

BIOL L472 Microbial Ecology

Course Syllabus Spring 2017

Course summary:

Microbes are the most abundant and diverse organisms on the Earth. Collectively, they are responsible for regulating the flow of energy and cycling of elements in the soil, water, and atmosphere. Furthermore, microorganisms are important for producing food and for keeping us healthy. In this course, we will explore the evolutionary and ecological processes that generate and maintain microbial biodiversity. Students will be exposed to contemporary microbiological, molecular, and bioinformatic approaches that are used to study microorganisms in a variety of habitats, including soils, oceans, and the human gut. Core principles will be reinforced and evaluated through a variety of learning tools including quizzes, a laboratory experiment, team projects, discussion of the primary literature, and in-class exams.

Instructor:

Dr. Jay Lennon
261B Jordan Hall (office)
812-856-0962 (office phone)
lennonj@indiana.edu

Lectures:

1:00-2:15 PM Tuesday and Thursday, JH 065 (Jordan Hall)

Office hours:

2:15-3:15 PM Tuesday and Thursday

Recommended Textbooks (on reserve in Life Science Library):

- *Brock Biology of Microorganisms* (13th Edition) by Michael T. Madigan et al. (2012).
- *Processes in Microbial Ecology* (1st Edition) by David L. Kirchman (2012).

Canvas:

We will use Indiana University's Canvas system (<https://canvas.iu.edu/>) for our course website. Here, you will find course material including lecture slides, required readings, syllabus, schedule, and material relevant to other course activities. In addition, all electronic communication pertaining to the course should be done using Canvas.

Student evaluation:

- **Exams:** There will be three exams that will comprise 65% of your final grade. The first two exams will cover material from the preceding eight class periods. The last exam will focus largely on material from the last 10 class periods, but will be semi-comprehensive and revisit core topics from earlier in the semester. The final exam will be administered on Tuesday, May 4 from 2:45 - 4:45 PM.
- **Literature assignment:** We will read three papers from the primary literature that are related to concepts presented in a previous lecture. Students will write a one-page summary on each of the three papers; each of these write-ups will comprise 5% of your final grade. In addition, students will need to come to class prepared to engage in thoughtful group discussion on the papers.

- **Microbial Diversity Team Project:** You will be paired with another student, and as a team will be responsible for conducting a literature search on a microorganism. The information you collect and synthesize will pertain to the microbe's phylogeny, genome structure, cell structure and metabolism, ecology, etc. You and your partner will be responsible for uploading the information that you find onto MicrobeWiki (<http://microbewiki.kenyon.edu/>). In addition, you and your partner will give an oral presentation at the end of the semester, using a Power Point style format. Together, the Microbial Diversity Team Project accounts for 15% of your final grade.
- **Participation:** Five percent of your final grade will reflect in-class participation. This will be assessed based on daily quizzes, your contribution to class discussion, and also your respect for others in the class. Please refrain from using phones or computers for non-course related activities.

Academic Integrity: As a student at IU, you are expected to adhere to the standards and policies detailed in the Code of Student Rights, Responsibilities, and Conduct (<http://www.iu.edu/~code/>). When you submit a paper or exam with your name on it in this course, you are signifying that the work contained therein is all yours, unless otherwise cited or referenced. Similar standards are assumed for presentations and the generation of web-based media. Any ideas or materials taken from another source for either written or oral use must be fully acknowledged. If you are unsure about the expectations for completing an assignment or taking a test or exam, be sure to seek clarification beforehand. All suspected violations of the Code will be handled according to University policies. Sanctions for academic misconduct may include a failing grade on the assignment, reduction in your final grade, a failing grade in the course, among other possibilities, and must include a report to the Dean of Students.

Attendance: I expect that enrolled students will be punctual and attend all classes. As a general rule, exams will not be rescheduled unless there is documentation of an illness or other emergency. These conflicts or other events should be communicated with the instructor as early as possible.

Special needs: Please contact me as soon as possible (first two weeks of the semester) if you have a documented disability that will interfere your performance of the activities planned for the course.