
SYLLABUS

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

SUBJECT : NETWORKING 2

1. Identification of Subject:

Name of Subject : NETWORKING 2
Code of Subject :
SKS / ECTS :
Semester :
Study Program :CSE
Lecturer :

2. Competency

After having the course, students are expected to:

- a) understand the design principles, key networking issues and solutions of the Internet
- b) understand various advanced topics on computer networking
- c) identify and solve problems in computer networking

3. Description of Subject:

This course will cover various advanced topics in computer networking including Internet design principles, Internet routing, network measurement and traffic engineering, congestion and flow control, peer to peer and overlay networks, anonymous networks, data center networks, cloud computing, online social networks, network security, and future Internet design

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 |

Contents/ Topics of Lecturing:

| Week | Topics | Content | Rem |
|---------|---------------------------------|--|-----|
| 1 | Foundation | Applications, Requirements, Network Architecture, Implementing Network Software, Performance | |
| 2 - 3 | Getting Connected | Perspectives on Connecting, Encoding (NRZ, NRZI, Manchester, 4B/5B), Framing, Error Detection, Reliable Transmission, Ethernet and Multiple Access Networks -802.3, Wireless | |
| 4 | Internetworking | Switching and Bridging, Basic Internetworking (IP), Routing, Implementation and Performance | |
| 5 | Advanced Internetworking | The Global Internet, Multicast, Multiprotocol Label Switching (MPLS), Routing among Mobile Devices | |
| 8 | MID TERM BRAKE | | |
| 6 -7 | End-to-End Protocols | Simple Demultiplexer (UDP) , Reliable Byte Stream (TCP) , Remote Procedure Call , Transport for Real-Time Applications (RTP) | |
| 9 - 10 | Congestion Control and Resource | Issues in Resource Allocation , Queuing Disciplines, TCP Congestion Control , Congestion-Avoidance Mechanisms , Quality of Service | |
| 11 | End-to-End Data | Presentation Formatting, Multimedia Data | |
| 12 - 13 | Network Security | Cryptographic Building Blocks, Key Predistribution , Authentication Protocols, Example Systems , Firewalls | |
| 14 | Applications | Traditional Applications, Multimedia Applications , Infrastructure Services , Overlay Networks | |
| 15 | FINA EXAMINATION | | |

6. Book Reference:

Computer networks : a systems approach , Larry L. Peterson and Bruce S. Davie. – 5th ed. TheMorgan Kaufmann series in networking, 2012, ISBN 978-0-12-385059-1