Course Catalog

Biomathematics

Faculty

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Overview

The Biomathematics minor is an interdisciplinary program designed primarily for students majoring in math or biology who are interested in the expanding field of mathematical modeling of biological phenomena.

Requirements

The Minor

The requirements for a Biomathematics minor are as follows:

I. The Core (21 hours)

BIOL 1311	Integrative Biology I
BIOL 1111	Introductory Biology Laboratory
BIOL 2312	Cells and Cell Systems
BIOL 2112	Cell Systems Laboratory
BIOL 3413	Genes, Phenotypes, and Evolutionary Dynamics
MATH 1311	Calculus I
MATH 1320	Statistical Methods
MATH 2308	Introduction to Analytical Models

II. Advanced Interdisciplinary Study (7 hours)

Complete one of the following pairs of courses. The BIOL course should be taken first for either option, as the MATH course will build on the knowledge from the BIOL course. The two MATH courses are offered alternate years, so students should check with the MATH department to
ensure they can complete their desired option.

Ecology option

BIOL 3434	Ecology
MATH 3328	Mathematical models in Life Sciences

or

Genetics option

BIOL 3450	Genetics
MATH 3327	Probablistic Models in Life Sciences

III. Contemporary Topics and Research in Biomathematics (at least 2 hours)

Complete all of the following:

BIMA 2094	Seminar in Biomathematics I
BIMA 3-90	Independent Research in Biomathematics (at least one hour)
BIMA 3194	Seminar in Biomathematics II

Courses

BIMA-2094 Seminar in Biomathematics I

This discussion format course focuses on contemporary subjects in biomathematics chosen by the instructor and students. (Offered every semester) Prerequisite: Consent of instructor

BIMA-3-90 Independent Research in Biomathematics

Individual Research in biomathematics conducted with faculty. Course credit will depend on the nature and scope of the proposed research project. Prerequisites: Consent of the instructor and approval from the minor director

BIMA-3391 Special Topics in Biomathematics

Advanced study of a topic or field not covered by other courses. May be repeated for credit for different topics. (Offered occasionally). Prerequisites: consent of instructor

BIMA-3194 Seminar in Biomathematics II

This discussion format course focuses on contemporary subjects in biomathematics chosen by the instructor and students. Students will also be expected to present the results of their own research project, including relevant background from the literature. (Offered every semester) Prerequisite: BIMA 2094 and Consent of instructor