

AM3615a—Introduction to Mathematical Biology

September-December 2016

Instructor: Xingfu Zou

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Office Hours: TBD

Lecture: Tue: 1:30-3:30pm, Thu: 1:30-2:30pm, at **UCC-53**.

Textbook: *N. F. Britton, Essential Mathematical Biology, Springer-Verlag, 2003.*

Other Reference Books:

- J. D. Murray, *Mathematical Biology*, 2nd edition, Vol I, Springer-Verlag, 2003
- L. Edelstein-Keshet, *Mathematical Models in Biology*, Society of Industrial and Applied Mathematics, 2005
- Fred Brauer and Carlos Castillo-Chavez, *Mathematical Models in Population Biology and Epidemiology*, Springer-Verlag, New York, 2001.
- D. S. Jones and B. D. Sleeman, *Differential Equations and Mathematical Biology*. Chapman and Hall/CRC, 2003.

Prerequisites: One of Calculus 2302A/B, 2402A/B, 2502A/B; plus one of Mathematics 1600A/B or the former Linear Algebra 1600A/B, or Applied Mathematics 1411A/B.

Course content: Single species population dynamics, population dynamics of interacting species, infectious diseases, population genetics and evolution, and possibly tumour growth or something else, time permitting.

Course Evaluation: Assignments — 40%; Midterm Exam — 30%; Final Exam — 30%.

Notes:

(i) All materials covered in lectures (some may be extra to the text) up to the end of the course can be considered testable in the assignments and exams. For this reason, students are advised not to miss classes. Some problems may be assigned for practice purpose, and will not be collected and marked.

(ii) *Assignments* will be scheduled according to the pacing, roughly one every two weeks. *Midterm exam* will be on Friday October 28, 7:00-10:00, with the room to be determined later. *Final exam* will be schedule by the university's registrar's office.

(iv) No make-up for missed midterm exam will be arranged. If for a reason acceptable by the university's policy, you have to miss the midterm exam, you need to obtain a permission from the Science Dean's office and I have to be notified of the permission **in advance**; in such a case, I will re-weight your missed midterm to your final exam.

[1] **Responsibility for checking prerequisites:** Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

[2] **Statement on academic offences:** Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

[3] **Use of plagiarism-checking software:** All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>)

[4] **Use of cheating-analysis software:** Computer-marked multiple-choice tests and/or exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

[5] **Statement on services for students in emotional/mental health distress:** Students who are in emotional/mental distress should refer to Mental Health Western:

www.uwo.ca/uwocom/mentalhealth/ for a complete list of options about how to obtain help.

Addendum to all Applied Mathematics Course Outlines

Accessibility Statement: Please contact the course instructor if you require material in an alternative format or if you require any other arrangement to make this course more accessible to you. You may also wish to contact Service for Students with Disabilities (SSD) at 661-2111 ext 82147 for any specific question regarding an accommodation.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to your faculty's Dean's office as soon as possible and contact your instructor immediately. It is the students responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a Recommendation of Special Examination form must be obtained from your faculty's Deans Office immediately. For further information please see:

<http://www.uwo.ca/univsec/handbook/appeals/medical.pdf>

A student requiring academic accommodation due to illness, should use the Student Medical Certificate when visiting an off-campus medical facility or request a Records Release Form (located in the Dean's office for visits to Student Health Services. The form can be found here:

<https://studentservices.uwo.ca/secure/medicaldocument.pdf>