



University of Tehran
School of Electrical and Computer Engineering

Course:	? – Industrial Electronics		
Course type:	Mandatory (for power, electronics and control engineering)	EE*	Credit: 3
Level:	Under Graduate		
Co-requisite(s):			
Prerequisite(s):	Electronics II		
Prerequisite by topic:			
Textbook(s):	[1] Power Electronics: Converters, Applications, and Design by Ned Mohan		
Coordinator:			
Goals:	<ol style="list-style-type: none"> 1. Introducing the power diodes and power semiconductors 2. Introducing the switch mode operating principle 3. Introducing the design and implementation of basic power electronic converters 4. Introducing the design and implementation of magnetic devices 5. Introducing the design and control techniques of power inverters 6. Introducing the diode and thyristor based rectifiers and their applications in industry 		
Outcome:	<ol style="list-style-type: none"> 1. Design of basic power electronic converters 2. Design and implementation of magnetic devices 3. Simulation of power electronic converters 4. Implementation of basic power electronic converters 		
Topics:	<ol style="list-style-type: none"> 1- Introduction to industrial electronics and its applications 2- Power semiconductor devices 3- Dc/Dc converters 4- Magnetic devices: design method 5- Inverters: design and control techniques 6- Diode rectifiers 7- Thyristor and its different types 8- Thyristor rectifiers 		
Computer usage:	Running simulations by Orcad/PSPICE		

Assignments:	Three assignments
Projects:	One practical project
Grading:	Exercises and final project: 40% Midterm and Final exam: 60%
Further readings:	[1] Power Electronics: circuits, devices and applications by Rashid
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Date:	October 4, 2017

*EE: Electrical Engineering CE: Computer Engineering IT: Information Technology