

**BICD 100 Genetics  
Winter 2018 (C00)**

**Instructor:** Goran Bozinovic  
**Lectures:** WF 7-8:20PM  
**Location:** SOLIS 107  
**Course website:** <http://tritoned.ucsd.edu>  
**Textbook:** *Essentials of Genetics* by Klug, Cummings, Spencer, Palladino. 10<sup>th</sup> ed, Benjamin Cummings  
**Text website:** [www.geneticsplace.com](http://www.geneticsplace.com)  
**Recommended supplement:** *Essentials of Genetics: Study Guide and Solutions Manual* by Nickla H, 10<sup>th</sup> 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 if necessary.

Contact Information

Email: [gbozinovic@ucsd.edu](mailto:gbozinovic@ucsd.edu)

Office: HSS 1145G

**Office hours: Wed 4-6PM @ Bonner Hall 1413 or by appointment**

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

Course Website (TritonEd):

- For class-related materials, please access the TritonEd at <http://tritoned.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 IAs can answer your questions effectively.
- Each IA section will have its own folder, so that section-specific materials can be posted and retrieved accordingly.

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

**Sections and Instructional Assistants (IAs):**

- 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 IA's discretion.

Sec	Day / Time	Room	IA	email
C01	M / 2-2:50	York 300A	Vu, Jeanne	<a href="mailto:jpv002@ucsd.edu">jpv002@ucsd.edu</a>
C02	M / 3-3:50	York 300A		
C03	M / 4-4:50	York 300A	Liu, Sophie	<a href="mailto:sol015@ucsd.edu">sol015@ucsd.edu</a>
C04	Tu / 8-8:50AM	CENTR 203		
C05	Tu / 7-7:50PM	CENTR 207		
C08	W / 5-5:50	York 3000A		
C09	F / 5-5:50	CENTR 2017A	Gong, Sylvia	<a href="mailto:sygong@ucsd.edu">sygong@ucsd.edu</a>
C10	F / 6-6:50	CENTR 2017A		

**Section meetings start on Monday, Jan 15<sup>th</sup>.**

**IA's office hours will be posted on the course WebCT on Jan 15th.**

**Classroom Etiquette:**

- Recordings of any kind in this class are not permitted to maintain a safe learning environment as we often discuss very sensitive issues.
- Please ask questions. However, make sure that 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 two exams in this course – the midterm and the final. Midterm is worth 35%, and the final is worth 45% of your grade. The final exam will consist of the material presented after the Midterm, 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 2 problem sets throughout the course, posted in the TritonEd. They are due in your discussion section the following week. Late assignments will not be accepted!

**Problem Set #1 available on TritonEd Friday, Jan 26, Due Wednesday, Jan 31**

**Problem Set #2 available on TritonEd Friday, March 2, Due Wednesday March 7**

**POP QUIZ:**

There will be two pop quizzes given in discussion sections worth 15 points each. If your pop quiz point total is <30, your IA will have the opportunity to award up to 5 more points based on consistent attendance and participation in discussion section to raise your point total to a maximum of 30. **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:

Midterm – 35%	105 pts
Final Exam – 45%	135 pts
Pop Quizzes (2) / Section attendance – 10%	30 pts
Problem Sets – 10%	30 pts
<b>Total Points possible (100%) =</b>	<b>300</b>

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

≥ 276 points _____ A	234 – 239 _____ C+
270 - 275 _____ A-	216 – 233 _____ C
264 - 269 _____ B+	200 – 215 _____ C-
246 - 263 _____ B	180 – 199 _____ D+
240 – 245 _____ B-	150 – 179 _____ D

\*The points / grade scale maybe adjusted based on the overall class performance.

After the grading is completed, you can view your scores by clicking on “my grades” on the TritonEd 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 IAs 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 IA no later than 24 hours after the missed quiz. The decision for re-taking the quiz will be at your IA'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! Most of the exam-relevant material will be "highlighted" during 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 IAs 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 IA 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 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
W 1.10	Course Introduction, Probabilities, Phenotype; Central Dogma	Discussion Ch 1
F 1.12	Monohybrid Cross, Mitosis	Ch 3 (37-42), Ch2
W 1.17	Meiosis, Dihybrid Cross, Crosses	Ch 2, Ch3 (49-55)
F 1.19	Epistasis, Complementation, Pleiotropy	Ch 4 (60-68)
W 1.24	X-linked mutations, penetrance, imprinting	Ch 4 (73-85)
F 1.26	Sex Determination, Sex Chromosomes, Dosage Compensation	Ch 5
W 1.31	Chromosomes, Chromosomal Variation	Ch 6
F 2.22	Gene mapping: recombination and linkage	Ch 7 (132-147)
W 2.7	Gene Mapping: molecular markers, LODs	Ch 7 (147-153)
F 2.9	Bacterial genetics: mutations, conjugations	Ch 8
<b>W 2.14</b>	<b>MIDTERM EXAM</b>	
F 2.16	DNA, Mutations and Repair	Ch 14
W 2.21	Regulation of gene expression, RNAi	Ch 15
F 2.23	Cancer Genetics	Ch 16
W 2.28	Forward and Reverse Genetics	Ch 21
F 3.2	Quantitative traits	Ch 22
W 3.7	QTL Mapping	Ch 22
F 3.9	Developmental Genetics	Ch 20
W 3.14	Population Genetics	Ch 23
F 3.16	Evolutionary Genetics	Ch 23
TBD	<b>FINAL EXAM</b>	

**Important Dates:**

<https://blink.ucsd.edu/instructors/courses/enrollment/calendars/2017.html>

**Additional TritonEd information:**

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>