



Independent Study | in Idaho

EPPN 154
Microbiology and the
World Around Us

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Course Guide

Independent
Study | in Idaho

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Entomology, Plant Pathology and Nematology 154 Microbiology and the World Around Us

University of Idaho
3 Semester-Hour Credits

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Entomology, Plant Pathology and Nematology 154

Microbiology and the World Around Us **3 Semester-Hour Credits: U of I**

Welcome!

Whether you are a new or returning student, welcome to the Independent Study in Idaho (ISI) program. Below, you will find information pertinent to your course including the course description, course materials, course objectives, as well as information about assignments, exams, and grading. If you have any questions or concerns, please contact the ISI office for clarification before beginning your course.

Policies and Procedures

Refer to the ISI website at www.uidaho.edu/isi and select *Students* for the most current policies and procedures, including information on setting up accounts, student confidentiality, exams, proctors, transcripts, course exchanges, refunds, academic integrity, library resources, and disability support and other services.

Course Description

Introduction to microorganisms and their role in disease, health, foods, and the environment; current topics in microbiology. University of Idaho students: May be taken by microbiology majors but carries no credit after Biol 250 [General Microbiology]. May be used as general education credit for Natural and Applied Sciences.

Students may submit up to 2 assignments per week. Before taking exams, students MUST wait for grades and feedback on assignments, which may take up to three weeks after the date of receipt by the instructor. ALL assignments and exams must be submitted to receive a final grade for the course.

Course Materials

Required Course Materials

Pommerville, Jeffrey C., *Alcamo's Microbes and Society*, 4th Edition. Jones & Bartlett Learning. 2014. ISBN-10: 1284023478. ISBN-13: 9781284023473.

A new Alcamo's Microbes and Society textbook includes Navigate 2 Advantage Access. Navigate 2 Advantage Access is optional and not needed for the class; therefore, either a new or used book will be fine for the class. Navigate 2 Advantage Access has practice activities, flashcards and web links.

Course Delivery

All ISI courses are delivered through Canvas, an online management system that hosts the course lessons and assignments and other items that are essential to the course. Upon registration, the student will receive a *Registration Confirmation Email* with information on how to access ISI courses online.

Course Introduction and Objectives introduces students with a basic understanding of the importance of microorganisms, particularly prokaryotes, in the biosphere and human, animal and plant health.

The primary objective of this introductory microbiology course is to provide students with a basic understanding of the importance of microorganisms (particularly prokaryotes) in the biosphere and human, animal and plant health.

It is expected that by the end of this course students will be competent in the following ways.

Learn & Integrate:

- Understand the structure, physiology, and functional diversity of Bacteria, Archaea, fungi, and viruses and their roles in the biosphere.
- Understand the genetics, genomics, ecology and evolution of microorganisms.

Think & Create:

- Students will become aware of and gain insight into current events in which microorganisms have a central role.
- Students will be able to apply the concepts and approaches learned in this course to help solve problems encountered in their professional lives.

Communicate:

- Students will be able to effectively communicate microbiology concepts to others.

Clarify Purpose & Perspective:

- Students will understand the importance of microorganisms in causing or resolving problems in contemporary society.

Practice Citizenship:

- Students will be able to explain to others many of the critical roles that microorganisms play in our daily lives.
- Students will be able to inform decision-makers about the ecological importance of microorganisms in developing strategies to address sustainability of the biosphere, emerging diseases, as well as in sustaining human, animal and plant health.

Units

Overview

Each Unit may include the following components:

- Unit overview
- reading assignments
- lecture PowerPoints
- written assignment

Study Hints:

- Complete all reading assignments.
- Prepare by reading the assigned chapters, exercises, and other material before class.
- Set aside time each week to read assigned material, complete assignments, and think about the material being presented. Use good note taking skills.
- When studying use the resources made available to you by the instructor, in the textbook, and on the Web or in the library.
- Keep a copy of every assignment submitted.

- Set a schedule allowing for course completion one month before your personal deadline. An *Assignment Submission Log* is provided for this purpose.
- Web pages and URL links on the World Wide Web are continuously changing. Contact your instructor if you find a broken Web page or URL.

Refer to the **Course Rules** in Canvas for further details on assignment requirements and submission.

Exams

- You must wait for grades and comments on assignments before taking subsequent exams.
 - For your instructor's exam guidelines, refer to the **Course Rules** in Canvas
- Refer to *Grading* for specific information on assignment/exam points and percentages.

Grading

The final course grade is issued after all assignments and exams have been graded. The course grade will be based on the following considerations:

Item	Points	Percentage	
Assignments 1—13	25 points each= 325	68%	A = 90% to 100%
Exams 1—3	50 points each= 150	32%	B = 80% to 89%
	Total = 475	100%	C = 70% to 79%
			D = 60% to 69%
			F = 59% or less

Academic Honesty

Academic honesty is governed by Article II of the University of Idaho's Student Code of Conduct (<https://www.uidaho.edu/student-affairs/dean-of-students/student-conduct/student-code-of-conduct>). All students are expected to uphold the highest standards of academic honesty. Academic dishonesty includes but is not limited to cheating on examinations, plagiarism, falsification of academic or other records, and the acquisition or use of test materials without faculty authorization. Examinations are to reflect the student's own work and knowledge. All incidents of academic dishonesty will be reported to the Dean of Students. Individuals guilty of academic dishonesty will receive a failing grade.

Disability Accommodations

Reasonable accommodations are available for students who have documented temporary or permanent disabilities. All accommodations must be approved through Disability Support Services located in the Idaho Commons Building, Room 306 to notify your instructor(s) as soon as possible regarding accommodation(s) needed for the course. More information can be obtained on the website of Center for Disability Access and Resources www.uidaho.edu/current-students/cdar/services.

About the Course Developer

I work in the field of microbiome research focused on characterization and a better understanding of the mutualistic relationship between bacteria residing in the human vagina and the host. My experiments investigate differences in community function between women and over time, especially in postmenopausal women. Additionally, I work on development and evaluation of techniques applicable for modeling vaginal community dynamics, vaginal health, and risk of bacterial vaginosis and sexually transmitted infections. Part of my appointment also includes work on plasmid evolution and antibiotic resistance of pathogens and presentation of research results, providing training and supervision to students or research support to other research groups at the University of Idaho such as Dr. Armando McDonald's lab specializing in optimization of industrial fermentation processes and bioplastics production.

Contacting Your Instructor

Instructor contact information is posted on your Canvas site under *Course Rules*.

Assignment Submission Log

Lesson	Projected Date for Completion	Date Submitted	Grade Received	Cumulative Point Totals
1				
2				
3				
4				
5				
It is time to take Exam 1.				
Exam 1				
6				
7				
8				
9				
10				
It is time to take Exam 2.				
Exam 2				
11				
12				
13				
It is time to take Exam 3.				
Exam 3				

Unit 1 Introduction to the Microbial World

Reading Assignment

Alcamo, Chapter 1

Overview

This unit is an introduction to microbiology covering history (use of microbes in ancient times and Medieval Ages) with early scientific discoveries in late 1600s until today. This lesson will introduce basic concepts such as germ theory of disease and Koch's postulates, and basic terms used in microbiology.

Written Assignment

Define terms (1 point each)

1. Microorganisms
2. Microbiome
3. Animalcules
4. Vaccine
5. Virus
6. Pathogen
7. Eukaryote
8. Protists
9. Spontaneous generation
10. Pasteurization

Fill in the blanks (1 point each)

11. "Cells" observed through microscopic observation of thin cork slices were first described by _____ in mid-1600s.
12. Using his own lenses Anthony van Leeuwenhoek noticed microorganisms that could move quite rapidly in different directions. He named these forms of life as _____.
13. Development of studies of infectious diseases was possible thanks to work of _____ and his germ theory of diseases.
14. Soil and marine microbial species that can break down dead plant and animal matter are called _____.
15. Algae can produce oxygen in the process of _____, where light energy is converted to chemical energy.
16. All _____ lack cell nucleus.

17. Genetic material of eukaryotes is organized in chromosomes that are built by long strings of _____ acid molecules.
18. Depletion of oxygen dissolved in water and areas called “dead zones” are a result of _____ blooms.
19. _____ are acellular, don't have a cell wall or internal compartments. They are just genetic information surrounded by a protein coat.
20. Microorganisms resistant to multiple antibiotics are called _____.

True or false? (1 point each)

21. Yeasts are not fungi. T / F
22. Majority of antibiotics produced are used in animal production systems. T / F
23. Superbugs are microbes susceptible to multiple antibiotics. T / F
24. Diatoms and cyanobacteria can be a part of phytoplankton. T / F
25. Malaria and African sleeping sickness are caused by protists. T / F