

Course Syllabus

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 will meet at 11:00 - 11:50 AM on MWF in Galbraith Hall 242.

Associated 50 min discussion sections are listed by section below. It is very important that you attend the section for which you are registered. Discussion sections will commence **in Week 0** for icebreakers.

Section	Time	IA	Room
D01	M 9pm	Alex Chen	HSS 2321
D02	W 5pm	Qingqing Gong	HSS 1315
D03	W 6pm	Ishrak Ramzan	HSS 1315
D04	W 7pm	Bomin Xie	HSS 1315
D05	F 8am	Tyler Truong	HSS 1315

D06	F 9am	Sunyoung Lee	HSS 1315
D07	F 10am	Sunyoung Lee	HSS 1315
D08	F 2pm	Jackie Ngo	HSS 1315

Staff Directory and Office Hours

Instructor	e-mail	Office Hours	room
Chris Day	cdday@ucsd.edu	Tue 9am	HSS 1145L
Alex Chen	aachen@ucsd.edu	Thur 10am	HSS 1145L
Qingqing Gong	q5gong@ucsd.edu	Wed 6pm	TBA
Ishrak Ramzan	iramzan@ucsd.edu	Fri 10am	The Loft  (https://map.concept3d.com/?id=1005#!m/165967)
Bomin Xie	b3xie@ucsd.edu	Fri 4pm	TBA
Tyler Truong	t6truong@ucsd.edu	Fri 4pm	TBA
Sunyoung Lee	syl004@ucsd.edu	Wed 9am	Leichtag Coffee Cart  (https://map.concept3d.com/?id=1005#!m/556761)
Jackie Ngo	jpn005@ucsd.edu	Fri 10am	The Loft  (https://map.concept3d.com/?id=1005#!m/165967)

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.

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: Each quiz is a multi-choice review of the unit material. You will receive 50% for completing the quiz and 100% for getting above 85%. There will be eight quizzes and they are worth 5% 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	Oct 27	8-9:20pm	Material in first half	18

Final Exam	Dec 6	11:30-2:30pm	Comprehensive	37
Homework	Oct 5 Oct 19 Nov 18 Dec 2	Take home	Lowest grade of the four can be dropped. 15 pt assigned to each problem set.	20
Online quizzes	Ad Hoc, after each unit.	Canvas Quizzes	8 online quizzes	5
Genetics in the News	Oct 12 Nov 2	Take home	Online assignment and Discussion	10
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 short answer questions.
- A one page, two sided, cheat sheet will be allowed to be used during the exam.

Homework Problems:

The four take-home problem sets count for about 20% 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, do 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.

Podcast:

Lectures will be recorded and available in the Media Gallery tab in canvas. They will also be embedded in a lecture pages specific for each section. Links will be found on the weekly page.

Lectures and Assignments:

Week	Date	Lecture	Assignments	Discussion	
0	Sept 23	Introduction	Unit Review Quizzes will be available for 1 week.	1	
1	Sept 26	Intro – Genetic Variation		1	
	Sept 28			1	
	Sept 30			2	
2	Oct 3	Unit 1 – Mendelian Genetics and how it relates to the cell cycle		2	
	Oct 5			Homework 1	2
	Oct 7				3
3	Oct 10	Unit 2 – Sex determination and Dosage compensation		3	
	Oct 12			Genetics in the News (1)	3
	Oct 14	Unit 3 – Pedigree Analysis		4	
4	Oct 17	Unit 4 – Deviations from Mendel's Ratios	Homework 2	4	
	Oct 19			4	
	Oct 21			5	
5	Oct 24			5	
	Oct 26			5	
	Oct 27			Evening Midterm; 8-9:20 pm, Gailbraith Hall	
	Oct 28			Unit 5 – Linkage and Mapping	
6	Oct 31	Unit-6 – Quantitative Traits		6	
	Nov 2			Genetics in the News (2)	6
	Nov 4			6	
7	Nov 7				
	Nov 9				
	Nov 11			Veteran's Day	
8	Nov 14	Unit 7 – Chromosomal Variation		7	
	Nov 16			7	
	Nov 18			Homework 3	7
9	Nov 21	Unit 8 – Genetic Screens			
	Nov 23				
	Nov 25			Thanksgiving	
10	Nov 28	Unit 9 – Gene Regulation		8	
	Nov 30			8	
	Dec 2			Homework 4; Seminar	8
	Dec 6	Final; 11:30-2:30 pm, TBA			

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.

Piazza Discussion Board

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

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 good way to solidify your own 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> 
(<https://students.ucsd.edu/academics/academic-integrity/index.html>.)














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> ↗ [_](http://disabilities.ucsd.edu))

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>).

Course Summary:

Date	Details	Due
Wed Sep 28, 2022	 About You https://canvas.ucsd.edu/courses/39495/assignments/525257	due by 11:59pm
Fri Sep 30, 2022	 First Day Survey: Getting to Know You - #FinAid https://canvas.ucsd.edu/courses/39495/assignments/549487	due by 11:59pm
Fri Oct 7, 2022	 Survey Bonus (Part 1) https://canvas.ucsd.edu/courses/39495/assignments/554859	due by 11:59pm
Sun Oct 9, 2022	 Homework 1 https://canvas.ucsd.edu/courses/39495/assignments/525262	due by 11:59pm
Wed Oct 12, 2022	 Genetics in the news (part1) https://canvas.ucsd.edu/courses/39495/assignments/525260	due by 11:59pm
Thu Oct 27, 2022	 Midterm https://canvas.ucsd.edu/courses/39495/assignments/525266	due by 8pm

Date	Details	Due
Fri Dec 2, 2022	 Seminar Report (https://canvas.ucsd.edu/courses/39495/assignments/525267)	due by 11:59pm
Tue Dec 6, 2022	 Final (https://canvas.ucsd.edu/courses/39495/assignments/525259)	due by 11:30am
	 Discussion Engagement (https://canvas.ucsd.edu/courses/39495/assignments/525258)	
	 Genetics in the news (part2) (https://canvas.ucsd.edu/courses/39495/assignments/525261)	
	 Homework 2 (https://canvas.ucsd.edu/courses/39495/assignments/525263)	
	 Homework 3 (https://canvas.ucsd.edu/courses/39495/assignments/525264)	
	 Homework 4 (https://canvas.ucsd.edu/courses/39495/assignments/525265)	
	 Review Quiz 2 (Mendelian Inheritance) (https://canvas.ucsd.edu/courses/39495/assignments/525254)	
	 Review Quiz 3 (Probability) (https://canvas.ucsd.edu/courses/39495/assignments/525250)	
	 Review Quiz 5 (Pedigrees) (https://canvas.ucsd.edu/courses/39495/assignments/525253)	
	 Review Quiz 6 (deviations from Mendel) (https://canvas.ucsd.edu/courses/39495/assignments/525255)	
	 Review Quiz 7 (linkage) (https://canvas.ucsd.edu/courses/39495/assignments/525256)	
	 Review Quiz 8 (Quantitative) (https://canvas.ucsd.edu/courses/39495/assignments/525248)	

Date	Details	Due
	 Review Quiz1 (Cell Division) (https://canvas.ucsd.edu/courses/39495/assignments/525249)	
	 Review Quiz4 (Sex determination) (https://canvas.ucsd.edu/courses/39495/assignments/525252)	
	 Survey Bonus (Part 2) (https://canvas.ucsd.edu/courses/39495/assignments/554860)	