

BIOLOGY 191 - Biology in Modern Society

Lecture: M, T, TH, F 3:35-4:35 Room: 1817 AB

Instructor: Drs. Michelle Ammerman and Jim Cohen
Pronouns: she/her/hers and he/him/his
Offices: 2212A and 2212C AB
E-mails: mammerman@kettering.edu and jcohen@kettering.edu
Phone: (810) 249- 4381 and (810) 249-4383
Student hours: T, TH 2:20-3:20 or by appointment

Course Objectives: Biology is the science of life, and the science permeates all aspects of our lives, ranging from the food we eat and the air we breathe to the interactions we have with others and the environments in which we live. Because of this, as well as new and developing methods on biological topics, it is important as humans in today's society that we understand the myriad of manners in which biology fits into our lives and society as a whole. To this end, we will focus on exploring our natural environment and various ways in which we, as humans, interact with the environment, historically and presently, and discuss biological, social, and environmental impacts of these interactions on the environmental and human society.

According to Socrates, "Education is the kindling of a flame, not the filling of a vessel." By gathering and discussing biological knowledge throughout this course, you will have the opportunity to stoke your intellectual flame. If you do so, your flame will burn brighter, and your ability to create, analyze, and synthesize information will grow. You will be able to use these abilities to successfully interrogate current and historical topics on biology and society.

Learning Objectives: Upon successful completion of this course, you will:

- understand the role of modern and historical approaches to biology
- understand the diversity of organisms and ecosystems
- analyze and address current and historical biological topics
- explain the effects of humans and man-made products on diverse ecosystems

Text: *A Sand County Almanac* by Aldo Leopold, ISBN: 9780195059281
Sicker, Fatter, Poorer by Leonardo Trasande, ISBN 1328553493
Additional readings will be provided.

Grading:

Weekly reflections	150 points
Lab activities	150 points
Field notebook	150 points
Participation	50 points
Cumulative experience	100 points

Total **600 points**

Make-up Exams and Late Assignments: Turning in assignments after the deadline will not be possible unless you discuss the matter with the professors at least 24 hours before the assignment is due. Should there be extenuating circumstances (e.g., severe illness, funeral, accident), contact me as soon as possible in order to reschedule. Should you not follow these guidelines, you will receive a zero for the assignment. Additionally, missing more than five classes, that are not excused, will result in a failing grade for the class.

Class Behavior: Be respectful of your classmates, and do not disturb them by talking in class, arriving late, or participating in other disruptive behavior. Furthermore, you are not permitted in class to use cellular phones, pagers, two-ways, or other similar types of devices. If you use your cellular phone or other device in class, you may be asked to leave class due to the disruptive nature of your activity. Remember to act as you wish others would act.

Email Policy: We will respond to emails within 48 hours of receiving them, but only if the email includes all of the following: subject, salutation, body, and signature. Correct spelling and grammar are expected.

The instructors can change the class rules at any time throughout the semester, if they deem it necessary to do so.

Class Schedule

Date	Lecture Topic	Reading Assignment
July 15	Introduction to class, concerns and topics	
July 16	Seasons and seasonality	January
July 18	Plant growth	February
July 19	Lab - Introduction to observation	<i>Field Notes</i> excerpts
July 22	Social behavior	March
July 23	Succession	April
July 25	Predation	May
July 26	Lab - Observation and peer assessment	
July 29	Introduction to microbiology	
July 30	Introduction to environmental microbiology	
August 1	Aquatic ecosystems	June
August 2	Lab - Observation and microbiology	
August 5	Life history	July
August 6	Colors	August
August 8	Species and evolution	September
August 9	Lab - PhenoForecaster	Park et al., 2019
August 12	PhenoForecaster results and discussion	
August 13	Leaves changing color	October
August 15	Competition and parasitism	November
August 16	Guest lecture	
August 19	Conifer diversity	December
August 20	Movement of material through ecosystems	Wisconsin
August 22	Population distribution	Illinois and Iowa
August 23	Terrestrial ecosystems	Arizona and New Mexico
August 26	Community ecology	Chihuahua and Sonora
August 27	Invasive species and competition	Oregon and Utah
August 29	Mutualism	Manitoba
August 30/September 2	No class	
September 3	Conservation discussion 1	Conservation Esthetic and Wilderness in America
September 5	Conservation discussion 2	Wilderness and The Land Ethic
September 6	Lab - Observation and microbiology	
September 9	Environmental toxicology	<i>Omens from Our Stolen Future</i>
September 10	Endocrine system	<i>Sicker, Fatter, Poorer</i> Ch. 2
September 12	Pesticides	<i>Sicker, Fatter, Poorer</i> Ch. 3
September 13	Lab - Microbiology plates	
September 16	Plastics 1	<i>Sicker, Fatter, Poorer</i> Ch. 4
September 17	Plastics 2	<i>Sicker, Fatter, Poorer</i> Ch. 5
September 19	Flame retardants	<i>Sicker, Fatter, Poorer</i> Ch. 6
September 20	Lab - Ames test	
September 23	What can you do?	<i>Sicker, Fatter, Poorer</i> Ch. 7
September 24	What can you do?	<i>Sicker, Fatter, Poorer</i> Ch. 8