Course Title:	Mobile programming
Course Code:	CSE571/1
Program:	Master Degree In Computer Engineering
Department:	Computer Engineering
Course coordinator:	Dr. AHMED KHELIFI
Institution:	Private Higher School of Engineers of Gafsa (ESIP)

A. Course Identification

1. Credit hours: **3 (1.5-0-0)**

2. Course type

a. College ☐ Department ■ Others ☐

b. Fundamental ■ Transversal ☐ Optional ☐

3. Level/year at which this course is offered: 3.1/3

4. Pre-requisites for this course (if any): JAVA, XML ,Agile methods

1. Mode of Instruction (mark all that apply **not writed**)

No	Mode of Instruction	Contact Hours	Self-study	Total workload
1	**Traditional classroom**	…..	11	26
2	**Blended**	15		
3	**E-learning**	.....		
4	**Distance learning**	.....		
5	**Other ()**	.....		

2. Contact Hours (based on academic semester **not writed**)

No	Activity	Contact Hours
1	**Lecture**	15
2	**Laboratory/Studio**	
3	**Tutorial**	-
4	**Others** (specify)	-
	Total	15

B. Course Objectives and Learning Outcomes

1. 1. Course Description

This course introduces students to Android mobile application development, covering the basics of building, designing, and managing mobile apps. Students will learn how to create user-friendly .interfaces, handle app navigation, store data locally, and connect to online services
The course is hands-on and directly linked to the Development of an Android Application for ESIP Activities project. By the end, students will have built a fully functional app that retrieves event and news data from a web server, saves it for offline access using SQLite, and provides smooth user interaction.

2. 2. Course Main Objective

By taking this course, students will:

- ✓ Understand how Android apps work and how to build them.
- ✓ Design mobile app interfaces using XML and Jetpack Compose.
- ✓ Navigate between app screens with Activities and Intents.
- ✓ Store user data locally using SQLite and Shared Preferences.
- ✓ Connect to online services using APIs for real-time updates.
- ✓ Test and deploy their own Android app.

3. Course Learning Outcomes not writed

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	✓ Students will gain a solid understanding of the Android operating system, its architecture, components, and the overall Android ecosystem.	PLO.K.2
1.2	✓ Students will grasp the concept of event-driven programming in Android and become proficient in capturing and handling user interactions such as button clicks and touch gestures	PLO.K3
2	**Skills**	
2.1	✓ Students will be able to develop Android applications, applying the knowledge of Android components and event handling to create functional and interactive apps.	PLO.S2
2.2	✓ Students will have the skills to design user-friendly Android app interfaces by utilizing various graphical components and XML layout design	PLO.S3
2.3	✓ Have students present their projects or findings to the class	PLO.S4
3.1	✓ Students will demonstrate the ability to capture and manage user interactions effectively, enhancing the user experience in Android applications.	PLO.S6
3.2	✓ Students will be proficient in integrating SQLite databases into Android applications, enabling data storage and retrieval.	PLO.S7

C. Course Content

No	List of Topics	Contact Hours
1	☐ Chapter 1: Introduction to Android Development • Overview of Android platform & architecture • Android Studio & SDK setup • Application components: Activities, Intents, Services • First project setup – Creating the Hello World app	2
2	☐ Chapter 2: UI Design & User Interaction • Building a simple GUI using XML & Jetpack Compose • Common UI elements: Buttons, Lists, Navigation Drawer • Event-driven programming & handling user input	3
3	☐ Chapter 3: Lifecycle Activity & Navigation • Understanding Activity Lifecycle and managing UI state • Screen navigation with Explicit & Implicit Intents • Passing data between Activities & Fragments	3
4	☐ Chapter 4: Data Storage with SQLite & Shared Preferences • Storing app settings using Shared Preferences • SQLite Database integration for offline access • Performing CRUD operations (Create, Read, Update, Delete)	4
5	☐ Chapter 5: Web Services Integration & Deployment Fetching data from a remote web server using REST API (Retrofit/Volley) Deploying and testing the Android application Generating APK for installation & deployment	3
Total		30

D. Teaching and Assessment not writed

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
PLO.K.2	Students will gain a solid understanding of the Android operating system, its architecture, components, and the overall Android ecosystem.	✓ Lecture ✓ Discussion class ✓ Code Reviews and Debugging ✓ Group Projects	✓ Practical Work (written or oral) ✓ Quizzes, Homework assignments ✓ Final Exam
PLO.K.3	Students will grasp the concept of event-driven programming in Android and become proficient in capturing and handling user interactions such as button clicks and touch gestures		
2.0	**Skills**		

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
PLO.S.2	Students will be able to develop Android applications, applying the knowledge of Android components and event handling to create functional and interactive apps.	✓ Lecture ✓ Discussion class ✓ Code Reviews and Debugging ✓ Group Projects	, ✓ , Practical Work (written or oral) ✓ Quizzes, Homework assignments Final Exam
PLO.S.3	Students will have the skills to design user-friendly Android app interfaces by utilizing various graphical components and XML layout design		
PLO.S.4	Students will demonstrate the ability to capture and manage user interactions effectively, enhancing the user experience in Android applications.		
PLO.S7	Students will be proficient in integrating SQLite databases into Android applications, enabling data storage and retrieval.		

2. Assessment Tasks for Students not writed

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Practical Work (written or oral)	Weekly	00%
2	Quizzes, Homework assignments	Random	00%
3	Final Exam	6	100%

E. Student Academic Counseling and Support not writed

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:
- Office hours - Blackboard interface - Academic advisor - Bibliotic

F. Learning Resources and Facilities

1.Learning Resources

Required Textbooks	• Horton, John. Android Programming for Beginners: Build In-Depth, Full-Featured Android 9 Pie Apps Starting from Zero Programming Experience. Birmingham, Packt Publishing, 2018.

	1. Griffiths, Dawn, and David Griffiths. Head First Kotlin: A Brain-Friendly Guide. Sebastopol, Ca, O'reilly Media, Inc, 2019. 2. Ian F. Darwin – Android Cookbook: Problems and Solutions for Android Developers, 2nd Edition, O'Reilly Media, 2017.
Essential References Materials	N/A
Electronic Materials	1. GitHub Repositories & Sample Projects – *Real-world Android applications for reference* 2. Coursera/Udemy Courses on Android Development
Other Learning Materials	• Developing Secure Mobile Applications for Android http://www.isecpartners.com/files/iSEC_Securing_Android_Apps.pdf • Architectural manifesto: How to Choose a mobile platform http://www.ibm.com/developerworks/architecture/library/wi-arch23.html • What is Android http://developer.android.com/guide/basics/what-is-android.html

2. Facilities Required not writed

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	**classroom board software …**
Technology Resources (AV, data show, Smart Board, software, etc.)	**data show;**

G. Course Quality Evaluation not writed

Evaluation Areas/Issues	Evaluators	Evaluation Methods
Effectiveness of teaching and assessment.	Students, course coordinator, Alumni, Employers	Direct/Indirect
Extent of achievement of course learning outcomes.	Faculty, Program Leaders, quality department	Direct
Quality of Learning resources	Faculty, Program Leaders,	Direct, Indirect
Teaching and learning quality and effectiveness.	Students, Faculty Program Leaders,	Direct, Indirect

H. Specification Approval Data not writed

Council / Committee	Computer Engineering Council
Date	11/09/2023