University of Connecticut

MATH 1020Q (Problem Solving)
Fall 2017

Course Outline

Instructor: Robert Dolan
Office: Monteith 322
Office Hours: MWF 10:00AM-11:00AM
Email: robert.dolan@uconn.edu
Class Webpage: robert-dolan.grad.uconn.edu/teaching/math-1020q-fall-2017/

Course Description: An introduction to the techniques used by mathematicians to solve problems. Skills such as Externalization (pictures and charts), Visualization (associated mental images), Simplification, Trial and Error, and Lateral Thinking learned through the study of mathematical problems. Problems drawn from combinatorics, probability, optimization, cryptology, graph theory, and fractals. Students will be encouraged to work cooperatively and to think independently.
*This class will not have lists and lists of equations to solve and formulas to memorize. The idea of this class is to teach you how to become **good problem solvers**. Most of the work you will do in this class should be fun and engaging!*

Text: PProblem SSSolving, by DeFranco and Vinsonhaler, 2nd Edition. (The text is available for sale at the UConn bookstore.)

Policies & Resources:
1. **Attendance**: You should attend all class meetings. A large portion of class time will consist of group work, where you get time working on problems with other students and your instructor. You are responsible for completing any work you miss on your own time, including working through the problems completed in class.
2. **Make-Up/Late Policy:** In fairness to everyone, there are generally **no** make-ups and **no** extensions for any form of evaluation/assessment. Only extreme situations with an officially documented excuse will allow you to make up an evaluation/assessment. Whenever possible, these excuses must be presented before the evaluation/assessment is due or is supposed to take place in class.
3. **Academic Integrity:** Academic dishonesty is considered a serious offense at UConn. Students caught cheating shall be subject to the sanctions and other remedies described in The Student Code (http://community.uconn.edu/the-student-code-appendix-a/). Proactive strategies for students to minimize academic misconduct can be found at http://community.uconn.edu/proactive-strategies-for-students-to-minimize-academic-misconduct/. It is in your best interest to maintain your academic integrity.
4. **Accommodations for Students with Disabilities:** Students who think that they may need accommodations because of a disability are encouraged to meet with me privately early in the semester. Students should also contact the Center for Students with Disabilities as soon as possible to verify their eligibility for reasonable accommodations. For more information, please go to the website http://www.csd.uconn.edu/.

Grading:

Homework/Classwork	50%
Exam 1	12.5%
Exam 2	12.5%
Final Project	12.5%
Final Exam	12.5%

Grade	Percentage	Grade	Percentage
A	93-100	C	73-76
A-	90-92	C-	70-72
B+	87-89	D+	67-69
B	83-86	D	63-66
B-	80-82	D-	60-62
C+	77-79	F	59 & below

- **Homework:** Homework will be assigned each week and collected the following week. All assignments and due dates will be announced in class and posted on the course website under the "homework" tab. We won't have a ton of time to spend on homework in class, but please feel free to ask questions before or at the beginning of class. You should turn in neat and organized solutions with full explanations. Answers without explanations are worth no credit. If homework is illegible and unorganized you will be less likely to get credit. I suggest typed solutions.

- **Group Projects:** You will be assigned group projects throughout the semester. Each group will submit one write-up for the project. These will be graded on accuracy, creativity, and presentation. We will start the projects in class, but you will have to finish them outside of class. All groups will present their project solutions to the class.

- **Exams:** There will be two midterm exams. There will not be any makeup exams given. If there is an emergency and you must miss an exam, you will be responsible for notifying your instructor ahead of time or you will not get credit for that exam. As for the final exam, students are required to be available for their exam during the time stated in the Registrar's Office Schedule. If you have a conflict with this time you must visit the Office of Student Services. Below are the tentative exam dates:
    - **Exam 1:** September 29, 2017
    - **Exam 2:** November 8, 2017
    - **Final Exam:** TBD (See Registrar's Office Schedule)

Tentative Outline

Week	Material Covered
1	Chapters 1,2 - Problem Solving, PSSSP
2	Chapter 3 - Be Proactive
3	Chapter 4 - See it
4	Chapter 4 - See it, Chapter 5 - Simplify it
5	Chapter 5 - Simplify it, Exam #1
6	Chapter 6 - Stir it up
7	Chapter 6 - Stir it up
8	Chapter 7 - Pause and Reflect
9	Chaps 8,9 - Interpersonal, Communication
10	Estimation
11	Review and Exam #2
12	Revisit PSSSP and work on Final Project
13	Revisit PSSSP and review for Final Exam
14	Present Final Project