$CS : 3330 : 0001$ ($22\mathbf{C} : 031 : 001$) **Algorithms**
Fall 2014

Class Schedule

12:30–1:20 pm Monday, Wednesday, and Friday at 110 MacLean Hall (SH).

Instructor

Kasturi Varadarajan: 101D MacLean Hall, 335-0732, kasturi-varadarajan@uiowa.edu
Office hours: 2:00–3:30 pm Tuesday, and 3:00–4:30 pm Thursday. To meet me at other times, you can set up an appointment.

Teaching Assistant

Watch the course page for information on your TA.

Course Web Page

`www.cs.uiowa.edu/~kvaradar/fall2014/algos.html`. This is also accessible from the ICON page for this course.

Departmental Information

Department of Computer Science, 14 Maclean Hall. The office of the DEO, Prof. Alberto Segre, is located here.

Content

The course is about developing algorithmic intuition, and learning to communicate algorithms effectively. We will practise the precise statement of various computational problems, think about different strategies or algorithms to solve them, reason about their correctness, evaluate these algorithms from the point of view of efficiency (usually running time), and develop a feel for the difficulty of problems and the applicability of various techniques we will learn. It is convenient to organize the course in terms of the following topics:

- Introduction

- Basic Graph Algorithms

- Greedy Algorithms and Analysis

- Recursive thinking: Divide-and-Conquer

- Recursive thinking: Dynamic Programming

- Network Flow and applications

- NP-completeness

These topics are essentially the first eight chapters of our textbook, *Algorithm Design*, by Kleinberg and Tardos. As a reference, we may also use from Jeff Erickson at UIUC, available at `http://www.cs.uiuc.edu/ jeffe/teaching/algorithms/`.

Prerequisites

Data Structures (At the UI this is CS:2230 (22C:021)).

Grading

The grading will be based on about eight homeworks (25 percent), two midterm exams (20 percent each), and a final (35 percent). One or two of the homeworks will be based on programming.

The policy on late homeworks is that you have a quota of three days for the entire semester that you may use for late submissions. So for example, there will be no penalty if you submit the third homework a day late, the fifth two days late, and the rest of the homeworks on time. Once you use up your quota of three days, any homework submitted late will not be accepted and you will get 0 points for that homework.

When you submit a homework X days late, your quota gets decreased by X irrevocably. You can only be late by an integer number of days – if you submit 10 hours after the deadline, for example, your quota is depleted by one day.

Exam Dates

The first midterm will be in class on Wednesday, October 8. The second midterm will be in class on Wednesday, November 12. The final will be during the finals week (Dec 15–19), as scheduled by the Office of the Registrar.

Collaboration

No collaboration is allowed on the exams. For homework problems, collaboration is allowed, assuming each of you has first spent some time (about 30 minutes) working on the problem yourself. However, no written transcript (electronic or otherwise) of the collaborative discussion should be taken from the discussion by any participant. Furthermore, discussing ideas is okay but viewing solutions of others is not. It will be assumed that each of you is capable of orally explaining the solution that you turn in, so do not turn in something you don't understand. Students are responsible for understanding this policy; if you have questions, ask for clarification.

Course Accounts

You will be assigned an account on the computer science department machines shortly, if you do not already have one. In addition, you will need your HawkId and password to access information about this course on ICON and to submit the programming assignments.

Administrative Home

The College of Liberal Arts and Sciences is the administrative home of this course and governs matters such as the add/drop deadlines, the second-grade-only option, and other related issues. Different colleges may have different policies. Questions may be addressed to 120 Schaeffer Hall, or see the CLAS Academic Policies Handbook at
`http://clas.uiowa.edu/students/handbook`.

Electronic Communication

University policy specifies that students are responsible for all official correspondences sent to their University of Iowa e-mail address (@uiowa.edu). Faculty and students should use this account for correspondences.

Accomodations for Disabilities

A student seeking academic accommodations should first register with Student Disability Services and then meet privately with the course instructor to make particular arrangements. See `www.uiowa.edu/∼sds/` for more information.

Academic Honesty

All CLAS students have, in essence, agreed to the College's Code of Academic Honesty: "I pledge to do my own academic work and to excel to the best of my abilities, upholding the IOWA Challenge. I promise not to lie about my academic work, to cheat, or to steal the words or ideas of others; nor will I help fellow students to violate the Code of Academic Honesty." Any student committing academic misconduct is reported to the College and placed on disciplinary probation or may be suspended or expelled (see CLAS Academic Policies Handbook).

Making a Suggestion or a Complaint

Students with a suggestion or complaint should first visit with the instructor (and the course supervisor), and then with the departmental DEO. Complaints must be made within six months of the incident. (See CLAS Academic Policies Handbook).

Understanding Sexual Harassment

Sexual harassment subverts the mission of the University and threatens the well-being of students, faculty, and staff. All members of the UI community have a responsibility to uphold this mission and to contribute to a safe environment that enhances learning. Incidents of sexual harassment should be reported immediately. See the UI Comprehensive Guide on Sexual Harassment for assistance, definitions, and the full University policy.

Reacting Safely to Severe Weather

In severe weather, class members should seek appropriate shelter immediately, leaving the classroom if necessary. The class will continue if possible when the event is over. For more information on Hawk Alert and the siren warning system, visit the Department of Public Safety website.