

TIF21-21-42

Data and Computer Communications

Komunikasi Data dan Komputer

BASIC INFORMATION

Course Credit	2 / 100 minutes per Week
Course Type	Required
Course Classification	Engineering Topics
Prerequisites	-

STUDENT AND LEARNING OUTCOMES

Covered Student Outcomes

Fundamental and Engineering Knowledge (a)	Modern Tools Utilization (e)
Development of Engineering Solution (b)	Multidisciplinary Teamwork(h)

Learning Outcomes

- LO1** Students are able to explain the concept of data communications, data networking and internet.
- LO2** Students are able to explain local area network and wide area networks.
- LO3** Students understand the concept of internet and transport protocols.
- LO4** Students are able to explain internet applications

COURSE DESCRIPTION

This course covers the concept of data communications, data networking, local area and wide area network, internet transport protocols and internet applications.

TOPICS

1. Data Communications, Data Networking and Internet
2. Protocol Architecture, TCP/IP and Internet-based Applications
3. Data Transmission

4. Transmission Media
5. Signal Encoding Techniques
6. Digital Data Communication Techniques
7. Data Link Control Protocols
8. Multiplexing
9. Spread Spectrum
10. Circuit Switching and Packet Switching
11. Asynchronous Transfer Mode
12. Routing in Switched Networks
13. Congestion Control in Data Networks
14. Cellular Wireless Networks
15. Local Area Networks Overview
16. High-Speed LANS
17. Wireless LANS
18. Internetwork Protocols
19. Internetwork Operation
20. Transport Protocols

REFERENCES

- [1] Stallings, *Data and Computer Communications 10th edition*, Pearson, 2018.

