

Mobile Application Development 2					
Credit Hours:	2	Course Code:	COSC-4104	Prerequisites:	COSC-3125
Course Learning Outcomes (CLOs):					
At the end of the course, the students will be able to:				Domain	BT Level*
1. Design and develop user Interfaces for the Android, IOS platform.				C	1
2. Deploy the fully developed Android and IOS Application				C	2
3. Develop a full stack application with Firebase Connectivity				A	1
*BT=Bloom’sTaxonomy,C=CognitiveDomain,P=PsychomotorDomain,A=AffectiveDomain					
#	SDG	Relevant CLOs			
1	SDG 9: Industry, Innovation and Infrastructure	CLO 2: Deploy the fully developed Android and IOS Application CLO 3: Develop a full stack application with Firebase Connectivity			
Course Contents:					
History, Introduction, Importance of Flutter, Introduction to Dart, Introduction to Platform, Writing Dart code, Dart Pad, Installing Dart SDK, IntelliJ IDEA, Introduction to Dart Language Syntax, main() function, Dart Variables, Dart Data Types Input of Information to Dart Program, Writing Comments ,Dart Conditional Operators If Statement, If – Else Statement, If...Else and Else...If... Statement, If Else and Logical Operators, For Loops, While Loops, Do-while Loops, Break Statement, Switch Case Statement, Functions, Object-Oriented Programming (OOP), Understanding Flutter Flutter Framework, Android Studio, Flutter SDK, Button Widget , App Structure and Navigation, Navigate to a New Screen and Back, Navigate with Named Routes, Send and Return Data Among Screens, Animate a Widget Across Screen, Web View Widget in Flutter, Introduction, The Camera Position, Adding Google Maps to a Flutter app, Introduction to Sensors, accelerometer, gyroscope., magnetometer, proximity sensors ambient light sensor Equivalence of Type Expression, Type Conversion, Intermediate Code Generation and Optimization.					
Teaching Methodology					
Lectures, Written Assignments, Practical labs, Semester Project, Presentations, Mobile and Laptops.					
Course Assessment:					
Mid Term Exam, Home Assignments, Quizzes, Project, Presentations, Final Exam.					
Reference Material:					
1. Flutter for Beginners: An introductory guide to building cross-platform mobile applications with Flutter and Dart 2 by Alessandro Biessek 2. Beginning App Development with Flutter: Create Cross-Platform Mobile Apps 1st Edition by Rap Payne 3. Learn Google Flutter Fast: 65 Example Apps Paperback – April 1, 2019 by Mark Clow					
Mobile Application Development 2 - Lab					
Credit Hours:	1	Course Code:	COSC-4204	Prerequisites:	COSC-3125
Course Learning Outcomes (CLOs):					
At the end of the course, the students will be able to:				Domain	BT Level*
1. Design and develop user Interfaces for the Android, IOS platform.				C	1
2. Deploy the fully developed Android and IOS Application				C	2

3. Develop a full stack application with Firebase Connectivity		A	1
*BT=Bloom's Taxonomy, C=Cognitive Domain, P=Psychomotor Domain, A=Affective Domain			
#	SDG	Relevant CLOs	
1	SDG 9: Industry, Innovation and Infrastructure	CLO 2: Deploy the fully developed Android and IOS Application CLO 3: Develop a full stack application with Firebase Connectivity	
Course Contents:			
History, Introduction, Importance of Flutter, Introduction to Dart, Introduction to Platform, Writing Dart code, Dart Pad, Installing Dart SDK, IntelliJ IDEA, Introduction to Dart Language Syntax, main() function, Dart Variables, Dart Data Types Input of Information to Dart Program, Writing Comments ,Dart Conditional Operators If Statement, If – Else Statement, If...Else and Else...If... Statement, If Else and Logical Operators, For Loops, While Loops, Do-while Loops, Break Statement, Switch Case Statement, Functions, Object-Oriented Programming (OOP), Understanding Flutter Flutter Framework, Android Studio, Flutter SDK, Button Widget , App Structure and Navigation, Navigate to a New Screen and Back, Navigate with Named Routes, Send and Return Data Among Screens, Animate a Widget Across Screen, Web View Widget in Flutter, Introduction, The Camera Position, Adding Google Maps to a Flutter app, Introduction to Sensors, accelerometer, gyroscope., magnetometer, proximity sensors ambient light sensor Equivalence of Type Expression, Type Conversion, Intermediate Code Generation and Optimization.			
Teaching Methodology			
Lectures, Written Assignments, Practical labs, Semester Project, Presentations, Mobile and Laptops.			
Course Assessment:			
Mid Term Exam, Home Assignments, Quizzes, Project, Presentations, Final Exam.			
Reference Material:			
1. Flutter for Beginners: An introductory guide to building cross-platform mobile applications with Flutter and Dart 2 by Alessandro Biesek 2. Beginning App Development with Flutter: Create Cross-Platform Mobile Apps 1st Edition by Rap Payne 3. Learn Google Flutter Fast: 65 Example Apps Paperback – April 1, 2019 by Mark Clow			