

# POWER ELECTRONICS

1	Course Title:	POWER ELECTRONICS	
2	Course Code:	EEM4108	
3	Type of Course:	Optional	
4	Level of Course:	First Cycle	
5	Year of Study:	4	
6	Semester:	8	
7	ECTS Credits Allocated:	4.00	
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:	Prof. Dr. FAHRİ VATANSEVER	
15	Course Lecturers:		
16	Contact information of the Course Coordinator:	Adres: Elektrik-Elektronik Mühendisliği bölümü, No:311 Tel: (224) 294 09 05 Web: <a href="http://home.uludag.edu.tr/~fahriv">http://home.uludag.edu.tr/~fahriv</a> E-posta: fahriv@uludag.edu.tr	
17	Website:	<a href="http://home.uludag.edu.tr/~fahriv">http://home.uludag.edu.tr/~fahriv</a>	
18	Objective of the Course:	To gain ability to analyze and design equipments and circuits/systems of power electronics	
19	Contribution of the Course to Professional Development:	Ability to perform analysis and designs of power electronic circuits	
20	Learning Outcomes:		
		1	To gain ability to apply theoretical and practical information about power electronics for modeling and solving engineering problems
		2	To gain ability to determine, define, formulize and solve complex engineering problems which encountering in power electronics with selecting proper analysis and modeling method
		3	To gain ability to design complex system or process which encountering in power electronics with applying modern modeling methods under realistic circumstance
		4	To gain ability to develop select and use modern technology and equipment for power electronics applications with using information technology in efficient way
		5	To gain ability to interpret results with collecting data and analyzing results for investigating engineering problems about power electronics
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21	Course Content:		
		<b>Course Content:</b>	

Week	Theoretical	Practice
1	Introduction to power electronics	
2	Principles and characteristics of power diode	
3	Principles and characteristics of thyristors	
4	Principles and characteristics of power transistors	
5	1 phase uncontrolled rectifier	
6	3 phase uncontrolled rectifier	
7	1 phase controlled rectifier	
8	General review	
9	3 phase controlled rectifier	
10	AC-AC phase control	
11	DC-DC convertors	
12	Invertors	
13	Frequency converters	
14	The design of power electronics circuits	

Activities	Number	Duration (hour)	Total Work Load (hour)
Theoretical	14	3.00	42.00
Practicals/Labs	0	0.00	0.00
Self-study and preparation	0	3.00	42.00
Homeworks	0	0.00	0.00
Final Exam	1	0.00	0.00
Field Studies	0	0.00	0.00
Contribution of Term (Year) Learning Activities to Success Grade	4	16.00	16.00
Others	0	0.00	0.00
Contribution of Final Exam to Success Grade	6	20.00	20.00
Total Work Load			120.00
Measurement and Evaluation Techniques Used in the Course	Midterm and final exams		4.00
ECTS Credit of the Course			4.00

[illegible]

ÖK5	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0
LO: Learning Objectives   PQ: Program Qualifications																
Contrib ution Level:	1 very low		2 low		3 Medium		4 High		5 Very High							