

CMPS 102 Syllabus and Information

Spring 2004

Welcome to CMP 102, Introduction to Analysis of Algorithms. The course meets TuTh from 12:00 to 1:45 in Thiman Lecture Hall, room 001. My office is 319 Baskin Engineering and my (tentative) office hours will be Tuesdays from 2-4. I can also be reached e-mail at dph@cse.ucsc.edu and through the WebCT discussion groups.

Prerequisites: All students must have successfully completed CMP 101. Transfer students **must** have credit for this course approved by the CIS/CE board office.

Main text: Introduction to Algorithms, by Cormen, Lieserson, Rivest and Stein. We will also have supplemental reading assignments from **Fundamentals of Algorithmics** by Brassard and Bratley, **Computer Algorithms** by Baase and Van Gelder, and **The Design & Analysis of Algorithms** by Levitin; all of which are on reserve in the science library.

TA: Alisa Neeman, Email: aneeman@cse.ucsc.edu Office hours: TBD.

Sections: Until we get permanent rooms, the sections will be meeting a little irregularly. The planned schedule is (all in room 330 BE):

- Fridays from 9 to 10:30 on Apr 2, 9, 16
- Friday April 2nd from 2 to 3:30
- Thursday April 8 and 15 from 2 to 3:30

Course Work: This course will be taught more like a math course than a programming course. You will have regular (weekly) written assignments, two in-class midterms (Thursday April 15, and TBD) a final examination on Thursday June 10 at 8am. Your percentage for each of these will be weighted as follows:

Homeworks	15%
First Midterm	20%
Second Midterm	25%
Final	40%

I will give an incomplete only if there has been medical/family emergency **and** the student has been doing at least average work. To gauge the difficulty of the exams and homeworks, I will average the top three overall scores to get a target percentage. Anyone getting at least 90% of that target percentage will get an A or A-, anyone getting at least 80% of that target percentage will get a B (or B+ or B-) and anyone getting at least 70% of that target percentage will get at least a C.

Assignments: Written assignments are to be written up individually. Copying another person's assignment or solution is cheating, and will not be tolerated. However, helping your classmates understand the material is encouraged. *Always* clearly acknowledge any help you have received from classmates or any other sources *including* the web, any texts other than the required one, etc. There is no penalty for over-referencing your sources.

Class Accounts: Students are required to read the WebCT discussion groups for the class; it is your responsibility to know the information that has been posted there and on the class web page at <http://www.cse.ucsc.edu/classes/cmeps102/> The CATS webCT documentation is available at: <http://ic.ucsc.edu/docs/webct/students.shtml>

Syllabus and Reading: The following lists the various topics I will cover. You should read the appropriate sections at least once before lecture, even if it is difficult to understand. Later, go back and read carefully to ensure that you fully understand the material. Those topics marked with an “(R)” represent review material will be covered only briefly in class, you are expected to review these topics in more detail on your own.

Topic	CLR	B&B	Baase and VG
introduction and asymptotic notation (R)	1,2,3	1,2,3	1
Proof Techniques (R)	–	1	3.3, 3.4
Summations and Recurrences (R)	4, ap. A	1.4,4	3.6
Counting and Probability (R)	5, ap. C	1.7	–
Divide and Conquer	7,8,9,28.2	7	3
Backtracking, Branch and bound	–	9	–
Dynamic Programming	15, 25.2	8	10
Greedy Methods	16, 23, 24.3	6	8
Lower bounds	8	12	5
String Matching	32	–	11

Chapter 10 and appendix B the text is material you should know from 101. Other topics, such as amortized analysis, NP-completeness, and approximation algorithms will be covered if time is available.