STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Wireless networks**		Code **1010805141010814201**
Field of study **Electronics and Telecommunications**	Profile of study (general academic, practical) **general academic**	Year /Semester **2 / 4**
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: **-** Classes: **15** Laboratory: **15** 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 purpose of the course is to teach students the wireless network standards.

Student should have practical knowledge and skils concerning wireless network design, deployment, analysis and technical problems solving.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. Students know the selected wireless network standards, the network advantages, disadvantages and the scope of their applications. - [K2_W06]

Skills:

1. Students are able to design, apply and deploy the WiFi network - [K2_U13]
2. Students are able to formulate professional opinions concerning wireless networks - [K2_U13]
3. Students are able to compare paramerers, to judge and analyse technical problems concerning the selected wireless networks. - [K2_U13]

Social competencies:

1. Students understand the necessity to study new standards and technilogies of the wireless networks. - [K2_K02]
2. Students understand challenges caused by the rising traffic in the wireless networks - [K2_K02]

Assessment methods of study outcomes

Permanent check of problems solving in the classes and in the laboratory.

Course description

Laboratory: WiFi network design, analysis and deployment

Classes: Analysis of technical problems concerning the WiFi network (OFDM, STBC, beamforming, receiver and transmitter design, ...)

Analysis of the MAC layers protocols (CSMA/CA, S-ALOHA, CDMA, OFDMA, ...)

Basic bibliography:

1. A guide to WiFi network.
2. Wireless network standards.
3. Scientific papers concerning the wireless networks.

Additional bibliography:

Result of average student's workload

Activity	Time (working hours)
1. Laboratory	15
2. Classes	15
3. Self study	35

Student's workload

Source of workload	hours	ECTS
Total workload	55	2
Contact hours	30	1
Practical activities	30	1