DATA STRUCTURES & ALGORITHMS

Course overview

Le Van Vinh, PhD

Faculty of Information Technology

HCMC University of Technology and Education

Email: vinhlv@fit.hcmute.edu.vn

Introduction

❖ **Course objectives**

- Provide basic/commonly-used data structures, including: Lists, Stacks, Queues, Trees, and Hash tables.

- Provide algorithms on the data structures: Sorting, searching, inserting, deleting.

- Applying the data structures to solve practical/real-world problems.

❖ **Programming languages**

- Pseudo-code

- C/C++

Outlines

1: Introduction to Data Structures and Algorithms

2: Sorting algorithms

3: Lists

4: Stacks

5: Queues

6: Tree structures

7: Hash Tables

Lê Văn Vinh - CNTT - SPKT

Useful materials

[1] Reema Thareja, Data structures Using C, Oxford University Press, 2014.

[2] Kruse, R.L, Data structures and Program Design in C++ , Prentice-Hall Inc, 1999.

[3] Giáo trình Cấu trúc dữ liệu và giải thuật. Le Van Vinh, ĐH Quốc gia TP. HCM.

Assessment

- Middle exams: 50%
  - Excercises (in class, at home)
  - Minor projects
  - Online activities (through www.lms.hcmute.edu.vn)
- Final exams: 50%
  - Major projects + Oral exam
- Bonus: Up to 15%
  - Attending class activities