

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Wireless networks		Code 1010805131010814201
Field of study Electronics and Telecommunications	Profile of study (general academic, practical) general academic	Year /Semester 2 / 3
Elective path/specialty -	Subject offered in: Polish	Course (compulsory, elective) elective
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 15 Classes: - Laboratory: - Project/seminars: -		No. of credits 2
Status of the course in the study program (Basic, major, other) major		(university-wide, from another field) from field
Education areas and fields of science and art technical sciences Technical sciences		ECTS distribution (number and %) 2 100% 2 100%
Responsible for subject / lecturer: dr hab. inż. Paweł Szulakiewicz, prof. nadzw. email: szulak@et.put.poznan.pl tel. 61 6653870 Faculty of Electronics and Telecommunications ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	Students have basic knowledge concerning signal theory, radiocommunications, wireless channels and digital communication systems (K1_W06, K1_W15, K2_W06)
2	Skills	Students are able to compare and professionally judge digital communication systems from the point of view of their parameters, modulation types and technologies (K1_U21)
3	Social competencies	Students understand limitations of their knowledge and necessity of professional approach to engineering problems solving. (K1_K01, K1_K02)
Assumptions and objectives of the course: The objective of the course is to teach students the selected wireless network standards, architectures, parameters and the scope of application.		
Study outcomes and reference to the educational results for a field of study		
Knowledge: 1. Students know the most popular wireless network standards, their structure, parameters, advantages, disadvantages and the scope of their application. - [-]		
Skills: 1. Students are able to design and deploy WLAN according to the standard IEEE 802,11 - [K2_U13] 2. Students are able to compare and judge different wireless networks - [K2_U13] 3. Students are able to express professional opinions concerning the wireless networks which enable access to the internet. - [K2_U13]		
Social competencies: 1. Students understand the necessity to study the new WLAN standards and technologies. - [K2_K02] 2. Students understand the technical challenges coming from the rising traffic in the WLANs. - [K2_K02]		
Assessment methods of study outcomes		
Oral examination concerning the wireless networks		
Course description		

<p>IEEE 802.11 a,b,g,n,ac,e,... Advances in WLAN wireless technologies (MIMO, beamforming, STBC, STTC, diversity types, OFDM, OFDMA, multi packet communication, ...). MAC layer The selected WLAN standards (WiMAX, H2, Bluetooth, ZigBee, UWB, ...)</p>		
<p>Basic bibliography: 1. WiFi guide and standard. 2. Selected standards available in the internet 3. Papers concerning WLANs in scientific journals and internet</p>		
<p>Additional bibliography:</p>		
<p>Result of average student's workload</p>		
<p>Activity</p>		<p>Time (working hours)</p>
<p>1. Lectures</p>		<p>15</p>
<p>2. Self study</p>		<p>20</p>
<p>Student's workload</p>		
<p>Source of workload</p>	<p>hours</p>	<p>ECTS</p>
<p>Total workload</p>	<p>35</p>	<p>2</p>
<p>Contact hours</p>	<p>15</p>	<p>1</p>
<p>Practical activities</p>	<p>0</p>	<p>0</p>