

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Basics of Electronics		Code 1010604241010321631
Field of study Transport	Profile of study (general academic, practical) (brak)	Year /Semester 2 / 4
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 10 Classes: - Laboratory: - Project/seminars: -		No. of credits 1
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 1 100%
Responsible for subject / lecturer: Dr inż. Grzegorz Twardosz email: grzegorz.twardosz@put.poznan.pl tel. +4861 665-2378 Wydział Elektryczny ul. Piotrowo 3a, 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Basic knowledge of physics, chemistry and mathematics
2	Skills	Has the ability to self-educate of courses of Transport. Is able to obtain information from the literature and internet.
3	Social competencies	Is aware necessity to achieve competences. Has a sense own work with the principles of team work. Understands need of lifelong learning.
Assumptions and objectives of the course: Recognize principles of operation and practical consumption elements and electronic systems		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Has theoretically and practically application a lot of electronic elements and devices. Is able to draw of patent information - [K1A?W18, K1A?W20]		
2. Has basic knowledge of properties of linear and non-linear elements, feedbacks and transmittance. - [K1A?W17, K1A?W20]		
Skills:		
1. Is able to analyze electronic objects and their technical solutions. Can search the catalogs and manufactures websites for ready-made components - [K1A-U10]		
2. Is able to obtain information from the literature, internet, data base and other sources in Polish and English. Has the ability to self-educate using modern teaching tools. - [K1A?U01, K1A?U06]		
Social competencies:		
1. Has the ability evaluation of social aspects of new knowledge, and can work in team. - [K1A ? K01]		
2. Is able to to define priority and understands the importance of non-technical aspects. - [K1A ? K02]		
Assessment methods of study outcomes		
Evaluation of knowledge and skills on a pass in fundamentals of electronics with applications and theoretical aspects. Bonus for activity and level of perception		
Course description		

Linear and non-linear elements. Graphical solution of circuits. The characteristics and parameters of electronic elements. Analyse and operation electronic systems. Networks and filters. The amplifiers and generators. Photovoltaic systems.		
Basic bibliography:		
1. Praca zbiorowa Elektrotechnika i elektronika dla nieelektryków, Warszawa, WNT		
2. Kurdziel R.: Podstawy Elektrotechniki, WNT, wybrane fragmenty		
3. Cholewicki T.: Elektrotechnika teoretyczna WNT, Warszawa t.1		
4. Jastrzębska G.: Odnawialne źródła energii i pojazdy proekologiczne, Warszawa WNT 2009		
5. Jastrzębska G., Nawrowski R.: Zbiór zadań z Podstaw Elektrotechniki, Poznań, Wyd. P.P.2000		
6. Jastrzębska G.: Ogniwa słoneczne rozdz.10-Zastosowanie energii Słońca w środkach transportu, WKiŁ, Warszawa.		
7. Opydo W.: Urządzenia elektryczne i elektroniczne wyd..PP, Poznań.		
Additional bibliography:		
1. Pasko M, Piątek Z., Topór _ Kamiński L.: Elektrotechnika Ogólna, wyd Pol. Śl., t.1		
2. Praca zbiorowa Praktyczna elektrotechnika ogólna, Rea, Warszawa,		
Result of average student's workload		
Activity	Time (working hours)	
Student's workload		
Source of workload	hours	ECTS
Total workload	35	1
Contact hours	20	1
Practical activities	0	0