

Discipline	Industrial Electronics code: 5001 Semester – /winter/			
Specialty	Electronics			
ECTS credits: 6	Form of assessment: Evaluation during semester			
Lecturer	Associate Professor, PhD Angel Marinov Room: 609E Phone: +359 52 383 266 E-mail: a.marinov@tu-varna.bg			
Department	Department of Electronics and Microelectronics			
Faculty	Faculty of Computer Sciences and Automation			
Learning objectives				
The first part of the “Industrial Electronics” course covers topics on industrials systems used in the field electrical technologies, drives, automated control and energy conversion. Students learn to design, implement and work with electronic power devices and regulators. In the second half of the course topics on process controllers used in industrial settings are covered. Systems for control of industrial robots and processes, machine vision and PLCs are discussed.				
CONTENTS:				
Training Area			Hours lectures	Hours seminar exercises

Industrial electronic devices fundamentals	1	1
Operation modes and protections in industrial electronic devices	2	2
Switch mode power supplies	3	3
Welding power supplies	3	3
Electronic devices for battery charging	3	3
Uninterrupted power supplies (UPS)	3	3
Controllers for electric drives	3	3
Power electronic converters for lighting applications	2	2
Control systems	2	2
Industrial robot control systems	2	2
Machine vision systems	3	3
Programmable logic controllers (PLC)	3	3
TOTAL: 60 h	30	30