



VIETNAM NATIONAL UNIVERSITY OF HO CHI MINH CITY
UNIVERSITY OF NATURAL SCIENCES
FACULTY OF INFORMATION TECHNOLOGY

COURSE SYLLABUS

Course Code:	TH502
Title:	Fundamentals of Telecommunication Networks
Credits:	3
Workload:	Lecture hours: 3 periods * 15 weeks = 45 periods Laboratory hours: 0 periods * 15 weeks = 0 periods Preparative hours: 3 periods * 15 weeks = 45 periods
Prerequisites:	N/A

Course Objectives:

This course is the first in the series on telecommunication for computer science students, especially those students interested in computer and telecommunication networks. This subject will equip students with knowledge about Telecommunication Networks, Principles of Telecommunication Networks, and Queuing Systems.

Main Text: N/A

References:

- *Fundamentals of Telecommunication networks*
Tarek N. Sadawi, Mostafa H. Ammar, Ahmel El Hakeem, John Wiley & Son, Inc, 1994.
- *Telecommunications Protocols and design*
John D. Spragins, Jojeph L. Hammond, Krzysztof Pawlikowski, Addison Wesley Inc, 1994.
- *Data and Computer Communication*
William Stallings , Macmillan, 1994.

Course Outline:

Chapter 1: Overview of telecommunication networks

1. Concepts
2. Channel switching techniques
3. Telecommunication network protocol architecture
 1. OSI model architecture
 2. Internet model architecture
 3. Other architectures (SNA and DECNET)
4. Some telecommunication networks

Chapter 2: Principles of telecommunication networks

1. General model of communication networks
2. Analog data in digital channel
3. Signal communication
4. Formats of data representing signal
5. Channel bandwidth
6. Communication media
7. Multiplexing
8. Communication in the physical layer of telecommunication network
9. Disturbance and disturbance detection techniques

Chapter 3: Queuing systems

1. Process discrete events, continuous time
2. General breed – die process and Poisson process
3. M/G/1 queuing system
4. Applications of M/G/1 queuing system
5. Queue with priority access
6. Queuing networks
7. FDM multiplexing
8. STDM multiplexing
9. ATDM multiplexing

Grading

Final exam:

Assignments: