

BIOL 311 Course Profile

The course description for BIOL 311 ([**Principles of Genetics**](#)) can be [found here](#).

Generally offered in: Fall and winter semesters

Prerequisite(s): BIOL 241 and BIOL 243

Antirequisite(s): Credit for BIOL 311 and MDSC 341 will not be allowed

Answered by Dr. Lars Petersen.

In your own words, can you give a brief summary about what this course is about?

BIOL 311 builds on the introduction to molecular and transmission genetics that students receive in their first year. In the first half of the course we explore the relationships between genes and phenotypes through classical experiments, predict probabilities for inheritance of traits, and compare how genes are mapped to chromosomal positions in eukaryotes and prokaryotes. In the second half of the course we focus on the molecular relationships between genes and their products, including aspects of gene expression and regulation, development and disease, and the molecular tools we have to analyze them.

What is the main skill you want students to take away from this course?

Genetics requires a lot of multi-step problem solving. Some students will memorize the steps to solve the examples we cover in class, but students that truly understand the material will see the logic behind each step and develop the skills to adapt to new scenarios that they haven't seen before.

What aspect of the course do you think students struggle with the most?

We introduce a new system of language that is very detail oriented, and many students will skip over some of these details to get to an answer, but miss important elements of the question by doing so.

What can students do to be successful in this course besides attending lectures?

We make several repeatable quizzes and practice problems available, and taking the time to understand how to approach these problems is critically important to success in BIOL 311.

Does this course have a lab or tutorial component? If so, what should students expect from that component of the course?

This course includes a lab component. The labs help supplement and reinforce concepts covered in lecture through hands-on experiential learning. Students learn laboratory techniques and develop data analysis and presentation skills.

What do you think is the most effective way that students can prepare for an examination in the course?

Practice, practice, practice! Especially with a group of their classmates, if possible.

Aside from the textbook and lecture notes, are there any other resources that you recommend students use?

We provide sufficient resources through the course D2L website for students to succeed in BIOL 311, however we also encourage any students who are encountering difficulties with any of the course work to seek us out during our office hours.

Do you have any other advice for incoming students taking this course?

Make every effort not to fall behind in BIOL 311, and make attempts at all the quizzes and posted problems early and often. We cover a lot of ground in the course, and we are continually building on previously learned skills. The faster you can develop these skills, the better placed you'll be for the next topics.

What is your favorite part about teaching this course?

As students work through the material, there are constantly moments when a concept clicks into place and the path toward a solution becomes clear. I am thrilled to see those "aha!" moments on student faces during lecture, or when working with students outside of class.