

Math 312: Applied Mathematics: Social Sciences

Professor: Dan Schult

Spring 2017

Office: 204 McGregory

Office Hours: Tuesday 11:20-12:30 Wednesday 1:20-3:00

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Introduction: In this course, we will discuss mathematical modeling, especially as it applies to modeling behavior in the social sciences. We will also be using many models from the life sciences as the models and modeling techniques are similar.

Modeling uses mathematical tools from many areas of mathematics. You will be expected to go back and refresh many tools and to use many others without the full coverage you would get in another course. The focus, as much as possible, will be on the modeling aspects rather than the tools. That also means there will be more writing in this class than a typical upper level math class.

Textbook: There is no textbook for this class. We will be using research papers as well as chapters from a few books and other handouts.

Course Web Page: <http://math.colgate.edu/math312>

Course Structure :

There will be **three main parts** to the course. At the end of each part, there will be either an exam or project due.

Problem Sets: Each part will include slightly less than weekly problem sets. Writeups of the problem sets should be carefully prepared documents expressing complete ideas and sentences. State the problem before you launch into a solution. Much of the analysis we will be doing involves modeling, i.e. assumptions about the behavior of the system. State these assumptions wherever appropriate. You may work together on these problem sets if you cite each other, but the writeup should be yours and yours alone.

Exams and Projects: There will be two exams and one project proposal each of which covers approximately one third of the course material. The exams will be

Exam 1: 11:20-1:10 Tuesday March 7

Exam 2: 11:20-1:10 Tuesday April 11

Final Exam: A cumulative final exam will be given Tuesday May 9 from 9-11am (the officially scheduled final exam period for this course). Please consult the final exam schedule before making travel plans.

Grades: Your grade will be determined by your work on problems sets (30%), the two exams and one project writeup (15% each) and the final exam (25%).