

BISC-407, Population Dynamics, Spring 2019

Lecture: Tues 10:30-11:20 AQ 5037
 Thurs 09:30-11:20 WMC 2202
Tutorial: Thurs 11:30-12:20 AQ 3148.1 (section D101)
 12:30-13:20 AQ 3145 (section D102)

Instructor: Dr. Leithen M’Gonigle
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Teaching assistant: Elijah Reyes
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Office Location: Shrum Science, B8227
Office Hours: Wed 1-2pm & by appointment

Pre-requisites: BISC 102 and either BISC 204 or GEOG 215, all with a grade of C- or better.

Course Description: Using a combination of theory and applied exercises students will explore various facets of population biology and evaluate the factors influencing the natural fluctuation and regulation of plant and animal populations.

Grade Breakdown:

Tutorial & Assignments	30%
Midterm Exam (Tues, Feb 5)	30%
Final Exam	40%

General:

- Attached to the end of this document is a preliminary course schedule. This will be updated as the term continues.
- Exams are closed book, closed notes, unless instructed otherwise.
- No makeup assignments or exams will be given.

Course Schedule:

To be updated as we progress.

Week	Content	Tutorial Topic
Jan 3	Welcome and Introduction	No tutorial
Jan 7	Population growth Intro to Maple	Intro to Maple
Jan 14	One locus selection Graphical analyses	Graphing
Jan 21	Equilibria Stability	Simulations
Jan 28	Stability Midterm review	Finding equilibria and assessing stability
Feb 4	Midterm Applications of the theory	More stability analyses
Feb 11	Dispersal <i>Feb 12 cancelled due to snow</i>	No tutorial
Feb 18	Reading week	
Feb 25	Dispersal continued Introduction to matrix algebra	Matrix algebra
Mar 4	Solving linear equations and finding general solutions <i>Mar 7 cancelled due to snow</i>	<i>Cancelled due to snow</i>
Mar 11	Introduction to demography	Eigenvectors
Mar 18	Non-linear equations	Growth with alternation of generations
Mar 25	Multi-variable stability analysis Spread of disease	Competition between two species
Apr 1	Predator-prey and simulation models Review	Predator-prey models