Course Code	PCA20D04J	Course Name	ANDROID APPLICATIONS DEVELOPMENT	Course Category	D	*Discipline Elective* Course	L	T	P	C
							3	0	2	4

Pre-requisite Courses	Nil	Co-requisite Courses	Nil	Progressive Courses	Nil
Course Offering Department	Computer Applications		Data Book / Codes/Standards	Nil	

Course Learning Rationale (CLR):	The purpose of learning this course is to,

CLR-1 :	*To understand mobile application development trends and Android platform*
CLR-2 :	*To analyze the need of simple applications, game development, Location map based services*
CLR-3 :	*To enable the learner for aspiring careers in Android Mobile application development areas*
CLR-4 :	*To Utilize Android Studio to create simple and complex applications*
CLR-5 :	*To Plan, prepare and build an original Android from concept to working program*
CLR-6 :	*To Publish an application to the Android Market*

Course Learning Outcomes (CLO):	At the end of this course, learners will be able to:	Learning Level of Thinking (Bloom)	Expected Proficiency (%)	Expected Attainment (%)	Program Learning Outcomes (PLO) 1 Disciplinary Knowledge	2 Critical Thinking	3 Problem Solving	4 Analytical Reasoning	5 Research Skills	6 Team Work	7 Scientific Reasoning	8 Reflective Thinking	9 Self-Directed Learning	10 Multicultural Competence	11 Ethical Reasoning	12 Community Engagement	13 ICT Skills	14 Leadership Skills	15 Life Long Learning
CLO-1 :	*Identify different classification of cybercrimes.*	3	80	70	L	H	-	H	L	-	-	-	L	L	-	H	-	-	-
CLO-2 :	*Apply the logic of Performing cyber forensics.*	3	85	75	M	H	L	M	L	-	-	-	M	L	-	H	-	-	-
CLO-3 :	*Analyze about the various kinds of vulnerabilities and scanning them.*	3	75	70	M	H	M	H	L	-	-	-	M	L	-	H	-	-	-
CLO-4 :	*Apply the various types of firewalls to effective ensure security of the premises*	3	85	80	M	H	M	H	L	-	-	-	M	L	-	H	-	-	-
CLO-5 :	*Identify and solve Web Treats for Organizations: The Evils and Perils*	3	85	75	H	H	M	H	L	-	-	-	M	L	-	H	-	-	-
CLO-6 :	*Apply tools and methods of cyber-crime concepts to solve security problems & Learn about providing Security solutions*	3	80	70	L	H	-	H	L	-	-	-	L	L	-	H	-	-	-

Duration (hour)		15	15	15	15	15
S-1	SLO-1	Getting started with android programming-Introduction	Understanding the component of a screen	Data persistence	Messaging and networking	Location based services
	SLO-2	Android versions and its feature set	Views and viewgroups	Saving and loading user preferences	SMS messaging	Displaying maps
S-2	SLO-1	Android architecture	Absolute layout, table layout, relative layout, frame and scrollview	Using getSharedPreferences() and getPreferences()	Sending SMS messages programmatically	Creating the project
	SLO-2	Android devices in the market	Adapting to display orientation	Persisting data to files	Getting feedback after sending the message	Obtaining the maps API key
S-3	SLO-1	Obtaining the required tools	Managing changes to screen orientation	Saving to internal storage	Sending SMS messages using intent	Displaying the map

	SLO-2	Eclipse, Android SDK, Android Development Tools(ADT)	Detecting orientation changes, Controlling the orientation activity, Creating the user interface programmatically	Saving to external storage,	Receiving SMS messages, Updating an activity from BroadcastReceiver,	Displaying the Zoom control
S-4-5	**SLO-1**	**Lab1:Login page creation with Toast message**	**Lab 4:implement implicit Intent**	**Lab 7: Student Registration form using Listview**	**Lab 10:Shared preferences**	**Lab 13:Simulate paintbrush applications**
S-6	SLO-1	Creating Android Virtual Devices(AVD)	Listening for UI notifications	SQLite database	Invoking an activity from Broadcast Receiver	Changing views
	SLO-2	Example: Creating android application	designing user interface using views	SQLite database Creating and using databases,	Example program: SMS messages	Satelite View
S-7	SLO-1	Anatomy of an Android Application	Basic views	Insert,display and delete	Sending E-mail	Navigating to a specific location
	SLO-2	Real time applications	Picker views	Creating the DBAdapter helper class	Example: How to send email in android application	Adding markers
S-8	SLO-1	Linking activities using intents	List views	Using the database programmatically	Networking	Getting the location that was touched
	SLO-2	Resolving intent filter collision	Displaying pictures and menus with views	Example: Add, retrieve, update, delete a contact	Binary data and Text data	Get coding and reverse geocoding
S-9-10	**SLO-1** **SLO-2**	**Lab 2:Student registration form with Toast message**	**Lab 5:Implement Time Picker**	**Lab 8: Implement Context menu**	**Lab 11:SQLite database**	**Lab 14:Draw an object**
S-11	SLO-1	Returning results from an intent	Using menus with views	Content providers	Accessing Web services	getting location data
	SLO-2	Passing data using an intent object	Some additional views	Sharing data in android using content provider	Performing Asynchronous Calls	Monitoring a location
S-12	SLO-1	Implicit Intent	Context Menu	Predefined query string constants	Downloading text files	Preparing for publishing APK files
	SLO-2	Example program for Implicit Intent	Example program for Context menu	Projections,Filtering,sorting	Example program for downloading textfiles	Deploying apk files
S-13	SLO-1	Explicit Intent	Option menu	Creating your own content providers	downloading binary data	Using adb.exe tool and web server
	SLO-2	Example program for Explicit	Example program for Optional Menu	Using the content providers	Example program for downloading binary data	Android market
S-14-15	**SLO-1** **SLO-2**	**Lab3: Implement Explicit Intent**	**Lab 6:Implement Date Picker**	**Lab 9: Implement Option Menu**	**Lab 12:SQLite database**	**Lab 15:Implement Webview**

Learning Resources	*1.WeiMeng Lee (2012), "Beginning Android Application Development", Wrox Publications (John Wiley, New York) (For 1 to 5 units).*	1.Ed Burnette (2010), "Hello Android: Introducing Google's Mobile Development Platform", The Pragmatic Publishers, 3rd edition, North Carolina USA 2.Reto Meier (2012), "Professional Android 4 Application Development", Wrox Publications (John Wiley, New York). 3.ZigurdMednieks, Laird Dornin, Blake Meike G, Masumi Nakamura (2011), "Programming Android: Java Programming for the New Generation of Mobile Devices", OReilly Media, USA

Learning Assessment											
Level	Bloom's Level of Thinking	Continuous Learning Assessment (50% weightage)								Final Examination (50% weightage)	
		CLA – 1 (10%)		CLA – 2 (10%)		CLA – 3 (20%)		CLA – 4 (10%) #			
		Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice	Theory	Practice
Level 1	Remember	20%	20%	15%	15%	15%	15%	15%	15%	15%	15%
	Understand										
Level 2	Apply	20%	20%	20%	20%	20%	20%	20%	20%	20%	20%
	Analyze										
Level 3	Evaluate	10%	10%	15%	15%	15%	15%	15%	15%	15%	15%
	Create										
	Total	100 %		100 %		100 %		100 %		100 %	

CLA – 4 can be from any combination of these: Assignments, Seminars, Tech Talks, Mini-Projects, Case-Studies, Self-Study, MOOCs, Certifications, Conf. Paper etc.,

Course Designers		
Experts from Industry	Experts from Higher Technical Institutions	Internal Experts
Mr.G.Muruganandam, Group Project Manager, HCL Technologies, Chennai	*Dr.S.Gopinathan, Professor, University of Madras, Chennai*	*Dr.S.Umarani, SRMIST*
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