BICD 100 Genetics A00
Fall 2023
General Course Information

Course description: an introduction to the principles of heredity emphasizing diploid eukaryotic organisms. Course-level learning goals:

- Deduce genotypes, allelic relationships, and modes of inheritance for traits determined by alleles of one or two genes by analyzing the outcomes of crosses and patterns of inheritance observed in pedigrees
- Apply knowledge of the mechanisms by which an organism's genome is passed on to the next generation
- Describe the molecular anatomy of genes, chromosomes and genomes and how they relate to the genetic control of heritable traits.
- Compare different types of mutations in terms of their impacts on gene function and how these changes relate to phenotypes
- Analyze genetic linkage in relation to patterns of inheritance and genomic locations
- Make deductions about gene interactions by analyzing cross outcomes
- Analyze genetic control of traits that are influenced by multiple genes and the environment
- Analyze the relationship between allelic and genotypic frequencies in populations and the impact of processes that alter these frequencies over time

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Instructional Assistants:
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Lectures: MW 6:30-7:50pm SOLIS 107. In these sessions we will review, augment, and apply material introduced through assigned readings. Occasionally there will be standard lectures, on topics not covered in readings. Attendance is not taken or required, but there will be points awarded for responses to clicker questions that can only be earned in class beginning in week 3 (see below). Video podcasts of lectures will available to registered students shortly after class ends at podcast.ucsd.edu.

iClickers: Questions will be asked in class that you will respond to using an iClicker**. This will give you the chance to apply new knowledge and receive feedback on your learning right away. Beginning in week 3 (Oct. 16th), you can earn points toward your final grade for your responses (0.5 pts for incorrect and 1 pt for correct answers to each question). New iClickers are available at the UCSD Bookstore and used ones from many sources (ask if you want to know more). All vintages of iClicker are fine. To allow for occasional absences (including those due to COVID or COVID exposure), forgotten clickers, dead batteries and other technical problems, your lowest five daily iClicker point totals will be dropped - please do not request accommodations on clicker points for these types of issues. Your iClicker must be registered to receive credit for your responses: on Canvas, click on "iClicker Registration" in the list of blue items on the left; enter the requested info. Even if you have registered your iClicker before, please check here to make sure your current device is registered; update the info if needed. *Important note for those who have ever shared an iClicker with another student:* if two students in this class have the same

iClicker currently registered to them, neither will get credit for their responses, i.e. each student in this class must have a unique iClicker registration to receive credit.
**if you want to use the iClicker app on your phone instead of a standard iClicker, you can but please see the instructor after class or in office hours for information about doing this. Bottom line: it's not as good an alternative as it sounds. It won't save you money unless this is your last quarter at UCSD, and you'll be using it "at your own risk" e.g. if your response isn't received because either you or the instructor didn't have an internet connection at the moment the polling period closed.

Textbook: P. Meneely et al., Genetics: Genes, Genomes and Evolution (first and only edition). This book is an important resource, because class time will concentrate on applying and augmenting information in the assigned readings rather than repeating it. Some assigned homework problems will also be in this book. Free access to a digital version of this book is available for the first two weeks of class to all enrolled and waitlisted students via the Textbook module on the course Canvas site. If you are still enrolled in the class as of Oct. 13 at midnight, and have not opted out by then, your UCSD student account will be charged **$33.50** for access for the remainder of the qtr. If you choose to opt out you will do that here: https://accessportal.follett.com/2298. If opting out with the intention of using a hard copy of the book, be sure it is the US edition (ISBN 978-0-19-871255-8 for paperback; 978-0-19-879536-0 for hardback) because all reading and homework problem assignments are based on this edition; I don't have access to any other edition (e.g. a European edition with a different ISBN) that would allow me to translate assignments to other editions.
- For questions about billing for textbook access, contact the UCSD Bookstore at textbooks@ucsd.edu.
- For tech support for access to digital textbook go to: https://brytewavesolve.zendesk.com/hc/en-us/categories/360001627173-Student-Support or email support@brytewave.com or call 1-877-612-2233.
- More detailed instructions on accessing the textbook via Canvas, and opting, are available here: https://solve.redshelf.com/hc/en-us/articles/360007684453-How-to-Access-through-Canvas
- You will also receive email from noreply@follett.com with more detailed information about textbook access and opt-out instructions.

Discussion sections: All students are enrolled in a discussion section that meets once/week in person on Friday and is led by a team of Instructional Assistants (IAs). These sessions are not recorded. Here, you will work with other students and receive support from IAs to build your problem solving and data analysis skills. The problems you will be tasked with working on are a subset of those on the weekly homework set due two days later, but you are welcome and encouraged to ask questions here about any homework problem. Beginning Oct. 6, 5 points/week can be earned via participation in the discussion section you are enrolled in (and only that one). There will be 8 section meetings for credit (because there are no sections on Nov. 10th or 24th due to holidays) and you can miss two sections with no penalty.

Homework: A homework assignment will be posted most weeks (see exceptions in course calendar) in the appropriate weekly module on Canvas. Completed homework will be submitted via Canvas and will be due Sundays at 11:59pm. Submissions will be accepted up to 24 hrs late for half credit. Keys will be posted shortly after the submission deadline. The homework gives you the opportunity to develop the problem solving and data analysis skills you will need for success on the exams. You may use (and are encouraged to use!) input from IAs, the instructor, and other students to complete your homework, but the work submitted must be your own, e.g. your wording on short answer questions should not duplicate that of other students' or previously published resources. *Exam problems will be very similar to homework problems, so mastery of homework is vital for success on exams!*

Weekly quizzes: will be administered on Canvas and are due Mondays at 6pm except the week of the midterm. Quizzes will become available in weekly modules on Canvas on Sundays, the day before they are due. They will have two components:
(1) Questions on the assigned readings for the week ahead, specified in the Course Calendar. To fully benefit from class sessions focused on developing problem solving and data analysis skills, you will need to do assigned readings before class. Quiz questions will provide guidance on what you should be gleaning from reading assignments, and reward your reading efforts. These questions will be posted in weekly modules separate from the quiz so you can see them before doing the reading and taking the quiz, if you like. Not applicable for week 10 quiz since there is no reading assignment.
(2) A few questions drawn (in modified form) from homework/discussion section material from the week before (not applicable for the week 1 or week 7 quiz though). This will give you feedback on your mastery of material from the prior week. Take advantage of posted keys and Monday office hrs to shore up your understanding of the prior week's material before taking weekly quizzes!

Quizzes are open book/open note and you will have one hour to give you plenty of time to consult readings and other course materials as needed but you may not give or receive help from/to others.

Office hours: all OH are on Zoom and accessed via the Zoom link within Canvas (see schedule there). Office hours are an excellent opportunity to get your questions answered and find support for solving any of the problems and questions presented in any part of this class. You don't need to have a question to benefit from participation – you can just join and listen what questions other students have and the responses to those. All office hrs are open to all students regardless of who is hosting the OH. If you need help and cannot make it to a scheduled OH, email the instructor for an appointment!

Exams: there will be 2 in-person exams of equal weight, each covering about half of the course material. The midterm will be on Mon. Nov. 6th during class time, and the final exam will be on Mon. Dec. 11th from 7-10pm. These will be closed book/note/device exams however you can bring a one page (front and back) "cheat sheet" of notes to use during the exam. The final exam is not cumulative but many elements of this course build on earlier ones, so an understanding of earlier material will be important for the final exam even though it is written to directly test only the material that is new since the midterm.

Accommodations for illness etc: The grading scheme in this class has been constructed with COVID and other kinds of mishaps in mind: you can drop one or more scores for each assignment type except the exams (see below), and miss some class and discussion section sessions while still reaching the point ceiling for that category. Save these freebies incase you get sick or have another problem interfering with class activities because that is what they are for. That said, if a serious medical or personal problem that was unforeseeable and beyond your control interferes with your ability to keep up in the class and take all both exams, please contact the instructor as soon as possible (definitely before an affected exam, unless you are incapacitated) so we can discuss your situation and come up with a solution together.

"Discussions" on Canvas: Post questions here about genetics in the appropriate weekly folder, or about course logistics, and they will be answered within 24 hrs (hopefully less). Questions posted here will be prioritized over those emailed to the instructor or instructional assistants. If you email a genetics question to the instructor or IA, they will likely ask you to post it on the discussion board rather than answering via email so the answer benefits other students as well.

Grading: your final grade will be determined by what percentage of the total available points (500) you earn. Points are available as follows:

70 points (14%) for weekly quizzes (9 quizzes worth 6-9 pts each; lowest score dropped)
60 points (12%) for homework (9 problem sets worth 6-9 pts each; lowest score dropped)
40 points (8%) for iClicker responses (5 points for most lectures beginning week 3; lowest 5 scores dropped)
30 points (6%) for discussion section participation (8 sessions beginning Week 1 x 5 pts, w-2 free skips)
150 points (30%) for midterm exam
150 points (30%) for final exam
500 points total

These guidelines will be used to assign grades:
≥450 points (90%) A (A-, A or A+)
≥400 points (80%) B (B-, B or B+)
≥325 points (65%) C (C-, C or C+)
>250 points (50%) D

If your average score on the two exams is ≥90%, you will get an A in the class regardless of other points. The same holds for other grades, if exam scores alone result in a higher grade than you would get based on your point total (≥80% on exams earns a B; ≥70% on exams earns a C, etc.). In other words, deficits in non-exam categories cannot bring your grade down, but points earned in these other categories can bring your grade up, and do for most students.

If necessary, the cutoffs listed above will be adjusted *downward* so that at least 70% of students receive an A or a B, but they will not be adjusted upward for any reason.

Academic integrity:
The aim of your instructor and IAs is to foster all students' ability to excel with integrity, and we expect that the work on all credit-bearing assignments will be your own. Policies are outlined above for each assignment type regarding what aids are authorized. You may not give or receive help from an unauthorized source (e.g. another student) on quizzes or exams. If Prof. Smith has a good reason to think you have used unauthorized aids on a credit-bearing assignment, a report will be filed with the UCSD Academic Integrity Office (AIO). A student confirmed to have engaged in academic dishonesty will have grade penalty, in addition to the disciplinary actions determined as appropriate by the AIO.