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

Course #:	BIOL 3320 CRN# 11293
Course Title:	Genetics
Credit Hrs:	3
Term:	Fall 2020
Course Meetings & Location:	**ONLINE ONLY,** Mondays & Wednesdays 3:00–4:20 PM
Prerequisite Courses:	BIOL 1305-1107; BIOL 1306-1108
Instructor:	Professor Eli Greenbaum, Ph.D.
Office Location:	Biology 301 (between Classroom & Biosciences Buildings). During the pandemic, the professor can be reached online via Blackboard or email.
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:	Pre-arranged meetings via phone can be scheduled 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 $90 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:	**Exams and in-class problems will happen synchronously (at the same time for all students and with a limited amount of time to complete assessments) at 3 PM on the days noted on the schedule below.** In-class problems will occur during the 3 PM 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. Exams will occur for the entire classtime. 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. Work must be shown for full credit when questions are in essay format. Some scheduled topics may not be covered at all. Students will have access to a calculator on LockDown browser, and for calculation-based problems, work must be shown for full credit when answers are in essay format. Specific settings for in-class problems and exams (e.g., backtracking) are at the discretion of the professor and subject to change.
Assessment of Course Objectives:	Students will be assessed on the course objectives from four exams, attendance for synchronous assessments including participation with in-class problems during classtime, and Sapling Learning online homework problems. Dates of exams and in-class problems are provided in advance (see course schedule below), but are subject to change because of canceled classes, etc. Powerpoints will not be posted in advance. 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 and Respondus monitor program on Blackboard, 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 broswer can be obtained from the UTEP library on a first-come, first-serve basis.

Grading Policy: Each of the 4 exams will include 34 multiple-choice questions worth 3 points each. 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 attendance and performance with in-class problems during classtime, 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, **students must show all work unless answers are in multiple-choice format**. Final grades for the course will be as follows: 90–102: A; 80–89: B; 70–79: C; 60–69: D; < 60: F. **As per university policy, queries about grades via email must come from an official UTEP email on file for a student.** 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, class attendance, homework, and other considerations explained below.

Sapling Homework: **The online Sapling homework is required** and is 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, attendance/punctuality, and adherence to the civility and academic integrity statements (10% of final grade). Sapling access costs about $100 (subject to change each semester), 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!). Although Sapling grants a "grace period" where one can use the website without paying for it, **students are required to pay for Sapling before the grace period ends.** Assignments that are not completed due to non-payment will receive a grade of zero. With few exceptions (e.g., population genetics, evolutionary genetics, epigenetics), homework assignments will be due within 7 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. To ensure that all deadlines are visible in the "Dashboard" view, follow these steps:** Sapling Learning > Adjusting Upcoming Assignments and Events Preferences Using Course Calendar Settings. 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 class meets only twice a week and 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 group 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 etextbook.

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 x 0.90 = 69. Now let us consider the 10% of the final grade which is based on the in-class problems (most important), Sapling homework, and class participation. If there are 7 group 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 group problems is: 62.14. If the student has attended every class on time, and 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 group 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 group problem average of 62.14 x 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: Makeups for assessments (i.e., in-class problems and exams) will be offered to students who miss a scheduled assessment because of illness, death in the family, well-documented computer or wifi problem, or university-sponsored activity, **but written documentation must be provided <u>within 1 week</u> of the missed in-class problem/exam via email to the professor.** Makeups are not an option for poor grades on completed assessments. Approved makeup assignments will consist of a 2-page research paper for in-class problems, and 10-page research paper for exams. General guidelines, a grading rubric, and an example of these papers are provided on Blackboard; contact the professor for additional details.

NOTE: Final grades will be submitted within 48 hours after the final exam; thus, final exam makeups must be completed within 48 hours of the scheduled final exam.

Extra Credit: Note that with the exception of one bonus question on each exam, along with 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: **Attendance via participation with in-class problems and exams is a significant portion of your grade in this course.** Valid excuses for missing class include illness, vehicle breakdown, death in the family, well-documented computer or wifi problem, 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 without written documentation will receive a grade of zero.

Powerpoints:	Powerpoints will be posted within a few hours after the completion of in-class problems, if scheduled on a given day (see schedule below), because they contain the in-class problems (and solutions). Occasionally I will assign videos for students to watch from websites including CBS News, BBC News, YouTube, New York Times, 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. To accommodate the schedules of different students, no official time for office hours will occur for this course, but students may email the professor anytime to request a time for a phone call to discuss any of these issues. Requests must be made at least 24 hours in advance to allow sufficient time for a response.
Honors Credit:	Students interested in Honors credit for the course must obtain an Honors Contract from the UTEP Honors Program and request a meeting with me **within 2 weeks of the start of the semester**. To receive this credit, students must receive a grade of A on EVERY exam, including the final, AND complete TWO drafts of a 10-page research paper, which generally requires several weeks of additional work over the course of the semester. Students must carefully consider other time commitments to ensure success.
Academic Integrity Policy:	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. **Lockdown browser and respondus monitor will be reviewed on a regular basis for all in-class problems and exams, and the professor reserves the right to penalize the grade of students who look away from their computer monitor when taking these online assessments. In some cases, scratch paper will be allowed for advanced calculations, but this paper must be shown at the end of the assessment (or emailed to the professor) to ensure no penalty occurs.**
Civility Statement:	Students are expected to behave professionally and maintain respect at all times for the professor and classmates. Failure to follow this policy may result in penalties to the final grade, or in extreme cases, expulsion from the class.
Disability Statement:	If you have a disability and need classroom 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 https://www.utep.edu/student-affairs/cass/. Requested accommodations must be made 3 working days before an examination. **All students requesting disability accommodations must request an office hours phone call 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 week 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 with assistance from your academic advisor – I will not automatically drop you if you never show up to class or just stop attending, and you will receive a final grade of F. 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 is highly encouraged to set up a phone meeting with the professor at the beginning of the semester to discuss strategies for success. **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	Aug 24	Objectives & Introduction	**P** Chapter 1
W	Aug 26	DNA: basic genetic material	**P** Chapter 10
M	Aug 31	DNA Replication	**P** Chapter 12
		In-class problem 3 PM	
W	Sep 2	Transcription	**P** Chapter 13
M	Sep 7	*************LABOR DAY NO CLASSES***************	
W	Sep 9	RNA Molecules/Processing	**P** Chapter 14 & 15
M	Sep 14	Translation	**P** Chapter 14 & 15
		In-class problem 3 PM	
W	Sep 16	**EXAM 1 at 3 PM**	
M	Sep 21	Mutation & Repair	**P** Chapter 18
W	Sep 23	PCR & DNA Technology	**P** Chapter 19
M	Sep 28	Pedigree & Genetic Testing	**P** Chapter 6
		In-class problem 3 PM	
W	Sep 30	Mendel and Genetics	**P** Chapter 3
M	Oct 5	Chromosome/Sex-Linked Genetics	**P** Chapters 2 & 4
		In-class problem 3 PM	
W	Oct 7	Allelism, gene expression, etc.	**P** Chapter 5
M	Oct 12	**EXAM 2 at 3 PM**	
W	Oct 14	Population Genetics I	**P** Chapter 25
M	Oct 19	Population Genetics II	**P** Chapter 25
		In-class problem 3 PM	
W	Oct 21	Non-Mendelian Inheritance	**P** Chapters 5 & 11
M	Oct 26	Evolutionary Genetics	**P** Chapter 26
W	Oct 28	*Emerald Labyrinth* reading day	**G** Chapters 1 & 11
Fri	Oct 30	*******************DROP DEADLINE*******************	
M	Nov 2	Congo Intro	**G** pp. 73–74, 77–83, 88–90, 177–180
W	Nov 4	Congo Research	**G** pp. 105–113, 221–224
M	Nov 9	**EXAM 3 at 3 PM**	
W	Nov 11	Genomics/Proteomics	**P** Chapter 20
M	Nov 16	Quantitative Genetics	**P** Chapter 24
W	Nov 18	Genetics of Development	**P** Chapter 22
M	Nov 23	Cancer Genetics	**P** Chapter 23
		In-class problem 3 PM	
W	Nov 25	Eukaryote Gene Mapping	**P** Chapter 7
M	Nov 30	Chromosome Mutations	**P** Chapter 8
		In-class problem 3 PM	
W	Dec 2	Epigenetics	**P** Chapter 21
M	Dec 7	**FINAL EXAM at 3 PM**	