CSCI 1323 (Discrete Structures), Spring 2004

Syllabus

1 Course description

This course focuses on the mathematics needed for success in computer science. As such, the course will address a variety of topics, including propositional and predicate logic, proof techniques (including mathematical induction), the algebra of sets (including relations and functions), elements of the theory of directed and undirected graphs, and the application of these topics to various areas of computer science.

The objectives of this course include, but are not limited to, the following:

- Learning formal logic.
- Learning proofs, recursion, and analysis of algorithms.
- Learning sets, relations, and functions.
- Learning graphs and graph algorithms.
- Applying these concepts to various areas of computer science.

2 Basic information

Class meeting times and location

- MWF 1:30pm – 2:20pm, Halsell 340.

Prerequisites

- None.

Instructor and contact information

- Dr. Berna Massingill.
- Office: Halsell 201L.
- Office phone: (210) 999-8138.
- E-mail: `bmassing@cs.trinity.edu`. (Often e-mail is the best way to reach me.)
- Office hours:
  - Monday/Wednesday 12:30pm – 1:30pm
  - Monday 3:30pm – 5:30pm
  - Tuesday 12:30pm – 3:30pm
  - Thursday 1pm – 4pm

In addition to these scheduled office hours, you are welcome to drop by and see if I am in my office and free to talk, or you can make an appointment by calling me or sending me e-mail. If I am not in my office during scheduled office hours, I should be somewhere in the building (perhaps in one of the labs helping another student), and there will usually be a note on my door saying where to find me.

3 Course materials

Textbook

- Judith L. Gersting. *Mathematical Structures for Computer Science.* Freeman Publishing, fifth edition, 2003.

Web page

Most course-related information (this syllabus, homework and reading assignments, etc.) will be made available via the World Wide Web. The course Web page is a starting point for Web-accessible course material; you can find it linked from my home page (`http://www.cs.trinity.edu/~bmassing`), directly at `http://www.cs.trinity.edu/~bmassing/Classes/CS1323_2004spring/`, or via Tiger's Lair (`http://bb.trinity.edu/`).

Other references

- Norman Biggs. *Discrete Mathematics.* Oxford, 1989.
- Bernard Kolman and Robert C. Busby. *Discrete Mathematical Structures for Computer Science.* Prentice Hall, second edition, 1987.
- Joe L. Mott, Abraham Kandel, and Theodore P. Baker. *Discrete Mathematics for Computer Scientists and Mathematicians.* Prentice Hall, 1986.
- Fred S. Roberts. *Discrete Mathematical Models.* Prentice Hall, 1976.

4 Course requirements

Grading

Grades in this course will be determined by the results of two major exams (a midterm and a final), several in-class quizzes, selected homework problems, and class attendance/participation, weighted as follows.

Component	Maximum points
Midterm exam	100
Final exam	200
Quizzes	50
Homework	about 200
Class participation	50

Numeric grades will be calculated as a simple percentage, by dividing points earned on the above components by maximum points. These numeric grades will then be converted to letter grades based on a curve, but in no case will the resulting letter grades be worse than students would receive based on the following scheme.

Numeric grade	Letter grade
90 – 100	A
80 – 89	B
70 – 79	C
60 – 69	D
0 – 59	F

Exams

Exams are comprehensive but will emphasize the most recent material. They are scheduled as follows. Please plan accordingly.

- Midterm exam: March 8 in class.
- Final exam: May 7 at 2:00pm.

Quizzes

About every other week there will be a short in-class quiz. Dates will be announced via the course Web page. They will usually cover material from recent classes and reading; the questions will be similar in format to those you are likely to see on the major exams. There will be about six quizzes over the course of the semester, and the lowest grade will be dropped.

Homework assignments

Homework will be assigned approximately once a week. Detailed requirements will be provided as part of each assignment; due dates will be announced via the course Web page. Because of the volume of homework, not all problems will be collected and graded; you will be told when an assignment is made which problems will be collected. It is nevertheless important that you do all assigned problems; this will increase your understanding of the material and prepare you for the exams. Notice also that the textbook contains many "practice problems"; you may want to work through them as you read and check your answers against those in the back of the book.

Attendance

Regular class attendance is strongly encouraged; class participation grades will be based largely on attendance.

E-mail

Course-related announcements will sometimes be made by sending e-mail to the Trinity e-mail addresses of all registered students. Students are strongly encouraged to read mail sent to their Trinity addresses frequently. An archive of such announcements will be provided via the course Web page.

Late and missed work

Exams can be made up only in cases of documented conflict with a university-sponsored activity or documented medical emergency. Quizzes cannot be made up, but the lowest quiz score will be dropped, so you can miss one quiz without penalty.

Unless otherwise stated for a particular assignment, homework will be accepted up to one class period late, *but no more*, at a penalty of 10 percent off per working day. This penalty may be waived or additional time allowed *at the instructor's discretion* in cases of illness or conflict with a university-sponsored activity.

If you have unusual circumstances (as we all sometimes do), please discuss these with the instructor as far in advance as possible.

Collaboration and academic integrity

Unless otherwise specified, all work submitted for a grade (homework assignments and exams) must represent the student's own individual effort. Discussion of homework assignments and course material among students is encouraged, but not to the point where detailed answers are being written collectively. Answers that are identical beyond coincidence are in violation of Trinity's Academic Integrity Policy and *will result in disciplinary action, including, but not limited to, a failing grade on that assignment for all parties involved.* You are responsible for the security of your work, both electronic and hard copy.