| Subject Code | Subject Name (Laboratory Course) | Category | L | T | P | C |
|---|---|---|---|---|---|---|
| AI19511 | MOBILE APPLICATION DEVELOPMENT LABORATORY FOR ML AND DL APPLICATIONS | PC | 0 | 0 | 2 | 1 |

| **Objectives:** Broad objective of this course is | |
|---|---|
| ● | To know the components and structure of mobile application development frameworks for android and windows OS-based mobiles. |
| ● | To understand how to work with various mobile application development frameworks. |
| ● | To learn the basic and important design concepts and issues of development of mobile applications. |
| ● | To be familiar with text and speech processing applications. |
| ● | To be familiar with image processing applications. |

| **List of Experiments** | | | | |
|---|---|---|---|---|
| **1.** | Introduction: About Android, Pre-requisites to learn Android, Dalvik Virtual Machine & .apk file extension, Android API levels (versions & version names). Android Java Basics: Getting started with Android development, project folder structure, simple programming, running project, generating build/APK of the app from Android Studio. | | | |
| **2.** | Develop an application to change the font and color of the text and display toast message when the user presses the button. | | | |
| **3.** | Develop a scientific calculator to perform arithmetic and mathematical functions using Math class. [Your scientific calculator should contain +, *, /, =, cos, sin, tan, pow, sqrt, log, Natural Log and mod]. | | | |
| **4.** | Create a Database table with the following structure using SQLite: Student (Name, roll no, Marks) Develop an android application to perform the following operation using SQLite developer classes.<br><br>a. Insert student Details<br><br>b. Update the student Record<br><br>c. Delete a specified record. View the details. | | | |
| **5.** | Design an android activity with two text boxes where the user can enter (username and ID) and a button (validate). Validate the entered username and ID field for the following using android code.<br><br>a. Both the fields should not be empty,<br>b. Name field should have alphabets,<br>c. ID field should have numeric values (only 4-digit). | | | |
| **6.** | Develop an android application to perform the following: (Machine Learning based application)<br><br>a. Text to Speech<br><br>b. Speech to Text | | | |
| **7.** | Develop an application to read OCR on road signs (Deep Learning based application). | | | |
| **8.** | Develop an android application to capture image using camera and displaying the image using image view (Deep Learning based application). | | | |
| **9.** | Develop an android app for barcode scanning (Deep Learning based application). | | | |
| | | **Total Contact Hours** | **:** | **30** |

| **Course Outcomes:**<br>On completion of the course, the students will be able to | |
|---|---|
| • | Learn the components of mobile application development. |
| • | Gain the knowledge of how to work with various mobile application development frameworks. |
| • | Acquire the basic and important design concepts and issues of development of mobile applications. |
| • | Deploy simple text and speech processing. |
| • | Develop simple image processing mobile applications. |

| CO/PO | PO 1 | PO 2 | PO 3 | PO 4 | PO 5 | PO 6 | PO 7 | PO 8 | PO 9 | PO10 | PO11 | PO12 | PSO 1 | PSO 2 | PSO 3 | PSO 4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **AI19511.1** | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | - | - | 1 | 3 | 3 | 3 | 2 | 3 |
| **AI19511.2** | 3 | 3 | 3 | 3 | 3 | 3 | - | - | - | - | 1 | 1 | 3 | 3 | 2 | 3 |
| **AI19511.3** | 3 | 3 | 3 | 3 | 3 | - | - | 2 | 2 | - | 2 | 2 | 3 | 2 | 3 | 3 |
| **AI19511.4** | 3 | 3 | 3 | 3 | 3 | 2 | 2 | - | - | - | 2 | 2 | 3 | 3 | 3 | 3 |
| **AI19511.5** | 3 | 3 | 3 | 3 | 3 | 2 | 2 | - | - | - | 2 | 2 | 3 | 3 | 3 | 3 |
| Average | 3 | 3 | 3 | 3 | 3 | 2 | 1.1 | 0.8 | 0.4 | - | 1.6 | 2 | 3 | 2.8 | 2.6 | 3 |

Correlation levels 1, 2 or 3 are as defined below:

1: Slight (Low) 2: Moderate (Medium) 3: Substantial(High)

No correlation : "-"