STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Data security		**1010334561010334967**
Field of study	Profile of study (general academic, practical)	Year /Semester
Information Engineering	**(brak)**	**3 / 6**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**Polish**	**obligatory**
Cycle of study:	Form of study (full-time,part-time)	
First-cycle studies	**part-time**	
No. of hours		No. of credits
Lecture: **20** Classes: **-** Laboratory: **16** Project/seminars: **-**		**5**
Status of the course in the study program (Basic, major, other)	(university-wide, from another field)	
(brak)	**(brak)**	
Education areas and fields of science and art		ECTS distribution (number and %)
technical sciences		**5 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student has an ordered knowledge of basic algorithms and their analysis, design techniques, algorithms abstract data structures and their implementation, computationally difficult problems.
2	**Skills**	Student can obtain information from literature, databases, and other sources; can integrate the information obtained, their interpretation, and also draw conclusions and formulate and justify opinions.
3	**Social competencies**	Student can construct algorithms using basic algorithmic techniques and analyse their complexity.

Assumptions and objectives of the course:

Presentation of theoretical and practical problems dealing with data security.

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

Knowledge:

1. Student has organized knowledge with theoretical foundations of data protection and IT system security. - [[K_W13]]

Skills:

1. Student is able to apply the appropriate methods of data protection and ensure the security of the IT system. - [[K_U17]]

Social competencies:

1. Student is aware of the importance of behavior in a professional manner, compliance with the rules of professional ethics and respect for the diversity of ideas and cultures. - [[K_K03]]

Assessment methods of study outcomes

Based on lecture and laboratory participation.

Course description

Threats to the data security. Methods of data protection: UPSs, system access security, logs, RAIDs, antivirus protection, steganography; cryptographic methods of data protection: ciphers, cryptographic techniques, data integrity, authentication, non-repudiation, cryptographic key management. Firewalls. Virtual Private Networks. Intrusion Detection Systems. Management of IT security.

Basic bibliography:

1. Wprowadzenie do kryptografii (Introduction to Cryptography), Buchmann J. A., Wydawnictwo Naukowe PWN (Springer), Warszawa (New York), 2006 (2004)

2. Ochrona danych i zabezpieczenia w systemach teleinformatycznych, Stokłosa J. (red.), Wydawnictwo Politechniki Poznańskiej, Poznań, 2005

3. Bezpieczeństwo danych w systemach informatycznych, Stokłosa J., Bilski T., Pankowski T., Wydawnictwo Naukowe PWN, Warszawa-Poznań, 2001

Additional bibliography:

1. Kryptografia (Cryptography. Theory and Practice), Stinson D.R., WNT (CRC Press), Warszawa (Boca Raton), 2005 (1995)

2. Kryptografia w praktyce, Ferguson N., Schneier B., Helion, Gliwice, 2004

3. Firewalle i bezpieczeństwo w sieci, Chestwick W. R. , Bellovin S.M. , Rubin A.D., Helion, Gliwice, 2003

Result of average student's workload

Activity	Time (working hours)
1. Lecture	20
2. Laboratory	16
3. Preparation of laboratory reports	20
4. Preparation to tests and laboratory	20
5. Preparation to the examination	10
6. Participation in consultations and examination	4

Student's workload

Source of workload	hours	ECTS
Total workload	90	5
Contact hours	40	3
Practical activities	40	3