

STUDY MODULE DESCRIPTION FORM		
Name of the module/subject Security in wireless networks		Code 1010822121010822685
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) elective
Cycle of study: Second-cycle studies	Form of study (full-time, part-time) full-time	
No. of hours Lecture: 2 Classes: 1 Laboratory: 1 Project/seminars: -		No. of credits 4
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 %) 4 100% 4 100%
Responsible for subject / lecturer: dr inż. Sławomir Hanczewski email: slawomir.hanczewski@et.put.poznan.pl tel. +48 61 665 39 46 Wydział Elektroniki i Telekomunikacji 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 (in part) 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.
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.
Assumptions and objectives of the course: To acquire theoretical and practical knowledge related to constructing safe wireless computer networks and their subsequent responsible use.		
Study outcomes and reference to the educational results for a field of study		
Knowledge:		
1. Student has appropriate knowledge on the safety of wireless computer networks - [K2_W12]		
Skills:		
1. Student is able to configure network devices and software in such a way as to secure safe data transfer. Student can responsibly use resources available on the Internet - [K2_U14]		
Social competencies:		
1. Student is constantly working on updating his or her knowledge and skills in issues related to wireless network - [K2_K04]		
2. Student develops awareness of the need for professional approach toward solving problems related to network safety - [K2_K05]		
Assessment methods of study outcomes		

Lecture ? oral exam Laboratory classes ? knowledge check (entrance test), practical skills check (network security issues), Classes ? test		
Course description		
1. Analysis of web threats stemming from the Internet 2. Hardware and software network firewalls 3. Security of network devices 4. Intrusion Detection Systems and Intrusion Prevention Systems (IDS/IPS) 5. Introduction to cryptography 6. Network protocols for safe data transfer 7. VPN (Virtual Private Networks) 8. Safety tests in computer systems		
Basic bibliography:		
1. The Book of Wireless: A Painless Guide to Wi-Fi and Broadband Wireless, 2nd edition, John Ross, 2009/05 2. Wi-Foo: The Secrets of Wireless Hacking, Andrew Vladimirov, Konstantin V. Gavrilenko, Andrei A. Mikhailovsky , 2005/07 3. A Guide to Computer Network Security, Joseph Migga Kizza, Springer 2009 4. Sieci VPN. Zdalna praca i bezpieczeństwo danych. Wydanie II rozszerzone, Marek Serafin, Helion 2009/12 5. Bezpieczeństwo sieci, E. Cole, R. Krutz, J. Conley, Helion, 2005 6. 101 zabezpieczeń przed atakami w sieci komputerowej, Maciej Szmit, Marek Gusta, Mariusz Tomaszewski, Helion 2005		
Additional bibliography:		
1. A Guide to Computer Network Security, Joseph Migga Kizza, Springer 2009 2. CCNA Security Official Exam Certification Guide, Michael Watkins, Kevin Wallace - Cisco Press (2008)		
Result of average student's workload		
Activity	Time (working hours)	
1. Udział w wykładach, laboratoriach i ćwiczeniach	60	
2. Przygotowanie do laboratoriów i ćwiczeń	25	
3. Przygotowania sprawozdań	9	
4. Przygotowanie do egzaminu	9	
5. Egzamin	2	
6. Konsultacje	1	
Student's workload		
Source of workload	hours	ECTS
Total workload	105	4
Contact hours	65	2
Practical activities	50	2