Program :	**Diploma in Computer Engineering / Computer Hardware Engineering / Cyber Forensics and Information Security**
Course Code : **6138**	Course Title: **Smart Device Programming Lab**
Semester : **6**	Credits: **1.5**
Course Category: **Program Core**	
Periods per week: **3 (L:0 T:0 P:3)**	Periods per semester: **45**

Course Objectives:

- Familiarize the software tools for mobile applications.
- Understand the development of mobile applications.
- Introduce the future trends in development of mobile applications.

Course Prerequisites:

Topic	Course code	Course name	Semester
Object Oriented Concepts		Object Oriented Programming	4

Course Outcomes :

On completion of the course, the student will be able to:

COn	Description	Duration (Hours)	Cognitive Level
CO1	Set up an environment to develop android applications	8	Applying
CO2	Make use of user interfaces in Android applications	12	Applying
CO3	Develop Android based database applications	12	Applying
CO4	Make use of HTML5.0 and JavaScript in mobile applications	10	Applying
	Lab Exam	3	

CO – PO Mapping

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7
CO1	3			3			
CO2	3			3			
CO3	3			3			
CO4	3	3	3	3		3	

3-Strongly mapped, 2-Moderately mapped , 1-Weakly mapped

Course Outline

Module Outcomes	Name of the Experiment	Duration (Hours)	Cognitive Level
CO1	**Set up an environment to develop android applications.**		
M1.01	Set up Android Studio in Windows/ Ubuntu	3	Understanding
M1.02	Create custom Android Virtual Device(AVD) & Emulate device with different screen size	2	Understanding
M1.03	Implement a simple application and execute using emulator and mobile	3	Applying
CO2	**Make use of user interfaces in Android applications**		
M2.01	Implement a program to toast a message.	2	Applying
M2.02	Implement programs for linking activities, data passing between activities using Intent	3	Applying
M2.03	Implement programs using Linear, Relative, Table, Absolute, Frame layouts	2	Applying
M2.04	Design GUI using TextView, EditText, Button, RadioGroup, RadioButton and CheckBox	3	Applying
M2.05	Implement a program to integrate a website inside the application using Webview	2	Applying
	Lab Exam – I	1.5	

CO3	**Develop Android based database applications.**		
M3.01	Implement a program to save data using the SharedPreferences Object	4	Applying
M3.02	Implement a program to save data to Internal Storage as files	4	Applying
M3.03	Implement a program to insert data into SQLite database	4	Applying
CO4	**Make use of HTML 5.0 and JavaScript in Mobile Application Development.**		
M4.01	Create simple HTML5 applications	2	Applying
M4.02	Implement web based applications using HTML5,CSS and JavaScript	3	Applying
M4.03	Open Ended Experiments **	5	Applying
	Lab Exam – II	1.5	

**** - Suggested Open Ended Experiments**

(Not for End Semester Examination but compulsory to be included in Continuous Internal Evaluation. Students can do open ended experiments as a group of 2-3. There is no duplication in experiments between groups.)

- Develop applications for Attendance Calculation, Course Outcome Evaluation, Booking an online Doctor.

Text / Reference

T/R	Book Title/Author
T1	Beginning Android Application Development- Wei-Meng Lee- Wrox-First Edition.
R1	HTML 5 Mobile Application Development- SAMS publications- Jennifer KyrninJennifer Kyrnin.-First Edition
R2	Beginning PhoneGap – Thomas Myer-2011

Online Resources

Sl.No	Website Link
1	https://www.javatpoint.com/android-tutorial
2	https://www.tutorialspoint.com/android/
3	https://www.androidhive.info/
4	https://developers.google.com/training/android/