

BICD 100 Genetics
Summer II, Aug 4th – Sept 4th, 2014
A00

Instructor: Goran Bozinovic
Lectures: Tu, Thu 5 -7:50 PM
Location: CENTR115
Course website: <http://webct.ucsd.edu>
Textbook: *Essentials of Genetics* by Klug, Cummings, Spencer, Palladino. 8th ed, 2010, Benjamin Cummings
Text website: www.geneticsplace.com
Recommended supplement: *Essentials of Genetics: Study Guide and Solutions Manual* by Nickla H, 8th ed.

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.

Goals: Genetics is important, interesting, and fundamental for modern biology. Genes are basic units of biology and inheritance for ALL life forms. This course will introduce and explore gene discovery and related studies, and their use in analysis and manipulation of biological function. We will also explore how genes are inherited and the importance of genetic variation in populations. We will use quantitative classical and modern approaches (problem solving) to predict genetic outcomes.

Prerequisites: BILD 1. Review the relevant material is necessary.

Contact Information

Email: gbozinovic@ucsd.edu

Office: HSS 1145G

Office hours: Thu 3:30 – 4:30 PM

When emailing, please put BICD 100 or Genetics in the subject line, or your email may not be read promptly.

Course Website (TED):

- For class-related materials, please access the TED at <http://ted.ucsd.edu> using your username and password.
- Make sure to log in often and check for announcements.
- Post all class-related questions on the discussion board. It will be sectioned based on the Textbook chapter numbers (C1, C2, etc..), so that the TAs can answer your questions effectively.

- Each TA section will have its own folder, so that section-specific materials can be posted and retrieved accordingly.

Note: for more information about the TED access, see the last page of the syllabus

Sections and Teaching Assistants:

- You must be enrolled and attend / participate in a section, since 20% of your grade is determined by section participation (see grading below). If not, you will not receive credit for problem sets (see problem set section below), nor will you be able to take the quizzes, which will be administered during the section at the TA's discretion.
- Section enrollment is open at <http://sections.ucsd.edu>. Log in using your UCSD student PID and select BICD100 (Bozinovic, TuTh 5 PM). If enrolled in the class, you can enroll in any section that has space, which will be highlighted in green once you enroll.

Sec	Day / Time	Room	TA	email
A01	M / 4-4:50pm	CENTR 217A	Dong, Yi	yid006@ucsd.edu
A02	Tu / 6-6:50pm	CENTR 205	Kazi, Amber Jasmine	akazi@ucsd.edu
A03	W / 3-3:50pm	CENTR 203	Kittani, Rand	rkittani@ucsd.edu
A04	W / 5-5:50pm	CENTR 203	Wu, Michael Bao-Pu	mbwu@ucsd.edu
A05	Th / 2-2:50pm	CENTR 217A	Yung, Bryan Shing Hei	byung@ucsd.edu

TA's office hours will be posted on the course WebCT on August 5th.

Classroom Etiquette:

- Recordings of any kind in this class are not permitted in order to maintain a safe learning environment as we often discuss very sensitive issues.
- Please ask questions. However, make sure that all of your comments are directed to the class.
- Turn off your phones and refrain from talking to fellow students during the lecture.
- Be considerate to others by not walking in/out of classroom for water/bathroom breaks while the class is in session.
- If you must leave early, please be seated in the aisle seat in the back near the exit

GRADING POLICY

EXAMS

There are three exams in this course – 2 midterms and the final. Each midterm is worth 25%, and the final is worth 30% of your grade. The final exam will consist of the material presented after the Exam 2, but it may include important fundamental concepts from the prior portion of the course.

The use of electronic Aids during Exams:

Unless you are an exceptionally skilled mathematician, you'll need a calculator during the exam. The use of any other electronic device, including your phone is strictly prohibited. Students using cell phones or devices other than calculators will be assumed to be cheating, and will receive a zero grade for the exam.

PROBLEM SETS:

10% of your grade will be based on problem sets. There will be 4 problem sets throughout the course, posted in the TED. They are due in your session the following week. In order to get the credit, you must hand your work in to the TA of the section in which you are enrolled. It is your responsibility to know which TA will be responsible for grading your work. Late assignments will not be accepted!

POP QUIZ:

There will be two pop quizzes given in discussion sections worth 25 points each. If your pop quiz point total is <50, your TA will have the opportunity to award up to 10 more points based on consistent attendance and high quality participation in discussion section to raise your point total to a maximum of 50. ***Credit will only be given for pop quizzes taken in the section you are enrolled in as shown at the online section enrollment site (<http://sections.ucsd.edu>).***

Exceptions to this policy will not be made. It is your responsibility to know what section you are enrolled in!

GRADING

Your final grade will be determined by what percentage of 500 points you earn (no exam or quiz scores may be dropped). Points are available as follows:

Exam 1 – 25%	125 pts
Exam 2 – 25%	125 pts
Final Exam – 30%	150 pts
Pop Quizzes (2) / Section attendance – 10%	50 pts
Problem Sets – 10%	50 pts

Total Points possible (100%) = 500

Here are guidelines for the minimum grade you will receive based on point totals including extra credit:

- >440 points (88%) A (A-, A or A+)
- >375 points (75%) B (B-, B or B+)
- >300 points (60%) C (C-, C or C+)
- >250 points (50%) D

After the grading is completed, you can view your scores by clicking on “my grades” on the TED course homepage. At the end of the quarter, final grades will also be posted here. Re-grade requests must be submitted in writing (explaining the error you found in the grading of your exam) with your exam to Instructor Bozinovic in class **within one week of when graded exams were first made available for pickup**; no requests will be considered after this date, except for correction of point addition errors.

Taking the Exam:

- Exams will end promptly at the end of the allotted time.
- All questions **MUST** be answered in ink! Absolutely no re-grading requests will be granted if you write your exams with pencils.
- Plan on arriving on time, since no additional time will be granted.
- You will not be admitted to the classroom for an exam 30min after the exam started, or after the first student has finished the exam, whichever occurs first, no matter the excuse.
- Once you have handed in an exam, you will not be able to drop the score or negotiate a reduction in its impact on your grade for any reason (e.g. you decide afterwards you weren't well enough).
- Requests to reconsider any grading must be submitted in writing along with your exam to one of the TAs within one week. Absolutely NO requests will be granted 5 days after the exams are graded and available for pick up (not after you pick up the exam!),

Extraordinary Circumstances:

- If you have an illness, injury or personal crisis that you believe will prevent you from performing adequately on an exam, contact the instructor about this problem before the exam to discuss your options. Your excuse must include official documentation (doctor's note). If your excuse is accepted, the make-up will most likely be an oral exam given by Dr. Bozinovic.
- If you cannot do this and miss an exam for one of these reasons, you must contact the instructor within 24 hours of the exam to discuss your options. Once you have handed in an exam, you will not be able to drop the score or negotiate a reduction in its impact on your grade for any reason (e.g. you decide afterwards you weren't well enough).

If a pop quiz is missed due to a similar sort of problem, contact your TA no later than 24 hours after the missed quiz. The decision for re-taking the quiz will be at your TA's discretion, but will adhere to the same policies stated above (see extraordinary circumstances).

How to do well in this course:

- Read lecture material BEFORE the lecture
- Attend lectures
- Turn all of the assignments in on time
- Take your own notes – active note taking is the key to effective learning
- Attend and actively participate in discussion sections
- Ask questions; attend office hours; utilize TAs expertise and assistance
- Don't procrastinate
- Work through the problem sets: genetics is a problem-solving science. It is, therefore, essential to spend time solving problems in classical Mendelian and human genetics. The significant portion of your exams, homework sets, and quizzes will consist of such problems. Learn how to solve problems not just by looking up the answers in the solutions manual.
- When attempting the end-of-chapter exercise and problem sets, you may use the Study Guide and Solution Manual or any other aids on the text website BEFORE seeking clarification during the discussion sessions. This way you will have a good idea of topics that need further explanation and could seek the help of your TA to understand the material.

ACADEMIC DISHONESTY

Please carefully review the “**Policy on Integrity of Scholarship**” at:

<http://senate.ucsd.edu/manual/appendices/app2.htm>

Academic dishonesty (aka cheating) will not be tolerated in this class. According to UCSD policy, academic dishonesty includes:

- taking an exam for another student
- allowing another student to take an exam for you
- copying another student's work on an exam or quiz
- allowing another student to copy your work
- altering graded assignments and submitting them for a re-grade

Altering an exam and submitting it for a re-grade is an incredibly bad idea since exams will be photocopied prior to returning them to students, and any exam handed in for a re-grade will be checked against the original. Any student caught or suspected of cheating (including those found using two or more clickers in class) will be reported to the UCSD Academic Integrity Coordinator and the Dean of the student's college. Confirmed cases of cheating will result in the student receiving an F as their final grade and other disciplinary actions determined appropriate by the Academic Integrity Coordinator.

Lecture schedule: TENTATIVE, subject to change

Readings - Chapters from Klug *et al.*, Essentials in Genetics

Date	Topic	Reading
Tu, 8/5	Intro, Mendel, Central Dogma	Ch 1
Tu, 8/5	Monohybrid Cross, Mitosis	Ch 3 (37-42), Ch2
Tu, 8/5	Meiosis, Dihybrid Cross, Crosses	Ch 2, Ch3 (49-55)
Th, 8/7	Epistasis, Complementation, Pleiotropy	Ch 4 (60-68)
Th, 8/7	X-linked mutations, penetrance, imprinting	Ch 4 (73-85)
Th, 8/7	Sex Determination	Ch 5
Tu, 8/12	EXAM 1 @ 5 PM	
Tu, 8/12	Sex Chromosomes, Dosage Compensation	Ch 5 – cont
Tu, 8/14	Chromosome variation	Ch 6
Th, 8/14	Gene mapping: recombination and linkage	Ch 7 (132-147)
Th, 8/14	Gene Mapping: molecular markers, LODs	Ch 7 (147-153)
Th, 8/19	Bacterial genetics: mutations, conjugations	Ch 8
Tu, 8/19	Bacteriophage	Ch 8
Tu, 8/19	DNA – Transforming principle	Ch 9
Tu, 8/21	DNA – mutation and repair	Ch 14
Tu, 8/21	Regulation of gene expression	Ch 15
Th, 8/26	EXAM 2, 5 PM	
Th, 8/26	Gene expression: RNA interference	Ch 15
Tu, 8/28	Cancer Genetics – Intro	Ch 16
Tu, 8/28	Cancer Genetics – cont.	Ch 16
Tu, 8/28	Forward and Reverse Genetics	Ch 21
Th, 8/31	Forward and Reverse genetic analysis	Ch 21
Th, 8/31	Quantitative traits and QTL mapping	Ch 22
Th, 9/31	Developmental Genetics	Ch 20
Tu, 9/2	Population Genetics	Ch 23 (pp. TBA)
Tu, 9/2	Evolutionary Genetics	Ch 23 (pp. TBA)
Th. 9/4	FINAL EXAM, 5 PM	

FINAL EXAM: Thursday, September 4th, 5-7:50 PM

Important Dates:

- 8/8 Deadline to late add a course
- 8/15 Deadline to change grading option, change units, and drop classes without “W” on transcript
- 8/24 Deadline for students receiving financial aid to withdraw and retain 100% federal aid
- 9/2 Drop course with “W”

Additional TED information:

Student Accounts

Student accounts are added the first day of classes (or earlier by request). Requests made less than one week prior to the start of the quarter may be delayed. UCSD students should use their email username and password. Student instructions: <http://iwdc.ucsd.edu/password.shtml>

Concurrent enrollment (Extension) students are not added automatically. Extension students should obtain a registration token from Extension's student services or the ACMS Help Desk and register for an account. More information is at: <http://sdacs.ucsd.edu/~icc/ce.php>