

# CSCI 4470/6470 Algorithms (Fall 2008)

Tue. & Thu. 12:30 – 1:45 (Bio Sci 404c) / Wed. 12:20 – 1:10 (Boyd 306)

**Instructor :** Shelby Funk

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**Office hours :** Monday 2:00 – 3:00 and Thursday 3:30 – 5:00

**Teaching assistant:** Alex Ho

**TA's office & office hours:** Boyd 538 / Wednesday 2:00 – 3:00

**Course website:** <http://webct.uga.edu>

**Class pictures:** <http://cs.uga.edu/~shelby/classes/4470-6470-Fall-08/photos>

## Course contents

This course provides an introduction to the modern study of computer algorithms. Topics include: asymptotic notation, basic algorithm analysis techniques, analysis of sorting algorithms, algorithm design techniques such as divide-and-conquer and greedy algorithms, fundamental graph algorithms, and a glance at the theory of NP-completeness. Time permitting; students will be exposed to some advanced subjects such as randomized algorithms and real-time scheduling algorithms.

By the end of the semester, students should know a broad array of algorithms and have tools for selecting the best algorithm to solve a given problem.

## Prerequisites

CSCI 2670 Introduction to Theory of Computing.

CSCI 2720 Data Structures.

## Text

*Introduction to Algorithms*, T. H. Cormen, C. E. Leiserson, R. L. Rivest, and C. Stein, 2nd ed, McGraw-Hill, 2001.

## Tentative Schedule

Part I. Introduction: Chapters 1-5 (1.5 weeks)

Part II. Sorting and order statistics: Chapters 6-9 (1.5 weeks)

Part IV. Advanced design and analysis techniques: Chapters 15-17 (4 weeks)

Part VI. Graph algorithms: Chapters 22-24 (3 weeks)

Part VII. Selected topics: Chapters 31, 34, 35 (4 weeks)

## Grading policy

Written assignments: 30%

Each midterm exam : 20%

Final exam: 30%

There will be 2 midterm exams.

Homework is due at the beginning of class. I will accept homework as late as 10 AM the following day.

## Important dates

|                                |   |
|--------------------------------|---|
| August 18 – 21 (Mon. – Thu.)   | Drop for undergrads                         |
| August 18 – 22 (Mon. – Fri.)   | Add for undergrads                          |
| August 18 – 25 (Mon. – Mon.)   | Drop for grads                              |
| August 18 – 26 (Mon. – Tue.)   | Add for grads                               |
| September 1 (Mon.)             | Labor day (no classes)                      |
| <b>September 25 (Thu.)</b>     | <b>First midterm exam</b>                   |
| October 23 (Thu.)              | Withdrawal deadline                         |
| October 31 (Fri.)              | Fall break (no classes)                     |
| <b>November 6 (Thu.)</b>       | <b>Second midterm exam</b>                  |
| November 24 – 28 (Mon. – Fri.) | Thanksgiving break (no classes)             |
| December 5 (Thu.)              | Last algorithms class                       |
| December 9 (Tue.)              | Friday class schedule (no algorithms class) |
| <b>December 16 (Tue.)</b>      | <b>Final Exam 12:00 – 3:00</b>              |

## Academic Dishonesty

All academic work must meet the standards included in “A Culture of Honesty.” Each student is responsible for informing themselves about these standards before performing any academic work. <http://www.uga.edu/ovpi/honesty/acadhon.htm>. I have also provided a separate document describing when you may (and may not) collaborate on your work.

## Laptop Policy

I discourage the use of laptops or other electronic devices during class. If you have a reason to use your laptop during class, please discuss this with me outside of class. If you have not had such a discussion with me, you are not permitted to use your laptop in class.

## Attendance policy

Regular class attendance is required though class attendance may not be used in the final determination of grades. Students are required to attend class during the regularly scheduled tests and the final exam unless *prior* arrangements have been made.

## Registration policy

Your work will not be graded unless you are officially registered for this class.

## Special Needs

Students with a disability or health-related issue who need a class accommodation should make an appointment to speak with the instructor as soon as possible.

## Caveat

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary." For the official University policy regarding syllabi, go to: [www.curriculumsystems.uga.edu/Policies/CourseSyllabusPolicy.pdf](http://www.curriculumsystems.uga.edu/Policies/CourseSyllabusPolicy.pdf)