

Subject card

Field of study Date of commencement of studies Education level Mode of study Year of study Semester of study Learning profile Conducting unit Name and surname of lecturer (lecturers) Lesson types and methods of instruction Learning activity and number of study hours Subject objectives Learning outcomes [Ke aurrect the drives are seen as a seen are seen as a seen are seen as a seen as a seen are seen as a see	eneral academic pro aculty of Electrical a ubject supervisor eachers esson type umber of study ours elearning hours inclue earning activity umber of study ours troduction and analy Course oute K6_W03] knows the	Dower Engineer offile Ind Control Engineer Lecture 15.0 Participation in classes including plan 30 yesis of fundame	Academic y realisation Subject gro Mode of de Language of ECTS cred Assessmer gineering prof. dr hab. in prof. dr hab. in Tutorial 0.0	year of of subject oup elivery of instruction its	n n Projec 0.0	2023/2 Obligatield or Subject resear at the tenglish 3.0 exam	story subject f study et group rela ch in the fiel university n Seminar 0.0	group in the ted to scientific d of study SUM 30	
Date of commencement of studies Education level first Mode of study Year of study Semester of study Learning profile Conducting unit Name and surname of lecturer (lecturers) Lesson types and methods of instruction Learning activity and number of study hours Subject objectives Learning outcomes [K6] [K6]	eneral academic production and analytroduction analytroduction and analytroduction analytroduction and analytroduction analytroduc	Lecture 15.0 Ided: 0.0 Participation in classes included plan 30 yesis of fundame	Academic y realisation Subject gro Mode of de Language of ECTS cred Assessmer prof. dr hab. in prof. dr hab. in Tutorial 0.0	of subject oup elivery of instruction its nt form nż. Piotr Chrza nż. Piotr Chrza Laboratory 15.0 Participation i consultation h	n n Projec 0.0	Obligatield of Subject resear at the CEnglish 3.0 exam	story subject f study et group rela ch in the fiel university n Seminar 0.0	ted to scientific d of study SUM 30	
studies Education level Mode of study Year of study Semester of study Learning profile Conducting unit Name and surname of lecturer (lecturers) Lesson types and methods of instruction Learning activity and number of study hours Subject objectives Learning outcomes [K6]	eneral academic production and analycours ull-time studies eneral academic production academic production and analycours Course out K6_W03] knows the	Lecture 15.0 Ided: 0.0 Participation is classes included plan 30 ysis of fundame	realisation Subject gro Mode of de Language of ECTS cred Assessmer pineering prof. dr hab. in prof. dr hab. in Tutorial 0.0	of subject oup elivery of instruction its nt form nż. Piotr Chrza nż. Piotr Chrza Laboratory 15.0 Participation i consultation h	n n Projec 0.0	Obligatield of Subject resear at the CEnglish 3.0 exam	story subject f study et group rela ch in the fiel university n Seminar 0.0	ted to scientific d of study SUM 30	
Mode of study Year of study 2 Semester of study Learning profile Conducting unit Name and surname of lecturer (lecturers) Lesson types and methods of instruction Learning activity and number of study hours Subject objectives Intr Learning outcomes	eneral academic production aculty of Electrical a subject supervisor eachers eachers eachers earning hours incluse earning activity earning earning activity earning activity earning activity earning activity earning activity earning ear	Lecture 15.0 Ided: 0.0 Participation is classes included plan 30 ysis of fundame	Mode of de Language of ECTS cred Assessmer gineering prof. dr hab. in Tutorial 0.0	elivery of instruction its nt form nž. Piotr Chrza nž. Piotr Chrza Laboratory 15.0 Participation i consultation h	n n Projec 0.0	field or Subject resear at the u English 3.0 exam	f study ct group rela ch in the fiel university n Seminar 0.0	ted to scientific d of study SUM 30	
Year of study Semester of study Learning profile Conducting unit Name and surname of lecturer (lecturers) Lesson types and methods of instruction Learning activity and number of study hours Subject objectives Learning outcomes [Ke au reg the dri	eneral academic pro aculty of Electrical a ubject supervisor eachers eason type umber of study ours -learning hours inclueraning activity umber of study ours troduction and analy Course out K6_W03] knows the	Lecture 15.0 Ided: 0.0 Participation is classes included plan 30 ysis of fundame	Language of ECTS cred Assessmer pineering prof. dr hab. in prof. dr hab. in Tutorial 0.0	of instruction its nt form nż. Piotr Chrza nż. Piotr Chrza Laboratory 15.0 Participation i consultation h	n n Projec 0.0	English 3.0 exam	Seminar 0.0	30	
Year of study Semester of study Learning profile Conducting unit Name and surname of lecturer (lecturers) Lesson types and methods of instruction Learning activity and number of study hours Subject objectives Learning outcomes [Ke au reg the dri	eneral academic pro aculty of Electrical a ubject supervisor eachers esson type umber of study ours elearning hours inclue earning activity umber of study ours troduction and analy Course oute K6_W03] knows the	Lecture 15.0 Ided: 0.0 Participation is classes included plan 30 ysis of fundame	Language of ECTS cred Assessmer pineering prof. dr hab. in prof. dr hab. in Tutorial 0.0	of instruction its nt form nż. Piotr Chrza nż. Piotr Chrza Laboratory 15.0 Participation i consultation h	n n Projec 0.0	3.0 exam	Seminar 0.0	30	
Learning profile Conducting unit Name and surname of lecturer (lecturers) Lesson types and methods of instruction Learning activity and number of study hours Subject objectives Learning outcomes [K6] [K	eneral academic pro aculty of Electrical a ubject supervisor eachers eason type umber of study ours elearning hours inclue earning activity umber of study ours troduction and analy Course out K6_W03] knows the	Lecture 15.0 Ided: 0.0 Participation is classes included plan 30 ysis of fundame	Assessmer gineering prof. dr hab. ir prof. dr hab. i Tutorial 0.0	nt form nż. Piotr Chrza nż. Piotr Chrza 15.0 Participation i consultation h	n n Projec 0.0	exam	0.0	30	
Conducting unit Name and surname of lecturer (lecturers) Lesson types and methods of instruction Learning activity and number of study hours Subject objectives Learning outcomes [K6] [K	aculty of Electrical a ubject supervisor eachers esson type umber of study ours -learning hours incluearning activity umber of study ours troduction and analy Course out K6_W03] knows the	Lecture 15.0 Ided: 0.0 Participation is classes included plan 30 ysis of fundame	prof. dr hab. in prof. dr hab. in Tutorial 0.0	nż. Piotr Chrza nż. Piotr Chrza Laboratory 15.0	Projec 0.0	t	0.0	30	
Name and surname of lecturer (lecturers) Lesson types and methods of instruction Learning activity and number of study hours Subject objectives Learning outcomes [K6] [ubject supervisor eachers esson type umber of study ours -learning hours incluering activity umber of study ours troduction and analy Course out K6_W03] knows the	Lecture 15.0 Ided: 0.0 Participation in classes including plan 30 ysis of fundame	prof. dr hab. in prof. dr hab. in Tutorial 0.0	Laboratory 15.0 Participation i consultation h	Projec 0.0		0.0	30	
of lecturer (lecturers) Lesson types and methods of instruction Learning activity and number of study hours Subject objectives Learning outcomes [K6]	eachers esson type umber of study ours -learning hours inclue earning activity umber of study ours troduction and analy Course out K6_W03] knows the	15.0 Ided: 0.0 Participation is classes included plan 30 ysis of fundame	prof. dr hab. i Tutorial 0.0 n didactic led in study	Laboratory 15.0 Participation i consultation h	Projec 0.0		0.0	30	
Lesson types and methods of instruction Learning activity and number of study hours Subject objectives Learning outcomes [K6] [K6] [K6] [K6] [K6] [K6] [K6] [K6	esson type umber of study ours -learning hours inclue earning activity umber of study ours troduction and analy Course out K6_W03] knows the	15.0 Ided: 0.0 Participation is classes included plan 30 ysis of fundame	Tutorial 0.0 n didactic ed in study	Laboratory 15.0 Participation i consultation in	Projec 0.0		0.0	30	
of instruction Number of study hours Learning activity and number of study hours	umber of study ours -learning hours incluering activity umber of study ours troduction and analy Course out K6_W03] knows the	15.0 Ided: 0.0 Participation is classes included plan 30 ysis of fundame	0.0 n didactic led in study	Participation i consultation h	0.0		0.0	30	
Learning activity and number of study hours Number of study hours Subject objectives Learning outcomes [K6] aureg the drives	cours -learning hours incluse arning activity umber of study cours stroduction and analy Course out K6_W03] knows the	Participation in classes including plan 30	n didactic led in study	Participation i consultation h	n	Self-st			
Learning activity and number of study hours	earning activity umber of study ours troduction and anal Course out K6_W03] knows the	Participation in classes including plan 30	led in study	consultation h		Self-st	udy	SUM	
and number of study hours Number of study hours Subject objectives Learning outcomes [K6] au reg the dri	umber of study ours stroduction and analy Course out K6_W03] knows the	classes includ plan 30 ysis of fundame	led in study	consultation h		Self-st	udy	SUM	
Subject objectives Intr Learning outcomes [K6 au reg the dri	ours troduction and analy Course out K6_W03] knows the	ysis of fundame	ental electronic	4.0		Self-study		I	
Learning outcomes [K6 au reg the dri	Course out		ental electronic		4.0			75	
[Ké au rec the dri	K6_W03] knows the	come	Introduction and analysis of fundamental electronic components, circuits and applications.						
au reg the dri		Course outcome Subject outcome Method of verification							
IKE	[K6_W03] knows the basics of automation and automatic regulation, knows the principles of the selection of electrical devices, drive systems and their control		Student defines functions and features of electronic circuits in automatic systems. Evaluates technical data of generators, oscilloscopes, multimeters and amplifiers.			[SW1] Assessment of factual knowledge			
kno en ne ba of tra	[K6_W05] has structured knowledge in the field of electrical engineering and electronics, necessary to understand the basics of operation and selection of electrical machines, electricity transmission systems and power electronic devices		Student specifies properties of passive components. Possesses fundamental knowledge on semiconductor and optoelectronic devices.			[SW3] Assessment of knowledge contained in written work and projects [SW1] Assessment of factual knowledge			
gro cal en res	[K6_K02] is able to work in a group taking different roles in it, can think and act in an entrepreneurial way, is aware of responsibility for their own work and responsibility for teamwork								
resi juni par Opt Op	Laboratory equipment: multimeters, oscilloscopes, measuring probes. Passive electronic components: resistors, capacitors, inductors. Semiconductors: conduction processes, doped semiconductors, pn junction, ms junction. Diodes: switching, rectifier, Schottky, Zener, photodiodes, light emitting diodes, solar panels. Transistors bipolar and unipolar: structure, operation principles, electrical data and characteristics. Optoelectronic components. Amplifiers: technical data, characteristics, influence of negative feedback. Operational amplifiers. Filters. Power amplifiers. Generators. Power supply units. Phase lock loop. Digital circuit technologies. A/C and D/ C converters.								
Prerequisites Fur and co-requisites	Fundamentals of physics and theory of electrical circuits.								
Assessment methods							Percentage of the final grade		
and criteria	Subject passin	g criteria	Pass	ing threshold		Pero	centage of th	e final grade	
Te	Subject passin		Pass 50.0%	ing threshold		Pero 50.0%	centage of th	e final grade	

Data wydruku: 06.05.2024 03:33 Strona 1 z 2

Recommended reading	Basic literature	Piotr J. Chrzan: Lectures on Electronics, https://enauczanie.pg.edu.pl/moodle/course/view.php?id=6456		
	Supplementary literature	Nassir H. Sabah: Electronics basic, analog, and digital with PSpice, CRC Press 2009 by Taylor Francis Group LLC, International Standard Book Number-13: 978-1-4200-8708-6 (eBook - PDF)		
	eResources addresses	Adresy na platformie eNauczanie: Fundamentals of Electrical Engineering and Electronics 2 [2023/24] - Moodle ID: 31347 https://enauczanie.pg.edu.pl/moodle/course/view.php?id=31347		
Example issues/ example questions/ tasks being completed	Describe main operation modes of digital oscilloscope and explain features of the passive voltage probe.			
Work placement	Not applicable			

Data wydruku: 06.05.2024 03:33 Strona 2 z 2