



UB301L Aug 0:2

Experiments in Microbiology and Ecology

Instructor

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Department: CES and MCB

Course Time: Mon, Tues, Wed, Thur, 2-5 pm

Lecture venue: UG labs

Detailed Course Page:

Announcements

Brief description of the course

There are two sets of hand on experiments for Biology majors: In the first part, students will get a hands-on experience in understanding the basic concepts in microbiology. In the second part, students will explore key concepts in Ecology, Evolution and Behaviour through field observations, manipulative experiments and computer simulations.

Prerequisites

UG Biology Majors

Syllabus

The topics for part 1 include the microbial growth curve, microbial nutritional requirements, genetic engineering techniques, plasmid isolation, creation of genetic knock out in bacteria, bacterial infection in cell culture system, estimation of infection by colony forming unit (CFU) analysis and fluorescence technique.

Topics in Part 2 will include niche and population estimation, competition and predation, species and trophic interactions, sexual selection and mate choice, adaptation and commensalism, and evolutionary pattern and process.

Course outcomes

Students will learn key techniques in Microbiology. In the Ecology module, students will learn how to frame questions and hypotheses, as well as how to design experiments. There will be one weekend field trip to a National Park, where students conduct an independent research project. Students also independently create one nature documentary.

Grading policy

Ecology module: weekly assignments, two independent projects (research project, mini documentary)

Assignments

Resources