MATH 310-001 (10678) **Discrete Mathematics** **Fall 2010**

Tentative Syllabus

Instructor: Dr. Ramón M. Figueroa-Centeno
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Office Hours: Monday, Wednesday and Friday: 10:00–10:45 AM
College Hall 4A (CH 4A) or the Math Tutoring Lab (CH 5)

Any part of this syllabus is subject to change without prior notice!

Course Prerequisites:

According to the catalog this course is not open to students with credit CS 215 (Discrete Mathematics), and you should have taken MATH 206 (Calculus II).

Course Description:

Topics from discrete mathematics, including logic, proof techniques, recurrence relations, set theory, combinatorics, relations, functions, graphs, Boolean algebraic structures and applications to coding theory.

Course Text (Required):

Mathematical Structures for Computer Science: *A Modern Treatment of Discrete Mathematics*, by Gersting, 6th Edition. Please sign up for the text's website: http://bcs.whfreeman.com/gersting6e/

The Final Examination is Comprehensive

Grading Scale:

Grade	Interval
A	$[90\%, 100\%]$
B	$[80\%, 90\%)$
C	$[70\%, 80\%)$
D	$[60\%, 70\%)$
F	$[0\%, 60\%)$

Point Distribution:

Exams (not including Final)	40%
Final Exam	10%
Homework	50%

Makeup Policy:

There will not be any make-ups for missing exams, for whatever reason. Instead, I will replace your worst grade with your final exam grade. To prepare for these exams, there is no substitute for solving lots of problems.

Incomplete Policy:

This is a temporary grade which the instructor may give to an undergraduate student when illness, necessary absence, or other reasons beyond the control of the student prevent completion of the course requirements by the end of the semester or session. This grade may not be given as a substitute for a failing grade.

Brief Outline of the Course and its Objectives:

The primary goal of the course is to teach you (a) how to prove theorems and (b) to write your proofs correctly and elegantly. So the approach that we are going to follow is to go into things in great depth at the expense of breadth. In particular, the first three chapters of the textbook, which deal with logic, set theory and proof techniques (among other things), are going to be covered thoroughly. Once we cover these absolute necessities we will explore other topics in the book, for example, relations, functions, number theory and graph theory, and in doing so we will practice what we have learned about proving theorems. We will omit the parts of the book that are primarily of interest to computer scientists.

Additional Rules and Suggestions:

It is important that students develop consistent study patterns and do class assignments on a regular basis in order to succeed in this course. Class attendance is **important**. Students should be aware that mathematics is not a spectator sport; in order to be successful in this course, students need to attend class regularly and do all homework problems regularly.

You are not allowed to talk, eat or chew gum in the classroom, since it is disrespectful to others. Also, turn off the sound in pagers and cell phones.

If you are late come in **quietly** and sit on the first seat you see available. Do not stay outside!

If you have a question you are obligated to ask it. If it is relevant to the whole class I will try my best to answer then, if not I will try to answer afterwards or guide you to where you can find an answer. Remember I cannot read your minds and thus cannot know your doubts if you do not tell me. I regard the only stupid questions those that are left unasked. I also value your opinions and suggestions about my teaching.

When coming to the office or tutor lab hours try to do so with concrete questions, this will help you as well as the person aiding you.

All exams and homework must be written in **PENCIL** or typed, or the will not be graded. You are required to bring a picture ID to all exams; you may be asked to present it at any time during a test.

Cheating will not be tolerated, without exception. No note cards or other aids will be allowed during exams, and their use is considered cheating.

Any student with a documented disability who would like to request accommodations should contact the University Disability Services Office—Hale Kauanoe A Wing Lounge, 933-0816 (V), 933-3334 (TTY), `shirachi@hawaii.edu`—as early in the semester as possible.

Advising is a very important resource designed to help students complete the requirements of the University and their individual majors. Students should consult with their advisor at least once a semester to decide on courses, check progress towards graduation, and discuss career options and other educational opportunities provided by UH-Hilo. Advising is a shared responsibility, but students have final responsibility for meeting degree requirements.

Finally, remember that Mathematics is a cumulative subject, so do not allow yourself to fall behind.

Mathematics, rightly viewed,
possesses not only truth, but supreme beauty.
Bertrand Russell

Mathematics is a dangerous profession;
an appreciable proportion of us go mad.
John Edensor Littlewood