CMSC 250 – Discrete Structures

SUMMER 2007

1 Prerequisites and description

Prerequisite: *CMSC131* with a grade of C or better; *MATH141*; This course is about the fundamental mathematical concepts related to computer science, including finite and infinite sets, relations, functions, and propositional logic. Introduction to other techniques, modeling and solving problems in computer science. Introduction to permutations, combinations, graphs, and trees with selected applications.

Lectures will be MTWTh from 9:30 to 10:50 am in CSI 2120.

Discussion Sections will be on Friday from 9:30 to 10:50 am in CSI 2120.

2 Textbook and class webpage

Text: Discrete Mathematics with Applications, third edition, Susanna Epp, Brooks/Cole – Thomas Learning, 2004, ISBN 0-534-35945.

Webpage: www.cs.umd.edu/class/summer2007/cmsc250/

Certain course materials will be made available on the class webpage, including important announcements – students are therefore responsible for visiting the class webpage frequently. The class webpage is at the URL above.

3 Contact Information

Instructor	Teaching Assistant
Jerry Alan Fails fails@cs.umd.edu Office: 3174 AVW Office Hours: MTh 11 am – 12 pm	Walid Gomaa walid@cs.umd.edu Office: 3212 AVW, Desk 4 Office Hours: MTh 12-1 pm

3.1 Email contact

Important: please put "CMSC 250" in the subject of all emails to the instructional staff. Although our email addresses are provided, we will generally be unable to provide long explanations about the course material via email. Such explanations are more appropriate for class discussion or personal communication (during office hours, before or after class as time permits). This approach will enable us to devote more attention and give a more detailed reply to any particular issue.

4 Course topics

1. Propositional logic, circuits and predicate logic (Chapters 1 and 2), approximately 2 weeks
2. Elementary number theory and proof forms (Chapter 3), approximately 1 week
3. Summations, recurrences, and mathematical induction (Chapter 4), approximately 1 week
4. Sets, Venn diagrams, Cartesian products, and power sets (Chapter 5), approximately 1 week
5. Counting and combinations (Chapter 6), approximately 1 week
6. Functions and the pigeonhole principle (Chapter 7), approximately ½ week
7. Relations, reflexivity, symmetry, and transitivity (Chapter 10), approximately ½ week
8. Graph theory (Chapter 11), approximately ½ week

5 Grading

This section describes the workload, weight distribution and grading policies for this course.

Any request for reconsideration of the grading of *any* coursework must be submitted **in writing** within **one week** of its return, or it **cannot** be considered. Exam regrading requests must be made in writing 24 hours after being returned, but no later than one week after being returned. If you feel a mistake was made in grading any homework question, you may speak directly to the TA or attach a sheet of paper to the homework and write **no more than three sentences** specifically describing what you feel the grading problem is, and give it to the TA within a week. The instructional staff may regrade the **entirety** of any coursework submitted for regrading.

Final course grades will be curved as necessary, based on each student's total numeric score for all coursework at the end of the semester.

5.1 Overview and weights

The final course grade will be made up of the following components, see the following subsections for details on each component:

- Homework (15%) – assignments are semiweekly
- Quizzes (20%) – administered weekly
- Exam 1 (20%) – Friday, June 22nd (anticipated exam date)
- Exam 2 (20%) – Friday, July 13th (anticipated exam date)
- Final Exam (25%) – Friday, July 27th, at the normally schedule class time, 9:30-10:50 am (**fixed**)

5.2 Homework assignments

Homework will be turned in each Tuesday and Friday, except for the first week when they will be turned in on Wednesday and Friday. The Friday of each exam, no homework will be due. Homework is due at the beginning of class (or discussion section) the day it is due. At the beginning means before or within the first 10 minutes of class. If you are later than 10 minutes to class without an excused absence (as described below) your homework will not be accepted. Homework is only accepted in person in class.

You must work alone on your homework, and homework must be **written legibly**, single-sided on your own lined paper, **or typed**, with the answers clearly labeled and in the sequential order as assigned. You must write your name and university ID number in the upper right-hand corner of your homework. Staple all pages together and be sure that your name appears on every sheet.

5.3 Quizzes

Quizzes will be given every Friday during your discussion section. Makeup quizzes will not be given, but if you provide a valid documented excuse (as described in the policies below), your quiz grade will be calculated using only your other quiz scores. Your lowest quiz grade for the semester will be dropped.

5.4 Exams

Exams will be held during the discussion section. Excused absences for exams are discussed below in the policy section.

The first two exam dates may change. The final exam date and time are **fixed** and will be rescheduled only for students having another final at exactly the same time or for students with more than three finals scheduled on the same day. If either of these situations applies for you, you must inform the instructor

within two weeks of the final exam. Also please let the instructor know immediately if you have a conflict with any of the tentative midterm dates, or any other important date as the semester progresses.

6 Policies

Students are responsible for all material covered and announcements, policies, and deadlines discussed in lecture, discussion section as well as those posted on the website.

6.1 Work hard

Foremost, students are urged to work hard! This class covers a lot of material in a short amount of time – do not let yourself get behind. Work hard and keep up the pace! In designing this class, efforts have been made to assist students in their learning by frequently allowing them to exercise what they learn and quickly receive feedback. The class is designed so that if you work hard and keep up on things you can succeed.

As a corollary to working hard, please feel free to ask the teaching assistant and instructor questions, but please ponder, read and reflect on your own before doing so.

6.2 Academic integrity

The Campus Senate has adopted a policy asking students to include the following statement on each examination or assignment in every course: "I pledge on my honor that I have not given or received any authorized assistance on this examination (or assignment)". Consequently, you must also include this pledge on each exam, quiz and homework.

You are permitted to discuss what the homework **problems** are asking with your classmates, but your **solutions** must strictly be your own work (other than the help from the instructional staff).

Any evidence of cooperation on homework assignments, on quizzes or exams, or use of unauthorized materials while taking a quiz or exam, or other possible violations of the Honor Code, **will be submitted** to the Student Honor Council, which could result in an XF for the course, suspension or expulsion.

If you have any question about whether a particular situation would be an academic integrity violation then consult with the instructor in advance. Should you have difficulty with the coursework you should **see the teaching assistant in office hours**, NOT solicit help from anyone else in violation of academic integrity rules.

IT IS THE RESPONSIBILITY, UNDER THE HONOR POLICY, OF ANYONE WHO SUSPECTS AN INCIDENT OF ACADEMIC DISHONESTY HAS OCCURRED TO REPORT IT TO THEIR INSTRUCTOR, OR DIRECTLY TO THE HONOR COUNCIL.

Every semester this department has encountered students attempting to cheat on their coursework, in violation of academic integrity requirements. Students' academic careers have been significantly affected by a decision to cheat. Think about whether you want to join them before contemplating cheating, or before helping a friend to cheat. If you are tempted, it means you need assistance so PLEASE contact a member of the instructional staff so you can receive proper assistance!

6.3 Excused absences

Reasons for missing coursework such as illness, religious observance, participation in required university activities, or family or personal emergency (such as serious automobile accident or close relative's funeral) will be considered to justify an excused absence. However, students requesting an excused absence for any reason must apply in writing and must furnish documentary support (including the phone number of a contact person) for the assertion that the absence qualifies as an excused absence.