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Office: D-221

Course Web Page: http://www.davegoulet.com/classes/bmth311/2017_Winter

Textbook: *Mathematical Modeling in Systems Biology* by Brian P. Ingalls.

Office hours: See table below. Office hours listed on this syllabus are subject to change. Once my winter schedule solidifies, I will notify you of updates to this schedule.

Table 1: Office Hours.

| | M | T | W | Th | F |
|----|---|---|---|----|---|
| 4 | ✓ | | | ✓ | ✓ |
| 8 | ✓ | | | ✓ | ✓ |
| 10 | | ✓ | | ✓ | |

Overview This course requires no previous knowledge of biology.

We'll extend and adapt techniques from differential equations to study models of biological systems. Some new mathematical topics will be introduced. Possible topics include partial differential equations, discrete dynamical systems, stochastic methods, and numerical methods. The goal of this course is to use familiar mathematical tools to model complex biological systems, specifically metabolisms, signal transduction pathways, and other biochemical processes.

Homework We'll have one homework assignment roughly every week. I'll assign homework about one week in advance of the due date. Homework will usually be due on Tuesday.

Exam or Project Instead of a final exam, we may work on projects or read and present research papers.

Quizzes We'll have roughly one quiz every week. Quizzes will be comprised of problems taken from the homework assignments or similar to problems from homework assignments. Quizzes will usually occur on Tuesday.

Other Details

- You're encouraged to cooperate and work together on homework.
- Grading will be weighted as follows: 20% homework, 30% quizzes, 20% class participation, 20% for the final exam/project/paper presentation, and 10% for discussions of those papers.

Grading When grading quizzes, I and the grader will check that you have shown your work, used a valid method, and explained your ideas well using clearly written short sentences and equations. The majority of the points will be assigned based on how well you've explained things. Plugging into formulae without explaining your reasoning will result in a poor score. From a holistic point of view, we want to see that you understand the big ideas. I'm not looking for lengthy explanations, just a few concise and insightful words and sentences to accompany your mathematical work.