Introduction

Data Structures and Algorithms

Overview

- Intermediate-level course
- Programming and problem solving
- Data structures: method to store information

Why Study Algorithms

- Using a computer?
  - Want it to go faster? Process more data?
  - Want it to do something that would otherwise be impossible?
- Technology improves things by a constant factor
  - but might be costly
  - good algorithmic design can do much better and might be cheaper
  - supercomputers cannot rescue a bad algorithm

Areas

- Multimedia. CD player, DVD, MP3, JPG, DivX...
- Internet. Packet routing, Google,..
- Communication. Cell phones, e-commerce
- Computer. Circuit layout, file system
- Computer graphics. Movies, video games
- Science. Human genome, protein folding
- Transportation. Airline crew scheduling, UPS deliveries
People

- **Lecturer:** Tran Thi Minh Chau  
  - 309 E3, chauttmATvnu.edu.vn

- **Teaching Assistant:** Nguyen Ba Dat  
  - Labs, homeworks, assignments  
  - datnb.nguyenATgmail.com

Coursework and Grading

- **Weekly exercises:** 10%  
  - Lab programming exercises, written homework.

- **Programming project:** 20%

- **Exams**  
  - Closed book.
  - Midterm: 10%
  - Final: 60%

- **Penalty**  
  - **Plagiarism:** immediate FAIL

Course Material

- [http://coltech.vnu.edu.vn/~chauttm/dsa2011w](http://coltech.vnu.edu.vn/~chauttm/dsa2011w)  
  - Syllabus, assignments, exercises, lecture notes...

- [http://bbc.vnu.edu.vn](http://bbc.vnu.edu.vn)  
  - Announcements, assignment submission, discussion board


- Đinh Mạnh Tường, *Cấu trúc dữ liệu và giải thuật.*


Final Notes

- **Not a course on programming**

- **Self-study is a MUST**

- **Beware:** Lecturer/Instructor might be wrong and do not know all.

- **Code of conduct:**  
  - Respect other people.
  - Be self-responsible.
  - No question is stupid.