



Ms. Katoa
Email: elizabethkatoa@nracs.k12.oh.us

Welcome to Biology Seminar! This year long course is equivalent to a semester of biology lecture taught at Kenyon College in Gambier, Ohio. College courses are considerably more demanding than "normal" high school classes. Students are expected to be highly self-motivated in order to meet these demanding requirements. You are responsible for learning the content and using multiple resources to study often helps in learning difficult concepts.

Biology 115 covers the study of life from the basic biochemical levels to the complex global levels following the theme of energy flow through materials and organisms. During First Semester we will focus on the chemical basis of life, cell structure and function, and cellular energetics. Second Semester will include cellular organization, homeostasis, and biodiversity at the ecological levels. This course is designed to further develop your abilities in understanding biological concepts through reading, writing, and scientific thinking.

Textbooks: Biology (S. Mader) & Biological Science (shared copies) (S. Freeman)

Preparation for Class:

- 1 **Reading assignments** should be read **BEFORE** class. This will help you more fully understand the lectures. It is recommended that you study the reading and lecture material everyday to better prepare you for exams. Re-reading is also strongly advised! You will be given supplemental readings from various sources in addition to the text.
- 2 **Writing Assignments:** The goal for these assignments is that you learn something new and enhance your writing skills. You will gain experience reading scientific articles and reporting on them. You will be writing lab reports and analyzing data.
- 3 **Labs:** Follow all lab safety procedures. There will be a variety of labs completed throughout the year including dissections.
- 4 **Absences** should be rare in this class. When you are absent, use your syllabus as a guide to keep you up to date until you return to school. You are expected to make up work. If you are absent the day of a lab, you will be expected to make it up within a timely manner. There may be times where an alternative lab is given, but you are still responsible for ALL material covered.
- 5 **Class Participation and Discussions:** Come prepared for class, ask questions, and contribute in a positive and meaningful way!
- 6 **Academic Honesty:** I believe in the honor system and I will assume that the work that you turn in will be exclusively yours. Proper citations must also be used in formal writing assignments and as noted. I recommend using APA style.

Grading:

1. Assignments are weighted as follows:

<i>Types of Work</i>	<i>Weight</i>
Labs, Writing assignments, Projects	40%
Class Participation	10 %
Quizzes/Tests	50 %

2. **Quizzes, Tests, Finals:**
 - Tests will be over unit topics (sometimes several chapters at a time). **Anyone achieving less than a "C" on a test should meet with me to discuss strategies to improve test scores.**
 - There will be a Midterm and a Final Exam (no exemptions)

This is meant to be a **tentative** schedule, we will generally follow this **sequence** but may not always be on the projected date. You will be given other reading assignments as needed. Other due dates will be posted in the classroom or Website. Plan on reading the assigned chapter by the earliest date indicated. Labs may change.

DATES	SUBJECT	Mader (ch)	Labs/activities
Aug 30-Sep2	Intro, Scientific process , Classification, phylogeny	1, 20	Scientific Method/Life lab activity
Sept 6-9	Continue above, Reading sci. literature/stats overview	20 +	
Quiz			
Sept 12-16	Chemistry of Life, water, Acids/Bases, Buffers	2	pH buffer lab
Sept 19-23	Organic Molecules- Functional Groups, Carbs, Lipids	3	Macromolecule testing
Sept 26- 30	Proteins - Enzymes and Catalysts, Nucleic Acids	3	Enzymes/catalyst lab
Test			
Oct 3-7	Cell structure and function, & transport	4, 5	Viewing cells
Oct 10-13	Cell Transport continued (short week)	5	Diffusion/Osmosis
Oct 17 -21	Cell Junctions, size and complexity, Prokaryote Diversity	5, 21.2 -21.4	
Oct 24-28	Prokaryote Diversity	21.2 -21.4	Microscope/viewing slides
Oct 31-Nov4	Eukaryote cell diversity, Endosymbiotic hypothesis /cell specialization, Protist Diversity	22	Viewing protists (fixed & live)
Test			
Nov 7-11	Cell Energetics , Metabolic Reactions & ATP	6	
Nov 14-18 21 & 22	Cellular Respiration	8	Respiration lab, modeling/manipulatives
Test/Quiz			
Nov 28- Dec 2	Photosynthesis	7	Photosynthesis lab modeling/manipulatives
Dec 5-9	C3 and C4 Plants, Plant transport	7.5, 26	
Test/Quiz			
Dec 12-16 & 19-21	Evolution of Animals, Multicellularity	29 30*, 31*	(Possible) invertebrate dissections, live animal observations/experiments
Jan 3-13	Animal Diversity	30*, 31*	
Jan 17-18 Midterm Exam			

Second Semester

DATES	SUBJECT	CHAPTER	LAB/ACTIVITY
Jan 23-27	Animal Behavior	45	animal observations/behavior lab
Jan 30- Feb 3	Population Ecology & Conservation, Demography and Growth (human)	46	Population studies
Feb 6-10	Communities: species interactions	47	Case studies
Feb 13-17	Ecosystems: Energy Flow, Biogeochemical Cycles	48	Design an ecosystem
Feb 21-24	Conservation & Biodiversity	50	
Test			
Feb 27- Mar 2	Tissues, Body cavities & Organs	33	microscope work
Mar 5 - 8	Muscle contraction, Overview – Skeleton & Skeletal Muscles	41	Muscle dissection, muscle id
Mar 12-16	OGT week – catch up...test on ch 33,41, ??		
Mar 19-23	Nerves, Resting/action potential, CNS	39	Impulse manipulatives, Brain Dissection
Mar 26-30	Sensory Systems – transmitting info to the brain	40	Eye Dissection
Apr 2-5	Hormone action and control	42	
Test			
Apr 16-20	Digestion, Homeostasis, water/salt balance	36,38	Dialysis, kidney function
Apr 23-27, Apr 30-May 4	Circulation Circulation continued, prep for rat	34	Heart dissection, Mudworm circulation
May 7-11	Rat Dissection		
May 14-18	**Lab Practical Exam after lab completion		
May 21-25?	Complete Content, Post Evaluation-Kenyon, Review, FINAL EXAM		