

Course Information and Syllabus

Instructor: Dr. Jon Scales
 Lect: 5:30-8:20 PM D 177
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Office: PH 109
 Office Hrs: M-R 9-11, T 2-4

Prerequisites: Undergrad Genetics Course

Text: Genetics: Genes to Genomes, Hartwell; Genes #, Lewin; Molecular Biology of the Gene, Watson; or any other suitable molecular genetics text for reference.

Course Philosophy:

This course will be a chance to further explore concepts you have probably been introduced to molecular/cellular based undergraduate courses.

One area largely missing from undergraduate treatment of genetics is the experimental approaches to study genes and use genetic tools to answer broader questions in biology. This course will expose you to experimental techniques and experimental designs used to identify genes, isolate genes, determine the function of genes and modify genomes.

Assignments:*New Findings literature reviews*

Students will actively participate in learning about advanced genetic by searching for and gathering current(ish) research papers and/or review articles in the fields of genetics, molecular genetics, molecular biology, development, or cell biology. These will be discussed in lecture.

Methodology literature searches

Students will actively participate in learning about advanced genetic techniques by searching for and gathering research papers showcasing new techniques/approaches to answering genetic problems. We will discuss these papers in our course.

Lab Projects

Due to the remodeling of Bolin Hall, we can not have any lab component to the course this semester.

Exams:

We will have 2 major exams (midterm and final). Both exams will have an in class portion and a take-home portion.

Grading:

The grading scale used for this course is as follows: A ≥ 90 B ≥ 80 C ≥ 70 D ≥ 60 F < 60

Tentative Lecture Schedule

Week	Topic
1	Overview
2 -3	Molecular Tools: Manipulating DNA
4-5	DNA Sequencing
6-7	Libraries, Gene Identification & Isolation
8	MT Exam
9-10	Transgenesis & Gene Editing
11-12	Gene/Protein Function Determination
13-14	
15	Final Exam