Mobile Application Development

Course Code:

CSE 476

Course Period:

Autumn

Course Type:

Area Elective

Credits:

3

Theoric:

3

Practice:

0

Laboratory Hour:

0

ECTS:

5

Prerequisite Courses:

Software Development Methodologies [1]
Course Language:

English

Course Coordinator:

Tacha Serif [2]
Courses given by:

Tacha Serif [2]
Course Objectives:

The aim of this course is to provide students with knowledge on the basic concepts of mobile infrastructures and the mobile technologies and abilities to design and implement mobile applications using modern development techniques and environments.

Course Content:

This course introduces students to mobile systems, mobile operating systems and application development environments, mobile networks and communication infrastructures (GSM, CDMA, 3G/WCDMA/ UMTS), Short range communication technologies (Bluetooth, WiFi), mobile application development techniques (Android-Java, iOS-Swift), mobile application deployment and distribution.

Course Methodology:

1: Lecture, 2: Question-Answer, 3: Lab, 4: Case-study

Course Evaluation Methods:

A: Testing, B: Experiment, C: Homework, D: Project

Course Learning Outcomes	Program Learning Outcomes	Teaching Methods	Assessment Methods
1) Basic knowledge of networking components; ability to identify and deduce the problems within the three-tier model (presentation, logic, storage & data).	1,6	1,2,4	A, C, D
2) Ability to design and implement object oriented programs (design overall hierarchy, classes and methods) under realistic constraints and conditions.	3,4,6	1,2,3	B, C, D
3) Knowledge and ability to implement multithreaded interactive applications with graphical user interface components (mouse, window, button).	1,4,6	1,2,3	A, C
4) Knowledge and ability to devise, select, and use modern techniques and tools needed for the design and implementation of software using object oriented concepts.	4,6	1,2,3	B, D

COURSE CONTENT

Week	Topics	Study Materials

1	INTRODUCTION TO MOBILE COMPUTING AND TECHNOLOGIES	Textbook
2	MOBILE SYSTEM DESIGN AND CONTEXT-AWARENESS	Textbook
3	INTRODUCTION TO ANDROID	Textbook
4	DDMS AND INTENT	Textbook
5	WEB SERVICES AND WEB SERVICE ACCESS	Textbook
6	DATA PERSISTENCE AND FILE, I/O	Textbook
7	SMS, NETWORKING AND INTERNET ACCESS ON ANDROID	Textbook
8	BLUETOOTH AND SENSORS	Textbook
9	LOCATION BASED SERVICES	Textbook
10	MID-TERM	Textbook
11	INTRODUCTION TO SWIFT	Textbook
12	SWIFT: XCODE PLAYGROUND	Textbook
13	SWIFT: GUI ELEMENTS	Textbook
14	SWIFT: SIMPLE NETWORKING WITH SWIFT	Textbook

RECOMMENDED SOURCES

Textbook	Lecture Notes: http://cse.yeditepe.edu.tr/v2/en/academic/course-pages [3] Lab material: http://cse.yeditepe.edu.tr/v2/en/academic/course-pages [3]
Additional Resources	BEGİNNİNG ANDROİD 2, BY MİKE MURPHY (1ST EDITION) PROFESSİONAL ANDROİD 4 APPLİCATİON DEVELOPMENT, BY RETO MEİER (1ST EDİTİON) İOS 10 SWİFT PROGRAMMİNG COOKBOOK: SOLUTİONS AND EXAMPLES FOR İOS APPS, BY VANDAD NAHAVANDİPOOR (1ST EDİTİON)

MATERIAL SHARING

Documents	http://coadsys.yeditepe.edu.tr/ [4]
Assignments	http://coadsys.yeditepe.edu.tr/ [4]

Exams

ASSESSMENT

IN-TERM STUDIES	**NUMBER**	**PERCENTAGE**
Mid-term	1	20
Assignment	5	50
Term Project	1	30
Total		**100**
CONTRIBUTION OF FINAL EXAMINATION TO OVERALL GRADE		30
CONTRIBUTION OF IN-TERM STUDIES TO OVERALL GRADE		70
Total		**100**

COURSE'S CONTRIBUTION TO PROGRAM

No	Program Learning Outcomes	Contribution				
		1	2	3	4	5
1	Adequate knowledge in mathematics, science and engineering subjects pertaining to the relevant discipline; ability to use theoretical and applied information in these areas to model and solve engineering problems.					**X**
2	Ability to identify, formulate, and solve complex engineering problems; ability to select and apply proper analysis and modeling methods for this purpose.					
3	Ability to design a complex system, process, device or product under realistic constraints and conditions, in such a way as to meet the desired result; ability to apply modern design methods for this purpose.					**X**
4	Ability to devise, select, and use modern techniques and tools needed for engineering practice; ability to employ information technologies effectively.					**X**
5	Ability to design and conduct experiments, gather data, analyze and interpret results for investigating engineering problems.					
6	Ability to work efficiently in intra-disciplinary and multi-disciplinary teams; ability to work individually.					**X**

7	Ability to communicate effectively both orally and in writing; knowledge of a minimum of one foreign language.	
8	Recognition of the need for lifelong learning; ability to access information, to follow developments in science and technology, and to continue to educate him/herself.	
9	Awareness of professional and ethical responsibility.	
10	Information about business life practices such as project management, risk management, and change management; awareness of entrepreneurship, innovation, and sustainable development.	
11	Knowledge about contemporary issues and the global and societal effects of engineering practices on health, environment, and safety; awareness of the legal consequences of engineering solutions.	

ECTS ALLOCATED BASED ON STUDENT WORKLOAD BY THE COURSE DESCRIPTION

Activities	Quantity	Duration (Hour)	Total Workload (Hour)
Course Duration (Excluding the exam weeks: 12x Total course hours)	13	3	39
Hours for off-the-classroom study (Pre-study, practice)	14	2	28
Midterm examination	1	1.5	1.5
Homework	5	5	25
Project	1	30	30
Final examination	1	1.5	1.5
Total Work Load			125
Total Work Load / 25 (h)			5
ECTS Credit of the Course			5