University of Connecticut
Dept. of Mathematics

Math 1030 **Elementary Discrete Mathematics** **Spring 2014**

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Office hours (MSB 301): M/F 11:00-12:15pm or by appointment through email.

Section 2 M/W/F 12:20-1:10pm MSB 415
Section 5 M/W/F 10:10-11am MSB 311

Text: Mathematics Beyond the Numbers, by Gilbert & Hatcher ISBN 978-1-4652-0486-8
You'll also need a calculator for several of the section. Nothing fancy, but you need something that can do logarithms and exponents.

Objectives: This course will stress problem solving skills and the development of reasoning skills in an interactive setting. The mathematics involved are not difficult, but are probably different than the work to which you are accustomed. We will see how some of these mathematical ideas have very real and useful applications to the world around us.

Homework: The material covered in this course takes practice! The course outline at the end of this syllabus contains reading assignments and practice problems for each section. Homework problems will not be collected, but you will do yourself a disservice by neglecting them. Working through examples is the best way to learn these concepts. Homework problems will be discussed at the start of each lesson.

Quizzes: Short quizzes will be given at the start of class each **Wed**, and will be based on the recommended homework assignments. There will be no make-ups for missed quizzes.

Exams: There will be 3 in-class, hour-long exams. They will be administered on:

Wed., Feb 12 in class
Wed, March 12 **Wed. April 16**

A comprehensive final exam will be given (tentatively) during the **common MATH block**. Attendance at all exams is mandatory, and **no make-up examinations** will be offered.

Final Grades will be calculated as follows:
Best 2 In-Class Exams - 20% Each
Other In-Class Exam - 10%
Quizzes & Projects - 20%
Final Exam - 30%

Tips for the Course:

- Try all of the homework assignments! These topics are not inherently difficult, but they take practice.
- Stay up-to-date with the readings.
- Discuss the topics with your classmates.
- Dont hesitate to ask questions in class.
- If you have issues with any assignments, please communicate with me. Im here to help you as much as possible, but I can't do much if I don't know you're having trouble.
- If you have a diagnosed learning disability that requires special consideration, please see me as soon as possible.

Class guidelines: It is expected that everyone in our class will act in a respectful manner:

- Turn off all cell phones and beepers before the start of class.
- Laptops are not to be used in class (Facebook can wait!)
- If you are late to class, please enter quietly and take your seat quickly
- Cheating of any kind is absolutely unacceptable and will be result in failure of the assignment. Please review the student code:
`http://www.dosa.uconn.edu/student_code.html`

Course Outline: Questions listed in **boldface** are highly recommended. All others are great for more practice.

Week	Sections	Topics	Assignment
1	1.1	Plurality, Run-off Methods	pg 15 # 1, **3**, 6, 7, 11, **15**
	1.2	Borda's Method	pg 28 # 1, 3, **5**, 9, **12**
2	1.3	Head-to-Head Comparison	pg 41 # **1**, 3, 7, **9**, 11, 15
	1.4	Approval Voting	pg 54 # 2, **5**, 7, 9, **11**, 15, 16
3	2.1	Quota Methods	pg 95 # **1**, 3, **5**, 8, 9
	2.2	Early Divisor Methods	pg 116 # **1**, 3, **5**, 7, 11, 13
4		Review	
		Exam 1	
	3.1	Algebra Review	pg 166 # 1-29 odd (especially **17, 21, 25**)
5	3.2	Simple Interest	pg 171 # **1, 7, 11**, 15, 17, 21, 23, 27, 30
	3.3	Compound Interest	pg 186 # 1, 5, **9, 13, 17**, 21, 31, 35, 39, 52
6	3.4	Systematic Savings	pg 197 # 1, **5**, 9, 13, **15**, 19, 21
	3.5	Amortized Loans	pg 212 # **1**, 5, **9**, 13, 17, 23
7	4.1	Elementary Probability	pg 239 # 1, 3, 5, **9**, 11, 13, **17**, 19, 23, 29
	4.3	The Addition Rule	pg 254 # 1, **3, 5**, 7, 11, 13, 15
8	4.4	Conditional Probability	pg 264 # 1, **3**, 7, 11, 13, **19**, 23, 27, 34
		Review	
		Exam 2	
9	4.4	More Conditional Probability	
	4.5	Counting Techniques	pg 282 # 1, **5**, 9, 13, **17**, 21, 25, 29, 35
10	4.6	More Probability	pg 293 # 1, **5**, 9, **11**, 17, 21, 25, **28**
	4.7	Expected Value	pg 301 # 1, **5**, 9, 12, 14, **17**, 23
11	4.8	Genetics	pg 314 # **1**, 3-5, 7, 11-13, 17, 21, 25, **26**
		Review	
12		**Exam 3**	
	6.1	Euler Paths and Circuits	pg 455 # 1, 5, 7, **11, 12**, 15, 17, 23, 28, **31**
13	6.2	Travelling Salesman	pg 481 # 1, 4, 5, **7**, 9, 15, 19, **20**
	6.3	Spanning Trees	pg 511 # 1, 3, 5, 7, 11, **15, 21**
14		Final Review	