

SYLLABUS
Natural Science 262-Life Science
Spring 2017

Instructor: Chuck Schick
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Office Hours: Wednesday at 4 pm or by appointment
Class Times: Monday and Wednesday, 6:30pm – 8:30pm

SCHEDULE

WEEK	Week of	TOPICS	Learning objective or purpose
1	Jan 16	Class Introduction, Life on Earth overview.	Reinforce prior knowledge and explain the class objectives
2	Jan 23	Atoms, molecules and the basic building blocks.	Review basic atomic structures, molecular bonds. Hydrolysis and dehydration synthesis.
3	Jan 30	Energy Flow in Cells. LAB #1 Laboratory -microbe scavenger Hunt	Energy flow is equal to life
4	Feb 6	Cell Membrane and function Cell Structures and Their Functions. Lab #2 Membranes & diffusion	Basic cell structures and their functions. How they relate to complex organ systems.
5	Feb 13	ASSIGNMENT #1 CELL MODEL PRESENTATION (due first class of week) LAB #3 Microscopes uses. Photosynthesis and Cellular Respiration	Problem solving using your creativity and to reinforce prior objectives.
6	Feb 20	Test #1 (first Class of week) Research Paper Outline and References Due (last class of week) LAB #4 Microscope, identification	Explain the production of sugar from inorganic elements
7	Feb 27	Cellular Respiration Lab #5 Cell Respiration Lab	The basic cellular processes in all life.
8	Mar 6	ASSIGNMENT #2: Cell Respiration Game Presentation DNA Protein manufacturing	How simple sequences can produce proteins, etc.
9	Mar 13	Spring Break	Work on Research Project, RELAX??
10	Mar 20	DNA, Gene Expression Biotechnology Lab #6 DNA extraction	Simple lab you can use in elementary school to demonstrate that DNA is easily extractable
11	Mar 27	Test #2, (first class of week) Cell Reproduction, Inheritance	Simple Punnett square predictions of genetic outcomes
12	Apr 3	Evolution Principles: How organisms evolve and some of the History of Life on Earth (Paleontology). How do we classify organisms? Early Life on Earth	Explain how this theory unifies most biological concepts
13	Apr 10	ASSIGNMENT 3: Plant/Animal Classification Game Presentation Anatomy and Physiology: Skeletal, Circulatory and Nervous System Lab #7 Anatomy	Simple human physiology
14	Apr 17	Anatomy and Physiology: The Digestive system and Excretion System Immune Responses Research Paper's are due First	Simple human physiology

		class of the week)	
15	Apr 24	Test #3 (First class of the week) Research Paper Presentations to the Class	Presentations allow you to present complex ideas and information to your classmates/peers not always covered in the class
16	May 1	Final Exam Review Wrap up. Final MAY10 6pm	Explain and disseminate information to your peers in a professional setting.

PLEASE OBTAIN A PAIR OF SAFETY GLASSES OR GOGGLES FOR LAB

Course Textbook: *Campbell: Essential Biology, 5th Ed???. Simon, Reece, Dickey (whatever edition the bookstore is currently selling)*

Assignments: There are three (3) assignments in the schedule. Each is designed to permit the student to explore other sources of information (that means not using the textbook) and prepare either a presentation or visual aid to be used in the classroom to enforce the material being presented. Each assignment is explained below:

#1 Cell Model- Use simple materials to prepare a labeled model of a cell (animal or plant) and present this model to the class. This model will be suitable for your use in your classroom (when you are a teacher). The model should be large enough to be seen by students in the classroom and have good proportions. The model will include at least two references for literature used during development. **YOUR TEXT IS NOT ONE OF THE REFERENCES.**

#2 Cellular Respiration Game. Design a Game for groups of students or the entire class that will provide instruction and reinforcement of information covered regarding cellular respiration. The Game must have varied outcomes and should include consequences for disruption of the process. Include references for your information. Game requires two references.

#3 Classification Game for your Students- Taxonomy is a difficult subject for most of us, yet we do it every day without thinking (REALLY! YOU DO!) You will prepare a group of objects and develop a procedure and system for classifying the objects. You will present it to the class. Just think of the many types of cars and how you could classify them. Any group of objects or biota can be used. The objective of your classification system is to design a presentation for your future students requires the use of a classification strategy. Your classification system must have at least three layers or levels.

RESEARCH PAPER/POWERPOINT:

You will be assigned a topic via lottery by the instructor. Don't worry you can change it if APPROVED. The topics are based upon subjects presented in the textbook or they are driven by news or current events (such as influenza, Diets, food contamination, disease, etc.). You will draw a number that corresponds to a research paper subject. You will then be responsible for that topic and presenting a scientific discussion of your research to the class. There are two ways to avoid your lottery topic: 1. trade with someone (see me so I can change the list), 2. You can present a better topic (I must approve). **Research must include 5 "REAL" references.**

Make-up Tests:

No Make-up Exams. See Grading Policy below.

Grading Policy:

There are Three (3) Tests and a FINAL Examination for a grand total of four (4). These tests count for (all approximate) 60% of your grade. You may drop the lowest test score (Best 3 out of 4 Exams). The poster/paper will be 20% of your grade. The three (3) Assignments and labs will count for 20%. Poor attendance could result in YOU BEING DROPPED FROM THE CLASS.

SPECIAL NEEDS:

If you have a disability, please inform me of your special needs ASAP so we can ensure your needs are met in a timely manner.