

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: http://home.uludag.edu.tr/~fahriv E-posta: fahriv@uludag.edu.tr
17	Website:	http://home.uludag.edu.tr/~fahriv
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:	
	Course Content:	

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	

22	Textbooks, References and/or Other Materials:	1. Erickson, R.W., Fundamentals of Power Electronics, Chapman and Hall, New York, 1997 2. Tuncay N. ve ark., Güç Elektroniği Devreleri (çeviri), Literatür yayınları, İst. 2005 3. Gülgün, R., Güç Elektroniği, Yıldız Teknik Üniversitesi matbaası, 1999
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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	1	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

24	ECTS / WORK LOAD TABLE
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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							