SYLLABUS

Date/ Revision	April 2017
Faculty	Engineering
Approval	Head of Program Study

SUBJECT : NETWORKING 1

1. Identification of Subject:

Name of Subject	: NETWORKING 1
Code of Subject	:
SKS / ECTS	:
Semester	:
Study Program	: CSE
Lecturer	:

2. Competency

After having the course, students are expected to:

a) understand the main networking problems and solution algorithms.
b) understand socket programming
c) learn how to use APIs

3. Description of Subject:

This course will cover an introductory course in data communications, computer communications, and networking. There will be a discussion about principles of data communications, including transmission, digital and analog data and signaling, encoding. This covers networks from low level protocol design up to TCP/IP.

4. Learning Approach

Approach	: Problem based learning
Method	: Discussion, question answer, group work
Student Task	: Practices and homework
Media	: Power Point Presentation, Video, Modulo

5. Evaluation

a)	Absence maximum	: 25%
b)	Participation in discussion	: 5 points
c)	Homework, Classwork	: 10 points
d)	Presentation, Simulation	: 10 points
e)	Daily Quiz	: 15 points
f)	Final Examination	: 60 points
	Total	: 100 points

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Contents/ Topics of Lecturing:

Week	Topics	Content	Rem
1	INTRODUCTION	Uses Of Computer Networks, Network Hardware, Network Software, Reference Models, Example Networks, Network Standardization, Metric Units, Outline Of The Rest Of The Book	
2 – 3	THE PHYSICAL LAYER	The Theoretical Basis For Data Communication, Guided Transmission Media, Wireless Transmission, Communication Satellites, Digital Modulation And Multiplexing, The Public Switched Telephone Network, The Mobile Telephone System, Cable Television	
4 – 5	THE DATA LINK LAYER	Data Link Layer Design Issues, Error Detection And Correction, Elementary Data Link Protocols, Sliding Window Protocols, Example Data Link Protocols	
6 – 7	THE MEDIUM ACCESS CONTROL SUBLAYER	The Channel Allocation Problem, Multiple Access Protocols, Ethernet, Wireless Lans, Broadband Wireless, Bluetooth, Rfid, Data Link Layer Switching	
8	MID TERM BREAK		
9 – 10	THE NETWORK LAYER	Network Layer Design Issues, Routing Algorithms, Congestion Control Algorithms, Quality Of Service, Internetworking, The Network Layer In The Internet	
11 - 12	THE TRANSPORT LAYER	The Transport Service, Elements Of Transport Protocols, Congestion Control, The Internet Transport Protocols: Udp, The Internet Transport Protocols: Tcp, Performance Issues, Delay-Tolerant Networking	
13	THE APPLICATION LAYER	Dns—The Domain Name System, Electronic Mail, The World Wide Web, Streaming Audio And Video, Content Delivery	
14	NETWORK SECURITY	Cryptography, Symmetric-Key Algorithms, Public-Key Algorithms, Digital Signatures, Management Of Public Keys, Communication Security, Authentication Protocols, Email Security, Web Security, Social Issues	
15	FINAL EXAMINATION		

6. Book Reference:

a) Computer Network, Fifth Edition, Andrew S. Tanenbaum & David J. Wetherall, Pearson, 2011, ISBN-13: 978-0-13-212695-3

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