

Genetics
Biology 3332
Fall 2025

Instructor Information:

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Office hours: MWF, 9 – 10 am, MT, 1 – 2 pm or by appointment

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E-MAIL POLICY: When sending an email, please add "BIOL3332" at the beginning of the title and clearly indicate your name in the first few sentences of the main text. Please note that the instructor may not be able to respond to emails in two working days.

COURSE FORMAT: This course is in a face-to-face format and will be held at the designated time and place, unless otherwise communicated through Canvas. Attendance is required in this course. You will find a calendar with the planned program in this syllabus. Please check Canvas frequently for changes and updates. All deadlines are listed as Central Time.

COURSE DESCRIPTION: This course provides an overview of the principles and concepts of heredity and molecular genetics. Three areas of genetics will be covered: Mendelian (or transmission) genetics, molecular genetics, and population/evolutionary genetics. While easily divided into these units, they are by no means independent, each being tied to the others. Major concepts to be covered will include how the genetic material: 1) replicates and is passed on, 2) contains information that results in a phenotype, and 3) can change. Recent discoveries, historical concepts and some applications will be discussed.

COURSE GOALS: 1) Students will understand the concepts of classical, molecular, and population genetics. 2) Students will solve genetics problems. 3) Students will make connections between genetics, their lives and other disciplines.

LEARNING OUTCOMES: Upon completion of BIOL 3332, the student should be able to

1. list, state, and define the terms of genetic transmission, expression, and change
2. summarize, describe, analyze, categorize, synthesize, and evaluate the principles and processes of genetic transmission, expression, and change
3. assess the merits of genetic hypotheses
4. recall, draw, diagram, interpret, the processes of genetic transmission, expression, and change
5. solve problems, formulate hypotheses, calculate results, based on data generated from genetic experiments

RECOMMENDED BOOKS/Materials:

There are many good genetics textbooks out there, and I recommend that you get access to a book for in depth readings. For this course, it is NOT required that you buy a specific book. The essential materials (lecture slides, videos, animations, online tutorials, practice questions, etc.) can be found through Canvas.

Lecture slides are based on these two books:

- Concepts of Genetics 12e by Klug, Cummings, Spencer, Palladino, Killian, Pearson, 2018
- Principles of Genetics by D. P. Snustad and M. J. Simmons, 6th, John Wiley & Sons, Inc, 2011

COMMUNICATION

Announcements: Announcements are found on Canvas, and depending on your Canvas settings for this class, you will get notified if there is a new one. Please make a point of reading the announcements. This is how I will communicate with the class when there is important information you need.

Office hours: I am available MWF, 9 am – 10 am, and MT 1-2 pm. If the above hours do not work for you, please contact me anyways and we will set up a time that works for both of us.

Important Note: This syllabus, along with course assignments and due dates, are subject to change. It is your responsibility to check Canvas for corrections or updates to the syllabus. Any changes will be clearly noted in a course announcement.

GRADING POLICY: The final grade will be determined as follows:

Exam 1	100 pts
Exam 2	100 pts
Exam 3	100 pts
Final Exam	150 pts
Assignments/Homework/Quizzes	160 pts
Attendance/Participation	100 pts
TOTAL	710 pts

Letter grades will be assigned according to the following scale:

A = above 90%
B = 80-89%
C = 70-79%
D = 60-69%
F = below 60%

Exams

Three exams (each 100 pts). Exam questions will be multiple choice, true and false, and short answer style. Exams cover material from the previous chapters. Exams are spaced throughout the semester (see schedule below). The Final Exam is cumulative (150pts).

Make-up Exam Policy

If you are unable to take an exam as scheduled, a make-up exam will be arranged ONLY if the reason is legitimate (illness, sport and religious events, emergencies, etc.), and written documentation is provided (doctor's note, etc.). A make-up exam will have to be scheduled no later than one week after the missed exam. Students who fail to make appropriate arrangements will receive zero points for the missed exam. Make-up exams are in the same style as the regular exams but contain different questions.

Behavior during Exams: Being -Late-to-Exam Policy

Students who are late more than 10 minutes after an exam has started will receive a zero and are not allowed to enter the exam room. Students are required to keep their desks clear of backpacks, purses, jackets and such. No cell phones, laptops or tablets can be out on the tables. Students can bring their own calculator or obtain one from the instructor. Cell phones, tablets and laptops are not allowed as calculators for exams.

Practice Quizzes/Homework/Assignments

For each chapter, there will be an online assignment. This can be an assigned reading, a worksheet with instructions, or an online Quiz (each 10 pts). The assignments can be found online on Canvas. You have one week time to turn in your quiz. Points will be drawn for late work.

In-class Participation & Attendance

In-class Participation is strongly encouraged in this course. We will use Mentimeter to record attendance and to work through exercises, in class questions etc. (or a sign in sheet to take attendance in case the software does not work). To calculate the attendance grade, students will count the numbers of classes attended and divide that by the total number of classes where attendance was taken. Students can receive a maximum of 100 points for participation. Unless students have an excused absence, there are no make-up points for missed attendance.

LECTURE SCHEDULE:

Please note that this is a tentative schedule. The dates for the exams are tentative and can be flexible.

Course Content Overview

Welcome! Class Orientation-Syllabus and Canvas

Introduction: The Science and History of Genetics

Topic 1: Cellular Reproduction: Mitosis & Meiosis

Topic 2: Mendelian Genetics: The Basic Principles of Inheritance

Topic 3: Extensions of Mendelian Genetics

9/18/2025 Exam I

Topic 4: Complex Traits and the Genetics of Behaviour

Topic 5: Sex determination and Sex chromosomes

Topic 6: Chromosome Mapping, Linkage, Crossing Over: The Chromosomal Basis of Mendelism

Topic 7: Chromosomal Mutations: Variation in Number & Arrangement

Topic 8: Population & Evolutionary Genetics

10/16/2024 Exam II

Topic 9: The Human Genome Project/Introduction to Molecular Genetics

Topic 10: The Genetics of Bacteria and their Viruses

Topic 11: DNA Structure and Analysis, Chromosomes

11/6/2024 Exam III

Topic 12: DNA Replication and recombination

Topic 13: The Genetic Code and Transcription

Topic 14: Translation and Proteins

Topic 15: Gene Mutations and DNA Repair

Topic 16: Regulation of Gene Expression

TBD Final Exam

CANVAS: Students should log onto Canvas ASAP and carefully read all announcements. Canvas and student email should be checked DAILY for new announcements or messages. On Canvas you will find lecture outlines, reviews for exams, videos, and much more that will be very helpful for you as you take this course. You will also have quizzes posted throughout the semester under the module sections (labeled Quizzes). Another helpful tool is that all course grades will be on Canvas, so students will be able to view and calculate their current course grade at any time.

Academic Integrity: Students should be aware that absolute academic integrity is expected of every student in all undertakings at The University of Texas at Tyler. Failure to comply can result in strong university-imposed penalties. Be forewarned that possession of anything containing course content will be considered cheating, whether or not you actually refer to it during the exam. Also be aware that TALKING during an EXAM to anyone other than the instructor or proctor will automatically be considered cheating. It does not matter what you were talking about. This includes the use of cell phones (even if they call YOU) or any other electronic device that could be used to record test material. Violation of this policy will be considered cheating and treated accordingly. Penalties for cheating include anything from a zero on the exam or quiz during which the cheating occurred, up to an F for the course in question, at the discretion of the instructor

Usage of AI

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

For this course, AI is not permitted in this course at all.

To best support your learning, you must complete all graded assignments by yourself to assist in your learning. This exclusion of other resources to help complete assignments includes artificial intelligence (AI). Refrain from using AI tools to generate any course context (e.g., text, video, audio, images, code, etc.) for an assignment or classroom assignment.

Resources to assist you in this course

- [UT Tyler Student Accessibility and Resource \(SAR\) Office](#)[Links to an external site.](#) (provides needed accommodations to students with document needs related to access and learning)
- [UT Tyler Writing Center](#)[Links to an external site.](#)
- [The Mathematics Learning Center](#)[Links to an external site.](#)
- [UT Tyler PASS Tutoring Center](#)[Links to an external site.](#)
- [UT Tyler Supplemental Instruction](#)[Links to an external site.](#)
- [Upswing \(24/7 online tutoring\) - covers nearly all undergraduate course areas](#)[Links to an external site.](#)[Links to an external site.](#)
- [Robert Muntz Library](#)[Links to an external site.](#) and [Library Liaison](#)[Links to an external site.](#)
- [Canvas 101](#) (learn to use Canvas, proctoring, Unicheck, and other software)
- LIB 422 -- Computer Lab where students can take a proctored exam
- [The Career Success Center](#)[Links to an external site.](#)
- [UT Tyler Testing Center](#)[Links to an external site.](#)
- [Office of Research & Scholarship Design and Data Analysis Lab](#)[Links to an external site.](#)

Resources available to UT Tyler Students

- [UT Tyler Counseling Center](#) [Links to an external site.](#) (available to all students)
- [My SSP App](#)[Links to an external site.](#) (24/7 access to Student Support Program counseling through phone or chat and online wellness resources available in a variety of languages)
- [Student Assistance and Advocacy Center](#)[Links to an external site.](#)
- [Military and Veterans Success Center](#) [Links to an external site.](#) (supports for all of our military-affiliated students)
- [UT Tyler Patriot Food Pantry](#)[Links to an external site.](#)
- [UT Tyler Financial Aid and Scholarships](#)[Links to an external site.](#)
- [UT Tyler Student Business Services](#)[Links to an external site.](#) (pay or set up payment plans, etc.)
- [UT Tyler Registrar's Office](#)[Links to an external site.](#)
- [Office of International Programs](#)[Links to an external site.](#)
- [Title IX Reporting](#)[Links to an external site.](#)
- [Patriots Engage](#)[Links to an external site.](#) (available to all students. Get engaged at UT Tyler.)

University Policies and Information

Withdrawing from Class

Students may [withdraw](#) (drop) from this course using the [Withdrawal Portal](#). Withdrawing (dropping) this course can impact your Financial Aid, Scholarships, Veteran Benefits, Exemptions, Waivers, International Student Status, housing, and degree progress. Please speak with your instructors, consider your options, speak with your advisor, and visit the One-Stop Service Center (STE 230) or email enroll@uttyler.edu to get a complete review of your student account and the possible impacts to withdrawing. We want you to make an informed decision. UT Tyler faculty and staff are here for you and often can provide additional support options or assistance. Make sure to carefully [read the implications for withdrawing from a course and the instructions](#) on using the [Withdrawal portal](#).

Texas law prohibits students from dropping more than six courses during their entire undergraduate career*. The six courses dropped include those from other 2-year or 4-year Texas public colleges and universities. Consider the impact withdrawing from this class has on your academic progress and other areas, such as financial implications. We encourage you to consult your advisor(s) and Enrollment Services for additional guidance. **CAUTION #1:** Withdrawing before census day does not mean you get a full refund. Please see the [Tuition and Fee Refund Schedule](#). **CAUTION #2:** All international students must check with the [Office of International Programs](#) before withdrawing. All international students are required to enroll full-time for fall and spring terms. **CAUTION #3:** All UT Tyler Athletes must check with the Athletic Academic Coordinator before withdrawing from a course. **CAUTION #4:** All veterans or military-affiliated students should consult with the [Military and Veterans Success Center](#).

* Students who began college for the first time before 2007 are exempt from this law.

Artificial Intelligence Statement

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy. Refer to the About This Course section of the UT Tyler Syllabus Module for specific information on appropriate use of AI in your course(s).

Final Exam Policy

Final examinations are administered as scheduled. If unusual circumstances require that special arrangements be made for an individual student or class, the Dean of the appropriate college, after consultation with the faculty member involved, may authorize an exception to the schedule. Faculty members must maintain student final examination papers for a minimum of three months following the examination date.

Incomplete Grade Policy

If a student, because of extenuating circumstances, is unable to complete all of the requirements for a course by the end of the semester, then the instructor may recommend an Incomplete (I) for the course. The "I" may be assigned in place of a grade only when all of the following conditions are met: (a) the student has been making satisfactory progress in the course; (b) the student is unable to complete all coursework or final exam due to unusual circumstances that are beyond personal control and are acceptable to the instructor, and (c) the student presents these reasons before the time that the final grade roster is due. The semester credit hours for an Incomplete will not be used to calculate the grade point average.

The student and the instructor must submit an Incomplete Form detailing the work required and the time by which the work must be completed to their respective department chair or college dean for approval.

The time limit established must not exceed one year. Should the student fail to meet all of the work for the course within the time limit, then the instructor may assign zeros to the unfinished work, compute the course average for the student, and assign the appropriate grade. If a grade has yet to be assigned within one year, then the Incomplete will be changed to an F, or NC. If the course was initially taken under the CR/NC grading basis, this may adversely affect the student's academic standing.

Grade Appeal Policy

Disputes regarding grades must be initiated within sixty (60) days from the date of receiving the final course grade by filing a Grade Appeal Form with the instructor who assigned the grade. A grade appeal should be used when the student thinks the final course grade awarded does not reflect the grades earned on assessments or follow the grading scale as documented in the syllabus. The student should provide the rationale for the grade appeal and attach supporting document about the grades earned. The form should be sent via email to the faculty member who assigned the grade. The faculty member reviews the rationale and supporting documentation and completes the instruction section of the form. The instructor should return the form to the student, even if a grade change is made at this level. If the student is not satisfied with the decision, the student may appeal in writing to the Chairperson of the department from which the grade was issued. In situations where there is an allegation of capricious grading, discrimination, or unlawful actions, appeals may go beyond the Chairperson to the Dean or the Dean's designee of the college from which the grade was issued, with that decision being final. The Grade Appeal form is found in the [Registrar's Form Library](#).
NOTE: The Grade Appeal Form is different from the Application for Appeal form submitted to the Student Appeals Committee, which does not rule on grade disputes as described in this policy.

Disability/Accessibility Services

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA), the University of Texas at Tyler offers accommodations to students with learning, physical, and/or psychological disabilities. If you have a disability, including a non-visible diagnosis such as a learning disorder, chronic illness, TBI, PTSD, ADHD, or a history of modifications or accommodations in a previous educational environment, you are encouraged to visit <https://hood.accessiblelearning.com/UTTyler/> and fill out the New Student application. The Student Accessibility and Resources (SAR) office will contact you when your application has been submitted and an appointment with the Assistant Director Student Accessibility and Resources/ADA Coordinator. For more information, including filling out an application for services, please visit the SAR webpage at <https://www.uttyler.edu/disability-services>, the SAR office located in the Robert Muntz Library, LIB 460, email saroffice@uttyler.edu, or call 903.566.7079."

Military Affiliated Students

UT Tyler honors the service and sacrifices of our military-affiliated students. If you are a student who is a veteran, on active duty, in the reserves or National Guard, or a military spouse or dependent, please stay in contact with your faculty member if any aspect of your present or prior service or family situation makes it difficult for you to fulfill the requirements of a course or creates disruption in your academic progress. It is important to make your faculty member aware of any complications as far in advance as possible. Your faculty member is willing to work with you and, if needed, put you in contact with university staff who are trained to assist you. The [Military and Veterans Success Center \(MVSC\)](#) has campus resources for military-affiliated students. The MVSC can be reached at MVSC@uttyler.edu or via phone at 903.565.5972.

Students on an F-1 Visa

To remain in compliance with Federal Regulations requirements you must do the following:

- Traditional face-to-face classes: Attend classes on the regular meeting days/times.
- Hybrid Classes: Attend all face-to-face classes convened by the instructor according to the schedule set for your specific course.
- Online course: Only one online course can count toward your full-time enrollment. Students are expected to be fully engaged and meet all requirements for the online course.

Academic Honesty and Academic Misconduct

The UT Tyler community comes together to pledge that "Honor and integrity will not allow me to lie, cheat, or steal, nor to accept the actions of those who do." Therefore, we enforce the [Student Conduct and Discipline policy](#) in the Student Manual Of Operating Procedures (Section 8).

FERPA

UT Tyler follows the Family Educational Rights and Privacy Act (FERPA) as noted in [University Policy 5.2.3](#). The course instructor will follow all requirements to protect your confidential information.

Absence for Official University Events or Activities

This course follows the practices related to [Excused Absences for University Events or Activities](#) as noted in the Catalog.

Absence for Religious Holidays

This course follows the practices related to [Excused Absences for Religious Holy Days as noted in the Catalog](#).

Absence for Pregnant Students

This course follows the requirements of Texas Laws SB 412, SB 459, SB 597/HB 1361 to meet the needs of pregnant and parenting students. Part of the supports afforded pregnant students includes excused absences. Faculty who are informed by a student of needing this support should make a referral to the Parenting Student Liaison. NOTE: Students must work with the Parenting Student Liaison in order to receive these supports. Students should reach out to the Parenting Student Liaison at parents@uttyler.edu and also complete the [Pregnant and Parenting Self-Reporting Form](#).

Campus Carry

We respect the right and privacy of students who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttler.edu/about/campus-carry/index.php>.