

## BICD 100 Overview of the Curriculum

The science of genetics, launched with the rediscovery of Mendel's Laws in 1900, is very much in the news. Within the subject of genetics, there are more topics than can be covered in one quarter. We've picked out many of the basic concepts that we think are important in a broad introductory survey course.

- 1) Transmission genetics in higher organisms, using classical analysis of crosses.
- 2) The molecular nature of genetic variation, and how this determines gene function and expression.
- 3) The interplay of genetic and environmental factors and how they determine phenotype.

Interspersed will be topics from the news and how this knowledge interacts with current research and our daily lives. By the end of this class you will be able to:

- Use genetic vocabulary and notation.
- Understand genetic principles of inheritance, gene function and mutations
- Apply the principles of genetics and quantitative techniques to interpret and solve biological problems.
- Appreciate the practical application of genetics to human health and agriculture.

### Scheduling and Enrollment

BICD100 (B00/C00/D00) will meet at 12:00 - 12:50 PM on MWF. The lectures will be in person at the P416 East tent (B00 on Mon / C00 on Wed / D00 on Fri). A live Zoom meeting will also be available for those who are not in attendance (See ZOOM LTI Pro for links to meetings).

Associated 50 min discussion sections are listed by section below. They will meet via Zoom and the links to each can be found in the ZOOM LTI Pro tab. It is very important that you attend the section for which you are registered. Discussion sections will commence on **in Week 1** for icebreakers.

Section	Time	IA
B01/C01/D01	M 3pm	Jonathan Vu
B02/C02/D02	M 4pm	Zoe Xu
B03/C03/D03	M 5pm	Zoe Xu
B04/C04/D04	W 2pm	Michaela Magpile
B05/C05/D05	W 3pm	Allison Williams

### Canvas Learning Management System

We will be using Canvas to deliver our course materials. You will be able to use this course site to download copies of course materials and view your grades.

### Staff Directory and Office Hours

Instructor	e-mail	Office Hours
Chris Day	cdday@ucsd.edu	<b>Friday 1pm</b> (in-person) after class in the tent. <b>Friday 5pm</b> (Zoom) link in Zoom LTI PRO
Jonathan Vu	jdvd010@ucsd.edu	Tue 2-3pm Zoom
Zoe Ziyang Xu	zix109@ucsd.edu	Tue 4-5pm Zoom
Michaela Magpile	mmagpile@ucsd.edu	Tue 2-3pm Zoom
Allison Williams	apw010@ucsd.edu	Wed 4-5pm Zoom

**Grade Scale:**

We do not curve. Consequently, you are not in competition with anyone for a grade.

**Grades** will be based on your percentage in the course:

90% A (A-, A or A+)

78% B (B-, B or B+)

65% C (C-, C or C+)

55% D

**Text and other materials for self-guided study****One textbook is recommended for the course:**

Klug et al. Essentials of Genetics, but any general genetics text, even older editions, will be OK as no specific readings will be assigned. Further, online resources have been posted on Canvas. See Course Strategies for more information on how to make the most of the any text book, or online resources, that you have plan to use.

**Practice Problems and Review Quizzes**

The practice problems and review quizzes are primarily for you to get comfortable with concepts as we progress through the learning objectives.

**Practice problems:** These are NOT graded, there will be separate homework problems. These problems are old homework and exam questions that I have written in the past. Answers will be posted, BUT, it is important that you attempt the questions before reviewing the answers. In addition, there are many good questions in text books that are helpful towards mastering our learning goals.

**Online quizzes:** A total of three points are available for each multi-choice quiz. 1pt for completing the quiz and 2pt for getting above 75%. There will be eight quizzes and they are worth 10% of your grade.

### Exams, Assignments and Participation

Your grade for BICD100 will be based on your performance on assignments and two exams. The assignments will give you opportunities to work with the material and to practice the kinds of problem-solving skills you will need for the exams. Each of the exams will cover material as described below:

Course Component	Date	Time	Description	Weight %
Mid-term	Mon May 3	During Lecture	Material covered up to the exam	15
Final Exam	Wed Jun 9	11:30 AM - 2:30 PM	Comprehensive	25
Homework	Fri Apr 16 Fri Apr 30 Fri May 14 Fri May 28	Take home	Lowest grade of the four can be dropped. 15 pt assigned to each problem set.	25
Online quizzes	Ad Hoc, after each unit.	Canvas Quizzes	8 online quizzes	10
Genetics in the News	Apr 9 May 22	Take home	Online assignment and Discussion	15
Engagement		Discussion	Attending and interacting during discussion.	5

Seminar	By 10th week	Take home	Report on an in-person, or online, seminar on a genetics related topic that you attend during this quarter.	5
			Total	100

**Exam format:**

- - Each exam will have both multi-choice questions and short answer questions.
  - Exams will be open book.
  - Exams will be timed and done in a place of your choosing.
  - We expect you to work **on your own** during the exam window.
  - You will then upload your answers to gradescope.

**Homework Problems:**

The four take-home problem sets count for about 25% of your course grade. Note that the lowest score will be dropped.

**All late problem sets will be assigned a zero grade.**

We encourage you to work together in study groups to discuss the questions, this could help you better understand the material.

If you do choose to work in groups, try not to make the mistake of simply accepting another student's answer and thinking you understand it. You need to attempt the problem set prior to meeting. You will always have a better understanding if you have gone through the problem-solving process.

Please list the names of your collaborators on your assignment. Each student must write her/his own answers, in his/her own words, after working with the group. All homework will be uploaded to gradescope.

**Discussion:**

Discussion activities will complement the lecture material as well as allowing you to review the more challenging material. You must attend the discussion section that you signed up for when selecting the class. IA's will note your professionalism, participation and engagement during the quarter. This will be 5% of your grade. You might need to miss a discussion for a

valid reason, illness, job interview or such. We understand this and some absences are OK, but you must communicate with your IA to ensure that they know what is going on.

### **Zoom cast**

Zoom lectures will be recorded and available in the Media Gallery tab in canvas. They will also be embedded at the bottom of each weekly page.

Week	Date	Lecture	Assignments
1	Mar 29	Intro – Genetic Variation	Unit Quizzes will be available for 1 week as review material.
	Apr 31		
	Apr 2		
2	Apr 5	Unit 1 – Mendelian Genetics and how it relates to the cell cycle	Genetics in the News (1)
	Apr 7		
	Apr 9		
3	Apr 12	Unit 2 – Sex determination and Dosage compensation	Homework 1
	Apr 14		
	Apr 16		
4	Apr 19	Unit 3 – Pedigree Analysis	
	Apr 21	Unit 4 – Deviations from Mendel's Ratios	
	Apr 23		
5	Apr 26	Unit 4 – Deviations from Mendel's Ratios	Homework 2
	Apr 28		
	Apr 30		
6	May 3	Midterm (during lecture time)	Midterm
	May 5	Unit 5 – Linkage and Mapping	Genetics in the News (2)
	May 7		
7	May 10	Unit-6 – Quantitative Traits	Homework 3
	May 12		
	May 14		
8	May 17	Unit 7 – Mutations	
	May 19		
	May 21		
9	May 24	Unit 8 – Chromosomal Variation	Homework 4
	May 26		
	May 28		
10	May 31	Memorial Day	
	Jun 2	Unit 9 – Gene Regulation	
	Jun 4		
	Wed Jun 9	Final 11:30 AM – 2:30 PM	Final

## **Course Administration**

Dr. Day is the first person to contact for all questions of course enrollment, section changes, grade records, signing up for early make-up exams (allowed only exceptional reasons), and any special needs.

### **Discussion Board**

A live discussion boards will be available during the exam for clarification questions.

Outside of the exam it can be used to ask questions relating to the genetic material we cover, or general questions. Dr Day and the IA's will try and review the new questions at least once a day.

Do feel free to answer each others questions. Answering each others questions is a really good way to solidify your knowledge.

### **Special Needs and Religious Holidays:**

Please let Dr. Day know as soon as possible if you have any special needs that we should accommodate or a religious holiday that will conflict with a course activity.

### **Students' Questions and Feedback:**

The staff of this course, lecturer and IAs alike, welcome your questions, suggestions, and comments. We want to get to know you, and we appreciate your feedback.

### **Board of Directors:**

In addition, we would like to have volunteers from the class to serve as class representatives and meet once a week with Dr Day. This is valuable for us since it allows you, the students, to make constructive suggestions, especially if there are logistical problems or other concerns. Given the online nature of this course, we imagine that a lot of problems will arise. In short, student concerns can be aired in a way such that real changes can be made. In our experience this open communication helps teaching staff and students alike.

**Academic integrity** (<https://students.ucsd.edu/academics/academic-integrity/index.html>[Links to an external site.](#))

Integrity of scholarship is essential for an academic community. The University expects that both faculty and students will honor this principle and in so doing protect the validity of University intellectual work. For students, this means that all academic work will be done by the individual(s) to whom it is assigned, without unauthorized aid of any kind. Anyone caught cheating (includes plagiarizing lab reports, cheating on a test, or changing an answer for a re-grade) will be reported to the Academic Integrity Office.

**Inclusion and accessibility** (<http://disabilities.ucsd.edu>[Links to an external site.](#))

Any student with a disability is welcome to contact us early in the quarter to work out reasonable accommodations to support your success in this course. Students requesting accommodations for this course due to a disability must provide a current Authorization for Accommodation (AFA) letter issued by the Office for Students with Disabilities (OSD), which is located in University Center 202 behind Center Hall. Students are required to present their AFA letters to faculty and to the OSD Liaison in the Division of Biological Sciences in advance so that accommodations may be arranged. For further information, contact the OSD at 858-534-4382 or [osd@ucsd.edu](mailto:osd@ucsd.edu)