

CS 3305
Discrete Math for Computing II
Fall 2005

Instructor: Nancy Van Ness,
Office: ECS 4706
Phone: 972.883.4858
email: nancyvn@utdallas.edu.
Time and Location: MWF 3:00 p.m. - 3:50 p.m., ECSS2.311
Office Hours:
Mon/Wed 5:30 - 6:30 PM in ECS 4.706
Tues 9 a.m. -10 AM. in ECS 4.706
Monday/Friday 11 am - 2 PM in advising office
or by appointment

Textbook: *Discrete Mathematics and Its Applications, 5th ed., Kenneth H. Rosen*

Material: Selected material from Chapters 6, 7, 2, 8, and 9

This course covers a large amount of material and is quite fast paced. Homework will be assigned almost every class. Check WebCT for any changes in the assignment. Hints and answers for the homework and the lecture slides are available there as well.

Grading: The grade in this course will consist of two mid terms, a final, quizzes and homework assignments. These will be weighted as follows:

| | | |
|-------------|-----|--|
| Assignments | 10% | see current assignment sheet |
| Midterm 1 | 20% | Monday, September 19 |
| Mid term 2 | 20% | Monday, October 17 |
| Quizzes | 20% | See current assignment sheet |
| Final | 30% | Wednesday, November 30 2:00 p.m. |

Grading Policies: As the number of quizzes and homework assignments is large, 1/3 of these will be dropped. Plan accordingly as late homework is not accepted (once answers have been posted) and no makeups are given for the missed quizzes.

ABET

ABET was established in New York in 1932 as the Engineers Council for Professional Development (ECPD). As a result of surveys conducted by professional engineering societies in the 1920s, ECPD was formed to fill the apparent need for a "joint program for upbuilding engineering as a profession." Hence, ECPD originally focused on the following

Guidance - Supplying information to engineering students and potential students.

Training - Developing plans for personal and professional development.

Education - Appraising engineering curricula and maintaining a list of accredited curricula.

Recognition - Developing methods whereby individuals could achieve recognition by the profession and the general public.

In 1980, ECPD was renamed the **Accreditation Board for Engineering and Technology (ABET)** in order to reflect more accurately its emphasis on accreditation, and it continues to put most of its emphasis on accreditation today. Now active in two additional areas, applied science and computing, **ABET** accredits some 2,700 programs at over 550 colleges and universities nationwide. Each year, over 1,500 volunteers from its now 30 member societies actively contribute to **ABET**'s goals of leadership and quality assurance in applied science, computing, engineering, and technology education, serving as program evaluators, committee members, commissioners, and Board representatives. (The preceding was taken from ABET 's web site history link. More information about ABET is available at its web site <http://www.abet.org>.)

UTD is actively pursuing accreditation by ABET. To this end each course must have a set of state objectives. The objectives for CS 3305 are as follows.

- Ability to use Big O in context of algorithmic complexity
- Ability to construct and solve recurrence relations
- Ability to use the principle of inclusion and exclusion to solve problems
- Ability to understand binary relations and their applications
- Ability to recognize and use equivalence relations and partial orderings
- Ability to use and construct graphs and graph terminology
- Ability to apply the graph theory concepts of Euler and Hamilton paths
- Ability to identify and use planar graphs and shortest path problems
- Ability to use and construct trees and tree terminology
- Ability to use and construct binary search trees

These objectives will be measured by taking grades on one or more of the following designated problems from the homework, specific problems from the quizzes or specific problems from the exams, midterm 1, mid term 2 or the final. More than one measure may be taken for each objective. In addition a folder must be kept of three samples of all graded work, including exams and homework. The originals will be kept and a copy returned to the student.

Description of the Course

Looking at the ABET Objectives, one notes that a great emphasis is placed on more advanced methods of counting (complexity, recurrence relations and inclusion/exclusion) as well as fundamental concepts which will be expanded upon in later courses. The student will be encouraged to understand structure and not memorization and mimicking of previously solved problems. Connections and similarities of concepts in different contexts will be stressed. Applying learned ideas in new situations will be emphasized. In the process, it is hoped that the student will begin to learn how to learn, a technique absolutely essential in the fast-changing technological world of today.

Homework is absolutely essential in the understanding of the concepts. While a lot will be assigned, not all needs to be turned in. Feedback will be given quickly. Not only answers but also hints will be posted on WebCT. Every week there will be a quiz over the material covered. At that time, students will be allowed to work in groups, use their books and ask questions as the problems will be new and not necessarily simple but built on the understanding of the homework and lectures for that week. Exams will be closed book with permission given for bringing in two sheets (front and back) to the Mid Terms and 4 sheets to the Final of prepared information. Seating during exams will be randomized and identification will be required. Programmable calculators will not be allowed.

Cheating: Cheating will not be tolerated.

Those suspected of cheating will be referred to the university's policy on Scholastic Dishonesty.

The following is a statement taken from UTD's website regarding this.

All episodes of suspected scholastic dishonesty will be reported according to University policy. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since such dishonesty harms the individual, all students and the University, policies on scholastic dishonesty will be strictly enforced. Penalties that may be assessed for scholastic dishonesty may be reviewed in Subchapter D. Penalties at <http://www.utdallas.edu/student/sliffe/chapter49.html>.

Cell phones:

Students are expected to treat other students with respect. All cell phones should be turned off during class and will not be allowed during exams.