Texas A&M University-Texarkana
BIOL 310 – Genetics

Spring 2021 Course Syllabus
RELLIS Campus

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Virtual Office Hours: MW 12:00p-3:00p or by appointment
(*Note:* When emailing or leaving a phone message, please indicate which course you are contacting me about.)

Semester Credit Hours:
4

Course Meeting Times:

T	9:10a-11:50a	Remotely via Zoom/RELLIS ACB I, Room 355 (after notice)
R	9:10a-11:50a	Remotely via Zoom/RELLIS ACB I, Room 355 (after notice)

Course Description:
This upper-division course is designed to provide biology majors with an overview of the basic principles of genetics at the level of molecules, cells, and multicellular organisms including humans. Topics include Mendelian inheritance, mitosis, meiosis, structure and function of chromosomes and genomes, regulation of gene expression, population genetics and evolution, genetic analysis, and cancer genetics. *Prerequisites:* Successful completion of two semesters of biology.

Course Delivery Method:
The course will be delivered synchronous remotely that replaces traditional face-to-face instruction with web-based online learning (e.g., Zoom video lectures, online discussions, etc.). The amount of face-to-face instruction that is replaced by online coursework will depend on overall trends in COVID-19 activity.

Required Textbooks/Resources:
Klug, W. S., Cummings, M., Spencer, C. A., Palladino, M. A., and Killian, D. (2019) Concepts of Genetics, 12th Edition, Pearson, ISBN: 978-0134604718.

Student Learning Outcomes:

Upon completion of this course, students should be able to:

- Understand the basic terminology that is used in the field of genetics.

- Explain the molecular events of mitosis and meiosis.
- Identify mechanisms and patterns of Mendelian and more complex inheritance.
- Describe the structure and function of DNA.
- Demonstrate a detailed understanding of DNA replication, transcription, and translation.
- Understand the role of genes and their regulation in the evolution of organisms.
- Summarize experimental procedures for the analysis of DNA and genomes.
- Become familiar with the diverse roles of genetics in the medical field such as cancer.
- Understand the importance of genetics in today's society.

Course/Instructor Specific Information:

Lecture: Lecture notes as well as details about exams and course assignments will be provided on Blackboard. Attendance of weekly Zoom meetings is highly recommended to ask questions and receive additional course information. You will receive meeting invitations through your TAMUT email account. Students are strongly encouraged to read the assigned textbook chapters.

Exams: There will be three lecture exams and a comprehensive final exam. Students will be told which lectures are covered in the specific exam. The exam format will include multiple choice and short-answer questions. Sample questions will be available on Blackboard to guide the study process. All exams are scheduled to be taken online using ProctorU. The examination periods run Monday to Sunday (end of the day). Students may take the 120-minute exam at any time during the one-week period. Tardy students will not be given extra time to complete exams. Absences from an exam will only be excused under special circumstances and proper documentation must be provided. Excused absences include university-sanctioned events, extreme illness or other extenuating circumstances. Arrangements for make-up exams due to university-sanctioned events must be made prior to the exam. In case of other acceptable excuses, you must notify me at the soonest possible time in order to avoid getting a zero on the missed exam.

Minireview Paper: The field of genetics is currently being revolutionized and has been brought to the forefront of biology. The many new tools and techniques that have been developed along with recent findings have a profound moral, political, and socio-economic impact around the world. Each student will monitor the news on a topic of interest and find additional journal references for scientific background. The results will be presented in form of a research paper (minimum length of 10 pages; APA format). The sections for the research paper are: Title Page, Abstract, Introduction, Rationale, Future Directions, and References. Title Page and References do not count towards the page limit. Minireview papers are due May 2, 2021. Please make sure to read additional assignment descriptions provided on Blackboard.

Virtual Office Hours: If you are unable to attend scheduled office hours please contact me to set up an appointment. Office hours are subject to change without notification.

Syllabus: Any changes to the syllabus or course information will be posted on Blackboard.

Final Grade: If you have any issues with your individual grades, you must take care of this prior to the last class day (May 4, 2021).

Methods of Evaluation:

Grading for the course will be as follows (100% total):

Exams (3)	20% each
Final Comprehensive Exam	25%
Genetics Minireview Paper	15%

Grading Scale:

A = ≥ 90%
B = 80-89%
C = 70-79%
D = 60-69%
F = < 60%

Important Dates (16 Week Session – Spring I; January 19-May 12):

January 18	Martin Luther King, Jr. Day – RELLIS Campus Closed
January 19	Spring Classes Begin Add/Drop Begins (16-Week Classes)
January 25	Last Day for Add/Drop (16-Week Classes)
February 3	Spring Census
February 15-21	Exam 1 Period
March 15-19	Spring Break – Faculty & Student Holiday
March 22-28	Exam 2 Period
April 2	Reading Day – No Classes
April 19-25	Exam 3 Period
April 20	University Withdrawal/“Q” Drop Deadline (16-Week Classes)
May 2	Genetics Minireview Paper Due
May 4	Last Day of Classes
May 5	Reading Day – No Classes
May 6-12	Finals Week – See Finals Schedule for Specific Meeting Times
May 15	Spring Commencements at RELLIS

Course Outline (Subject to Change):

Date	Topic	Assigned Reading
Week 1 Jan. 19-22	**Class Introduction and Syllabus Review**	-
Week 2 Jan. 25-29	Introduction to Genetics Mitosis and Meiosis	Chapter 1 Chapter 2
Week 3 Feb. 1-5	Mendelian Genetics Extensions of Mendelian Genetics	Chapter 3 Chapter 4
Week 4 Feb. 8-12	Chromosome Mapping in Eukaryotes Genetic Analysis and Mapping in Bacteria and Bacteriophages	Chapter 5 Chapter 6
Week 5 Feb. 15-19	Sex Determination and Sex Chromosomes	Chapter 7
Week 6 Feb. 22-26	Chromosome Mutations: Variation in Number and Arrangement Extranuclear Inheritance	Chapter 8 Chapter 9
Week 7 Mar. 1-5	DNA Structure and Analysis DNA Replication and Recombination	Chapter 10 Chapter 11
Week 8 Mar. 8-12	DNA Organization in Chromosomes The Genetic Code and Transcription	Chapter 12 Chapter 13
Week 9 Mar. 15-19	**Spring Break**	-
Week 10 Mar. 22-26	Translation and Proteins	Chapter 14
Week 11 Mar. 29-Apr. 1	Gene Mutation, DNA Repair, and Transposition Regulation of Gene Expression in Bacteria	Chapter 15 Chapter 16
Week 12 Apr. 5-9	Transcriptional Regulation in Eukaryotes Posttranscriptional Regulation in Eukaryotes	Chapter 17 Chapter 18
Week 13 Apr. 12-16	Epigenetic Regulation in Eukaryotes Developmental Genetics	Chapter 19 Chapter 23
Week 14 Apr. 19-23	Cancer Genetics	Chapter 24
Week 15 Apr. 26-30	**Final Exam Review**	-

For University policies on Academic Integrity, **A&M-Texarkana Email Address**, **and the Drop Policy, please refer to** Syllabus Policies***.***

For policies governing all web-enhanced and online courses, please refer to Online Education**.

Disability Accommodations: The Americans with Disabilities Act (ADA) is a federal non-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this law requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact the Office of Student Life in UC room 126, or call (903) 223-3116. For additional information visit Disability Services***.**

* http://bit.ly/TAMUT_SyllabusPolicies

** http://bit.ly/TAMUT_OnlineEducation

*** http://bit.ly/TAMUT_DisabilityServices

Coronavirus Safety Measures

Students must observe the following practices while participating in face-to-face courses and course-related activities (office hours, transitioning to and between classes, study spaces, academic services, etc.).

Self-monitoring
Before you return to campus you should review the self-monitoring CDC recommendations that are available and hyperlinked below:

Self-monitoring CDC Recommendations

Students who have a fever or exhibit symptoms of COVID-19 should participate in class remotely and should not participate in face-to-face instruction or visit campus.

Face Coverings
Face coverings (cloth face covering, surgical mask, neck gaiters, etc.) must be properly worn in all common areas including classrooms, lobbies and hallways, and offices.

- To attend a face-to-face class, students must wear a face covering (or a face shield if they have an exemption letter). If a student refuses to wear a face covering, the instructor should ask the student to leave and join the class remotely. If the student does not leave the class, the faculty member should report the incident to Carlos Pinkerton (cpinkerton@rellis.tamus.edu). Carlos will follow-up with the student and initiate the student conduct process. Additionally, the faculty member may choose to teach that day's class remotely for all students.
- Students who refuse to wear face coverings may be subject to possible sanctions for violations including failure to comply with university official, failure to comply with federal, state and local laws, disorderly conduct, and disruptive activity.

Physical Distancing
Physical distancing must be maintained between students, instructors, and others in course and course-related activities.

Within the building, we ask that you:
- Follow marked pathways for entering and exiting classrooms.
- Leave classrooms promptly after course activities have concluded.
- Avoid congregating in hallways and maintain 6-foot physical distancing when waiting to enter classrooms and other instructional spaces.

Outside of the building, we ask that you:
- Practice physical distancing of at least 6 feet.
- Wear a mask unless you can maintain an appropriate physical distance of 6 feet.

Quarantine
Students required to quarantine must participate in courses and course-related activities remotely and **must not attend face-to-face course activities**. Students should notify their instructor of the quarantine requirement. Students under quarantine are expected to participate in courses and complete graded work unless they have symptoms that are too severe to participate in course activities.

Remote Learning
Every face-to-face class will have a remote learning option. See course/instructor specific information above.

Excused Absence
Students experiencing personal injury or illness that is too severe for the student to attend class qualify for an excused absence. See course/instructor specific information above.

COVID-19 Reporting Process
If you are exhibiting signs of COVID-19, we ask that you do not come to class. Instead you should complete the following steps:

- Visit with a medical professional for evaluation and possible testing. Any upper-division student at RELLIS can visit the Texas A&M Physicians Health Community Clinic. The clinic is located in the Bryan Medical Center at:

  2900 East 29th Street, Suite #1010,
  Bryan, Texas 77802.

- Report your signs and/or testing outcome using the A&M System Portal available and hyperlinked below:

  Texas A&M University System Portal

  You should utilize the portal if:
  - You tested positive for COVID-19.
  - You are experiencing COVID-19 symptoms.
  - You have been in close contact (within 6 feet for more than 15 minutes) of someone who has or is suspected to have COVID-19.
  - Someone in your household (including roommate or housemate) has tested positive for COVID-19.