

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

Course #: BIOL 3320 CRN# 21146
Course Title: Genetics
Credit Hrs: 3
Term: Spring 2021
Course Meetings & Location: **ONLINE:** Mondays & Wednesdays 3:00–4:20 PM (attendance mandatory)
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
Emergency Contact: (Cell) 785-393-3583 *emergencies only please*
Office Hrs: Office hours with the TA or professor are on-demand for your convenience!
Pre-arranged meetings via phone can be requested via email Monday-Friday from 9 AM to 5 PM (except on days of quizzes or exams)- allow 24 hours for a response.
Textbook(s), Materials: Required: Pierce, Benjamin A. 2020. *Genetics: A Conceptual Approach*. 7th Edition. Macmillan Learning, ISBN: 1319216803. 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. PDF version available free of charge at UTEP library website.

Course Objectives (Learning Outcomes): At the end of this course, students will understand the nature and functions of hereditary material, with emphasis on the historical, experimental procedures and data that led to current concepts in genetics. Students will also learn about the professor's evolutionary genetics research program in Central Africa.

Course Activities/Assignments: **Exams and quizzes 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. Students who have ANY time conflict with these dates/times should not take this course.** Students who begin an assessment ≥ 30 minutes late will receive a zero. Quizzes 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. The use of scratch paper will be allowed for some assessments, but calculators and cell phones are never allowed. Specific settings for quizzes 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 quizzes during classtime, and Sapling Learning online homework problems. Dates of exams and quizzes 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 browser 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 for the course.** 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 quizzes during classtime, participation in Sapling Learning online homework problems, and adherence to the civility and academic integrity statements below. To receive full credit for quizzes, **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, netiquette, and other considerations explained below.
- Netiquette: Students are expected to communicate with the professor and each other in a professional and respectful manner at all times—failure to do so can result in penalties to the final grade, or in extreme cases, reporting to the UTEP Office of Student Conduct and Conflict Resolution. Students should be mindful that their actions are being recorded on Lockdown browser, and to avoid penalties, they should avoid taking their eyes off the computer screen, talking to other people (nobody else should be in the room), using cell phones, or otherwise engaging in behavior that could give the impression of academic misconduct.
- Sapling Homework: **The online Sapling homework is required** (students who do not register will fail the course) 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 quizzes, 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. 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. Note that Sapling does not raise one’s grade, but it can reduce one’s grade substantially if multiple assignments are missed or poor (< 50% correct). See example below to understand how the Sapling homework affects the final grade calculation.

Computers & Wifi: **A reliable computer and wifi connection are required for this class.** One-time computer malfunction or disruption of wifi network, when documented with screenshots, etc., are valid excuses for requesting extension of Sapling homework deadlines and or assessments (i.e., quizzes and exams). However, **recurring problems with computers and/or wifi network must be avoided**, and will not be accepted as valid excuses per discretion of the professor. Students can take their laptop computer to the UTEP library (where social distancing regulations are strictly enforced) to get a reliable wifi signal, additional computers are available there, and it is also possible to sign out laptops on loan, while supplies last.

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 quizzes (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 $62.14 \times 0.09 = 5.59$. For the final grade, we then add $5.59 + 69$ for a final score of 74.59, which is a C.

Make-up Policy: Makeups for assessments (i.e., quizzes and exams) will be offered to students who miss a scheduled assessment because of illness, death in the family, or university-sponsored activity, **but written documentation must be provided within 1 week of the missed quiz/exam via email to the professor.** Well-documented computer or wifi problems will be accepted, but documentation **must be submitted within 24 hours of the missed assessment.** Makeups are not an option for poor grades on completed assessments, time conflicts with work or other classes, or missed assessments due to child care or other family obligations. If a student chooses to start an assessment it is not possible to request a makeup for any reason except for technical problems that prevent completion of the assessment. **Approved makeup assignments will consist of a 2-page research paper for quizzes, 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 quizzes 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 quizzes or exams without written documentation will receive a grade of zero.

Review Sessions: Because the class meets only twice a week and the TA only assists with grading, it is not possible to hold additional review sessions for assessments (i.e., quizzes and exams). However, the majority of the exams are based on the Powerpoints and quizzes, 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. Any student who has questions about any material covered in the course should take advantage of on-demand office hours, except on days with assessments.

- 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. See also the Netiquette section above.
- 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 assignments, 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.
- Academic Integrity: This course has a zero-tolerance policy for cheating. 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 assessments (quizzes and exams), and the professor reserves the right to penalize the grade of students (at the discretion of the professor) who look away from their computer monitor when taking these online assessments, poor “environment” videos, or incomplete video footage.** 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 within 1 hour of assessment completion) to ensure no penalty occurs. During assessments, students are encouraged to use common sense to avoid the impression of cheating—it is strictly forbidden to use your cell phone or other electronic devices including calculators (a calculator is provided in Lockdown browser), consult notes or the textbook, visit any websites (except for Lockdown browser and UTEP Blackboard), communicate with other people in any way, or take the exam in the same place as another student. **Any violations WILL be reported** to the UTEP Office of Student Conduct and Conflict Resolution.

Course Schedule:

Lecture Schedule		Topic/Exam	Relevant Reading
P = Pierce, G = Greenbaum			
W	Jan 20	Objectives & Introduction	P Chapter 1
M	Jan 25	DNA: basic genetic material	P Chapter 10
		Syllabus quiz 3 PM	
W	Jan 27	DNA Replication	P Chapter 12
		Quiz 3 PM	
M	Feb 1	Transcription	P Chapter 13
W	Feb 3	RNA Molecules/Processing	P Chapter 14
M	Feb 8	Translation	P Chapter 15
		Quiz 3 PM	
W	Feb 10	EXAM 1 at 3 PM	
M	Feb 15	Mutation & Repair	P Chapter 18
W	Feb 17	PCR & DNA Technology	P Chapter 19
M	Feb 22	Pedigree & Genetic Testing	P Chapter 6
		Quiz 3 PM	
W	Feb 24	Mendel and Genetics	P Chapter 3
M	Mar 1	Chromosome/Sex-Linked Genetics	P Chapters 2 & 4
		Quiz 3 PM	
W	Mar 3	Allelism, gene expression, etc.	P Chapter 5
M	Mar 8	EXAM 2 at 3 PM	
W	Mar 10	Population Genetics I	P Chapter 25
***** SPRING BREAK MARCH 15–19 *****			
M	Mar 22	Population Genetics II	P Chapter 25
		Quiz 3 PM	
W	Mar 24	Non-Mendelian Inheritance	P Chapter 11
M	Mar 29	Evolutionary Genetics	P Chapter 26
W	Mar 31	<i>Emerald Labyrinth</i> reading day	G Chapters 1 & 11
Thur	Apr 1	***** DROP DEADLINE *****	
M	Apr 5	Congo Intro	G pp. 73–74, 77–83, 88–90, 177–180
W	Apr 7	Congo Research	G pp. 105–113, 221–224
M	Apr 12	EXAM 3 at 3 PM	
W	Apr 14	Genomics/Proteomics	P Chapter 20
M	Apr 19	Quantitative Genetics	P Chapter 24
W	Apr 21	Genetics of Development	P Chapter 22
M	Apr 26	Cancer Genetics	P Chapter 23
		Quiz 3 PM	
W	Apr 28	Eukaryote Gene Mapping	P Chapter 7
M	May 3	Chromosome Variation	P Chapter 8
		Quiz 3 PM	
W	May 5	Epigenetics	P Chapter 21
M	May 10	FINAL EXAM, time TBA	