

Subject code	Credits
INF4012	4

Title

INFORMACINI SISTEM SAUGUMAS

Title in English

INFORMATION SYSTEM SECURITY

Subject goal and annotation

This course gives the student an overview and the background in the field of security of information technologies and a detailed and practical understanding of selected aspects: risk management, access control, authentication technologies, cryptography, digital signature, public key infrastructure, hardware and software for the implementation of security algorithms, internet security and break-in prevention technologies, content protection and copyright issues. Course contains lectures and laboratory assignments. Students are also expected to both independently study theoretical materials and perform additional individual work.

Prerequisites

Programming in C, C#, JAVA, PHP, or python, Data structures

Relationship between the learning outcomes of the Programme and learning outcomes of the subject

Learning outcomes of the Programme	Learning outcomes of the subject	Criteria for measuring the achievement of learning outcomes
3. Knowledge of basic and advanced computer science and its application.	<p>Knowledge and understanding of security strategy and reduction of information security issues, risk and potential business impacts.</p> <p>Integration between business and information security.</p>	<p>Students demonstrates the ability to describe and analyse strategic alignment of security with business strategy and organizational objectives.</p> <p>Students able to perform an information security planning prior to implementation of new technologies.</p>
<p>10. Analysis, design and development of advanced Internet systems.</p> <p>12. Analysis, design and development of diverse software systems.</p>	<p>Implementation, monitoring and reporting on information security.</p> <p>Apply cryptographic algorithms for ensuring the confidentiality</p> <p>Identify and analyse information security risks within today's needs. Choose and apply suitable tools, to ensure acceptable security level for organisation.</p>	<p>Students demonstrates skills in analysing, modelling and predicting information system security needs, available solutions, applying tools.</p>

Subject content

	Lecture topics and contents	Hours
1.	Ethical hacker. Cyber security. Auditing. Security Concepts, Policies, Mechanisms.	5
2.	Cryptography. History of cryptosystems. Hash functions. Algorithms.	9
3.	Identification and Authentication. Multifactor authentication. Public key Infrastructure.	12

4.	Security in Cloud Computing and Software Development.	4
	Total	30

Practical work contents

Four practical problems will be performed.

1. Security of Wi-Fi.
2. Authentication
3. Cryptography: - access management.
4. Digital signature, e-signature.

Evaluation of study results

Final written exam (50%), mid-term written exam (17%), assessments of laboratory (practical) work (33%).

Distribution of subject study hours

Lectures	30
Laboratory work	30
Individual studies (including studies in groups, preparation for the mid-term and final exams)	58
Total	108

Recommended literature

No	Authors of publication and title	Number of copies available		
		<i>in the Library of VMU</i>	<i>in specialized publication collections at VMU</i>	<i>in other libraries</i>
Basic materials				
1.	Fundamentals of Information Systems Security/Information Security and Risk Management. Available free on internet: http://en.wikibooks.org/wiki/Fundamentals_of_Information_Systems_Security/Information_Security_and_Risk_Management			
2.	M. Krause, H.F. Tipton Information Security Management 2002. ISBN: 0849399475 Available free on internet: http://www.cccure.org/Documents/HISM/ewtoc.html .			
Supplementary materials				
1.	7 Things Every CEO Should Know About Information Security	Available online: https://www.lumension.com/Resources/eBooks/7-Things-Every-CEO-Should-Know.aspx		
2.	9 Steps to Cybersecurity Explains Cybersecurity and How to Properly Integrate it into Your Organization	Free ebook: http://www.iso27001standard.com/en/free-ebooks/9-steps-to-cybersecurity-managers-information-security-manual		
3.	Febg Bao, Jian Weng. Information Security Practice and Experience. 2011. Proceedings of the 7th International Conference on Information Security Practice and Experience, ISPEC 2011,	Available online: http://www.ebook3000.com/Information-Security-Practice-and-Experience_157522.html		

Subject prepared and coordinated by

Lect. Vytautas Barzdaitis