

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Exploitation of computer networks		Code 1010334581010331474
Field of study Information Engineering	Profile of study (general academic, practical) (brak)	Year /Semester 4 / 8
Elective path/specialty Security of Information Technology (IT)	Subject offered in: Polish	Course (compulsory, elective) obligatory
Cycle of study: First-cycle studies	Form of study (full-time, part-time) part-time	
No. of hours Lecture: 8 Classes: - Laboratory: 8 Project/seminars: -		No. of credits 3
Status of the course in the study program (Basic, major, other) (brak)		(university-wide, from another field) (brak)
Education areas and fields of science and art technical sciences		ECTS distribution (number and %) 3 100%
Responsible for subject / lecturer: dr inż. Tomasz Bilski email: tomasz.bilski@put.poznan.pl tel. 061 66 53 554 Faculty of Electrical Engineering ul. Piotrowo 3A 60-965 Poznań		
Prerequisites in terms of knowledge, skills and social competencies:		
1	Knowledge	K_W07: Student has organized knowledge with theoretical foundations of computer networks. K_W13: Student has organized knowledge with theoretical foundations of data protection and IT system security. K_W18: Student knows common IT engineering technology.
2	Skills	K_U04: Student is able to prepare and to demonstrate short presentation of engineering task results. K_U05: Student is able to self learning in order to increase professional skills. K_U11: potrafi dokonać krytycznej analizy sposobu funkcjonowania sprzętu komputerowego, systemu operacyjnego (lub ich fragmentów) i sieci komputerowych
3	Social competencies	K_K02: Student understands and is aware of the importance of nontechnical issues related to computer engineer activity. Student understands the responsibility associated to his engineering decisions. K_K05: Student is able to think and work in enterprising way.
Assumptions and objectives of the course: Students should obtain theoretical knowledge and experience in computer networks management with special emphasis on such issues as: data security, operational environment heterogeneity.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Student has organized knowledge with theoretical foundations of computer networks. - [K_W07] 2. Student has organized knowledge with theoretical foundations of data protection and IT system security. - [K_W13] 3. Student has basic knowledge of IT system management. - [K_W14]		
Skills:		
1. Student is able to work alone and in a group; student can assess time needed to finish a given work; student can develop and realize schedule necessary to keep up deadlines. - [K_U02] 2. Student is able to do critical analysis of computer hardware operations, operating system and computer networks. - [K_U11]		
Social competencies:		
1. Student understands and is aware of the importance of nontechnical issues related to computer engineer activity. Student understands the responsibility associated to his engineering decisions. - [K_K02] 2. Student is able to think and work in inventive way. - [K_K05]		

Assessment methods of study outcomes		
Lecture ? test.		
Laboratory ? exercises.		
Course description		
<p>Lecture</p> <p>Functions, duties and tasks of network manager. Elements of the management process: hardware configuration, access control system, user account management, monitoring, optimization, time management, security violations, system documentation, contingency plan, resource planning, personnel management, cooperation with service providers, system development. Basic tools and protocols for network management (e.g. SNMP, DHCP, NTP, DNS, syslog). Information security policy.</p> <p>Course update 2017: new models of networks (NFV, SDN), Internet of Things.</p> <p>Teaching methods:</p> <ul style="list-style-type: none"> - lecture with multimedia presentations, - additional topics available in Moodle course. 		
<p>Laboratory</p> <p>DHCP server configuration. DNS server configuration. Computer networks management with SNMP and other tools. Access control system. User and admin accounts management.</p>		
<p>Basic bibliography:</p> <ol style="list-style-type: none"> 1. Tanenbaum A., Computer Networks 		
<p>Additional bibliography:</p> <ol style="list-style-type: none"> 1. Comer D., Computer Networks and Internets 2. T. Bilski, New Challenges in Network Security, PRZEGLĄD ELEKTROTECHNICZNY, ISSN 0033-2097, R. 92 NR 12/2016, s. 228-232. 3. . Bilski, Data Security in Emerging Wireless Technologies, Information Systems Architecture and Technology ? Networks Architecture and Applications, [Editors L. Borzemski, A. Grzech, J. Świątek, Z. Wilimowska], Oficyna Wydawnicza Politechniki Wrocławskiej, Wrocław, 2013, 119?128. 		
Result of average student's workload		
Activity	Time (working hours)	
1. Lectures	15	
2. Laboratory	15	
3. Exam preparation	15	
4. Theoretical preparation for laboratory	5	
5. Practical preparation for laboratory	35	
6. Exam	2	
7. Consultations	3	
Student's workload		
Source of workload	hours	ECTS
Total workload	90	3
Contact hours	35	1
Practical activities	50	2