MINISTRY OF EDUCATION AND TRAINING
CAN THO UNIVERSITY

SOCIALIST REPUBLIC OF VIETNAM
Independence - Freedom - Happiness

COURSE OUTLINE DETAILS

1. Course: Cross-platform mobile programming (Lập trình di động đa nền tảng**)**

- **Code number:**
- **Credits: 03**
- **Hours:** 30 theory + 30 lab hours and 90 self-study hours.

2. Management Unit:

- **Department:** Software Engineering Department
- **Faculty/School/Institute/Center/Department:** College of Information and Communication Technology

3. Requisites:

- **Prerequisites:** CT108H – Object Oriented Programming
- **Corequisites:** None

4. Course objectives:

Objectives	Descriptions	Program Outcomes
4.1	Understand basic techniques for mobile application development.	2.1.2a
4.2	Be able to create practical mobile applications.	2.1.3a, 2.2.1a, 2.2.2b
4.3	Ba able to collaborate with others in a group to fulfill practical case studies.	2.2.2b, 2.2.2c
4.4	Be flexible and responsible for studying and working.	2.3

5. Course learning outcomes:

COs	Descriptions	Objectives	POs
	Knowledge		
CO1	Know how to use integrated development environments (IDEs) and programming languages for mobile applications.	4.1	2.1.2a
CO2	Understand the architecture of a mobile application project.	4.1	2.1.2a

COs	Descriptions	Objectives	POs
	Knowledge		
	Skills		
CO3	Be able to design user interfaces using common controls.	4.1	2.1.2a
CO4	Be able to make event handlers in mobile application development.	4.1	2.1.2a
CO5	Develop analysis and development skills for mobile applications.	4.1-4.4	2.1.2a, 2.1.3a, 2.2.1a, 2.2.2b, 2.2.2c, 2.3
CO6	Be able to communicate, collaborate with others in groups.	4.3, 4.4	2.2.2b, 2.2.2c, 2.3
CO7	Plan to fulfill the case study on time.	4.3, 4.4	2.2.2b, 2.2.2c, 2.3
	Attitudes/Autonomy/Responsibilities		2.2.2b, 2.2.2c, 2.3
CO8	Be flexible and responsible for studying and working.	4.3, 4.4	2.2.2b, 2.2.2c, 2.3
CO9	Be careful, honest, enthusiastic and positive in studying and working.	4.3, 4.4	2.2.2b, 2.2.2c, 2.3

Note: “COs” means Course Outcomes; “POs” means Program Outcomes

6. Brief description of the course

This course is about application development using Java in Android. During the course, students are equipped techniques for mobile device development to develop their skills to build personal or business mobile applications. Furthermore, they are able to self-study programming on other platforms such as iOS, Windows Phone or game programming.

7. Course structure:

7.1. Theory

	Content	Hours	COs
Chapter 1.	**Foundations**	**3**	**CO1-CO4**
1.1.	Introduction		
1.2.	IDEs establishment		
1.3.	Build and execute application		
1.4.	Upload an app		**CO1-CO4**
Chapter 2.	**Application and Activity**	**3**	
	Structure of an Android app		
	Introduction to Activity		
	Activity life cycle		
	Create and execute Activity		
Chapter 3.	**User interface design**	**7**	**CO1-CO4**
3.1.	Layout		
3.2.	Common controls		
3.3.	Dialog		
3.4.	Toast and Notification		
3.5.	Adapter and Data Connection		
Chapter 4.	**Intents and Services**	**5**	**CO1-CO5**
	Built-in Intents		
	Intents and Data URL		
	Intent filter and Broascast Receiver		
	Services		
Chapter 5.	**Restore and sharing**	**3**	**CO1-CO5**
	Shared Preference		
	Preference Framework and Preference Activity		
	File system access		
Chapter 6.	**Database and Content Provider**	**3**	**CO1-CO5**
	SqlLite		
	Content Providers		
Chapter 7.	**Map applications**	**3**	**CO1-CO5**
	Location-Based Services		
	Geocoder		

	Map-Based Activity		
Chapter 8.	**Telephone and SMS**	**3**	**CO1-CO5**
	Telephony		
	SMS and MMS		

7.2. Computer lab

	Content	Hours	Cos
Chapter 1.	**User interface design**	**5**	**CO1-CO4**
Chapter 2.	**Simple applications with common controls**	**5**	**CO1-CO4**
Chapter 3.	**Intents and Services**	**5**	**CO1-CO5**
Chapter 4.	**Database and Content Provider**	**5**	**CO1-CO9**
Chapter 5.	**Android map applications**	**5**	**CO1-CO9**
Chapter 6.	**Telephone and SMS**	5	**CO1-CO9**

8. Teaching methods:

- Lecture, computer lab, presentation, discussion.
- Assignments.

9. Duties of student:

Students have to do the following duties:

- Perform actively self-study hours.
- Attend at least 80% of the total number of theory and lab hours.
- Complete all homework and assignments.
- Attend the midterm and final exams of the course.

10. Assessment of course learning outcomes:

10.1. Assessment

No.	Point components	Rules and Requirements	Weights	COs
1	Group assignments	- <= 4 students/group - Design, develop a practical case study. - Report and make presentation	50%	CO1-CO9

2	Final exam	- Computer exam. - No notes and books are allowed. - Attend at least 80% of the total number of theory and lab hours.	50%	CO1-CO4

10.2. Grading

- Grading components and final test scores will be marked on a scale of 10 (0 to 10), rounded to one decimal place.
- Course score is the sum of all the components of the evaluation multiplied by the corresponding weight. The course score is marked on a scale of 10 and rounded to one decimal place, then it is converted to A-B-C-D score and score on a scale of 4 under the academic regulations of the University.

11. Learning materials:

Learning materials information	Barcode number
[1] Hồ Văn Tú (2014), Bài giảng Phát triển ứng dụng trên thiết bị di động, Đại học Cần Thơ.	
[2] http://developer.android.com (2014), Android Developers.	
[3] Ian F. Darwin (2012), Android Cookbook, O'Reilly Media, Inc..	
[4] Mark L. Murphy (2010), The Busy Coder's Guide to Android Development, CommonsWare.	
[5] Reto Meier (2012), Professional Android™ 4 Application Development, John Wiley & Sons, Inc..	
[6] Shane Conder, Lauren Darcey (2012), Android™ Wireless Application Development, Addison-Wesley.	
[7] Wei-Meng Lee (2012), Beginning Android™ 4 Application Development, John Wiley & Sons, Inc..	
[8] W. Frank Abelson, Charlie Collins, and Robi Sen (2009), Unlocking Android – A Developer's Guide, Manning Publications Co.	

12. Self-study Guide:

Week	Content	Theory (hours)	Practice (hours)	Student's Tasks
1	**Chapter 1:** Foundations	3	0	**Before class** - Study 1.1 - 1.5, chapter 1 of [1] Do examples in chapter 1 of [1]

2-3	**Chapter 2:** Application and Activity	3	5	**Before class** - Study 2.1 – 2.5, chapter 2 of [1] Do examples and exercises in chapter 2 of [1]. Study the same topic in [2][3][4][5][6][7][8]
4-5	**Chapter 3:** User interface design	7	5	**Before class** - Read 3.1-3.7, chapter 3 of [1] Do examples and exercises in chapter 3 of [1]. Study the same topic in [2][3][4][5][6][7][8]
6-7	**Chapter 4:** Intents and Services	5	5	**Before class** - Read 4.1- 4.6, chapter 4 of [1] Do examples and exercises in chapter 4 of [1]. Study the same topic in [2][3][4][5][6][7][8]
8-9	**Chapter 5:** Backup, restore and sharing	3	5	**Before class** - Read 5.1- 5.5, chapter 5 of [1] Do examples and exercises in chapter 5 of [1]. Study the same topic in [2][3][4][5][6][7][8]
10-11	**Chapter 6:** Database and Content Provider	3	5	**Before class** - Read 6.1- 6.5, chapter 6 of [1] Do examples and exercises in chapter 6 of [1]. Study the same topic in [2][3][4][5][6][7][8]
12	**Chapter 7:** Map applications	3	3	**Before class** - Read 7.1- 7.4, chapter 7 of [1] Do examples and exercises in chapter 7 of [1]. Study the same topic in [2][3][4][5][6][7][8]
13	**Chapter 8:** Telephone and SMS	3	2	**Before class** - Read 8.1- 8.3, chapter 8 of [1] Do examples and exercises in chapter 8 of [1]. Study the same topic in [2][3][4][5][6][7][8]
14-15	**Group assignment**	0	30	Discussion, task assignment Analysis and design

				Report and presentation

Cần Thơ, ngày 27 tháng 09 năm 2022

TL. HIỆU TRƯỞNG
TRƯỞNG KHOA

Nguyễn Hữu Hòa

TRƯỞNG BỘ MÔN

Trương Minh Thái