ELECTRONICS II

1	Course Title:	ELECTRONICS II	
2	Course Code:	ELNZ203	
3	Type of Course:	Compulsory	
4	Level of Course:	Short Cycle	
5	Year of Study:	2	
6	Semester:	3	
7	ECTS Credits Allocated:	4.00	
8	Theoretical (hour/week):	3.00	
9	Practice (hour/week):	0.00	
10	Laboratory (hour/week):	2	
11	Prerequisites:	None	
12	Language:	Turkish	
13	Mode of Delivery:	Face to face	
14	Course Coordinator:	Öğr.Gör. ÖZCAN TEMEL	
15	Course Lecturers:	Öğr.Grv. Özcan TEMEL	
16	Contact information of the Course Coordinator:	ozcant@uludag.edu.tr 2942380	
17	Website:		
18	Objective of the Course:	Be able to use the transistor as a switching and amplifying element. Comprehending the principles of operational amplifier and its working methods.	
19	Contribution of the Course to Professional Development:		
20	Learning Outcomes:		
		1	Be able to use the transistor as a switching and amplifying element.
		2	To be able to establish mathematical functions with operational amplifier and to measure the output.
		3	To be able to establish filter circuits using operational amplifier and measure frequency response.
		4	To determine the required circuit components for the oscillator that will produce the desired frequency and waveform.
		5	To be able to design, measure, reduce, invert and regulate sources with switched power supply principles.
		6	
		7	
		8	
		9	
		10	
21	Course Content:		

Course Content:

Week	Theoretical	Practice
1	Operation of the transistor as a switch.	Presentation, problem solving, discussion.
2	Use of the transistor as an amplifier: Emitter, base, collector common connections.	Presentation, problem solving, discussion.

3	Using the transistor as an amplifier: A, B, C class amplifiers.	Presentation, problem solving, discussion.
4	Use of the transistor as amplifier: AB, Class D amplifiers.	Presentation, problem solving, discussion.
5	Operational amplifiers: Inverters, inverting inputs and negative feedback.	Presentation, practice, discussion.
6	Operational Amplifiers: Inverter, non-inverting amplifiers, voltage tracer, comparator.	Presentation, practice, discussion.
7	Operational Amplifiers: Addition, weighted addition (DAC), integral, derivative.	Presentation, practice, discussion.
8	Midterm exam, subject repetition.	Presentation, practice, discussion.
9	Operational Amplifiers: Band-pass, band-stop, pass-through, overpass filters.	Presentation, practice, discussion.
10	Oscillators: Colpitts, Hartley, 555, MAX038.	Presentation, practice, discussion.
11	Power supplies with linear voltage regulator.	Presentation, practice, discussion.
12	Power supplies with switched voltage regulator.	Presentation, practice, discussion.
13	Power supplies with switched voltage regulator.	Presentation, practice, discussion.
14	Examples of operational amplifier applications and problem solutions.	Presentation, practice, discussion.

22	Textbooks, References and/or Other Materials:	
23	Assesment	

Activites	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	14	2.00	28.00
Self study and preperation	12	1.00	12.00
Homeworks	0	0.00	0.00
Projects	0	0.00	0.00
Field Studies	0	0.00	0.00
Midterm exams	1	20.00	20.00
Others	0	0.00	0.00
Final Exams	1	20.00	20.00
Total Work Load			122.00
Total work load/ 30 hr			4.07
ECTS Credit of the Course			4.00

Quiz 0 0.00
Final Exam 1 60.00
Contribution of Term (Year) Learning Activities to Success Grade 40.00
Contribution of Final Exam to Success Grade 60.00
Measurement and Evaluation Techniques Used in the Course

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	0	5	5	3	0	0	0	0	3	0	0	0	0	0	0
ÖK2	3	0	5	5	5	3	0	0	3	5	0	0	0	0	0	0
ÖK3	3	0	5	5	5	3	0	0	3	5	0	0	0	0	0	0
ÖK4	3	5	5	3	3	0	0	0	3	3	0	0	0	0	0	0

ÖK5	3	3	5	5	5	3	0	0	3	0	0	0	0	0	0	0

LO: Learning Objectives PQ: Program Qualifications					
Contribution Level:	**1 very low**	**2 low**	**3 Medium**	**4 High**	**5 Very High**