

Advanced Population and Community Ecology

Instructors:	John Maron	Winsor Lowe
E-mail:	john.maron@mso.umt.edu	winsor.lowe@umontana.edu
Phone:	(406) 243-6202	(406) 243-4375
Office:	Natural Sciences Annex 102	Health Science 410
Office Hours:	Monday, 3-4 pm	Tuesday, 3-4 pm

Rooms and Times: Lectures - SB 473, 8:40-10:00 am, Tues. and Thurs.
Discussion - TBD

Course Description:

This course is geared towards newer graduate students and is meant to provide students with a broad overview of both population and community ecology. Specific topics related to population ecology will include simple and more complex age/stage structured models of population growth, density-dependence and population regulation, spatial aspects of population dynamics including metapopulation and source-sink dynamics, niche models, subsidized populations. Topics related to community ecology will include predator-prey interactions, plant-herbivore interactions, mutualisms, community organization, null models of community assembly, metacommunities and species diversity. Lectures will alternate between introducing the theoretic foundations for population and community ecology and discussing the classic and more recent empirical tests of theory.

Grading:

30% = *Mini-lecture and paper discussion*

- > In a discussion period, each student will present a 15 min lecture on a topic not covered by the Instructors, and lead a discussion of a related paper for the rest of the period
- > Lectures and papers should be discussed with the Instructors by the Friday before the assigned discussion period

30% = *Final Proposal*

- > Proposal are due on April 19
- > We will distribute guidelines for the proposal before the mid-term

15% = *Proposal Review*

- > Review panels will be during the last weeks of classes
- > We will distribute guidelines for the written and oral review before the mid-term

25% = *Participation*

Grading Policy:

- > We will consider extensions on assignments **ONLY** if you discuss the reason for such a request with us IN PERSON before the due date.

Book: Gotelli, N.J. 2008. A Primer of Ecology. 4th edition. Sinauer Associates, Inc., Sunderland, MA.

Readings: Readings for lectures and a broader reading list will be posted to Moodle.

Drops, Adds, Other Academic Changes, and Pass/Fail Policies:

The University's Academic Policies and Procedures are described at http://archive.umt.edu/catalog/14_15/academics/academic-policy-procedure.php

See <http://www.umt.edu/registrar/PDF/Spring2016officialdatesdeadlines.pdf> for important dates regarding course registration. Students should specifically note that after February 12 any academic changes generally will not be approved. Changes after February 12 may be requested by petition, but the petition **MUST** be accompanied by documentation of extenuating circumstances (i.e., requests to drop a course or change the grade basis to benefit a student's grade point average will not be approved).

**** We encourage students with disabilities of any kind to discuss appropriate accommodations with us.****

Date	Topics	
Jan. 26	Course objectives and structure / Simple population models	JM, WL
Jan. 28	Density dependent population models	JM
Feb. 2	Population regulation	JM
Feb. 4	Stage-structured models 1	JM
Feb. 9	Stage-structured models 2	JM
Feb. 11	Niches	WL
Feb. 16	Competition Models 1	WL
Feb. 18	Competition Models 2	WL
Feb. 23	Simple predator-prey models	WL
Feb. 25	Complex predator-prey models	WL
March 1	Spatial population and community models 1	WL
March 3	Spatial population and community models 2	WL
March 8	“Non-equilibrium” community structure	WL
March 10	Neutral theory	WL
March 15	Empirical competition research	JM
March 17	Community assembly/mechanisms of coexistence	JM
March 22	Empirical predator-prey research-direct effects	JM
March 24	Empirical predator-prey research-indirect effects	JM

Date	Topics	
March 29	Plant defense	JM
March 31	Mutualisms	JM
April 5	SPRING BREAK	-
April 7	SPRING BREAK	-
April 12	Food webs 1	WL
April 14	Food webs 2	WL
April 19	Disease ecology	AL
	PROPOSAL DUE	
April 21	Species diversity and community assembly	WL
April 26	Limits on distributions	JM
April 28	Biodiversity and ecosystem function	JM
May 3	TBD	-
May 5	TBD	-