

## MATH 582 and EEB 582 - Spring 2018 Math Ecology

Instructor: Suzanne Lenhart, Chancellor's Professor in Mathematics

Office: 235 Ayres Hall

Office Hours: M 2:30-3, W noon - 1, Thurs. 12-1:30 and by appointment

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TEXT: Elements of Mathematical Ecology, by Mark Kot.

### EVALUATION

quiz on homework 15%

final exam 35%

homework 45%

participation 5%

Scoring 93% or above in this course will guarantee an A, 90% for A- etc.

**GOAL, LEARNING OUTCOMES:** The goal of this course is to provide an introduction to mathematical approaches in ecology. Students should learn to formulate, interpret and analyze basic models in ecology. This course is the second part of a sequence and starts with chapter 13 (mutualism models) and finishes with part of chapter 25. Optimal control of harvesting problems will be introduced. Models with spatial structure and with age structure will be covered. These models include partial differential equations, difference equations, integral equations and matrix equations. A few other types of topics will be introduced through discussion of papers in class.

**MAKE UP POLICY:** Late homework or quiz will be arranged only if you ask me in advance and we agree on an alternate date.

**COURSE SCHEDULE:** Note that some review/summaries of journal articles will be included in the homework. The articles will be provided and some short summaries will be required.

Specific students will be assigned to tell the class about the main features in some articles. Some simple problems will be worked in groups in class. Such activities are counted as participation.

The tentative date for the homework quiz is March 7.

The comprehensive final exam is Friday, May 5 at 12:30pm.

A class or two may need to be made up and will be done at 9am of April 30. Please save this time/date.

Any student who feels the need for an accommodation based on the impact of a disability should contact Student Disability Services in Dunford Hall, at 865-974-6087, or by video phone at, 865-622-6566, to coordinate accommodations for students with documented disabilities.