Biology 116X
Fundamentals of Biology II
Summer 2019 Course Description and Syllabus

Be aware that we will cover approximately one chapter from the textbook each day—this is a twelve-week intensive course that covers an entire semester's material.

Lecture: 1:00-2:50 am, Tu and Th; Murie 107
Lab: Wed 1:00 am-4:30 pm Murie 203

Instructor:
David E. Russell, PhD
russeld@miamioh.edu
Office hours: Tues and Thurs 9-10 before class or by appointment.

TA:
Diane Huebner
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Prerequisites:
Enrollment in Biology 116X requires prior successful completion of Biology 115X or its equivalent. Biology 115X requires placement in Math 105X or higher; placement in English 11X or higher; and concurrent enrollment in, or prior successful completion (C or better) of Chemistry 105X, so we expect that those conditions will be met by students enrolled in 116X as well. Students who do not meet these conditions will be dropped from the course. Exceptions are granted on a case-by-case basis by the instructor.

Textbooks and Course Materials:
- Freeman, S. *Biological Science* 6th ed San Francisco: Pearson Benjamin Cummins
- Laboratory Manual will be provided; you will need to get a 3-ring binder to store this manual.

Course materials, including lecture power points and course handouts, will be posted on Blackboard. You are strongly encouraged to print out the lecture notes ahead of time to aid your in-class note taking. The lecture power points are not complete lecture notes and will not serve as a replacement for attending lecture. To access UAF's Blackboard system, log into http://classes.uaf.edu/ and log in using your UAF ID and password. If you are using Blackboard for the first time, click on the link for first-time users for information.

Grading System:

• Three one-hour lecture exams (150 points each)	450 pts
• Lecture assignments or unscheduled quizzes (several)	80 pts
• Lab	250 pts
• Final examination (two-hour, cumulative)	220 pts
TOTAL	**1000 pts**

Grading Scale:

A+	97-100	C+	76-77	F	0-57
A	90-96	C	70-75		
A-	88-89	C-	68-69		
B+	86-87	D+	66-67		
B	80-85	D	60-65		
B-	78-79	D-	58-59		

Exams and Written Assignments:

Exams will be primarily on material covered in lecture. The exams will be a mixture of questions including multiple choice, matching, and short answer. More information will be provided before the first exam. In addition, there will be unannounced ("pop") quizzes given during lecture. Quizzes will be short-answer or multiple choice questions. There will be some additional assignments made from time to time in lecture. These will be announced and may involve some additional readings and/or short written assignments.

NO make-up exams or labs will be given unless the student has a valid excuse for the absence. If you know that you will miss an exam or lab, you must contact me in advance to discuss your problem. Make-up exams are granted only at the instructor's discretion and may be a different format than the original. Some work may be impossible to make-up. Exams or labs missed without instructor permission will be recorded as a zero. Absolutely no exams will be administered after the exam has been returned to the students. All work turned in after it is due (late work) will be recorded as a zero unless you received an extension from the instructor in advance.

Assignments are expected to be turned in by the deadline—they can be turned in 1 days late for ½ of the graded score and NO ASSIGNMENT will be accepted without instructor permission after two days.

YOU MUST PASS LAB with at LEAST A 60% TO PASS THE CLASS

Attendance:

Active attendance is expected. **Absence from 3 or more lectures can result in your being dropped from the class**. If you miss a class in which an assignment was given out or a quiz occurred, it will be recorded as a zero unless it was an excused absence you discussed with me in advance.

Academic Dishonesty:

Academic dishonesty will not be tolerated. See the statements in the Student Code of Conduct concerning academic dishonesty. As stated in the student handbook, students are expected to behave honestly in their learning because any form of cheating undermines the value of a UAF education for everyone. You are responsible for knowing UAF's policy concerning academic dishonesty. Penalties will be enforced in accordance with the regulations as stated in the student handbook and range from grade reductions to suspension, dismissal or expulsion from the

university. A lack of familiarity with UAF's policy or misunderstanding of what is considered appropriate and honest conduct will not be accepted as an excuse.
In particular, we will not tolerate cheating on exams or on any written work. Any written work that is handed in with your name on it must be your own original work. Plagiarism, submitting work purported to be your own where the ideas or wording are from another person or source (e.g. another book or someone's report), will not be tolerated. The minimum penalty for a first offense will be a zero in that portion of the course, in accordance with UAF's policy (see Student Code). While it is fine to discuss things with your lab mates, you should go into another room and write out your assignments or lab reports by yourself. If you and another student hand in work that is virtually identical (i.e., contains identical or almost identical sentences or has all the same ideas expressed in the same order), that is not original work and handing it in with your name on it is dishonest and against policy. Again, saying that you did not understand the definition of plagiarism or UAF's policy on academic honesty is no excuse.

Course Overview

Biology 116X is the second semester of a year-long inquiry into biology. Biology 115X focuses on structure and function from the molecular level through the level of the individual organism; Biology 116X introduces the evolutionary and ecological processes that shape the biology of organisms and cells. By the time you finish Biology 116X, you should have an understanding of genetics and inheritance, the processes and mechanisms of biological evolution, the diversity of living organisms and their evolutionary relationships, plant structure and function, and ecology. You should also have an understanding of the connection between different fields of biology- which you have studied throughout the summer, for example, how evolution and ecological interactions both influence and are constrained by structure and processes at the molecular, cellular, and organismal levels.

An understanding of the biological processes, structures and functions is not the only goal of the course. There are fundamental skills and concepts that you must gain or refine in an introductory science course. One of the most important things you will refine this semester is your understanding of the scientific method and how it enables scientists to reach new understanding through careful observation and empirical testing of hypotheses. The skills you develop this year will improve your ability to conduct the types of scientific investigations that are fundamental to biology. These include laboratory techniques, basic principles of experimental design and execution, basic data interpretation and analysis, presentation of results in written reports and the ability to find and use scientific literature. They will also enhance your ability to analyze and critically evaluate biological issues and make informed decisions in your own life.

Many fields of biology that you will study this semester have expanded rapidly over the last few decades (in some cases, months and years). Other areas have been studied for centuries and even these many of these more "mature" areas of study have undergone recent, rapid expansion with new technological innovations that have allowed us to investigate them in new ways. New advances and discoveries are constantly being made and published. When a scientist reads a report or hears of an interesting finding, he or she critically reads and evaluates the reports findings. This is something that you will be expected to do as well; as you read the text, listen to lectures, and participate in lab, you should recognize that all the topics you are studying are based on empirical testing and think carefully about how they have been tested and what current research shows.