

COMP3600/COMP6466 Algorithms

2009-S2 Basic Course Information

1 Course Description

This course deals with the study of algorithms for solving practical problems, and of the data structures used in their implementation. Detailed analysis of the resource requirements of algorithms will be an important issue.

The topics covered will include: mathematical tools, greedy algorithms, dynamic programming, divide-and-conquer, basic search techniques, graph algorithms, data structures, etc.

2 Prerequisites

12cp of 2000-level COMP units including COMP2100 or both COMP2031 and COMP2600; and 6cp of 2000-MATH/STAT/EMET units.

3 Lectures, Laboratories and Consultations

The course consists of thirty lectures, four tutorials/labs (two hours each) which run together. The detailed arrangement is as follows.

Three lectures are offered per week. They are on Mondays, Tuesdays, and Wednesdays. The lectures are scheduled at

- 12:00pm – 1:00pm on Mondays, ENEG T (Building 32)
- 12:00pm – 1:00pm on Tuesdays, JD101 (Building 27)
- 11:00am – 12:00pm on Wednesdays, JD101 (Building 27)

Four tut/lab will be offered for the course, which are run on Weeks 5, 7, 9 and 11, and there are three groups. The times for the tutorials and labs are scheduled at

- 1:00pm – 3:00pm on Monday, CSIT N114 (Tutor: Khoi-Nguyen Tran)
- 5:00pm – 7:00pm on Monday, CSIT N114 (Tutor: Khoi-Nguyen Tran)
- 9:00am – 11:00am on Wednesday, CSIT N115/116 (Tutor: Weifa Liang)

The consulting times are as follows.

- 11:00am – 12:00pm on Fridays, CSIT N334
- 2:00pm – 3:00pm on Wednesdays, CSIT N334

4 Textbook and Reference Books

The following text book will be used for this course:

Introduction to Algorithms
by T. H. Cormen, C. E. Leiserson, R. L. Rivest and C. Stein
MIT Press, 2nd Edition, 2001.

The following reference books are recommended for this course:

Computer Algorithms – Introduction to Design and Analysis
by Sara Baase and Allen Van Gelder
Addison-Wesley, 3rd Edition, 2000.

Algorithms in C
by Robert Sedgewick
Addison-Wesley, 3rd Edition, 2002.

Algorithms Design
by John Kleinberg and Eva Tardos
Addison-Wesley, 2005.

Algorithms
by Sanjoy Dasgupta, Christos Papadimitriou and Umesh Vazirani
McGraw Hill Higher Education, 2008.

The Design and Analysis of Computer Algorithms
by Alfred V. Aho, John E. Hopcroft and Jeffrey D. Ullman
Addison-Wesley, 1974.

5 Assessment

There will be TWO assignments (a_1 and a_2) and ONE final exam. Following the assessment policy of departmental courses, the assessment will be based on a 40:60 weighting for assignments ($A/100$) and the final examination ($E/100$), and the final marks will be calculated by the following formula:

$$Total = 0.4A + 0.6E$$

$$A = 0.45a_1 + 0.55a_2$$

The department's policy on plagiarism will be enforced.

6 Staff

The lecturer is Dr Weifa Liang, N334, CSIT Building, phone: 6125-3019.