



COURSE SYLLABUS

Course Code:	TH010
Title:	Introduction to Computer Science A1 (Pascal)
Credits:	5
Workload:	Lecture hours: 4 periods * 15 weeks = 60 periods Laboratory hours: 3 periods * 15 weeks = 45 periods Preparative hours:
Prerequisites:	N/A

Course Objectives:

The objective of this course is to provide students with the general knowledge and basic principles of computer sciences, basic programming concepts and skills for problem solving for computing. Pascal will be used throughout the course.

Main Text: *Introduction to Computer Science* (in Vietnamese)
Prof. Hoàng Kiếm - the Education Publisher, 1998.

References:

- *Ngôn ngữ lập trình Pascal (Pascal Programming Language)*
Quách Tuấn Ngọc - the Education Publisher, 1996.

Course Outline:

Chapter 1 Overview and fundamental principles

- 1.1 Computer Memory
 - 1.1.1 Main Memory
 - 1.1.2 Information Coding and Storage
 - 1.1.3 Binary System
 - 1.1.4 Negative Number Representations
 - 1.1.5 Number storage
 - 1.1.6 Error in communication
- 1.2 Central Processing Unit
 - 1.2.1 Central Processing Unit
 - 1.2.2 Basic concepts of programs
 - 1.2.3 Program Execution
 - 1.2.4 Other Structures
 - 1.2.5 Arithmetical/Logical operations
 - 1.2.6 Peripheral communications
- 1.3 Computer Simulation
 - 1.3.1 The programming language Bare Bones
 - 1.3.2 Turing Machine

- 1.3.3 Calculating Functions
- 1.3.4 Non-Calculating Functions

Chapter 2 Algorithms and Heuristics

- 2.1 Algorithms
- 2.2 Algorithm representations
- 2.3 Algorithm complexity
- 2.4 Recursive Algorithms
- 2.5 Some popular algorithms
- 2.6 Heuristics

Chapter 3 Solving Problems in Computers

- 3.1 Solving Problems in Computers
- 3.2 The programming language Pascal
 - 3.2.1 Overview of the programming language Pascal
 - 3.2.2 Structure of a Pascal program
 - 3.2.3 Data Types in Pascal
 - 3.2.4 Recursive Programming

Grading

Final exam :

Assignments: