Course Syllabus
Fundamental Genetics
BIOL 3104
Lecture: MWF 9:00 – 9:50AM BO 213
Lab: R 1:00-2:50 PM & 3:00-4:50 PM BO 205
Fall 2022

Contact Information

Instructor: Dr. Mike Shipley
Office: Bolin Science Hall Room 218C
Office hours: MW 10:00-11:00 AM; TR 9:30-11:30 PM; or by appointment Phone: 397-4517
E-mail**:** michael.shipley@msutexas.com

Required Texts

Pierce, Benjamin A. 2012. Genetics: A Conceptual Approach, 5th. Ed. W.H. Freeman and Company, New York.

Cook, William, David Perez-Guerra, Michael Shipley. 201p. Fundamental Genetics Lab Manual.

Goals and Objectives

The goal of this course is to introduce the student to the mechanisms of heredity, to consider its importance in biology, and to apply the study of genetics to everyday life. This will be achieved through lecture, individual effort through working genetics problems, and laboratory investigations. It is expected that the student will achieve a working knowledge of Mendelian and molecular genetics, and will be able to use this information in their career goals. This course may not be applied to a biology major.

Assessment of Outcomes

The objectives of this class will be assessed in several ways to include the Major Field Achievement Tests, and surveys of Midwestern State University graduates.

Prerequsites

One year of biology (8 credit hours) is the prerequisite for this course.

Student Expectations

Class attendance is crucial for maximum performance. All students are expected to attend every class meeting, to be on time, and to stay until dismissed. Excessive absences may result in a student dropped from the course. Bring your textbook to class each day. Students should refer to the current MSU Handbook and Activities Calendar for university policy on academic dishonesty, class attendance, student rights and activities. For example see page 39 for information on class attendance policy and page 3 for the student honor creed.

Grade Determination

The major exams will cover material presented in the lecture. Students should study the assigned text chapters, review lecture notes, and work assigned problems in preparation for the tests. The final exam will not comprehensive. The grade for this class will be based upon

students' performance on the 4 major exams, the laboratory, and assigned problems. The breakdown for the grade and the grading scale is as follows:

Category	Percent of Grade	Grade Range	Letter Grade
Major Exams (4)	**60%**	**90-100**	**A**
Assigned Problems	**10%**	**80-89**	**B**
Laboratory	**30%**	**70-79**	**C**
	100%	**60-69**	**D**
		< 60	**F**

Course Outline

Topic	Chapter
Introduction to Genetics	1
Chromosomes and Cellular Reproduction	2
Basic Principles of Heredity	3
Sex Determination and Sex-Linked Characteristics	4
Exam 1	
Extensions and Modifications of Basic Principles	5
Pedigree Analysis and Applications	6
Linkage, Recombination and Eukaryotic Gene Mapping	7
Exam 2	
Chromosome Variation	8
DNA: The Chemical Nature of the Gene	10
Chromosome Structure and Organelle DNA	11
Exam 3	
DNA Replication and Recombination	12
Transcription	13
RNA Molecules and RNA Processing	14
The Genetic Code and Translation	15
Final Exam (Exam 4) Monday December 5 at 8:00 AM	

Campus Carry

Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to Campus Carry Rules and Policies. If you have questions or concerns, please contact MSU Chief of Police Patrick Coggins at patrick.coggins@mwsu.edu.

Active Shooter

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by MSU Police Department regarding the options and strategies we can all use to stay safe during difficult situations. For more information, visit Safety / Emergency Procedures. Students are encouraged to watch the video entitled "*Run. Hide. Fight.*" which may be accessed via the University police webpage.