

## *Course Syllabus CS 2305*

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**Special Message:** The test on Thursday, September 29 will cover through Section 3.6.

**Last Updated:** 9/25/2016

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### **Course Information**

Fall, 2016

Discrete Mathematics I

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### **Professor Contact Information**

Prof. Tim Farage

See my UTD homepage at [www.utdallas.edu/~tfarage](http://www.utdallas.edu/~tfarage) for office hours, etc.

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### **Grader Contact Information**

Grader for CS 2305.001: Venkata Pasupula

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Office hours: MW from 3-5pm in the open lab in ECSS 2.104A1

Grader for CS 2305.002: Ritesh Panigrahi

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Office hours: TR from 10:30am - 12:30pm in the open lab in ECSS 2.104A1

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**Computer Science Mentoring Center:** [Computer Science/Discrete Math Mentoring Center Hours](#)

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

Co-requisite: Calculus I

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### **Course Description**

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

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### **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 the online zyBook for this course. To get it do this:

1. Go to [zyBooks.com](https://www.zybooks.com)
2. Enter zyBook code UTDallasCS2305FarageFall2016
3. Click Subscribe

The cost to subscribe is \$48; any applicable returning student discounts will be applied automatically.

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### **Assignments & Academic Calendar**

**The Participation Activities that appear in each section will be counted toward your grade, so be sure to do them. Sections covered in this Course:**

Section 1.1, Section 1.2, Section 1.3, Section 1.4, Section 1.5, Section 1.6, Section 1.7, Section 1.8, Section 1.9, Section 1.10

Section 2.2, Section 2.4

Section 3.1, Section 3.2, Section 3.3, Section 3.6

Section 4.1, Section 4.3, Section 4.4

Section 7.2

Section 8.4

Section 9.1, Section 9.2, Section 9.4, Section 9.5, Section 9.6, Section 9.7, Section 9.9

Section 10.1, Section 10.4, Section 10.5, Section 10.6, Section 10.8

**The following are exercises given at the end of the sections. Please do these exercises in order to practice for the tests. They will not count toward your grade.**

Exercise: 1.1.2, Exercise: 1.1.4

Exercise: 1.2.2, Exercise: 1.2.3, Exercise: 1.2.5

Exercise: 1.3.2, Exercise: 1.3.3, Exercise: 1.3.4

Exercise: 1.4.1, Exercise: 1.4.4

Exercise: 1.5.2, Exercise: 1.5.3

Exercise: 1.6.1, Exercise: 1.6.2, Exercise: 1.6.3

Exercise: 1.7.1, Exercise: 1.7.3, Exercise: 1.7.4, Exercise: 1.7.5

Exercise: 1.8.1, Exercise: 1.8.2

Exercise: 1.9.3, Exercise: 1.9.4, Exercise: 1.9.5

Exercise: 1.10.3, Exercise: 1.10.4

Exercise: 2.2.1

Exercise: 2.4.1

Exercise: 3.1.1, Exercise: 3.1.2, Exercise 3.1.3, Exercise 3.1.4

Exercise: 3.2.3, Exercise: 3.2.4

Exercise: 4.1.2

Exercise: 4.3.2, Exercise: 4.3.4

Exercise: 4.4.2

Orders of Infinity - not in text - go to link <http://www.businessinsider.com/the-different-sizes-of-infinity-2013-11>

Exercise: 8.4.1 Exercise: 8.4.2 a,c

Exercise: 9.1.1 a,b,e,f

Exercise: 9.2.1 a,d,e

Exercise: 9.4.1

Exercise: 9.5.1

Exercise: 9.6.1 a,c, Exercise: 9.6.2 a,b,e, Exercise: 9.6.3 a,b

Exercise: 9.7.2 a,b,e

Exercise: 9.9.1 a,b, Exercise: 9.9.2

Exercise: 10.1.1 a,b,c

Exercise: 10.4.3

Exercise: 10.5.3, Exercise: 10.5.4, Exercise: 10.5.5

Exercise: 10.6.1

Exercise: 10.8.1, Exercise: 10.8.2

Exercise: 10.8.4

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*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, September 29

Test 2 - Thursday, November 3

Test 3 - Tuesday, December 6 - 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.

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## **Grading Policy**

The tests and any Participation Activities will determine your grade.

The final course average will be weighted as follows (These are subject to change):

Each test makes up 30% of your grade. The Participation Activities in zyBook make up 10% 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.

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## **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.

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### **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.*