

# Why are there so many parts of this course?

Rationale for Micr-22 Elements, revised Fall 2016

Our course objectives are diverse, addressing topics from core scientific concepts to current events. Because of the varied goals for Micr-22, I use multiple assignments rather than rely solely on exams. I put together this document to illustrate how parts of the class fit together. Course components are listed below (with their associated course objective # in parentheses) and short descriptions of their purposes.

## **General course objectives from our syllabus**

Upon completion of this course, my goal is for all students to:

1. explain the basic features of every major group of microorganisms.
2. describe the physiology and genetic processes of microorganisms.
3. apply physical and chemical methods of controlling microorganisms.
4. explain the dynamics of host-parasite interaction.
5. diagnose specific diseases on the basis of symptoms and laboratory test results.
6. perform basic microbiology lab procedures.
7. demonstrate safe handling procedures for microorganisms.

## **Other critical skills**

8. Applying, analyzing, and evaluating scientific thinking, reasoning, and values.
9. Articulating an understanding of microbiological processes using scientific terminology.
10. Collaborating within diverse groups to produce meaningful work.

## **Course elements**

### Information coming in

	<b>Description of purpose</b>
Textbook, other articles (1, 2, 4, 5)	Introduce ideas.
Lectures, discussions (1, 2, 4, 5)	Introduce ideas; discuss examples.
Reading scientific articles (8)	See how scientific ideas can be shared.

### Connecting and communicating ideas

Lab exercises (3-10)	Practice lab procedures and identification methods.
Reports on articles (9)	Practice effective written communication.
Lab report (6, 8, 9)	Practice scientific analysis and writing.
Pathogen charts project (1, 4, 5, 8-10)	Practice collaboration, and information analysis and management.

### Checking for understanding

Lecture exams (8, 9)	Check progress. Get motivation and feedback.
Lab exams (8, 9)	Check progress. Get motivation and feedback.

Or, if you prefer a flowchart to show connections:

