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

COURSE SYLLABUS

Course Code: TH503

Title: Data Communication Techniques

Credits: 4

Workload:

Lecture hours:	**3** periods * **15** weeks = **45** periods
Laboratory hours:	**1** periods * **15** weeks = **15** periods
Preparative hours:	**3** periods * **15** weeks = **45** periods

Prerequisites: TH135 – Fundamentals of Telecommunication Networks 2

Course Objectives:

This course belongs to the series on communication for those students interested in computer and telecommunication networks. Topics include Data Communication, Data Encoding, Digital data communication techniques, Data link control, and Multiplexing.

Main Text: N/A

References:

- *Data and Computer Communication*
  William Stallings, Macmillian, 1994.
- *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.

Course Outline:

Chapter 1 : Overview about data communication techniques

1. Data communication concepts
2. Digital and analog communication
3. Deficiency in Data transmission
4. Communication networks

Chapter 2 : Data encoding

1. Digital data, digital signal
2. Digital data, analog signal
3. Analog data, digital signal

4. Analog data, analog signal

Chapter 3 : Digital data communication techniques

1. Synchronous and asynchronous communication
2. Error detecting techniques
3. Interfacing

Chapter 4 : Data link control

1. Signal transmitting channel configuration
2. Flow control
3. Error control
4. Data link control protocols
5. Practice

Chapter 5 : Multiplexing

1. Frequency-Division Multiplexing (FDM)
2. Statistical Time-Division Multiplexing (STDM)
3. Asynchronous Time-Division Multiplexing (ATDM)

Grading Final exam :

Assignments: