



Course Syllabus
Genetics
BIOL 3334
Lecture: MWF 10:00-10:50 AM BO 209
Lab: M 2:00-4:50 PM & T 2:00-4:50 PM BO 205
Spring 2022

Contact Information

Instructor: Dr. Mike Shipley
Office: Bolin Science Hall Room 218C
Office hours: MWF 9:00 – 10:00 AM; R 9:30 – 11:30 AM; or by appointment.
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Required Texts

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

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.

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.

Prerequisites

Biol 1214 with a grade of C or better.

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 be 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)	55%	90-100	A
Assigned Problems	10%	80-89	B
Laboratory Exercises	25%	70-79	C
Laboratory Exam	<u>10%</u>	60-69	D
	100%	< 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
Chromosome Variation	8
Exam 2	
DNA: The Chemical Nature of the Gene	10
Chromosome Structure and Organelle DNA	11
DNA Replication and Recombination	12
Transcription	13
RNA Molecules and RNA Processing	14
Exam 3	
The Genetic Code and Translation	15
Control of Gene Expression in Bacteria	16
Control of Gene Expression in Eukaryotes	17
Gene Mutations and DNA Repair	18
Final Exam (Exam 4) Wednesday May 4 at 10:30 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.