Lecture #1: Tuesday, 2 April 2002
Topics: **Basic Course Information**
Lecturer: Leonidas Guibas

The people

- **Instructor:** **Prof. Leonidas J. Guibas**
  office: Gates 374
  tel.: 723-0304
  e-mail: guibas@cs.stanford.edu
  office hours: Tuesday/Wednesday, 11:00–12:00 noon

- **Teaching Assistants:** Gagan Aggarwal, Natasha Gelfand, and Anthony Man-Cho So.
  Further details to be announced

- **Course Secretary:** **Hoa Nguyen**
  office: Gates 146
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The lectures

- **Class Lectures:** **Prof. Leonidas Guibas**
  time: Tuesday/Thursday, 9:30–10:45 am
  place: Skilling Auditorium

- **Recitation Sections:** to be announced

Prerequisites

The official prerequisites for this course are CS109 (*Introduction to Computer Science*) and Statistics 116 (*Theory of Probability*). If you have not taken the latter course, be aware that familiarity with basic combinatorial mathematics and especially with some probability theory (random variables, independence, expectation, variance) will be very useful in CS161.

Course Mechanics

The primary goal of this course is to teach you *how to design and analyze discrete algorithms* (here 'discrete' means combinatorial, and is meant to contrast with 'continuous' algorithms, such as those used in numerical analysis). The material will be presented in the two weekly lectures. There will also be recitation sections, each meeting for one hour per week. These will be run by the TAs and will be devoted to solving problems and illustrating the techniques covered in the lectures. Each student is encouraged to attend one of these sections. Class participation is strongly encouraged during the lectures and is absolutely essential during the recitations.

The requirements for this course will be a weekly paper-and-pencil homework assignment (seven such homework sets altogether), an in-class midterm examination, and a final programming project/contest. Grading will be based primarily on the problem sets (60%), the mid-term (15%), and the programming project (25%). In borderline situations, class and recitation participation will be taken into account.

The main written reference for the course will be the book: *Introduction to Algorithms* (CLR) by Cormen, Leiserson, and Rivest (MIT). This text is currently in its second edition, with Stein added as a co-author. Several of the assigned homework problems will be from this text. A list of other useful books will be handed out (handout 3).

Electronic versions of the course information, including PDF files for the handouts, will be available at the URL:

`http://graphics.stanford.edu/courses/cs161-02-spring/`, or
`http://www.stanford.edu/class/cs161/` .

Look at this page for the latest information about the course, various announcements, etc.

If you have any questions about the course mechanics, etc., please send e-mail to "cs161-help@cs.stanford.edu."[1]

Problem sets

Problem sets will be assigned on a weekly basis. They will generally be handed out in lecture on Tuesdays and due in lecture the following Tuesday. Solutions will normally be handed out the Tuesday after that. The actual dates will be announced on the problem set handout.

Problem sets will contain exercises and problems.

- The *exercises* are *not* to be handed in. They are provided as practice material. Several of the exercises will be solved in the recitations, and some of them may appear in the midterm.

[1] We would like this to be the primary path by which you communicate with us electronically.

- The *problems* are to be handed in and will be graded. They will form a part of your final grade.

An important goal of this course is to teach you how to describe algorithms, and how to formally prove correctness and performance assertions about algorithms. Try to be as clear and precise as possible in your presentations. Understandability of the solution is as desirable as correctness. Sloppy answers will be at a disadvantage, i.e. likely to receive fewer points, even if they are correct. Your homework should *not* be done in red ink.

It is very important that every homework be turned in on time. We recognize that occasionally there are circumstances beyond one's control that prevent an assignment from being completed before it is due. You will be allowed two class periods of grace during the quarter. This means that you can either hand in two assignments late by one class, or one assignment late by one week. Any other assignment handed in late will be penalized by 20% for each class that it is late, unless special arrangements have been approved previously by the instructor.

You are encouraged to collaborate in study groups of up to three students on the solution of the homeworks. If you do collaborate, you must write up solutions on your own and acknowledge your collaborators in the write-up for each problem. If you obtain a solution with help (e.g., through library work, another student, etc.), acknowledge your source, and write up the solution on your own. Plagiarism and other anti-scholarly behavior will be dealt with severely. Some of the problems you will be assigned, or variations thereof, may have also been used in this class in previous years. It is an honor code violation to use past handouts containing solutions to these problems in working out current problem sets.