

EE5415: MOBILE APPLICATIONS DESIGN AND DEVELOPMENT

Effective Term

Semester A 2025/26

Part I Course Overview

Course Title

Mobile Applications Design and Development

Subject Code

EE - Electrical Engineering

Course Number

5415

Academic Unit

Electrical Engineering (EE)

College/School

College of Engineering (EG)

Course Duration

One Semester

Credit Units

3

Level

P5, P6 - Postgraduate Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

EE2311 Object-Oriented Programming and Design or EE3206 Java Programming and Applications or EE5414 Development and Design in Embedded Systems or equivalent

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

The course aims to provide students with an understanding of the principle and hand-on experience on Android mobile application design and development. The course combines a conceptual overview, design issues, and practical development via Android mobile apps projects. Students will learn skills leading to creating and deploying mobile applications, with particular emphasis on software engineering topics including software architecture, software process, usability, and deployment in embedded systems.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Describe the principles and skills required for Android mobile application design and development to produce and maintain high-quality mobile applications.		x	x	
2	Apply software requirements engineering principles to mobile application development.		x	x	x
3	Evaluate and apply software process and best practices.		x	x	

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Learning and Teaching Activities (LTAs)

LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures and Tutorials Students attend lectures and observe demonstrations to learn key concepts of mobile app design and development. Student attend tutorials in the laboratory and practice the mobile app developing skills via hands on experiences in writing codes.	1, 2, 3	2 hrs Lect/wk1 hrs Tut/wk

2	Individual project with presentation, written reports	Students work independently to plan, analyze requirements, design, implement and present a mobile app project.	1, 2, 3	
3	Group project with presentation, written reports	Students work collaboratively in groups to plan, analyze requirements, design, implement and present a mobile app project.	1, 2, 3	

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks ("- " for nil entry)	Allow Use of GenAI?
1	Tutorials with quizzes and programming assignments	1, 2, 3	5	-	Yes
2	Programming Test	1, 2, 3	25	1 hour' s test	No
3	Individual Project with proposal, final report and presentation	1, 2, 3	10	Students are encouraged to work with Faculty members, research students and staff in these projects.	Yes
4	Group Project with proposal, final report and presentation	1, 2, 3	10	Students are encouraged to work with Faculty members, research students and staff in these projects.	Yes

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

2

Minimum Continuous Assessment Passing Requirement (%)

30

Minimum Examination Passing Requirement (%)

30

Additional Information for ATs

Remark: To pass the course, students are required to achieve at least 30% in course work and 30% in the examination. # may include homework, tutorial exercise, project/mini-project, presentation

Assessment Rubrics (AR)

Assessment Task

Examination (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Achievements in CILOs

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal level

Assessment Task

Coursework (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Achievements in CILOs

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal level

Assessment Task

Examination (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Achievements in CILOs

Excellent

(A+, A, A-) High

Good

(B+, B) Medium

Marginal

(B-, C+, C) Low

Failure

(F) Not even reaching marginal level

Assessment Task

Coursework (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Achievements in CILOs

Excellent

(A+, A, A-) High

Good

(B+, B) Medium

Marginal

(B-, C+, C) Low

Failure

(F) Not even reaching marginal level

Additional Information for AR

Constructive Alignment with Programme Outcomes

PILO 1,2,3 - This course provides essential knowledge and techniques for designing and implementing mobile application software product. Students have ample opportunities to practice these skills with modern software development tools. A mobile app design project will be carried out by students. They are required to propose their mobile app, analyse some practical problems, develop and present their own solutions with a demonstration.

Part III Other Information

Keyword Syllabus

Android Mobile App Design and Development Principles

Overview and history of Android mobile app, mobile app markets, design principles, software architecture, software development cycles, software development tools, programming languages, operating systems for mobile devices, usability, and deployment.

User Interface and Functionality Design

UI Overview, Activities, Application Lifecycle, Intents, Intent Filters, Broadcasts, Broadcast Receiver, Shared Preferences, Files, SQLite DB, Content Provider.

Mobile App Software Development

Automated testing, Test-Driven Development, Google Maps, MapView, MapActivity, Threads, Services, Status Bar Notifications, Deployment to Market, Monetization.

Examples of Mobile Apps Projects:

- Mobile apps for Android based smartphones

- Mobile apps for Android based tablet computers

Reading List

Compulsory Readings

Title	
1	http://developer.android.com

Additional Readings

Title	
1	Nil