

Instructor: Dr. Fleuridor, PhD

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Office Hours (LFS 5): Mon 11am-noon, Tues 5-6pm, Wed 11am-noon, Thurs 5-6pm

COURSE DESCRIPTION

Biology 11A is a 5 unit class with 3 hours lecture and 6 hours laboratory each week. Students will study the chemistry of life, the cell, cellular structure, metabolism, photosynthesis, aerobic and anaerobic respiration, mitosis, meiosis, genetics, molecular biology, and evolution. Genetics will include Mendelian Genetics, Human Genetics, and Biotechnology. This course is intended for Science Majors and for pre-medical, pre-veterinarian, pre-dental, pre-optometry, and pre-pharmacy majors. Corequisites: Chemistry 1A. Advisories: Eligibility for English 1A, Biology 3 or high school Biology. (A, CSU-GE, UC, I)

Objectives: *Upon completion of this course, students will be able to:*

Unit 1:

- use their text book, laboratory manual, and scientific literature along with the scientific method to design laboratory experiments to test an hypothesis.
- understand the structure of elements and how elements are bonded to make molecules.
- understand how the structure of water affects its polarity, cohesion, pH.
- understand the function and structure of the molecular basis of life; carbohydrates, lipids, proteins, and nucleic acids.

Unit 2:

- identify prokaryotic and eukaryotic cells, organelles, and tissues.
- diagram the plasma membrane of a cell and list their functions and structural components.
- describe transport across a membrane in diffusion, osmosis, and active transport.
- list, in order, the parts of glycolysis, Krebs, and the Electron Transport Chain.
- compare and contrast the light-dependent and light-independent reactions of photosynthesis.
- define the structure and function of a cell signaling pathway.
- state the cell cycle, mitosis, and its controls.

Unit 3

- demonstrate proficiency in pedigree analysis
- calculate phenotypic and genotypic ratios.
- acquire and apply basic DNA technological laboratory skills.
- understand microbial genetics and nutrition using prokaryote microorganisms and viruses.
- examine the concepts and techniques associated with embryological development.
- use critical thinking skills to perform and analyze laboratory experiments.

Unit 4

- set up an evolutionary chart of a representative organism.
- cite examples of evolutionary adaptations.
- use the Hardy-Weinburg theorem in frequency of alleles in a population.
- examine macroevolution.
- compare and contrast mass extinctions in evolutionary history.
- draw out the branches of new phylogenies.
- compare eukaryotes to prokaryotes and the diversity of organisms on earth.

REQUIRED MATERIALS/BLACKBOARD

Text: Biology, Raven, 9th edition, McGraw Hill

Lab Text: Biology Lab Manual, Vodopich, 9th edition, McGraw Hill

Scantron form 882 (X6)

Colored pencils (hard graphite) are optional

Check your emails and blackboard account regularly for announcements, reading materials and assignments, and any changes in the syllabus. All lecture and lab handouts, lecture notes, course schedules will be posted on Blackboard. Visit <http://blackboard.reedleycollege.edu> and use your student ID number as both the user name and password to enter your account.

MAINTAINING A RESPECTFUL CLASSROOM

You are expected to respect one another, school property, and the instructor. You are responsible for your education, which includes asking questions, listening, studying, being on time, and seeking help when necessary.

No food or beverages allowed. Cell phone use will not be tolerated in this class; turn off your cell phones prior to class. Laptops may be used in this class; laptop users should sit in the back row to avoid distracting others.

Any student caught cheating or plagiarizing will be subject to the Reedley College disciplinary procedures (review the Reedley College catalog section on academic dishonesty).

Students with diagnosed disabilities should contact the Disabled Students Programs and Services (DSP&S). Please give me a copy of the letter you receive from DSP&S detailing class accommodations you may need. If you require accommodation for test-taking please make sure I have the letter no less than three days before the test. If you have a need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact me as soon as possible.

ATTENDANCE AND DROP/ADD POLICY

Excuses for absences will be honored at my discretion. You are responsible for dropping yourself from the class if you wish to do so, prior to the drop date (Oct 12). Students (both enrolled and waitlisted) will be dropped from the course based on the following policy:

- Student does not attend the first lecture.
- Student does not attend the first lab.
- Student misses a cumulative 8 hours (lecture or lab) in the first three weeks.
- Student misses 6 hours (lecture or lab) up to drop date without providing an excuse.

EVALUATIONS AND GRADING

Description	Points Possible
5 Exams (100 pts. each)	500
Cumulative Final Exam	200
Laboratory Assignments (~20 @ 10 pts each)	~ 200
6 Quizzes (10 pts. each)	~60
6 Lab quizzes (10 pts. Each)	~60
2 Lab Exams (100 pts. each)	200
PowerPoint presentation	100
Paper	100
Total Points =	~ 1320

The grade you receive for the course will be based on the following scale:

90% + = A 80-89% = B 70-79% = C 60-69% = D 59% and Below = F

Lecture exams will be multiple-choice, fill in the blank, matching questions with short-answer or essay questions based on the main objectives of each chapter. Correct spelling and grammar is important. Write neatly; if I can't read it, I can't grade it! Your final exam will be cumulative.

Research Paper and PowerPoint presentation

You must write a 5 page research paper on a topic related to biotechnology. It must be typed, double spaced, and in APA or AMA format. You must cite at least three **scientific research** articles. It is due week 16 of the semester and must be turned in to turnitin.com and as a hard copy. Instructions for PowerPoint presentation will be handed out in class.

LATE ASSIGNMENTS AND MAKE-UP POLICY

All lab reports must be turned in before leaving the lab. There are no make up lab reports or quizzes. You may, at my discretion, make up one lecture exam if you miss it due to extreme circumstances.

Tentative Schedule

	Lecture	Lab
Wk 1	M Science of Biology (Ch 1)	M Safety, Exercise 1
	W Molecules (Ch 2)	W Exercise 1 continued
Wk 2	M Chemistry of Life (Ch 3) QUIZ 1	M Exercise 2 – metric system
	W Chemistry of Life (Ch 3)	W Exercise 3 - microscope
Wk 3	M Cell Structure (Ch 4)	M Exercise 4 - cells
	W Membranes (Ch 5)	W: Exam 1 (Ch 1-4)
Wk 4	M No Class - Labor Day	M: No Class – Labor Day
	W Energy/Metabolism (Ch 6)	W Exercise 6 - chemistry
Wk 5	M Cells Harvest Energy (Ch 7)	M Exercise 12 - respiration
	W Photosynthesis (Ch 8) QUIZ 2	W Exercise 7 - chromatography
Wk 6	M Photosynthesis (Ch 8)	M Exercise 13 - photosynthesis
	W: Exam 2 (Ch 5-8)	W: Exam 2 (Ch 5-8)
Wk 7	M Cell Communication (Ch 9)	M Exercise 9 - diffusion
	W Cell Division (Ch 10)	W Exercise 10 - membranes
Wk 8	M Meiosis (Ch 11) QUIZ 3	M Exercise 5 – acids and bases
	W Inheritance (Ch 12)	W Exercise 14,15- mit/ meiosis
Wk 9	M Exam 3 (Ch 9-12)	M Exam 3 (Ch 9-12)
	W Chromosomes (Ch 13)	W Exercise 17 - genetics
Wk 10	M DNA (Ch 14)	M Research Lab
	W Lab Exam 1	W Lab Exam 1
Wk 11	M Genes (Ch 15)	M Exercise 11 - enzymes
	W Gene Expression (Ch 16)	W Exercise 8 -spectrophotometry
Wk 12	M Biotechnology (Ch 17) QUIZ 4	M DNA isolation & transformation (pGLO)
	W Exam 4 (Ch 13-16)	W Exam 4 (Ch 13-16)
Wk 13	M Mechanisms of dvmt. (Ch 19)	M Genotyping (PV92)
	W Mechanisms of dvmt. (Ch 19)	W Genotyping
Wk 14	M No Class - Veteran's Day	M: No Class – Veteran's Day
	W Genes w/in populations (Ch 20)	
Wk 15	M Evidence of Evolution Ch 21 QUIZ 5	M Evolution DVD
	W Exam 5 (Ch 17, 19 – 20)	W Exam 5 (Ch 17, 19 – 20)
Wk 16	M Origin of Species (Ch 22)	M Research Paper Due
	W Systematics (Ch 23)	M PowerPoint presentations W Exercise 18 - evolution
Wk 17	M Systematics (Ch 23) QUIZ 6	M Exercise 19 – human evolution
	W Lab Exam 2	W Lab Exam 2
Wk 18	W Final Exam (cumulative)	No Lab – Finals Week

***** I reserve the right to make changes in this schedule with notification*****