

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Problem workshop		Code 1010822121010820111
Field of study Electronics and Telecommunications	Profile of study (general academic, practical) general academic	Year /Semester 1 / 2
Elective path/specialty Computer Networks and Internet	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. Sławomir Hanczewski email: slawomir.hanczewski@et.put.poznan.pl tel. +48 61 665 39 46 Faculty of Electronics and Telecommunications ul. Piotrowo 3A 60-965 Poznań		Responsible for subject / lecturer: dr inż. Sławomir Hanczewski email: slawomir.hanczewski@et.put.poznan.pl tel. +48 61 665 39 46 Faculty of Electronics and Telecommunications ul. Piotrowo 3A 60-965 Poznań
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	K1_W22 The student knows the basic concepts underpinning present day telecommunications networks and understands the functional meaning of these terms. Student has the ordered basic knowledge in the structure, operation and standards in different types of computer and telecommunications networks. Student knows the fundamentals of traffic engineering, queueing theory, services, devices, traffic management systems, network protocols and telecommunications techniques that are used in computer and telecommunications networks.
2	Skills	K1_U25 The student has the ability to configure devices and run a local computer network. Student can select and implement appropriate algorithms for a given network optimization problem to be solved. Student can make use of applications that analyze traffic flow in LAN networks, as well as applications that enable safe data transfer. K1_U26 The student is able to solve typical problems related to traffic engineering and the process of deciding and defining the parameters for network devices.
3	Social competencies	K1_K03 The student develops a sense of responsibility for electronic and telecommunications systems of his or her own design, and is aware of potential threats of their reasonably anticipated improper use for other people or society at large. K1_K02 Student develops awareness of the need for professional approach toward technical problems to be solved and accepting responsibility for proposed technical solutions Student is able to execute team commitments.
Assumptions and objectives of the course: To develop the ability to team work in providing solutions to tasks related to designing, building and running telecommunications networks. To improve the knowledge on telecommunications networks.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Student has the ordered knowledge of designing, building and maintaining computer networks - [K2_W12] 2. Student has the ordered practical knowledge of designing telecommunications networks - [K2_W14]		
Skills:		
1. Student is able to prepare a study presenting tasks results and to prepare a presentation of a given required subject (solution to a problem) in telecommunications networks, is able to discuss the prepared material - [K2_U02]		
Social competencies:		

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| <p>1. Student can organize and supervise work of a small group of co-workers - [K2_K01]</p> <p>2. Student understands the need and knows the possibilities of continuous training raising the competence of the professional skills - [K2_K04]</p> |
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Assessment methods of study outcomes		
Evaluation of the prepared report and presentation		
Course description		
<p>Questions related to the task subjects prepared by the teacher to be executed.</p> <p>Questions related to the preparation of case studies and reports and to their presentations</p>		
Basic bibliography:		
<p>1. 1. Stasiak M, Głabowski M., Hanczewski S., Zwierzykowski P.: Podstawy inżynierii ruchu i wymiarowania sieci teleinformatycznych, Wydawnictwo Politechniki Poznańskiej, Poznań, 2009.</p> <p>2. A. Józefiak, Budowa sieci komputerowych na przełącznikach CISCO, Helion, Gliwice, 2009.</p> <p>3. A.S. Tanenbaum, Sieci komputerowe, Helion, Gliwice, 2004.</p> <p>4. E. Cole, R. Krutz, J. Conley, Bezpieczeństwo sieci, Helion, 2005</p>		
Additional bibliography:		
Result of average student's workload		
Activity	Time (working hours)	
1. Udział w zajęciach	30	
2. Praca nad rozwiązaniem zadanego problemu	10	
3. Konsultacje	1	
Student's workload		
Source of workload	hours	ECTS
Total workload	50	1
Contact hours	30	1
Practical activities	40	1