DIGITAL ELECTRONICS

1	Course Title:	DIGITAL ELECTRONICS
2	Course Code:	FZK3407
3	Type of Course:	Optional
4	Level of Course:	First Cycle
5	Year of Study:	3
6	Semester:	5
7	ECTS Credits Allocated:	5.00
8	Theoretical (hour/week):	3.00
9	Practice (hour/week):	0.00
10	Laboratory (hour/week):	0
11	Prerequisites:	none
12	Language:	Turkish
13	Mode of Delivery:	Face to face
14	Course Coordinator:	Dr. Ögr. Üyesi CENGİZ AKAY
15	Course Lecturers:	Dr. Öğr. Üyesi Cengiz Akay
16	Contact information of the Course Coordinator:	cenay@uludag.edu.tr Uludağ Üniversitesi Fizik Bölümü
17	Website:	
18	Objective of the Course:	Basic concepts and principles of physics is given clear and logical manner
19	Contribution of the Course to Professional Development:	To explain digital data processing techniques to students using logic circuits and systems, to introduce digital technologies.
20	Learning Outcomes:	

	1	Students can analyze a digital electronic circuit at the end of the course and solve a given problem.
	2	They can design a digital electronic circuit suitable for the given problem and apply this circuit.
	3	They can build and solve digital systems with basic logic circuits.
	4	Learn about the general structure of microcontrollers.
	5	They can design digital circuits using microcontrollers.
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21	Course Content:	

Course Content:	

Week	Theoretical	Practice
1	Analog and digital data concepts	
2	An overview of digital circuits	
3	Number systems and conversions	
4	Introduction of logic functions	

5	Processing of the basic theorems of logic expressions	
6	Digital system analysis with basic logic circuits	
7	General Review	
8	Truth table, Maxterm, Minterm expressions and their conversion to each other	
9	Logic diagram design	
10	Digital system design with all logic circuits	
11	Karnaugh maps and simplification of logical expressions	
12	Microcontrollers	
13	Introduction of Arduino Uno, Mega microcontrollers	
14	Microcontroller applications	

22	Textbooks, References and/or Other Materials:	Mano, M.M., "Digital Design", Prentice Hall, 2002, William Kleitz, "Digital Electronics", Prentice Hall, 1996, Garrod & Borns, "Digital Logic", Saunders College Publishing, 1991
23	Assesment	

TERM LEARNING ACTIVITIES	NUMBER	WEIGHT
Midterm Exam	1	40.00
Quiz	0	0.00

Activites	Number	Duration (hour)	Total Work Load (hour)
Total	2	100.00	
Theoretical	14	2.00	28.00
Contribution of Term (Year) Learning Activities to	40.00		
Practicals/Labs	0	0.00	0.00
Self study and preperation	14	4.00	56.00
Contribution of Final Exam to Success Grade	60.00		
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Measurement and Evaluation Techniques Used in the	Short questions asked in the lesson		
Field Studies	0	0.00	0.00
Midterm **24 ECTS / WORK LOAD TABLE**	1	30.00	30.00
Others	0	0.00	0.00
Final Exams	1	40.00	40.00
Total Work Load			154.00
Total work load/ 30 hr			5.13
ECTS Credit of the Course			5.00

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	2	2	0	2	2	4	2	3	3	2	2	0	0	0	0
ÖK2	3	3	2	0	2	3	3	3	2	3	0	2	0	0	0	0
ÖK3	5	5	4	3	2	5	3	0	3	3	0	2	0	0	0	0
ÖK4	5	5	5	3	2	5	3	0	3	4	0	2	0	0	0	0

ÖK5	5	5	5	3	2	4	3	0	3	4	0	2	0	0	0	0

LO: Learning Objectives   PQ: Program Qualifications

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