Math 469 (section 500)
Introduction to Mathematical Biology, Spring 2016
TR 12:45–2:00 p.m. in Blocker 164

Instructor: Prof. Anne Shiu
Co-instructor: Prof. Jay Walton
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Office: Blocker 601E
Office Hours: Tuesdays 2:30–3:30 p.m. and by appointment (ask one day in advance)

Prerequisites. Linear Algebra (MATH 304 or 323) and Differential Equations (MATH 308)

Textbook. *An Introduction to Mathematical Biology*, L. Allen

Course description. Introduction to mathematical modeling techniques for the biological sciences. Topics include: continuous versus discrete models, deterministic versus stochastic models, population dynamics and ecology, spread of infectious diseases, and phylogenetics.

Web site. `http://math.tamu.edu/~annejls/469-spring-16.html` (Homework is posted here.) Also, we will use `www.piazza.com`.

Learning outcomes. This aim of this course is for students to become familiar with mathematical modeling for applications in the life sciences. Upon successful completion of this course, students will be able to (1) formulate, analyze, and simulate mathematical models arising from applications in ecology, biology, and medicine, (2) critically assess mathematical models, and (3) communicate effectively about the mathematical and scientific topics in the class.

Student expectations. Students will be expected to read the textbook and complete homework. For exams, students will be expected to work with key mathematical concepts, write short explanations, and understand important definitions and statements of theorems.

Homework. Homework will be due each week on Thursday at the beginning of class. Staple your homework, and remove frayed edges from paper torn from spiral notebooks. Additionally, homework solutions must be clear and well-organized; the grader will impose a 10% penalty for solutions that are lacking in clarity. Challenge problems are optional and do not count toward your grade. Group work is encouraged, but please write up your solutions independently.

Late homework policy. Late homework is *not* accepted (except with a University-approved absence; see Make-up Policy below). However, the lowest two homework scores will be dropped.

Project. For the final project, students will read a scientific paper related to the course, and then explain, critique, and/or extend the results in (1) a 20-minute in-class presentation (beginning around April 21) and (2) a final paper (due Friday, May 6, by 5pm, to the instructor's office).

Exams. There will be one in-class midterm and one final exam:
- Midterm exam: Thursday, March 10 (Week 8)
- Final exam: Tuesday, May 10 (8:00–10:00 a.m.)

Grading.
- Homework – including some partial drafts of the final paper: 25%
- Midterm exam: 20%
- Final exam: 25%
- Project – in-class presentation: 10%
- Project – final paper: 20%

Final grades: did you accomplish the learning outcomes?

- A: 90%+
- B: 80–89%
- C: 70–79%
- D: 60–69%
- F: < 60%

The precise cut-offs will be determined when final grades are assigned.

Attendance Policy. Attendance is required in this class.

Make-up Policy. No make-up exams or late assignments are possible or accepted without a University-approved excused absence (see `http://studentrules.tamu.edu/rule07`). An absence for a non-acute medical service or regular check-up does not constitute an excused absence.

To be excused, you must notify the instructor in writing (by email is acceptable) prior to the date of absence, if possible. *Consistent with Texas A&M Student Rules, in cases where advance notification is not feasible (e.g. accident or emergency) the student must provide notification by the end of the second working day after the absence.* This notification must include an explanation of why notice could not be sent prior to the class. For injury or illness too severe or contagious to attend class, you must provide confirmation of a visit to a health care professional affirming date and time of visit. The Texas A&M University Explanatory Statement for Absence from Class form will not be accepted. It is the student's responsibility to schedule a make-up in a timely manner.

If you must miss class, please get notes from another student in the class.

Special Services. The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit `http://disability.tamu.edu`.

Academic Integrity Statement. Academic dishonesty will not be tolerated.

An Aggie does not lie, cheat, or steal or tolerate those who do.

Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the TAMU community from the requirements or the processes of the Honor System. For additional information please visit `http://www.tamu.edu/aggiehonor/`.

As commonly defined, plagiarism consists of passing off as one's own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person *or a solutions manual* and turn it in as your own. Any student found guilty of cheating, plagiarism, or other dishonorable acts in academic work is subject to disciplinary action. If you are caught cheating, you will receive a grade of "0" and it could result in your failing the course.

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