

COURSE SYLLABUS

General information

- Name: Art of Programming
- Code: CSC10002
- Lecturer:
 - Name: Bùi Tiến Lên
 - Degree: PhD
 - Institution: University of Sciences
 - Phone number: 0907357838
- Teaching Assistants:
 - Msc. Lê Ngọc Thành
 - Msc. Trương Tấn Khoa
- Number of hours:
 - Theory: 45
 - Experiments-Practice: 30

Requirements

- Courses which students must have passed: Introduction to Programming

Course description

This course is to introduce to students advanced programming techniques and practices in C/C++ syntax. Students will learn how to use different types of pointers, dynamic memory management, binary file manipulation, etc. Students will also learn to implement basic data structures such as linked list, stack, and queue. Sort algorithms and problem solving with dynamic programming will also be presented.

Learning objectives

After finishing the course, student will be able to:

- Define and use advanced programming techniques in C/C++: pointers, binary files, recursion, exception handling, etc.
- Describe and implement basic data structures: linked list, stack, and queue.
- Present and apply basic sort algorithms and dynamic programming to solve problems.

Course contents

1. Review & overview
2. Recursion
3. Dynamic programming
4. Exception
5. Multithread
6. Binary file
7. Linked list
8. Stack
9. Queue
10. Sorting

Methods of instruction and study

- Students do hand-writing exercises on theory classes and at home

- Lecturer gives lecture on theory classes
- Student self-practice on the computer room or at home, with the guidance of lecturer and teaching assistants

Grading scheme

- Lecture: 60% (midterm + final + assignments)
- Lab: 40%
- Bonus: 5% (activities)

General regulations & policies

- All students are responsible for reading and following strictly the regulations and policies of the school and university.
- Students who are absent for more than 3 theory sessions are not allowed to take the exams.
- For any kind of cheating and plagiarism, students will be graded 0 for the course. The incident is then submitted to the school and university for further review.
- Students are encouraged to form study groups to discuss on the topics. However, individual work must be done and submitted on your own.

Textbooks

1. “Giáo trình kỹ thuật lập trình”, 2013, Nhiều tác giả, Nhà xuất bản Khoa học và Kỹ thuật.
2. “Starting Out with C++ from Control Structures to Objects”, 2014, Tony Gaddis, Pearson.

Software or Technologies

- Microsoft Visual Studio C++ or similar IDEs