

Course Synopsis:

Microbial Ecology and Diversity 11:680:491 (3 credits)

Offered: This is a lecture course which is offered each Fall semester.

Prerequisites and Registration Restrictions:

Pre-requisites: 11:680:390 General Microbiology, or equivalent.

For Pre-requisite overrides or Special Permission contact the Dept. Staff.

Format: Two 1 hour 20 min lectures.

The course introduces the students to the enormous taxonomic, metabolic and ecological diversity of microorganisms on Earth. The course is organized in three sections of approximately equal proportion:

1. **Microbial diversity** in which we “climb” the three of life by first considering how life on Earth started and how it has evolved to the enormous diversity that we see now among the Bacteria, Archaea, and the microbial Eukarya and their viruses;
2. **Metabolic diversity** in which we consider the magnificent diversity of the reactions that are carried out by microorganisms as revealed to us through various element cycles on Earth;
3. **Ecosystem diversity** in which we describe how microbes live in communities and engage in interactions with each other, with plants and animals, and with their environments. We consider the uniqueness of microbial life in ecosystems and highlight the role of microbes in sustaining homeostasis on Earth;

Throughout the course we stress the importance of the processes that are discussed in class to human wellbeing and environmental sustainability. Grading consists of 3 midterm exams and a term paper.

Syllabus: A detailed syllabus will be available at the first class meeting and posted on the course Sakai page.

Additional Information: Contact Dr. Barkay (Rm. 331, Lipman Hall), phone 848-932-5664, email: barkay@aesop.rutgers.edu