create an application to implement different types of dialogs.	RW-1	Students will be able to use all types of Alert Dialog in their applications

Practical 28	Dialogs	Create an application to implement different types of dialogs.	RW-1	Students will be able to use all types of Alert Dialog in their applications
	SPILL OVER			
Practical 29	Spill Over			