CERTIFICATE IN MOBILE APPLICATION DEVELOPMENT(CMAD)

LEARNING OBJECTIVES

After pursuing the programme successfully, the student should be able to

- Understand the requirements for the development of mobile applications for various purposes
- Analyze the architecture of Android
- Design, implement and test a database for user requirements
- Develop mobile apps using Android
- Develop programs using Python
- Use IDEs such as Android Studio

ELIGIBILITY CRITERIA

(i)10+2

OR

(ii)10th standard with 2 or 3 years Diploma / Equivalent

Duration:

6 Months (1 Semester)

TARGET GROUP OF LEARNERS

Any person who is interested in developing Mobile APPS

PROGRAMME STRUCTURE

The University follows the credit system for all its programmes. Each credit amounts to 30 hours of study comprising all learning objectives. Thus, a four credit course includes 120 study hours and and an eight credit course includes 240 study hours. To successfully complete the Diploma programme , the student will have to earn 16 Credits over a period of 1 semester (minimum duration) and the maximum duration permissible by passing all the prescribed courses.

The basic structure of the programme is as follows:

Semester	Course Code *	Course Title	Credits	No. of Theory Counseling Sessions (2 hours duration)	No. of Practical Counseling Sessions (3 hours duration)
1	BCS-091	Introduction to Mobile Architecture	4	8	-
	BCS-092	Introduction to Databases	3	6	-
	BCS-093	Introduction to Android	2	4	-
	BCS-094	Programming using Python	2	4	-
	BCSL-091	Laboratory Course (Includes practicals of following courses: Introduction to Databases, Introduction to Android, Programming using Python)	5	-	50 (Introduction to Databases (10), Introduction to Android (20), Introduction to Python (20))

Attendance to Theory Counseling sessions is not compulsory. However, it is essential to have a minimum of 70% attendance to practical counseling sessions in each of the course components of BCSL-091

SYLLABUS

Course Title (BCS-091): Introduction to Mobile Architecture

Introduction to Mobile Applications, Components of a Mobile Application, Basics of Mobile Application Design, Introduction to Mobile Operating Systems, Basics of Android, Basics of Ios, Basics of Windows Mobile, Mobile Processors, Memory, Sensors, I/O, Native Development Tools, Cross Platform Development Tools, Publishing Tools and Developer Program, Monetization, etc.

Course Title (BCS-092) : Introduction to Databases

Introduction to Database Systems, Database History, Data Modelling, Entity Relationship Model, Integrity Rules and Constraints, Relational Database Design and Redundancy, Functional Dependencies, Normalization, SQL, DDL , DML, Join Statements, Introduction to SDLC, etc.

Course Title (BCS-093): Introduction to Android

Introduction, History, Features, Categories of Android applications, Architecture, Android application fundamentals, Android development platforms, Configuring Android Development Environment, Basic Android APP components, Additional components, Android Manifest, Android Development, Device Compatibility, Device features, Platform versions, Screen configuration, UI design, Creating GUI for Android Application, Design of UI with Layout Editor, Managing Touch Events in a ViewGroup, Setting up testing environment and testing an Android Application, Debugging, Logcat, Integrating Multimedia into Android Application development (AAD), Camera functions in AAD, Saving Data on Android Devices, Android sensor framework, Making an APP Location-Aware, Connecting devices wirelessly, Performing network operations, Publishing an Android APP, Performance profiling of an Android APP, Security concerns, etc.

Course Title (BCS-094) : Programming using Python

Basic Programming Concept, Features of Python, Variables, Expressions and Statements, Data types, Comments, Debugging, Control structures, Arrays, Linked Lists , Queues, , Functions, Strings, Methods, Classes, Operator Overloading, Inheritance, Data Encapsulation, Polymorphism, Exception Handling, Software Testing, Black Box Testing, White Box Testing, Profilers, Introduction to SQLite, SQL CRUD statements, Role of Python in Mobile Application Development, Open Source Python Libraries, Introduction to Kivy, Kivy Buidozer, Packaging, Kivy Launcher, Kivy Android Virtual Machine, GUI development, Tkinter, Creating GUI for Python with Tkinter and wxPython, Development examples using Kivy, etc.

Course Title (BCSL-091) : Laboratory Course (Includes practicals of following courses: Introduction to Databases, Introduction to Android, Programming using Python)

Practical Counseling sessions in Databases, Android and Python

DELIVERY AND SUPPORT MECHANISM

(1) No printed course material will be given. However, Course Material can be downloaded from http:/egyankosh.ac.in .

(2) During practical counseling sessions, 1 Computer will be assigned to 2 students

(3) Support mechanism will include Theory Counseling, Practical Counseling, Interactive Radio Counseling and Teleconferencing apart from the above

(4) Counseling sessions shall be held at designated Learner Support Centers (LSCs) preferably

FEE

Rs.5000/- for CMAD + Rs.200/- programme fee

EVALUATION METHODOLOGY

Every Course will have two components Assignment and Term End Examination respectively. If the course is having only Theory Counseling Sessions, then there will be two components, namely, Assignment and Term End Examination (Theory). If the Course is having only Practical Counseling Sessions, then there will be two components, namely, Assignment, Term End Examination (Practical) .

Semester	Course Code	Course Title	Credits	Assignment (Max. Marks)	TEE (Theory) (Max. Marks)	TEE (Practical) (Max. Marks)
1	BCS-091	Introduction to Mobile Architecture	4	25	75	-
	BCS-092	Introduction to Databases	3	25	75	
	BCS-093	Introduction to Android	2	25	75	
	BCS-094	Programming using Python	2	25	75	
	BCSL-091	Laboratory Course (Includes practicals of following courses: Introduction to Databases, Introduction to Android, Programming using Python)	5	25		75

Qualifying Marks will be 40% in each of the components. Student needs to reappear only in failed components in the case of Laboratory courses. The duration of all TEE (Theory) will be of 3 hours. The duration of TEE(Practical) will be of 3 hours.

Name of Programme Coordinator : Prof.P.Venkata Suresh, SOCIS, IGNOU, New Delhi-110068

Contact Information : pvsuresh@ignou.ac.in

Tel. No. : 011-29572908

For admission, click on https://ignouadmission.samarth.edu.in/