

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Problem workshop		Code 1010812121010810111
Field of study Electronics and Telecommunications	Profile of study (general academic, practical) general academic	Year /Semester 1 / 2
Elective path/specialty Radio Communications	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: - Classes: - Laboratory: - Project/seminars: 2		No. of credits 1
Status of the course in the study program (Basic, major, other) other		(university-wide, from another field) from field
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 1 100% 1 100%
Responsible for subject / lecturer: dr inż. Rafał Krenz email: rafal.krenz@put.poznan.pl tel. +48.61.6653912 Faculty of Electronics and Telecommunications ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	All from K1_W01 to K1_W24. K2_W06
2	Skills	All from K1_U01 to K1_U27. K2_U13 K2_U15 K2_U17
3	Social competencies	All from K1_K01 do K1_K05.
Assumptions and objectives of the course: The purpose of this course is to develop the ability for individual solving a given problem in the area of wireless communications in collaboration with other members of a team. Another purpose is to know about the structure of a scientific study and to prepare the oral presentation with the use of self-prepared slides.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Has in-depth knowledge of construction and operation of wireless systems. - [K2_W06]		
2. Has a deeper and practical knowledge of software defined radio technology and its applications. - [K2_W03]		
Skills:		
1. Is able to prepare a scientific paper or technical report and give a presentation (in English or in Polish) on solving a problem in the area of electronics and/or telecommunication; is able to participate in a discussion related to the presented problem. - [K2_U02]		
2. Is able to apply measurement techniques and devices, specific to wireless communications. - [K2_U013]		
Social competencies:		
1. Is able to act as a formal head of a small group of co-workers; is able to lead a small team. - [K2_K01]		
2. Is aware of the necessity to approach solving technical problems with responsibility and professionalism. - [K2_K04]		
Assessment methods of study outcomes		

Final report. Oral presentation of a solved problem. Activity during studies.		
Course description		
Application of software defined radio (software and hardware platforms) to wireless communication systems. Set-up and configuration of wireless communication systems, with emphasis on 2G/4G systems. Physical layer measurements in wireless communications.		
Basic bibliography:		
Additional bibliography:		
Result of average student's workload		
Activity	Time (working hours)	
1. Participation in lab meetings.	30	
2. Individual solving a given problem.	15	
3. Preparation of a report.	5	
Student's workload		
Source of workload	hours	ECTS
Total workload	50	1
Contact hours	30	1
Practical activities	40	1