Course title		Code	semester	T+U	credit	ECTS
Mobile Operating Systems			7	3+0	3	4

Prerequisite Courses	None
Language of the Course	English
Course Level	Undergraduate
Type of Course	Optional
Course Coordinator	
Instructors	
Course Assistants	
The aim of lesson	The aim of this course; To teach how to use Android native development platform, Windows CE API, iOS and Linux API.
Course Content	Architecture of operating systems. Mobile operating systems, Process managements, concurrency, IPC, synchronization, Memory management, paging, partitioning, File systems (EXT2 / 3/4, JFFS / YAFFS, FAT), Peripheral communication and interrupt management, networking, OS Linux, Android, Windows Mobile, iOS (iPhone OS), Symbian OS user interface., Security considerations, cryptography, Reverse engineering, mobile malware.
Course Learning Outcomes	Students who successfully complete this course; 1. Will be able to define and explain layered model of operating system. 2. It will be able to provide the features of the most popular mobile operating systems. 3. Will be able to explain the internal processes in the operating system according to the process life cycle. 4. Will be able to develop applications that run on specific operating systems without the need for CLR or additional libraries. 5. Will be able to modify existing software to improve the efficiency of resource allocation.

Weeks	Topics
one	Architecture of operating systems. Mobile operating systems.
2	Process managements, concurrency, IPC, synchronization.
3	Memory management, paging, partitioning.
4	File systems (EXT2 / 3/4, JFFS / YAFFS, FAT).
5	Peripheral communication and outage management, network communication.
6	OS Linux, Android.
7	Windows Mobile.
8	iOS (iPhone OS)
9	Symbian OS.
10	User interface.
11th	Security issues, cryptography.
12	Reverse engineering, mobile malware.
13	Reverse engineering, mobile malware.
14	power management.
15	Power management and general replay

General Competencies
To be able to research and learn about the technical concept of the operating systems of mobile devices in the most accurate way.

resources
Y. Karim, "Embedded Android: Porting, Extending, and Customizing", O'Reilly Media, 2013, ISBN 978-1449308292
R. Sylvain, "Android NDK Beginner's Guide", Packt Publishing, 2012, ISBN 978-1849691529

J. Levin, "Mac OS X and iOS Internals: To the Apple's Core", Wrox, 2012, ISBN 978-1118057650
D. Boling, "Programming Windows Embedded CE 6.0 Developer Reference," Microsoft Press; 4 edition, 2007, ISBN 978-0735624177.

Evaluation System

The dates, days and hours of the Midterm Exam, Quiz, Final Exam and Evaluations will be announced later, according to the decision of the Faculty Administrative Board.

	WITH PROGRAM LEARNING OUTCOMES COURSE LEARNING OUTCOMES RELATIONSHIP TABLE										
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
LO1	4	4	4	4	3	4	4	5	5	4	4
LO2	4	3	3	3	3	3	3	3	5	4	5
LO3	4	4	4	3	5	3	3	4	3	3	3
LO4	4	4	4	3	5	4	3	4	3	3	3
LO5	4	4	4	3	5	3	3	4	3	3	3
LO: Learning Outcomes OP: Program Outcomes											
Contribution Level	1 Very Low		2 Low		3 Medium		4 High		5 Very High		

Relation of Program Outcomes and Related Course

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11
Mobile Devices and Operating Systems	4	4	4	3	4	3	4	4	3	4	3