SYLLABUS:

Date / Revision	April 2017/September 2017/IT
Faculty	Engineering
Study Program	Computer Science

SUBJECT: IT SECURITY 1

1 Basic Information

1.01	**Subject Name**	**IT SECURITY 1 (Information Security)**
1.02	**Semester**	4
1.03	**Level**	1
1.04	**SKS**	2
1.05	**Mandatory / Curriculum**	D-04
1.06	**Subject Code**	OTSE
1.07	**Subject Code**	CSE-D-OTSE-117
1.08	**Year**	2017
1.09	**Quality Control**	Final Test, see evaluation
1.10	**Limitations**	Min 12 and Max 32 students in one class
1.11	**Combined with**	
1.12	**Perquisite**	
1.13	**Responsible**	
1.14	**Revision**	September 2017

2 Description of Subject

It is a comprehensive study of the principles and practices of computer system security, which can range from non-networked standalone devices up to networked mobile computing devices. It will explain the nature and value of the data within larger businesses and the responsibility of keeping all of the technology within the company secure from malicious cyber attacks.

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3 Objectives

To provide student with general knowledge about the important of information security. It is about preventing unauthorized access, use, disclosure, disruption, modification, inspection, recording or destruction of information.

4 Competency

- Understand how information security risk and vulnerabilities
- Understand the fundamentals of cryptography, basic cryptographic tools.
- Able to implement cryptography to protect the confidentiality and integrity of data.
- Able to Identify and assess current and anticipated security risks
- Able to develop contingency plans and disaster recovery plan

5 Learning Approach / Methodology

- Lectures/ Class contact (time-tabled) supplemented with interactive questions and answers;
- Student Study Effort: homework/assignment; preparation for test/quizzes/ examination.

6 Evaluation

5.1	**Absence maximum**	25%
5.2	**Participation in Discussion**	05 Points
5.3	**Homework / Classwork**	05 Points
5.4	**Presentation /Simulation**	10 Points
5.5	**Daily Quiz**	20 Points
5.6	**Final Examination**	60 Points
	Total	100 Points

7 Text Book and Reference

1	**Main Text Book:** Computer Security Fundamentals, Third Edition, Brett Bartow et.al., Pearson Education, 2016, ISBN-10: 0-7897-5746-X
2	**Supplement Textbooks:** Securing Information and Communications Systems, Principles, Technologies, and Applications Steven M. Furnell et.al., Artech House, 2008, ISBN 13: 978-1-59693-228-9

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8 Content / Topics of Lecture

Week	Content/Topics of Lecturing	Text Book Chapter	Rem
1	How Seriously Should You Take Threats to Network Security? , Identifying Types of Threats , Assessing the Likelihood of an Attack on Your Network , Basic Security Terminology , Concepts and Approaches , How Do Legal Issues Impact Network Security? , Online Security Resources	Chapter 1: Introduction to Computer Security	
2	Network Basics , How the Internet Works , History of the Internet , Basic Network Utilities , Other Network Devices , Advanced Network Communications Topics	Chapter 2: Networks and the Internet	
3	How Internet Fraud Works , Identity Theft , Cyber Stalking , Protecting Yourself Against Cyber Crime DoS , Illustrating an Attack	Chapter 3: Cyber Stalking, Fraud, and Abuse Chapter 4: Denial of Service Attacks	
4	Viruses , Rules for Avoiding Viruses , Trojan Horses, The Buffer-Overflow Attack , The Sasser Virus/Buffer Overflow , Spyware , Other Forms of Malware , Detecting and Eliminating Viruses and Spyware	Chapter 5: Malware	
5	Basic Terminology , The Reconnaissance Phase , Actual Attacks , Malware Creation , Penetration Testing	Chapter 6: Techniques Used by Hackers	
6	What Is Industrial Espionage? , Information as an Asset , Real-World Examples of Industrial Espionage , How Does Espionage Occur? , Steganography Used in Industrial Espionage , Phone Taps and Bugs , Protecting Against Industrial Espionage , Industrial Espionage Act , Spear Phishing	Chapter 7: Industrial Espionage in Cyberspace	
7	Cryptography Basics , History of Encryption , Modern Methods , Public Key (Asymmetric) Encryption , PGP , Legitimate Versus Fraudulent Encryption Methods , Digital Signatures , Hashing , MAC and HMAC , Steganography , Cryptanalysis , Cryptography Used on the Internet	Chapter 8: Encryption	
8	Midterm Break		
9	Virus Scanners , Firewalls , Antispyware , IDS , Digital Certificates , SSL/TLS , Virtual Private Networks , Wi-Fi Security	Chapter 9: Computer Security Technology	
10	What Is a Policy? , Defining User Policies , Defining System Administration Policies , Defining Access Control , Developmental Policies , Standards, Guidelines, and Procedures , Data Classification , Disaster Recovery , Important Laws	Chapter 10: Security Policies	
11	Basics of Assessing a System , Securing Computer Systems , Scanning Your Network , Getting Professional Help	Chapter 11: Network Scanning and	

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		Vulnerability Scanning	
12	Actual Cases of Cyber Terrorism , Weapons of Cyber Warfare , Economic Attacks , Military Operations Attacks , General Attacks , Supervisory Control and Data Acquisitions (SCADA) , Information Warfare , Actual Cases , Future Trends, Defense Against Cyber Terrorism , Terrorist Recruiting and Communication, TOR and the Dark Web	Chapter 12: Cyber Terrorism and Information Warfare	
13	General Searches , Court Records and Criminal Checks , Usenet	Chapter 13: Cyber Detective	
14	General Guidelines , Finding Evidence on the PC , Finding Evidence in System Logs , Getting Back Deleted Files , Operating System Utilities , The Windows Registry , Mobile Forensics: Cell Phone Concepts , Expert Witnesses , Additional Types of Forensics	Chapter 14: Introduction to Forensics	
15	Final Examination		

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