

SYLLABUS: Computer Network & IT Security

Date / Revision 15 August 2017 / 15-08-17/MaS
Faculty All Faculties
Study Program All Study Programs

SUBJECT: Computer Network & IT Security

1 Basic Information

1.01	Subject Name	Computer Network & IT Security
1.02	Semester	1
1.03	Level	1
1.04	SKS	2
1.05	Mandatory / Curriculum	Mandatory / U-02
1.06	Subject Code	CNIS
1.07	Subject Code	UNI-CNIS-1102
1.08	Year	2017 (7)
1.09	Quality Control	Final Test, see evaluation
1.10	Limitations	Min 12 and Max 32 students in one class
1.11	Combined with	All study programs
1.12	Perquisite	None
1.13	Responsible	Computer Science Department, Erry G. Wiriaatmadja, M. Affandi
1.14	Revision	15-08-2017/MaS

2 Description of Subject

The current trend in using computer technology enables people to connect each other for sharing data, information and others computing resources. This course introduces the computer networking and Information Technology security which are important for students to understand. The knowledge can be applied in practical work for personal and organizational usages.

3 Objectives

- introduce the Computer Network and Internet
- to study Application Layer and Network Layer
- introduce the Wireless and Mobile Networks
- to study Network Management and Understanding of IT Security
- introduce the Security for Individuals and for Organizations

4 Competency

After having the course, students are expected to:

- . describe the computer network
- describe the Internet and its usages
- understand application and network layer
- describe wireless and mobile networks
- understand how to manage computer network
- understand the general security issues of information technology
- understand the IT security for individuals and organizations

5 Learning Approach / Methodology

- Lectures/ Class contact (time-tabled) supplemented with interactive questions and answers;
- Tutorial/ Practice Classes: preview of materials, revision;
- 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 NETWORKING A Top-Down Approach”, Authors: James F. Kurose University of Massachusetts, Amherst Keith W. Ross Polytechnic Institute of NYU, Publisher: Pearson, ISBN-13: 978-0-13-285620-1
2	Supplement Textbooks: <ul style="list-style-type: none"> “Information Technology Security Handbook”, Authors: George Sadowsky, James X. Dempsey, Alan Greenberg, Barbara J. Mack, Alan Schwartz, Publisher: Global Information and Communication Technologies Department the World BANK, ISBN: 0-9747888-0-5

8 Content / Topics of Lecture

Week	Content/ Topics of Lecturing	Text Book	Remark
1	Computer Networking and the Internet <ul style="list-style-type: none"> What is the Internet? The Network Edge The Network Core History of Computer Networking and the Internet 	Chapter 1 Main Textbook	Group Formation Slide Presentation
2	Application Layer <ul style="list-style-type: none"> Principles of Network Application The Web and HTTP File Transfer: FTP Electronic Mail and the Internet DNS – The Internet’s Directory Services 	Chapter 2 Main Textbook	Slide Presentation
3	Transport Layer <ul style="list-style-type: none"> Transport Layer Services Multiplexing and De-multiplexing TCP 	Chapter 3 Main textbook	Slide Presentation
4	The Network Layer <ul style="list-style-type: none"> Routing The Internet Protocol Routing in the internet 	Chapter 4 Main textbook	Slide Presentation
5	Wireless and Mobile Networks <ul style="list-style-type: none"> Wireless Network Characteristics Wireless LAN Cellular Internet Access Mobility Management Mobile IP 	Chapter 6 Main textbook	Slide Presentation
6	Multimedia Networking <ul style="list-style-type: none"> Multimedia Networking Application Streaming Stored Video Voice Over IP Network Support for Multi Media 	Chapter 7 Main textbook	Slide Presentation

7	Assignment <ul style="list-style-type: none"> The use of computer network in business/industry How to build computer network (requirement, hardware and software) 		Assignment
8	MIDTERM SEMESTER BREAK		
9	IT Security In The Digital Age: <ul style="list-style-type: none"> Introduction The Digital Revolution What Is Security? Emergence and Growth of the Internet Information Security Issues What Motivates the Security Violators? Importance of Security for SME's in Developing Countries Towards a New Model of Trust 	Part 1 Supplement Textbook	Slide Presentation
10	Security for Individuals - Understanding and Addressing Security: <ul style="list-style-type: none"> Why are security measures required? Why is security lacking? Assessing the threat and the cost of loss The role of the user in security Assignment: <ul style="list-style-type: none"> Describe the motivations of IT security violations. 	Part 2 – Chapter 2 Supplement Textbook	Slide Presentation Assignment
11	Security for Individuals - Keeping Your Computer and Data Secure: <ul style="list-style-type: none"> Physical Security Using Backups to Protect your Data Authentication Restrict Privileges 	Part 2 – Chapter 3 Supplement Textbook	Slide Presentation
12	Security for Individuals - Keeping your Operating System and Application Software Secure: <ul style="list-style-type: none"> Commercial Software Non-traditional and non-commercial software 	Part 2 Chapter 4 Supplement Textbook	Slide Presentation
13	Security for Individuals - Malicious Software: <ul style="list-style-type: none"> Introduction What do they do? Payload Software How do you get them? Non-resident Malware Assignment: <ul style="list-style-type: none"> Describe how we can protect our computer from unintended access or virus-attacks. 	Part 2 Chapter 5 Supplement Textbook	Slide Presentation Assignment
14	Security for Organizations <ul style="list-style-type: none"> e-Security Risk Mitigation Assignment: <ul style="list-style-type: none"> Why does an organisation need to plan security needs? 	Part 3 – Chapter 2 Supplement Textbook	Slide Presentation Assignment
15	Planning the Security Needs: <ul style="list-style-type: none"> Effective Security Based on Technical Solutions and Policy Guidance Types of Security Concerns 	Part 3 – Chapter 4 Supplement Textbook	
16	Final Examination		