STUDY MODULE DESCRIPTION FORM

Name of the module/subject **(-)**		Code **1010802241010824062**
Field of study **Technical Applications of Internet**	Profile of study (general academic, practical) **general academic**	Year /Semester **2 / 4**
Elective path/specialty **-**	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: **2** Classes: **-** Laboratory: **-** Project/seminars: **1**		No. of credits **4**
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 %) **4 100%** **4 100%**

Responsible for subject / lecturer:

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Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Know basic technologies applied to solve practical problems in computer science and telecommunications, in particular in the area where these disciplines are merged (wireless systems, computer networks) - K_W04.
2	**Skills**	Are able to effectively utilize available data sources in both classical (texts and books) and modern form (Internet, discussion fora, databases, etc.) - K_U01.
3	**Social competencies**	Are aware of limitations of their own knowledge and skills; are capable of precise formulation of questions; understand the need for further education and getting familiar with research and popular journals associated with their fields of study on systematic basis - K_K01.

Assumptions and objectives of the course:

The goal of the subject is presentation of the basic technologies used in the designing of computer networks.

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

Knowledge:

1. Know basic technologies applied to solve practical problems in computer science and telecommunications, in particular in the area where these disciplines are merged (wireless systems, computer networks). - [K_W04]

2. Have systematic knowledge on signal theory, wireless communications, radio wave propagation, wireless and fixed networks and their standards, fiber optic systems, image, sound and speech processing techniques, measurement techniques connected with the above-mentioned areas of telecommunications. - [K_W13]

Skills:

1. Are able to carry out routine tasks and solve technical problems associated with the assessment, analysis and development of popular telecommunication and computer networks, both fixed and wireless. - [K_U12]

2. Are able to propose a technology, equipment, hardware and software to solve the problems of the Future Internet, including the business model as well as other economic and administrative circumstances. - [K_U16]

Social competencies:

1. Understand the need for disseminating knowledge on modern ICT, including the newest research and technological achievements. - [K_K04]
2. Understand and appreciate the significance of intellectual fairness in the activities of their own and other people; are aware of ethical problems in the context of research reliability (plagiarism or auto-plagiarism) as well as dangers of damage to the natural environment and their impact on society. - [K_K03]
3. Are able to define appropriate priorities for the tasks completed, also with the use of the methodology of carrying our projects. - [K_K06]

Assessment methods of study outcomes

Lecture: online exam on the e-learing platform of the Faculty of Electronics and Telecommunications

Project: finish note of the project

Course description

Main topics

1. Introduction
2. How to design computer networks? Cabling.
3. IP addresses in computer networks
4. Switch or router? Discussion about the architecture of computer networks
5. How to choose routing protocol?
6. Default gateway in computer networks
7. Addressing services
8. Building heterogeneous network
9. Network services versus architecture of the computer networks
10. Monitoring - techniques and tools
11. Troubleshooting
12. Network security
13. Case study

Basic bibliography:

1. James F. Kurose, Keith W. Ross: Sieci komputerowe. Ujęcie całościowe. Wydanie V, Helion, 2010

Additional bibliography:

1. Gary A. Donahue: Wojownik sieci, Helion, 2012
2. Robert Breyer, Sean Riley: Switched, Fast i Gigabit Ethernet, Helion, 2000

Result of average student's workload

Activity	Time (working hours)
1. Lecture	30
2. Project	15
3. Preparation to the project	15
4. Exam	2
5. Exam results - discussion	2

Student's workload

Source of workload	hours	ECTS
Total workload	64	4
Contact hours	49	2
Practical activities	30	1