Course Syllabus CS 2305

Special Message: None at this time.

Last Updated: 01/10/2017

Course Information

Spring, 2017

Discrete Mathematics I

Professor Contact Information

Prof. Tim Farage

See my UTD homepage at www.utdallas.edu/~tfarage for office hours, etc.

Grader Contact Information

TBA

Computer Science Mentoring Center: Computer Science/Discrete Math Mentoring Center Hours

Course Pre-requisites, Co-requisites, and/or Other Restrictions

Co-requisite: Calculus I

Course Description

Principles of counting. Logic and proof methods, including induction. Basic recurrence relations. Basics of algorithm complexity. Sets, relations, functions. Elementary number theory.

Student Learning Objectives/Outcomes

1. Ability to use and apply basic definitions and properties of logic
2. Ability to recognize and construct valid proofs including proofs by induction
3. Ability to understand what an algorithm is, use algorithms, use Big-O notation and algorithmic complexity
4. Ability to use basic counting techniques
5. Ability to use and apply basic definitions and properties of sets, relations, functions

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Required Textbooks and Materials

We'll be using Rosen's Loose Leaf for Discrete Mathematics and Its Application 7th Edition

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Assignments & Academic Calendar

Assignments are from Rosen's 7th edition:

Assignments will not be graded. They are given so you can learn the material and practice for the tests.

Assignment 1.1: 1, 3, 5, 7, 9, 13, 23, 27 (Propositional Logic)
Assignment 1.3: 5, 7, 15, 17, 46, 47 (Propositional Equivalences)
Assignment 1.4: 1, 5, 7a, b, d, 9, 13, 15, 25, 27, 35 (Predicates and Quantifiers)
Assignment 1.5: 1, 3, 5, 7, 9, 17, 27 (Nested Quantifiers)
Assignment 1.7: 1, 3, 5, 7, 9, 11, 18b (Introduction to Proofs)
Assignment 2.1: 1, 5a,b, 9a-c, 13, 17, 19a,b, 21, 23 (Sets)
Assignment 2.2: 1, 3, 4, 25, 29 (Set Operations)
Assignment 2.3: 1a,b, 3a,b, 5a, 9a-d, 12, 13, 23 (Functions)
Assignment 2.5: 1 - 4 (Cardinality of Sets)
Assignment 3.2: 1a-d, 2a-e, 7a,b, 8a,b, 15 (The Growth of Functions)
Assignment 4.1: 1, 9a,c,d, 21a,c, 28a,b (Divisibility and Modular Arithmetic)
Assignment 4.2: 1, 3, 7, 9, 10, 11, 25, 26, 27, 28 (Integer Representation and and Modular Exponentiation)
Assignment 4.3: 1, 3a-c, 14, 15 (Primes and Greatest Common Divisors)
Assignment 4.4: 1, 3, 4, 22, 31, 32 (Solving Congruences)
Assignment 4.5: 5, 7 (Applications of Congruences - Pseudorandom Numbers)
Assignment 4.6: 1, 3, 5, 25, 27 (Cryptography)
Assignment 5.1: 3, 4, 5, 7, 15 (Math Induction)
Assignment 6.1: 1, 3, 7, 9, 11, 13, 15, 17, 27, 29, 33, 47 (Counting)
Assignment 6.3: 1, 3, 5, 7, 9, 11, 13, 15, 17, 19, 21, 27, 31 (Permutations and Combinations)
Assignment 6.5: 1, 3, 7, 9, 11, 13, 17 (Combinations with Repetition) (not on test)

Note: Only pencils and blank paper are allowed during tests. No electronic devices of any kind are allowed. Test dates are subject to change.

Test Dates

Test 1 - Thursday, Feb. 16
Test 2 - Thursday, March 23
Test 3 - Thursday, April 27 - This is also the last day of class

All tests are weighted equally. Each test will contain an extra credit problem. No other extra credit will be given.

Grading Policy

The tests and attendance will determine your grade. Attendance may count for up to 5% of your grade.

Letter grades will be assigned as given below. I reserve the right to make the grading scale easier than given here.

98-100	A+
92-97	A
90-91	A-
88-89	B+
82-87	B
80-81	B-
78-79	C+
72-77	C
70-71	C-
68-69	D+
62-67	D
60-61	D-
Below 60	F

Your grade will be based only on your scores as described above. PLEASE do not ask me to change your score/grade or give you a score/grade for any other reason. I know that some of you will lose scholarships, be deported, etc. if you do not make a certain score/grade; there is nothing I can do about this. Of course, if a mistake was made in scoring, I will correct it. Any requests for changes to scores must be made within 30 days after the day the graded material was returned to the class.

Any request for a grade change must be made within 60 days after the day that grades were posted.

Course & Instructor Policies

All make-up exams are scheduled and given at the discretion of the instructor. Make-up exams are only given to those students who coordinate the missing of an exam prior to the originally scheduled exam date and time, or for an emergency.

Class attendance is recorded. There is a strong, direct correlation between class attendance and class performance. Those students who regularly attend class tend to make significantly higher final grades than those who don't.

Students are expected to be respectful to each other and to the course instructor. Disruptive behavior in the class room is not tolerated.

Each student in the class is encouraged to join/form a study group. Members of each study group are strongly encouraged to assist one another in learning and understanding the course material.

UT Dallas Syllabus Policies and Procedures

For general UTD policies go to the link: http://provost.utdallas.edu/syllabus-policies/

These descriptions and timelines are subject to change at the discretion of the Professor.