Class: COMP 363: Design and Analysis of Computer Algorithms (Section 615)
Spring 1999 Course Information & Syllabus

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Lectures: Monday 6:00-8:40 pm in DH-127.
If you have to miss a class, get notes from another student; mine are typically pieced together from more
than one place with a lot of metacommments, which makes it hard for anybody but me to follow them. Also
get copies of any missed handouts (available on the web site). The handouts are numbered sequentially,
starting with handout 0. On handout 0, you need to fill in some information and return it to me promptly
so you can be on the email list and get access to the web site for the course.

Office Hours: In Damen 329C: Mon. and Wed. 2:15-4:15 pm, and Tues. 10:30 am – 12:30 pm.
These are the guaranteed times to find me except as announced in advance. You should also be able to find
me at lots of other times; feel free to look for me or make appointments.

Course Objectives: Students should gain basic skills in designing and implementing efficient and effective
computer programs. We will begin by developing models and mathematical tools for measuring the efficiency
of algorithms. Then students will be introduced to a variety of useful data structures and to algorithms for
a variety of fundamental problems. Finally, the course will provide an introduction to classification of
computational problems into different complexity classes. The course will include a small amount of actual
programming in addition to theoretical analysis.

Prerequisites: The formal prerequisites are COMP 271 and COMP 211 (which requires MATH 131 or
161). It is also helpful for students to have previously taken STAT 203, but I will lecture or hand out
brief notes on basic probability if necessary. The actual desired topical backgound includes: programming
in a general-purpose language including capabilities for recursion, e.g., C, induction, basic calculus, basic
probability, sets, permutations and combinations. Familiarity with graphs and trees also provides a helpful
head start. Except for the programming, review material on most of these topics is included in the textbook.

Required Text: Thomas H. Cormen, Charles E. Leiserson, and Ronald L. Rivest. Introduction to Algo-
rithms. McGraw-Hill, 1990. The second printing incorporates a numer of bug corrections. There are also
some additional corrections in later printings.

Course Requirements: There will be several homework assignments, two midterm exams, and a final.
The weightings within the semester grade will be: Homework 20%, Exam I 20%, Exam II 25%, and Final
exam 35%.

Homework: Only homework turned in by the due date is guaranteed to be graded. Any special circum-
cstances that cause difficulty in meeting the deadlines should be brought to the attention of the instructor
in advance. Homework must be handed in at the beginning of class, since solutions may be handed out in
the same class on occasion. Homework turned in to my mailbox will generally not be graded, since I do not
check the box continually and cannot generally verify that homework was turned in before solutions were
distributed or discussed in class. If you cannot turn in homework in person, you should put it under the
door of my office.

Exams: The midterm exams, tentatively scheduled for session 6 and session 12, are 75 minutes long. The
final exam is scheduled for 6:00-8:00 on Monday, May 10.

Collaboration: No collaboration is permitted on exams. Collaboration on homework is acceptable, but
copying is not! You may discuss solution techniques with other students, but you must write up your
solutions independently. If you obtain a solution through research, e.g., in the library, credit your source and write up the solution in your own words.

Tentative Course Outline and Approximate Schedule:

Recommended readings from the text are shown for each lecture. (When selected sections or subsections are listed, it is assumed that you will include the introduction of the corresponding chapter or section.) Also included are some sections that may be consulted as needed for background on topics such as mathematical notations, probability, graph theory, etc. I’ve tried to flag the first point at which such sections may be useful.

14. (4/26) More NP-complete problems. Section 36.5. Review or additional enrichment material or overflow from prior lectures.