

THE UNIVERSITY OF TEXAS AT EL PASO
COLLEGE OF SCIENCE
Department of Biological Sciences

Course #: BIOL 3320 CRN# 36259
Course Title: Genetics
Credit Hrs: 3
Term: Summer 2020
Course Meetings & Location: **ONLINE ONLY**, Monday - Friday 10:00 AM (time for quizzes and exams)
Prerequisite Courses: BIOL 1305-1107; BIOL 1306-1108
Instructor: Eli Greenbaum, Ph.D.
Office Location: Biology 301 (between Classroom & Biosciences Buildings)
Contact Info: Phone # 747-5553; Fax # 747-5808
E-mail address: egreenbaum2@utep.edu
NOTE: **please do NOT email me on Blackboard**
Emergency Contact: (Cell) 785-393-3583 *emergencies only please*
Office Hrs: Online only: email all office-hours related queries to egreenbaum2@utep.edu. If a discussion is necessary, requests for a phone meeting can be made via email.
Textbook(s), Materials: Required: Pierce, Benjamin. 2016. *Genetics: A Conceptual Approach*. 6th Edition. W. H. Freeman, ISBN: 1319050964. Purchase eBook and required Sapling Plus homework for about \$100 at: <http://www.saplinglearning.com/login>
NOTE: No Key Code required

Greenbaum, E. 2017. *Emerald Labyrinth: A Scientist's Adventures in the Jungles of the Congo*. ForeEdge (imprint of University Press of New England), ISBN 1512600970.

Course Objectives (Learning Outcomes): At the end of this course, students will understand the nature and functions of hereditary material, with emphasis on the experimental procedures and data that have led to current concepts in genetics.

Course Activities/Assignments: We will occasionally work on problems during the 10 AM classtime for about 15–30 minutes, depending on the complexity of the question(s). These problems will be based on the previous day's Powerpoint lecture, but topics will not be provided in advance. Students are expected to read assigned chapters **before** class, and to practice with problems at the end of the chapters and Sapling Learning on their own, or in study groups outside of class to ensure adequate understanding of the material. Students will have access to a calculator on LockDown browser, and for calculation-based problems, work must be shown for full credit. Specific settings for in-class problems and exams (e.g., backtracking) are at the discretion of the professor and subject to change. Some scheduled topics may not be covered at all.

Assessment of Course Objectives: Students will be assessed on the course objectives from four exams, in-class problems at pre-assigned times, and Sapling Learning online homework problems. Dates of in-class problems and exams are provided in advance (see course schedule below), but are subject to change because of canceled classes, etc. To minimize academic misconduct and ensure exams are fair to all, students are **REQUIRED** to do these assignments with a computer that has a webcam and the LockDown browser program, which can be downloaded from: <https://download.respondus.com/lockdown/download.php?id=586140509>. If you do not have a computer with these capabilities, a laptop with LockDown browser can be requested from the UTEP library, pending availability.

Grading Policy: Each of 4 exams will include multiple choice questions. All four exams will: (1) include one bonus question such that it will be possible to receive a grade of 102%; (2) not be cumulative; and (3) not be curved. **The lowest of the first THREE exams will be dropped; note that the final cannot be dropped, and failure to take the final exam will result in a grade of F.** Each of the three counted exams will be worth 30% of the final grade. **Ten percent** of the final grade will be assessed from in-class problems during classtime at 10 AM, participation in Sapling Learning online homework problems, and adherence to the civility and academic integrity statements below. To receive full credit for in-class problems with detailed calculations, **students must show all work**, but most of these problems will be multiple choice questions that do not require work to be shown. Final grades for the course will be as follows: 90–102: A; 80–89: B; 70–79: C; 60–69: D; < 60: F. At the discretion of the professor, students who are within 0.5 point of the next-highest letter grade (e.g., 89.5) may be assigned a better grade, depending on their overall performance in the course, Sapling homework, and other considerations explained below.

Sapling Homework: **The online Sapling homework is required** and meant to provide extra practice for genetics problems, to reinforce concepts discussed in class, and to provide additional enrichment and breadth of knowledge. Sapling reading quizzes and homework assignments are included in the class participation portion of the grade along with in-class problems, and adherence to the civility and academic integrity statements (10% of final grade). Sapling access costs about \$100, but includes an ebook version of the textbook—it is not possible to pay less if students do not wish to have access to the ebook (this is the policy of Sapling, not the professor!). With few exceptions (e.g., population genetics, evolutionary genetics, epigenetics), homework assignments will be due within 2–4 days—**it is the student’s responsibility to check deadlines for all assignments at the beginning of the semester and mark their calendars to ensure no deadlines are missed.** Extensions for homework assignments will not be granted unless written documentation is provided for medical illness, death in the family, or university-sponsored activity. Note that learning curve and animation activities on Sapling are provided at the discretion of the professor for additional enrichment, but they are optional and are not included in the course grade calculations. Credit will be given for assignments for which most of the questions are answered correctly (i.e. > 50% score). For each reading quiz or homework that is not completed, or for which the score is < 50%, the student will be penalized 0.5% for the class participation portion of the final grade. See example below to understand how the Sapling homework affects the final grade calculation.

Review Sessions: Because the TA only assists with grading, it is not possible to hold review sessions for exams. However, the majority of the exams are based on the Powerpoints and in-class problems, and students should focus on them for the majority of their studying. A small portion of exam questions will be based on the Sapling Homework and textbook.

Example Grade Calculation: This final course grade example is provided to ensure clear understanding for students taking the course. Let’s say a student receives the following exam grades: EXAM 1: 85; EXAM 2: 75; EXAM 3: 55; FINAL EXAM: 70. The lowest exam that is NOT the final is dropped, and so the failing grade from Exam 3 goes away. The average of the remaining three exams is: $85 + 75 + 70 = 230/3 = 76.67$. Because 90% of the final grade is based on these exams, we then multiply $76.67 \times 0.90 = 69$. Now let us consider the 10% of the final grade which is based on the in-class problems (most important) and Sapling homework. If there are 7 in-class problems over the course of the semester, let’s say the student has the following grades: 75, 60, 50, 100, 50, 100, 0. The average of these problems is: 62.14. If the student did not have any problems with adherence to the civility/academic integrity rules (see below), then there is no penalty and we move on to consider Sapling. If the student received a grade of at least 50% for all the completed Sapling reading quizzes and homework assignment problems, then we multiply the in-class problem average by 10% or 0.10. But for our example, let’s say the student missed two assignments, for a penalty of 0.5% for each one. So we would then multiply the in-class problem average of $62.14 \times 0.09 = 5.59$. For the final grade, we then add $5.59 + 69$ for a final score of 74.59, which is a C.

- Make-up Policy: Makeup assignments will be offered to students who miss a scheduled in-class problem or exam because of illness, death in the family, or university-sponsored activity, **but written documentation must be provided within 2 days of the missed problem/exam. Final grades will be submitted within 24 hours after the final exam**; thus, final exam makeups must be completed within 24 hours of the scheduled final exam. Students who miss online in-class problems and/or exams must document the valid reason in an email to the professor for makeup assignments. Makeup assignments will consist of a 2-page research paper for in-class problems, and 10-page research paper for exams. A grading rubric and sample research paper will be provided on Blackboard, and students should contact the professor for additional details.
- Extra Credit: Note that with the exceptions of one bonus question on each exam, as well as the ability to drop the lowest non-final exam, no extra credit will be given for any assignment at any time during the entire duration of this course. **Requests for extra credit assignments will be denied—no exceptions.**
- Attendance Policy: Being present to take in-class problems and exams at assigned times are a significant portion of your grade. Valid excuses for tardiness/missing class include illness, vehicle breakdown, death in the family, loss of power/internet, or university-sponsored activity, but **all valid excuses must be accompanied by written documentation** to receive credit. Students who miss in-class problems or exams (held at 10 AM according to the schedule below) without written documentation will receive a grade of zero.
- Powerpoints: Recorded Powerpoints (with the Yuja video platform) will be posted within a few hours after the completion of scheduled classes, at least on days with in-class problems. **Powerpoints are not posted in advance because some of them contain the in-class problems with solutions.** Occasionally I will assign videos for students to watch from websites including CBS News, BBC News, YouTube, New York Times, National Geographic, and other sites with stories relevant to class. If videos don't load for you on the first attempt, it is the student's responsibility to try different web browsers to view the videos. I will monitor these websites prior to class, but if for any reason the website is not working, it is the student's responsibility to bring this to my attention at least 2 days before a given exam so that I can omit any questions that are related to these videos.
- Office Hours: Office hours are meant to discuss challenges that students are having in the course, and to receive advising about ways to improve performance. Students who have specific questions about the class materials are welcome to discuss them with the professor, but note that office hours are not meant for general tutoring of the course. Because the course is entirely online, queries about the course can be emailed to the professor, and if a lengthy response is required, he will schedule a phone call with the student.
- Honors Credit: Students interested in Honors credit for the course must obtain an Honors Contract from the UTEP Honors Program and request a phone meeting with me **within 3 days of the start of the semester**. To receive this credit, students must receive a grade of A on EVERY exam AND complete TWO drafts of a 10-page research paper, which generally requires several weeks of additional work over the course of the semester, which is especially challenging during the summer semester. Students must carefully consider other time commitments to ensure success.
- Academic Integrity Policy: **Because of the opportunity for cheating, all students taking in-class problems or exams are REQUIRED to use LockDown browser and Respondus monitor via a webcam.** If you take your eyes off the computer screen while doing these assignments you will be flagged and I will review the video. At the professor's discretion, flagged students may incur a penalty to their grade. The UTEP policy on academic integrity and scholastic dishonesty can be found at: <https://www.utep.edu/student-affairs/osccr/student-conduct/academic-integrity.html>. All students will be expected to adhere to this policy.
- Civility Statement: Students are expected to be actively engaged in taking notes and class activities during the brief time we meet each week. This is less of an issue with an online class.
- Disability Statement: If you have a disability and require accommodations, please contact The Center for Accommodations and Support Services (CASS) at 747-5148, or by email to cass@utep.edu, or visit their office located in UTEP Union East, Room 106. For additional information, please visit the CASS website at www.sa.utep.edu/cass. Requested accommodations must be made 3 working days before an examination. **All students requesting disability accommodations must request a phone-call meeting with the professor to discuss the details before they will be implemented, preferably at the beginning of the semester.**

- Military Statement: If you are a military student with the potential of being called to military service and/or training during the course of the semester, please contact the professor within the first two weeks of class to arrange in advance for makeup exams, etc.
- Dropping the Course: Students are cautioned to consider dropping the course if they are performing poorly **BEFORE** the drop deadline (see below for date). You must drop this class yourself – I will not automatically drop you if you just stop participating, and you will receive a final grade of F. However, I reserve the right to drop you if you register for the course and never complete any assignments. Also remember that courses may only be repeated a total of 3 times, and a “W” counts as one. Any student who is taking Genetics for the 3rd and final time must request a phone-call meeting with me or risk being dropped. **The College of Science will remain aligned with the University and not approve any drop requests after the drop date.** Note that if a student has an advisor submit a drop request after the drop deadline without permission from the dean, I will be asked to assign a grade by the registrar, and that grade will be F.
- Incomplete Grades: All grades of Incomplete must be accompanied by an Incomplete Contract that has been signed by the instructor of record, student, departmental chair, and the dean. Although UTEP will allow a maximum of one year to complete this contract, the College of Science requests it be limited to one month based upon completion data. A grade of Incomplete is only used in extraordinary circumstances confined to a limited event such as a missed exam, project, or lab. If the student has missed a significant amount of work (e.g. multiple assignments or tasks), a grade of Incomplete is not appropriate or warranted.

Course Schedule:

Lecture Schedule		Topic/Exam	Relevant Reading
P = Pierce, G = Greenbaum			
M	Jun 8	Objectives & Introduction	P Chapter 1
M	Jun 8	DNA: basic genetic material	P Chapter 10
Tu	Jun 9	DNA Replication	P Chapter 12
In-class problem 10 AM			
Tu	Jun 9	Transcription	P Chapter 13
W	Jun 10	RNA Molecules/Processing	P Chapter 14 & 15
W	Jun 10	Translation	P Chapter 14 & 15
In-class problem 10 AM			
Th	Jun 11	EXAM 1: 10 AM	
F	Jun 12	Mutation & Repair	P Chapter 18
F	Jun 12	PCR & DNA Technology	P Chapter 19
M	Jun 15	Pedigree & Genetic Testing	P Chapter 6
In-class problem 10 AM			
M	Jun 15	Mendel and Genetics	P Chapter 3
Tu	Jun 16	Chromosome/Sex-Linked Genetics	P Chapters 2 & 4
In-class problem 10 AM			
Tu	Jun 16	Allelism, gene expression, etc.	P Chapter 5
W	Jun 17	EXAM 2: 10 AM	
Th	Jun 18	Population Genetics I	P Chapter 25
F	Jun 19	Population Genetics II	P Chapter 25
In-class problem 10 AM			
M	Jun 22	Non-Mendelian Inheritance	P Chapters 5 & 11
Tu	Jun 23	Evolutionary Genetics	P Chapter 26
W	Jun 24	Congo Intro G Chapters 1 & 11 & pp. 73–74, 77–83, 88–90, 177–180	
Th	Jun 25	Congo Research	G pp. 105–113, 221–224
F	Jun 26	EXAM 3: 10 AM	
F	Jun 26	***** DROP DEADLINE *****	
M	Jun 29	Genomics/Proteomics	P Chapter 20
M	Jun 29	Quantitative Genetics	P Chapter 24
Tu	Jun 30	Genetics of Development	P Chapter 22
Tu	Jun 30	Cancer Genetics	P Chapter 23
In-class problem 10 AM			
W	Jul 1	Eukaryote Gene Mapping	P Chapter 7
W	Jul 1	Chromosome Mutations	P Chapter 8
In-class problem 10 AM			
Th	Jul 2	Epigenetics	P Chapter 21
M	Jul 6	FINAL EXAM: 10 AM	