

MASTER COURSE DESCRIPTION

Dept and Course Number **CS 250** Course Coordinator **Reilly**
 Title **Discrete Structures** Credits **3**

Current Catalog Description

Discrete structures for computer science, including sets, functions, elementary propositional and predicate logic, Boolean algebra, elementary graph theory, proof techniques including induction and contradiction and combinatorics.

Textbook

Mathematical Structures for Computer Science, 6th ed., by Judith L. Gersting, W.H. Freeman and Co., 2007.

References *None*

Course Goals

To introduce to the student those topics in discrete mathematics which are fundamental to the study of computer science.

Prerequisites by Topic

Introduction to Object-Oriented Programming and Pre-Calculus Mathematics with grades of C or better

Major Topics Covered in the Course

Formal logic, proofs, recursion, analysis of algorithms, relations, functions, graphs, Boolean algebra, computer logic, computation, and languages.

Laboratory projects (specify number of weeks on each) *None*

Estimate CSAB Category Content

| | CORE | ADV'D | | CORE | ADV'D |
|------------------|-------|-------|-------------------------------|-------|-------|
| Data Structures | _____ | _____ | Computer Org & Architecture | _____ | _____ |
| Algos: SW Design | 10 | _____ | Concepts: Program'g Languages | _____ | _____ |

Oral and Written Communications

Every student is required to submit at least 0 written reports (not including exams, tests, quizzes, or commented programs) of typically 0 pages and to make 1-2 oral presentations of typically 5-10 minute's duration. Include only material that is graded for grammar, spelling, style, and so forth, as well as for technical content, completeness, and accuracy.

Time permitting, which it usually isn't for all students to participate at full.

Social and Ethical Issues *None*

Theoretical Content

100% of the course is theoretical content, including coverage of formal logic, proofs, recursion, analysis of algorithms, relations, functions, graphs, Boolean algebra, computer logic, computation, and languages.

Problem Analysis

Somewhere between 4-6 (averaging 5) assignments are handed in and graded.

Solution Design

The student must follow an analysis with a plan to solve the problem (design) and then "Implement" the solution(s). Evaluation may be required.

FOR THIS TERM

In Charge: Prof. K. D. Reilly (reilly@uab.edu --- 934-2213)

Meetin' Time/Place: Mon-Wed-Fri --- 1-1:50 PM --- Humanities 311

Office Hours: After classes. By app't. Thurs. 9:30-10:30.
Also: **CS-Study-Hall** (CIS Dept. Office) M-Th (2 hrs M-W; 4 hrs Thurs !).

Teachin' Assistant: Hui Wu (wuh@cis.uab.edu --- 934-2213)

Grading: "End_of_Month" Exams (3 @ 20 ea): 60 pts. Feb 2 -- Mar 2 – Mar 30
Final Exam (Comprehensive): 30 pts. May 2 10:45-1:15 ..
HomeWorks 20 pts. (Schedule on HW lists)
Total: 110 pts.

(The 10 pts "cushion" is almost meaningless since we have to use a curve anyway)

Exam Notes: Make-up exams will be permitted only under extreme circumstances .
Sometimes, we just use the average of your tests for the missing exam. If we give a make-up, it can be partly oral.

Exams are **closed book** but we allow a **crib (cheat) sheet: one sheet, both Sides OK !** (We also give you a handout on logic that you can use !)

Course Material: by chapter:

1.1–1.5
2.1-2.3
3.1-3.6
4.1 and 4.4-4.5
5.1-5.2
6.1 and 6.4

Special Note: Some sections *not listed* may be "briefed" and provide fare for exams --- Likewise, some *listed* sections may get less than full attention due to time squeezes. (This is more likely near the end of the course !)

Web Pages: www.cis.uab.edu/cs250 is full of goodies. Pl. sniff around.