COURSE SYLLABUS

MOBILE PROGRAMMING

Course code: 220071

1. General information

Course type	*Number of credits*	*Number of learning periods*
General ☐ Basic ☐ Specialized ☑ Compulsory ☑ Elective ☐	Theory: 02 Exercise: 00 Practice: 01	Theory: 30 Exercise: 00 Practice: 30

*Learners***:**

Level	Bachelor
Discipline	Information Technology

Course requirements:

Prerequisites	Java Programming	Course code: ……..
Parallels	N/A	Course code: ……..
Other requirements	System design and analysis skills	

2. Learning resources

Prescribed textbooks	[1] Nguyễn Hoàng Duy Thiện (2013). *Tài liệu giảng dạy Lập trình thiết bị di động*. Trường Đại học Trà Vinh. [2] Trương Thị Ngọc Phượng (2012). *Lập trình Android*. Nhà xuất bản Thời Đại.

	[3] David Wolber, Hal Abelson, Ellen Spertus and Liz Looney (2014). *App Inventor 2: Create Your Own Android Apps.* O'Reilly.
Recommended textbooks	[1] Mark Lawrence Murphy (2010). *Android Programming Tutorials, 2nd Edition.* CommonsWare, LLC.
	[2] Frank Ableson, Charlie Collins and Robi Sen (2009). *Unlocking Android*, Manning.
	[3] Shane Conder and Lauren Darcey (2010). *Android Wireless Application Development, 2nd Edition*, Addison-Wesley Professional.
Other learning materials	[1] Java Development Kit, Google Android Studio, MIT App Inventor;
	[2] https://developer.android.com/index.html
	[3] http://appinventor.mit.edu/explore/

3. Course description

The course equips students with specialized knowledge of mobile programming. The course also trains students with design and analysis skills. Additionally, the course develops students' appropriate awareness and attitudes on the role of programming applications for varied mobile devices running different operating systems and skills for working in groups, writing and presenting reports.

4. Course learning outcomes (CLOs)

After finishing the course, students will be able to:

		Satisfy LOs of the program	*Satisfy LOs of the ABET*
❖ *Topic 1: Disciplinary Knowledge and Reasoning*			**B.1.1**
L1.	Describe operating systems platforms: Android, iOS and Windows Phone	1.3.17	**B.1.2** **B.1.3**
L2.	Build components of Android applications		**B.1.4**

L3.	Describe App Inventor environment		**B.1.5**
L4.	Build Android applications on the App Inventor environment		**B.1.6**
❖ *Topic 2: Personal and Professional Skills and Attributes*			
L5.	Self-develop knowledge of careers.	2.4.4	
❖ *Topic 3: Interpersonal Skills: Teamwork and Communication*			
L6.	Apply teamwork techniques	3.1.5	
L7.	Present orally and negotiate	3.2.4	
L8.	Apply English reading skills	3.3.1	
L9.	Use specialized English	3.3.2	
❖ *Topic 4: Conceiving, Designing, Implementing and Operating Systems in The Enterprise, Societal and Environmental Context – The Innovation Process*			
L10.	Identify the requirements of the system	4.2.1	
L11.	Design components of the system	4.3.4	
L12.	Actualize the system based on the design	4.4.2	
L13.	Develop systems	4.5.4	

5. Course content

Course contents	CLOs	Number of learning periods		
		Theory	Practice	Others
Chapter 1. Describing operating systems platforms: Android, iOS and Windows Phone	**L1, L5**	**5**	**0**	
1.1. History of the Android platform	L1	1	0	
1.2. Architecture of the Android platform	L1	1	0	
1.3. Tools and app development environment	L1	1	0	

for Android				
1.4. Tools and app development environment for iOS	L1, L5	1	0	
1.5. Tools and app development environment for Windows Phone	L1, L5	1	0	
□ *Personal and Professional Skills and Attributes*	**L5 (I)**			
□ *Interpersonal Skills: Teamwork and Communication*	**L6 → L9 (U)**			
□ *CDIO in the enterprise, societal and environmental context*				
Chapter 2. Building components of Android applications	**L2**	**10**	**10**	
2.1. Setting up Android Emulator	L2	1	1	
2.2. Storage structure and components of Android projects	L2	1	1	
2.3. Activity state and life cycle	L2	2	2	
2.4. Resources on the interface	L2	2	2	
2.5. Use of Intent and Broadcast Receiver	L2	2	2	
2.6. Use of SQLite and Content Provider	L2	2	2	
□ *Personal and Professional Skills and Attributes*	**L5 (I)**			
□ *Interpersonal Skills: Teamwork and Communication*	**L6 → L9 (U)**			
□ *CDIO in the enterprise, societal and environmental context*				
Chapter 3. Describing the App Inventor environment	**L3, L5**	**5**	**0**	
3.1. Introduction to App Inventor	L3,	1	0	

	L5			
3.2. Components, properties, and events	L3	2	0	
3.3. Development environment	L3, L5	2	0	
□ *Personal and Professional Skills and Attributes*	**L5 (I)**			
□ *Interpersonal Skills: Teamwork and Communication*	**L6 → L9 (U)**			
□ *CDIO in the enterprise, societal and environmental context*				
Chapter 4. Building Android applications on the App Inventor environment	**L4, L5, L10, L11, L12, L13**	**10**	**20**	
4.1. Utilizing Texting, Location Sensing and other Sensors resources	L4, L10, L11, L12, L13	1	3	
4.2. Utilizing Canvas and Image Sprite resources in Game Applications	L4, L10, L11, L12, L13	2	4	
4.3. Utilizing List resources in applications with information	L4, L10, L11, L12, L13	2	4	
4.4. Utilizing Screen Arrangment resources in applications with multi-interfaces	L4, L10, L11, L12, L13	2	4	

4.5. Utilizing TinyDB và TinyWebDB resources in applications with database access	L4, L10, L11, L12, L13	2	4	
4.6. Distributing and deploying Android apps via Google Play and mobile devices	L4, L5	1	1	
☐ *Personal and Professional Skills and Attributes*	**L5 (I)**			
☐ *Interpersonal Skills: Teamwork and Communication*	**L6 → L9 (U)**			
☐ *CDIO in the enterprise, societal and environmental context*	**L10 → L13 (T)**			
Summary of skills in course level				
☐ *Personal and Professional Skills and Attributes*	Self-develop knowledge of careers.			
☐ *Interpersonal Skills: Teamwork and Communication*	Apply teamwork techniques Present orally and negotiate Apply English reading skills Use specialized English			
☐ *CDIO in the enterprise, societal and environmental context*	Identify the requirements of the system Design components of the system Actualize the system based on the design Develop systems			

6. Teaching and learning methods

ID	Teaching method/technique		Description
M1.	Lecturing	☑	Suitable to contents of the course
M2.	Questions – Answers	☑	Students being active in learning

M3.	Group-based Learning	☑	Students working together to explore, discuss and report
M4.	Problem-based Learning	☐	
M5.	Project-based Learning	☑	Students being knowledgable of intended developed apps
M6.	Case studies	☐	
M7.	Role play	☐	
M8.	Demo	☑	Students memorizing sample demonstrations
M9.	Simulations	☐	
M10.	Debate	☐	
M11.	Game	☐	
M12.	Brainstorming	☐	
M13.	Think-Pair-Share	☐	

7. Course assessment

ID	Assessment activity		Quantity	Weight	LOs assessed
T1.	Text-based midterm exam	☑	01	25%	L1, L2
T2.	Text-based final exam	☐			
T3.	Practice midterm exam	☑	01	25%	L3, L4
T4.	Practice final exam	☐			
T5.	Report	☐			
T6.	In-class exercises	☐			
T7.	Homework assignments	☐			
T8.	Question – Answer	☐			
T9.	Term Project	☑		50%	L2, L4, L10, L11, L12, L13

T10.	Final Exam	☑		50%	
Formula for Overall score	((T1 + T3)/2 + T9)/2				

8. Course requirements and expectations

8.1. Requirements on attendance

- Students are responsible for attending all classes. In case of absence due to force majeure circumstances, there must be sufficient and reasonable evidence.
- Students who do not attend more than 20% of the class sections, whether for reason or not, are deemed not to have completed the course and must re-enroll in the following semester.

8.2. Requirements and expectations on student behaviors

- Students must show their respects for teachers and other learners.
- Students must be on time. Students who are late more than five minutes will not be allowed to attend the class.
- Students should not make noises and interfere with others in the learning process.
- Students should not eat, chew gum, and use devices such as cell phones, music players during class hours.
- Laptops and tablets can only be used in class for the purpose of learning.
- Students who violate the above principles will be asked to leave the class and considered absent from the class.

8.3. Requirements on learning issues

Issues related to applying for score reservation, scoring complaints, scoring, exam disciplines are done according to the Learning Regulation of Tra Vinh University.

9. Tentative course instructor

Nguyễn Hoàng Duy Thiện

DEAN   **DEPARTMENT HEAD**   **LECTURER**

Nguyễn Hoàng Duy Thiện