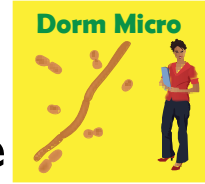


BioMI 1100

The Microbiology of College Life



Course Instructor: Kathleen Hefferon
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Office Hours: Mondays 4-5pm Rm 106 Wing Hall, or on Zoom

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Lectures: M W F 12:20 - 1:10pm Uris Hall G01

Textbook: Stearns et al. “Microbiology for Dummies” provides an excellent resource for students. Instructors will also assign relevant readings for lecture clarification.

Course Description: Microbial habitats are literally everywhere on a college campus – and college students interact with microorganisms daily. From the athlete locker room, to the kitchen, to the bathroom, to between the sheets, college students are exposed to a plethora of microorganisms that are benign, beneficial, and pathogenic. The goal of this class is for students to learn about microbiology and microbial ecology as it relates to them – in the college campus environment. Students will learn about viruses, bacteria, eukaryotes and metazoans that cause common illnesses (i.e. gastroenteritis, influenza and STDs), the microbially-driven elemental cycling of alcohol production, and ecology of microorganism that spoil food. Students will take away a practical understanding of the microorganisms that they can apply to their own lives.

Learning Objectives: By the end of the course, students should:

1. Demonstrate an understanding of core concepts of microbiology, including the evolution and diversity of microbes; cell structure and function; pathogenic and non-pathogenic lifestyles; and the role of microbes in human health and the built environment.
2. Recognize the differences between pathogens, opportunists, and non-pathogenic microorganisms and have an appreciation for their roles in the college campus environment.
3. Describe how microorganisms facilitate major biogeochemical cycles in natural and agricultural habitats.

4. Apply the scientific method, as well as use objective observation and empirical measurement to evaluate alternative ideas concerning the underlying principles that govern biological, physical and chemical processes.
5. Explain fundamental concepts of microbiology, both in written and in oral format

Assessment and Grading:

Midterm 1 – 10%

Midterm 2 – 10%

Final Exam – 25%

Attendance/Participation in Activities – 25%

Homework Assignments – 20% on Canvas

Wikipedia Assignment – 10%

Module	Lecture or Discussion	Date	Title
Introduction	L1	Mon Jan 22	Welcome and Overview
The Microbiology of Growing Up	L2	Wed Jan 24	Zits and Dandruff
	Activity 1	Fri Jan 26	Critical Thinking online minicourse
	L3	Mon Jan 29	Head lice
The Microbial Ecology of the Bathroom	L4	Wed Jan 31	Dental plaque and bad breath!
	Activity 2	Fri Feb 2	How to read a science paper, bacterial diversity
	L5	Mon Feb 5	Mold and Mildew
	L6	Wed Feb 7	E. coli, Biofilms
	Activity 3	Friday Feb 9	Cultivation and swab distribution
	L7	Mon Feb 12	Waterborne, Human Microbiome

	L8	Wed Feb 14	Athlete's foot, jock itch
	Activity 4	Fri Feb 16	Paper Human Microbiome
Locker Room Microbiology	L9	Mon Feb 19	Swimming pool microbiology
	Class Exam!	Wed Feb 21	Midterm Exam 1 Content from L1-L9
	No Activity!	Fri Feb 23	Start of February Break!
	L10	Wed Feb 28	Pinkeye, strep throat
	Activity 5	Fri Mar 1	See what grew during microbial cultivation
	L11	Mon Mar 4	Bad BO
Microbial Ecology of the bedroom	L12	Wed Mar 6	STDs syphilis and chlamydia
	Activity 6	Fri Mar 8	The STI simulation
	L13	Mon Mar 11	HIV, HPV, Herpes,
Microbiology of the dorm	L14	Wed Mar 13	mPox and COVID
	Activity 7	Fri Mar 15	Paper discussion on Hand Sanitizers and Pandemics...are they effective?
	L15	Mon Mar 18	Vaccines
	L16	Wed Mar 20	GMOs and genome edited foods
	Activity 8	Fri Mar 22	Guest Lecture on the social aspects of GMOs Professor Ron Herring

Microbial ecology of the kitchen	L17	Mon Mar 25	Food Safety/fermented foods & drinks/microbiome health?
	Class Exam!	Wed Mar 27	Midterm 2 Content from L10-L17
	No Activity!	Fri Mar 29	Spring Break begins!
	L18	Mon Apr 8	Food, synthetic biology and the alt protein movement
	L19	Wed Apr 10	Soil microbes and wine
	Activity 9	Fri Apr 12	Guest Lecturer on Grape microbes, Professor Tim Martinson
	L20	Mon Apr 15	Water borne Gastroenteritis cholera, giardia
	L21	Wed Apr 17	Food borne E. coli, listeria, Norwalk
	Activity 10	Fri Apr 19	Gastro Paper: sick on a cruise ship!
	L22	Mon Apr 22	Person to person, mumps, tuberculosis, measles
	L23	Wed Apr 24	Vector-borne
	Activity 11	Fri Apr 26	Wikipedia Activity
	L24	Mon April 29	Antibiotics and resistance
	L25	Wed May 1	Symbiosis

	Activity 12	Fri May 6	BLAST search and microbial diversity
	L26	Mon May 8	Review for Final

Exams: There will be two in-class midterms covering Lectures 1 – 9 and Lectures 10

– 17. The final exam will cover Lectures 1 – 25. Examinations will be mostly multiple choice, however may include a short answer question and/or essay question.

Homework: Each week during lecture, the instructor will assign some multiple choice/short answer questions on Canvas.

Assignments: There will be one short written assignment. The assignment (Wikipedia) can be performed as a group or individually, it is up to you! More information about the requirements for the assignment and due dates will be provided in Week 3 of the class.

Policy on Late Work: Students are strongly encouraged to ensure on-time submission of assignments. Work handed in 0 – 12 hrs after the submission date/time will be assessed a 20% penalty. Work handed in 12 – 48 hrs after submission date/time will be assessed a further 20% penalty. Work submitted > 48 hrs after the due date will not be graded.

Policy for Class Absences: It is very important that you attend all lectures and discussion periods. Attendance is highly recommended at lectures, since information not contained on powerpoint slides will be conveyed during the lecture itself. Attendance will be taken for the discussion periods. You may miss a total of 2 discussion periods during the class without penalty.

If you get sick (!) during the class and need to miss lectures, please go to **Cornell Health Services** and let us know.

Please note that the midterm examinations occur on the Wednesday prior to February and Spring breaks. Please do not make travel plans that depart prior to these break periods.

Integrity for Assignments: Sharing of materials from previous years is not permitted. Additionally, work that has been presented for assessment in other courses is not acceptable in this course.

Mental Health: The instructors, teaching assistants and university care about you and your wellbeing! If you experience unusual personal or academic stress during the course or need to talk with someone, seek support from your instructors or Cornell Student Health Services as soon as possible.