COMP9024: Data Structures and Algorithms

Course Outline

(Updated in July 2007)

Aims:

The aims of this course are

- to introduce the basic data structures and algorithms, and
- to develop skills in the design and analysis of algorithms and data structures.

Learning Outcomes:

If successfully completing this course, students will

- understand the basic data structures and algorithms;
- be able to analyze the complexities of software; and
- be able to select appropriate data structures and algorithms for applications.

Units of Credit: 6

Prerequisite: COMP9021.

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Lectures:

Each week there is a three-hour lecture. The following topics will be covered in the lectures:

- Java programming language
- Analysis of algorithms
- Linked lists, stacks and queues
- Trees
- Priority queues
- Search trees
- Sorting
- Maps and dictionaries
- Text processing
- Graphs

Assignments:

There will be four assignments all of which are individual assignments.

Tutorials:

There will be no formal tutorials. But each week, you will be given some questions based on the lecture material. It is recommended that you try your best to solve these questions. Solutions to some of questions will be discussed in the next lecture.

Examination:

There will be a formal three-hour exam at the end of this course. It is an open book exam.

Assessment:

Your final result is calculated based on:

- Assignments 20%
- Final exam 80%

Late penalties:

You are expected to complete each assignment on time. The late penalty is computed as follows:

- 10% x if you assignment is x days late.

Supplementary Exam:

You will be given a supplementary exam ONLY IF

- you have not been caught for plagiarism, and
- your final result is at least 45, or you are on the special list due to illness and other reasons.

Note that all requests for special consideration must be put in writing **within one week** of the event at NewSouthQ.

Plagiarism:

- **Plagiarism is strictly prohibited** - a mark of ZERO will be given for all works detected where it cannot be shown that it was not copied. For details, please read CSE Plagiarism Policy.

Textbook:

- Data Structures and Algorithms in Java (4^{th} edition) by Michael T. Goodrich and Roberto Tamassia.

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