WIRELESS EMBEDDED SYSTEMS

1	Course Title:	WIRELESS EMBEDDED SYSTEMS	
2	Course Code:	BM5132	
3	Type of Course:	Optional	
4	Level of Course:	Second Cycle	
5	Year of Study:	1	
6	Semester:	2	
7	ECTS Credits Allocated:	6.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	0	
11	Prerequisites:		
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Doç. Dr. Murtaza CİCİOĞLU	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	murtazacicioglu at uludag.edu.tr	
17	Website:		
18	Objective of the Course:	1. To introduce Computer Engineering Program, courses offered in the program and related research areas 2. To inform students on Computer Engineering as a profession, problems in computer engineering and their solution methods, and application domains 3. To invite faculty members, assistants, graduates, employers, senior and graduate students as speakers to introduce Computer Engineering Program from different perspectives	
19	Contribution of the Course to Professional Development:	Learning about the scope of computer engineering	
20	Learning Outcomes:		
		1	Adequate knowledge in microprocessor architectures, embedded Linux, embedded graphics (Qt).
		2	Ability to write Qt/Qt Embedded GUI applications, network applications, digital multimedia applications.
		3	Ability to debug, verify, emulate embedded Linux systems.
		4	Ability to devise, select, and use modern techniques and tools needed for embedded Linux systems.
		5	Ability to work in a team.
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21	Course Content:		
	Course Content:		

Week	Theoretical	Practice
1	EMBEDDED OR NOT? ANATOMY OF AN EMBEDDED SYSTEM. WHY LINUX? PROCESSOR BASICS. LINUX BASICS.	
2	RS232. TERMINAL EMULATORS.	
3	CROSS-DEVELOPMENT ENVIRONMENT, NATIVE/TARGET COMPILATION, TOOLCHAINS, GDB, GDBSERVER, TI DVSDK.	
4	BIOS VERSUS BOOTLOADERS, U-BOOT.	
5	SETTING UP NETWORK SERVICES. BOOTING THE KERNEL (SD-CARD OR NFS/TFTP).	
6	CONFIGURING/BUILDING LINUX KERNEL AND ROOT FILE SYSTEM.	
7	CONFIGURING/BUILDING LINUX KERNEL AND ROOT FILE SYSTEM.	
8	SETTING UP WI-FI MODULE. LOADING/UNLOADING DEVICE DRIVERS. DEVICE DRIVER BASICS.	
9	GPIO, SYSFS, FILE SYSTEMS, FRAMEBUFFER, TOUCHSCREEN DEVICE.	
10	EMBEDDED GRAPHICS, WINDOWING ENVIRONMENT, QT/QT EMBEDDED, VIRTUAL FRAMEBUFFER, EMBEDDED GUI APPLICATION DEVELOPMENT.	
11	GSTREAMER TI PLUGIN.	
12	DIGITAL MULTIMEDIA APPLICATIONS.	
13	GSTREAMER TI PLUGIN.	
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22	Textbooks, References and/or Other	KARIM YAGHMOUR, “BUILDING EMBEDDED LINUX CHRISTOPHER HALLINAN, “EMBEDDED LINUX PRIMER,” PRENTICE HALL OPEN SOURCE
23	Assesment	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	8.00	112.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	15.00	15.00
Others	0	0.00	0.00
Final Exams	1	15.00	15.00
Total Work Load			199.00
Total work load/ 30 hr			6.13
ECTS Credit of the Course			6.00

Midterm Exam	1	40.00
Home work-project	0	0.00
Final Exam	1	60.00
Total	2	100.00
Contribution of Term (Year) Learning Activities to Success Grade		40.00
Contribution of Final Exam to Success Grade		60.00
Total		100.00
Measurement and Evaluation Techniques Used in the Course		Written exam

24	**ECTS / WORK LOAD TABLE**

25	CONTRIBUTION OF LEARNING OUTCOMES TO PROGRAMME QUALIFICATIONS															
	PQ1	**PQ2**	**PQ3**	**PQ4**	**PQ5**	**PQ6**	**PQ7**	**PQ8**	**PQ9**	**PQ10**	**PQ11**	**PQ12**	**PQ13**	**PQ14**	**PQ15**	**PQ16**
ÖK1	3	4	3	4	5	2	4	3	4	2	4	5	0	0	0	0
ÖK2	3	4	4	2	3	4	3	5	3	4	3	4	0	0	0	0
ÖK3	5	4	4	2	3	4	4	5	2	3	4	4	0	0	0	0
ÖK4	3	3	4	3	5	4	3	3	4	2	3	4	0	0	0	0
ÖK5	5	4	4	3	3	3	4	4	5	3	2	4	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications

Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**