COMSATS University Islamabad
Department of Computer Science
Course Description Form (CDF)

Course Information

Course Code: **CSC303**	Course Title: **Mobile Application Development**
Credit Hours: **3(2,1)**	Lecture Hours/Week: **2**
Lab Hours/Week: **3**	Pre-Requisites: **CSC241-Object Oriented Programming**

Course Objectives:

- To discuss different mobile application development platforms and architectures;
- To discuss the components of mobile application development;
- To compare different mobile application development tools;
- To describe the constraints that game platforms impose on developers;
- To develop a medium sized mobile application as a team.

Course Contents

This course introduces the fundamental concepts related to the design and implementation of mobile application that uses JavaScript and React Native. Topics Include: Overview; Concepts of JavaScript; Programming in React Native; GitHub; Concepts of React Navigation; Working with Multiple Screens with React Navigation; Working with Persistent Storage using AsyncStorage; Retrieving Data from Server using API; State Management and Redux; Accessing Device Camera; GPS & Google Maps API; Working with Mobile Sensor; and Ejecting & Publishing Mobile Applications.

Unit wise Major Topics:

Unit	Topic	No. of Teaching hours
1.	Mobile Application Development: Overview, Platforms, Client-Side Technologies, Importance of Mobile Applications, and Development Technologies.	2
2.	JavaScript: Concept, Arrays, Functions, ES6 Arrow Functions, Writing Unit Tests, Prototype-based Classes, ES6 Classes, Hoisting, Class Expression, Constructor, Getter Methods, Static Methods, Public & Private Fields, and Inheritance.	4
3.	Programming in React Native: Creating First React Native Expo & CLI Projects, Working with Expo Snack, Function-Based Components & React Hooks, Class-Based Components & State Object, Developing Application with Text Input, Button, Touchable Opacity, Flat List, Custom Components, Styling, Icons & Fonts, Debugging Application; and GitHub.	11
4.	Concepts of React Navigation: Working with Multiple Screens, Customizing Header, Screen Options, Drawer & Material Bottom Tab Navigators, and Customizing Themes.	5
5.	Working with Persistent Storage using AsyncStorage; Retrieving Data from Server using API; Google Firebase; State Management & Redux; Context API; Accessing Device Camera; GPS & Google Maps API; Working with Mobile Sensor; and Ejecting & Publishing Mobile	8

	Applications.	
Total Contact Hours		**30**

Mapping of CLOs and GAs

Sr.#	Unit #	Course Learning Outcomes	Blooms Taxonomy Learning Level	GA
CLO's for Theory				
CLO-1	1	Apply Java script concepts to develop mobile application user Interfaces.	*Applying*	2
CLO-2	2	Construct attractive front-end for mobile applications using latest technologies.	*Creating*	3,5
CLO-3	3-4	Develop backend for mobile applications using modern technologies.	*Creating*	3-5
CLO's for Lab				
CLO-4	3	Implement programs using Java scripts and React Native for mobile applications.	*Creating*	3-6,10
CLO-5	4-5	Develop advanced mobile applications with multiple screen and APIs having persistent storage.	*Creating*	1,3-6,10

CLO Assessment Mechanism

Assessment Tools	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5
Quizzes	Quiz 1	Quiz 2	Quiz 3&4	-	-
Assignments	-	Assignment 1	Assignment 2-4	Lab Assignments	-
Midterm Exam	Midterm Exam	Midterm Exam	Midterm Exam	Lab Midterm Exam	-
Final Term Exam	Final Term Exam			-	Lab Project/ Lab Final Term Exam

Text and Reference Books

Textbook:

1. React Native in Action, Nader Dabit, Manning Publications, 2019.

Reference Book:

1. Fullstack React Native, Shoemaker, Sophia, Djirdeh, Houssein,, Published by Fullstack.io, 2019.