BICD 100 – Genetics
Winter 2023

Welcome!

Course description
An introduction to the principles of heredity emphasizing diploid organisms. Topics include Mendelian inheritance and deviations from classical Mendelian ratios, pedigree analysis, gene interactions, gene mutation, linkage and gene mapping, reverse genetics, population genetics, and quantitative genetics. ***Prerequisites:*** BILD 1, BILD 3

Time and Place:
Tues/Thurs 11 – 12:20p, York 2722

Instructor:
Emily Grossman, PhD
H&SS 1145H
egrossma@ucsd.edu

Office Hours
Tuesdays 2 – 3p
HSS1145L

Instructional Assistants
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Learning Goals
At the end of this course, students will be able to:
- ➢ Summarize genetic techniques, and explain applications of the methods to real life
- ➢ Apply knowledge of genetics concepts to analyze and explain data, make predictions, and solve problems
- ➢ Learn to find, read, and evaluate scientific literature

Discussion sections:
Sections will start **<u>Week 2</u>** (Jan 17th – 20th). Attendance at discussion sections is mandatory, and 5% of the overall course grade will be based on attendance and participation during discussions. You must attend the discussion section you are enrolled in. However, I understand circumstances out of your control occasionally occur, so you can miss two discussion sections and still earn full credit.

Class Web Site:
The class web site is on Canvas (canvas.ucsd.edu) All class notices, the syllabus, and other important information will be posted here. Please check the web site regularly for updates, since this will be the main form of distribution of information to the class. My lecture notes will be posted to the site.

Resources
1. Support for student writers:
Writing + Critical Expression Hub (part of the Teaching + Learning Commons)
There are undergraduate writing mentors on staff who are in Biological Sciences degree programs, so they have training not only in working with student writers, but also familiarity with science reasoning and science writing. Please don't hesitate to meet with a writing mentor for help—every writer can benefit from these conversations. Students can make appointments via
https://ucsd.mywconline.com

2. Tutoring
OASIS: Office of Academic Support and Instructional Services

From the OASIS website (https://students.ucsd.edu/sponsor/oasis/): We are the learning center at UC San Diego and provide most of the free tutoring on campus in a collaborative, supportive environment. All UC San Diego students are eligible to receive OASIS services. Each year, OASIS serves 3,000 students in language, math, science, study skills, and writing as well as peer counseling and peer mentoring.

They are located on the third floor of Center Hall, (858) 534-3760 (phone), oasis@ucsd.edu (email)

Required Learning Materials:
iClicker (available at bookstore)

Optional reading resource:
Essentials of Genetics, Klug 10th edition (Redshelf ebook, see note below)
The book is recommended, but not mandatory. If you wish to use previous editions of the book just keep in mind that the assigned reading page numbers given may not exactly correspond. You will have to determine the material referenced.

Course Requirements and Grading:

12.5 points In-lecture iClicker questions (2.5%)
25 points Post lecture questions (5%)
12.5 points Discussion section attendance/participation (2.5%)
125 points Problem sets (25%)
100 points Midterm I (20%)
100 points Midterm II (20%)
<u>125 points Final (25%)</u>
500 points total

The following grading scheme will be used. The course is **<u>not</u>** graded on a curve (i.e. 20% of students getting A, B, C, and such). Thus, the ability to do well in this course is not dependent on others doing poorly.

Total percentage	Grade	80.0 – 81.9%	B-
98.0 – 100%	A+	78.0 – 79.9%	C+
92.0 – 97.9%	A	72.0 – 77.9%	C
90.0 – 91.9%	A-	70.0 – 71.9%	C-
88.0 – 89.9%	B+	60.0 – 69.9%	D
82.0 – 87.9%	B	<59.9%	F

Due to the generous amount of extra credit opportunities, I do not round final scores.

1. Clicker participation (not for correctness), 2.5%
If you participate in answering at least 75% of the clicker questions during the lecture sessions, you will get full points. Because you only need 75% participation for full points, if you miss a few days or forget your clicker, this shouldn't affect your score. Additionally, bonus questions will be given toward the end of the course to allow you to make up for missed days.
For participation below 75%, the breakdown is as follows:
65% - 74.9%: 8pts
50% - 64.9%: 6pts
25% - 49.9%: 4pts
Below 25%: 0pts

2. Post lecture questions, 5%
The quizzes posted on Canvas are meant to reinforce importance concepts covered during the lectures. Quizzes are to be completed *prior* to the start of the next lecture (deadlines will be posted on Canvas). Because mastery is not necessarily expected after watching the lecture, scoring 85% or higher overall will result in full points. If your average score overall on the quizzes falls below 85%, you will earn your average percent (out of 25 points) for this portion of the grade. **It is very important to follow-up in office hours or discussion sections on concepts you were unclear on.**

3. Discussion section attendance/participation, 5%
Discussions will be facilitated by the Instructional Assistants and are meant to be a time to work collaboratively to analyze data, work through problems, and get your questions answered. Participation in 7 out of the 9 discussion sessions will result in full points. **It is highly recommended that you participate in as many as possible because this is an opportunity to ask questions and get feedback**. *If circumstances beyond your control interfere with your ability to participate, please get in touch with me so we can devise a plan for you to succeed in the course.*

4. Problem Sets: 25% There will be eight Problem Sets due throughout the quarter. The problem sets will cover material from the previous week's lectures. Starting Week 1, Problem Sets will be released on Fridays and due the following Friday at 11:59pm (see calendar on Canvas).

5. Exams (Midterms (20% each) and Final (25%)): 65% total
Dates for exams will be noted on schedule in syllabus, and on Canvas. Midterm exams will cover material from Weeks 1 – 2 and 3 – 6 respectively. Final exam will be cumulative. All exams will be uploaded and graded through Gradescope.

6. Extra credit opportunities (opportunity to earn up to 10pts (2%))
Extra credit problems will be presented throughout the quarter on Problem Sets. In addition, if 85% of the class completes a CAPE evaluation at the end of the quarter for me, everyone will receive 2pt of extra credit as well.

Late policy:
Assignments must be submitted on time to be eligible for full credit. Except in the case of medical or family emergencies, late assignments will be subjected to a 5% deduction per day if submitted within 72 hours after the posted due date. Assignments not submitted within 72 hours of the due date will receive a score of 0.

Regrades:
If a grading error has been made, you should submit a re-grade request to your Instructional Assistant or Dr. Grossman. **Students who submit items for re-grading (for example, a question on a problem set) understand that we may re-grade the entire item (for example, the entire problem set) and the score may go up or down.**

Accessibility
Any student with a disability is welcome to contact me in order to work out reasonable accommodations to support their success in this course. Students requesting accommodations for this course due to a disability must work through the Office for Students with Disabilities (OSD). Instructors will receive Authorization for Accommodations Letters from the OSD online portal. Whenever

possible, we will use universal designs that are inclusive. If you have feedback on how to make the class more accessible and inclusive, please get in touch!

If you received accommodations during Fall 2022 and would like to request the same accommodations for Winter 2023, please email your OSD specialist so that they can create Authorization for Accommodation (AFA) letters through the OSD student portal. Use the subject line "Requesting Winter Accommodations." You will receive an email from your Specialist letting you know when you may access your AFA letters electronically.

Students Who Have Not Received Accommodations Through The OSD Previously
This includes those with temporary limitations (concussions, broken bones, etc.)

All intake appointments will take place over the phone/Zoom. Call the OSD at 858.534.4382 to schedule an appointment. If campus is closed, send an email to osd@ucsd.edu and put "Request for Intake Appointment" in the subject line. Indicate dates and times during the subsequent two weeks that you are available for a 60 minute phone appointment, and you will be contacted via phone or email. If you are deaf or hard of hearing and would prefer to have your intake conducted via email or through Zoom with captions, please let them know.

Before your appointment, complete the intake and consent forms which may be found on the OSD website: osd.ucsd.edu/students/forms.html#Student-Forms and email them back to osd@ucsd.edu. These will be forwarded to your Disability Specialist before your appointment.

Contact the OSD for further information:
858.534.4382 (phone) osd@ucsd.edu (email) http://disabilities.ucsd.edu (website)

Inclusion
It is our goal to create a learning environment that supports diversity of thought, perspective, experience, and identities. We encourage all of you to participate in discussion and contribute to the field from your perspective. If you have feedback on how to make the class more inclusive, please get in touch!

Office of Equity, Diversity, and Inclusion:
858.822.3542 | diversity@ucsd.edu | https://diversity.ucsd.edu/
https://students.ucsd.edu/student-life/diversity/index.html
https://regents.universityofcalifornia.edu/governance/policies/4400.html

A Culture of Respect: The Office for the Prevention of Harassment & Discrimination (OPHD) provides assistance to students, faculty, and staff regarding reports of bias, harassment, and discrimination. Students have the

right to an educational environment that is free from harassment and discrimination.

Students have options for reporting incidents of sexual violence and sexual harassment. Sexual violence includes sexual assault, dating violence, domestic violence, and stalking. Information about reporting options may be obtained at OPHD at (858) 534-8298, ophd@ucsd.edu, or http://ophd.ucsd.edu. Students may receive confidential assistance at the Sexual Assault Resource Center at (858) 534-5793, sarc@ucsd.edu, or http://care.ucsd.edu, or through Counseling and Psychological Services (CAPS) at (858) 534-3755 or http://caps.ucsd.edu

Students may feel more comfortable discussing their particular concern with a trusted employee. This may be a UCSD student affairs staff member, a department Chair, a faculty member or other University official. These individuals have an obligation to report incidents of sexual violence and sexual harassment to OPHD. This does not necessarily mean that a formal complaint will be filed.

If you find yourself in an uncomfortable situation, ask for help. UCSD is committed to upholding policies regarding nondiscrimination, sexual violence and sexual harassment.

Student Expectations

Waitlist policy
In order to be added, someone must drop from the section you are waitlisted from. The waitlist will automatically update and add the current #1 student into the class until the end of the second week. I will not add anyone past this, even if seats become available in the course.

Exam policies:
All exams will be given during the scheduled class time as noted on the class schedule. If an exam is missed due to medical or family reasons, a make up exam will be scheduled within one week of the original exam.

Attendance Policy
You must attend the discussion section you are enrolled in. Attendance at discussion sections is mandatory. However, I understand circumstances out of your control occasionally occur, so you can miss two discussion sections and still earn full participation credit.

Academic Integrity:

We hold the following values (adapted from the International Center for Academic Integrity) as important to academic integrity and for maintaining an inclusive classroom environment.

	As students, this means **you will…**	As the Instructional team, this means **we will…**
Honesty	➢ Honestly demonstrate your knowledge and abilities ➢ Communicate openly without using deception, including citing sources appropriately	➢ Give you honest feedback on your demonstration of knowledge and abilities on assignments and exams ➢ Communicate openly and honestly about the expectations and standards of the course through the syllabus and guidelines for course assignments
Responsibilities	➢ Complete your assignments on time and be fully prepared for class ➢ Arrive to class on time and be active participants	➢ Give you timely feedback on your assessments ➢ Arrive to class on time and be active participants ➢ Create relevant assessments and class activities
Respect	➢ Speak openly with others while honoring diverse viewpoints and perspectives ➢ Allow others to voice their opinions and perspectives	➢ Respect your perspective even while we challenge you to think more deeply and critically ➢ Help facilitate the respectful exchange of ideas in class
Fairness	➢ Contribute fully and equally when working in teams ➢ Not seek unfair advantage over others	➢ Create fair assessments and grade in a fair and timely manner ➢ Treat students and teams equally
Trustworthy	➢ Not engage in personal affairs while on class time ➢ Be open and transparent about what you are doing in class ➢ Not distribute course materials to others in an unauthorized fashion	➢ Be available when we say we will be ➢ Follow through on our promises ➢ Not modify the expectations or standards without communicating with everyone
Courage	➢ Say or do something when you see actions that undermine any of the above values	➢ Say or do something when we see actions that undermine any of the above values

This class statement and table of values is adapted from Dr. Tricia Bertram Gallant.

Although we encourage students to work together on problem sets and during discussion sections, the following is not allowed.

- ➢ Copying another student's work on the problem sets or exams, or allowing another student to copy your work
- ➢ Plagiarizing (copying) the answers to your problem sets from another source (lecture slide, book, online, *etc*). <u>They need to be written in your own words</u>
- ➢ Altering graded exams or assignments and submitting them for a regrade
- ➢ Responding to clicker questions in class using another student's clicker

All course materials are the property of the instructor, the course, and the University of California, San Diego and **may not** be posted online, submitted to private or public repositories, or distributed to unauthorized people outside of the course. Any suspected instances of a breach of academic integrity will be reported to the Academic Integrity Office for review. A breach of academic integrity may result in a zero on the assignment/test/participation item in question and/or a failed grade in the course. The impact of the breach on a grade will be determined by the instructor in consultation with the Academic Integrity Office.

If you observe anyone not acting in accordance with the above values we are trying to foster, please bring your concerns to my or the instructional team's attention, and we will do our best to determine appropriate actions to uphold and protect these values.

Tentative Course Schedule: (subject to change)

Week	Dates	Lecture topic
Wk 1	Tues 1/10	Introduction, genes, and chromosomes
	Thurs 1/12	Cell Division: Mitosis
Wk 2	Tues 1/17	Cell Division: Meiosis
	Thurs 1/19	Gametogenesis, Introduction to Mendelian genetics
Wk 3	Tues 1/24	Mendelian genetics II
	Thurs 1/26	Midterm I
Wk 4	Tues 1/31	Modification of Mendelian ratios
	Thurs 2/2	Modification of Mendelian ratios II
Wk 5	Tues 2/7	Sex-determination and sex chromosomes
	Thurs 2/9	Chromosome mutations
Wk 6	Tues 2/14	Chromosome mutations II
	Thurs 2/16	Genetic linkage and mapping I
Wk 7	Tues 2/21	Genetic linkage and mapping II
	Thurs 2/23	Midterm II
Wk 8	Tues 2/28	Regulation of gene expression
	Thurs 3/2	Quantitative traits and heritability
Wk 9	Tues 3/7	Developmental genetics I
	Thurs 3/9	Cancer genetics I
Wk 10	Tues 3/14	Cancer genetics II
	Thurs 3/16	Review for Final
Final	Thurs 3/23	**Final 11:30 - 2:30p, Location TBD**

Important Dates to Remember
Drop Deadline (without W):   Friday, February 3rd 2023 (end of Week 4)
Withdrawal Deadline: Friday, February 17th 2023 (end of Week 6)
Midterm I Exam: Thursday, January 26th 2023
Midterm II Exam: Thursday, February 23rd 2023
Final Examination: Thursday, March 23rd 2023

A note about your optional course materials:
➤ They are provided by the UC San Diego Bookstore in a digital format through Canvas and are free for the first two weeks of classes.
➤ If you decide to opt out, you'll need to click the Redshelf link inside Canvas, click View Course Materials, scroll to click the grey opt out button and follow the prompts. You must opt out by 1/20/23.

<u>Potentially Useful Resources (listed alphabetically):</u>

Black Resource Center: The Black Resource Center is a Campus Community Center that serves everyone at UC San Diego while emphasizing the Black experience. We promote scholarship, foster leadership, and cultivate community for students through the committed, collaborative effort and support of faculty, staff, and the broader UC San Diego community.
http://brc.ucsd.edu/ (website)

Counseling And Psychological Services (CAPS): CAPS provides FREE, confidential, psychological counseling and crisis services for registered UCSD students. CAPS also provides a variety of groups, workshops, and drop-in forums.
http://caps.ucsd.edu/ (website)

Cross-Cultural Center: The Cross-Cultural Center strives for meaningful dialogues and context across all cultures, particularly those of underrepresented or underprivileged backgrounds. We offer supportive and educational services through art, social and educational programs, workshops, and outreach. We welcome creative venues for enhancing social consciousness and equity.
http://ccc.ucsd.edu/ (website)

Hub Basic Needs Center & Triton Food Pantry: The Hub Basic Needs Center addresses the gaps and concerns students have with accessing nutritious food, stable housing, and financial wellness resources. We are committed to transforming dialogues surrounding the basic needs of students so they can focus on their academic success contributing to holistic well-being.
https://basicneeds.ucsd.edu/ (website)

Inter-Tribal Resource Center: We are focused on supporting Native American students and promoting educational access in our tribal communities.
https://itrc.ucsd.edu/ (website)

LGBT Resource Center: The Lesbian Gay Bisexual Transgender Resource Center at UC San Diego provides a visible presence on campus and enhances a sense of connection and community among LGBT faculty, staff, students, alumni and the UC San Diego Community.
http://lgbt.ucsd.edu/ (website)

Office for Students with Disabilities (OSD): The Office for Students with Disabilities (OSD) at UC San Diego works with undergraduate, graduate, and professional school students with documented disabilities, reviewing documentation and determining reasonable accommodations.
https://disabilities.ucsd.edu/about/index.html (website)

Raza Resource Centro: The Raza Resource Centro team is committed to our student's success and we work collectively to meet the needs of our students. The Centro is a lively space where students study, meet, write, get tutoring, and most importantly are in community. It is a space where Latina/o Chicana/o organizations hold meetings, events and where culture, arte, and academics interconnect.
http://raza.ucsd.edu/ (website)

Student Veterans Resource Center: The Student Veterans Resource Center (SVRC) is committed to ensuring that military affiliated students successfully make the transition from the military environment to campus life, and are assisted in their progress toward completing their academic degree. The Center also provides opportunities for peer-to-peer support, mentoring and social networking.
https://students.ucsd.edu/sponsor/veterans/ (website)

Women's Center: The Women's Center serves as a resource for the entire campus community while placing the experiences of diverse women at the center through the resources we provide, the programming and learning opportunities we facilitate, and the dynamic community space that we create.
https://women.ucsd.edu/ (website)

There are many other resources available to you on campus, and if you wish to know more about where you can go for support – please let me know and we can find it together. If you would like me to include resources other than those I have listed above, let me know as well! I want to know what is important for everyone!