

BIOL 3301

Genetics



Instructor: Emerson Crabill, Ph.D.

Email: ecrabill@angelo.edu

Phone: 325-486-6642

Office: CAV 003C

Office Hours: M-F by appointment

Course Information

Course Description

This is a course in general genetics. Topics are organized into three major areas: cytogenetics, molecular genetics and classical genetics.

Prerequisite and Co-requisite Courses

Credit for Biology 1306/1106 and 1307/1107 or Biology 2323/2123 and 2324/2124 with a grade of "C" or better.

Student Learning Outcomes

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

- Communicate effectively on the topic of genetics
- Understand genetic inheritance
- Understand the flow of genetic information
- Understand how gene expression is regulated
- Be aware of new technologies used to manipulate genes and its impact on biology more generally

Course Delivery

This class meets in-person Monday through Friday.

Required Texts and Materials

Concepts of Genetics, 12th Edition. William S. Klug, et al. Pearson

Technology Requirements

To successfully complete this course, students need to purchase access to Top Hat. Lectures notes will be available through Blackboard or Top Hat.

Top Hat

We will be using Top Hat Pro (www.tophat.com) for class participation. You will be able to submit answers to in-class questions using Apple or Android smartphones and tablets, laptops, or through text message. You can visit the Top Hat Overview (<https://success.tophat.com/s/article/Student-Getting-Started-with-Top-Hat>) within the Top Hat Success Center which outlines how you will register for a Top Hat account, as well as provides a brief overview to get you up and running on the system.

An invitation will be sent to you by email. If you do not receive this email, you can register by simply visiting our course website: <https://app.tophat.com/e/019942>

Note: our course Join Code is 019942

Top Hat Pro may require a paid subscription, and a full breakdown of all subscription options available can be found here: www.tophat.com/pricing.

Communication

I will respond to email and/or telephone messages within 24 hours during working hours Monday through Friday. Weekend messages may not be returned until Monday.

Grading

Evaluation and Grades

Course grades will be determined as indicated in the table below.

| Assessment | Points |
|-------------------|---------------|
| Top Hat Questions | 100 |
| Exam I | 100 |
| Exam II | 100 |
| Exam III | 100 |
| Exam IV | 100 |
| Total | 500 |

Grading System

Course grades will be dependent upon completing course requirements and meeting the student learning outcomes.

The following grading scale is in use for this course:

A = 450-500 points

B = 400-449 points

C = 350-399 points

D = 300-349 points

F = 0-299 (Grades are not rounded up)

Assignment and Activity Descriptions

Top Hat questions will occur during class. For each question, half the points are for giving the correct answer and half are for participation. Exams will be during normal class time. There is no lecture on exam days.

General Policies Related to This Course

All students are required to follow the policies and procedures presented in these documents:

- [Angelo State University Student Handbook](#)¹
- [Angelo State University Catalog](#)²

Academic Integrity

Students are expected to maintain complete honesty and integrity in all work. Any student found guilty of any form of dishonesty in academic work is subject of disciplinary action and possible expulsion from ASU.

The College of Science and Engineering adheres to the university's [Statement of Academic Integrity](#).³

Accommodations for Students with Disabilities

ASU is committed to the principle that no qualified individual with a disability shall, on the basis of disability, be excluded from participation in or be denied the benefits of the services, programs or activities of the university, or be subjected to discrimination by the university, as provided by the Americans with Disabilities Act of 1990 (ADA), the Americans with Disabilities Act Amendments of 2008 (ADAAA) and subsequent legislation.

Student Disability Services is located in the Office of Student Affairs, and is the designated campus department charged with the responsibility of reviewing and authorizing requests for reasonable accommodations based on a disability. It is the student's responsibility to initiate such a request by contacting an employee of the Office of Student Affairs, in the Houston Harte University Center, Room 112, or contacting the department via email at ADA@angelo.edu. For more information about the application process and requirements, visit the [Student Disability Services website](#).⁴ The employee charged with the responsibility of reviewing and authorizing accommodation requests is:

Dallas Swafford
Director of Student Disability Services
Office of Student Affairs
325-942-2047
dallas.swafford@angelo.edu
Houston Harte University Center, Room 112

Incomplete Grade Policy

It is policy that incomplete grades be reserved for student illness or personal misfortune. Please contact faculty if you have serious illness or a personal misfortune that would keep you from completing course work. Documentation may be required. See ASU Operating Policy 10.11 [Grading Procedures](#)⁵ for more information.

Student Absence for Observance of Religious Holy Days

A student who intends to observe a religious holy day should make that intention known in writing to the instructor prior to the absence. See ASU Operating Policy 10.19 Student Absence for [Observance of Religious Holy Day](#)⁶ for more information.

Title IX at Angelo State University

The University prohibits discrimination based on sex, which includes pregnancy, sexual orientation, gender identity, and other types of Sexual Misconduct. Sexual Misconduct is a broad term encompassing all forms of gender-based harassment or discrimination including: sexual assault, sex-based discrimination, sexual exploitation, sexual harassment, public indecency, interpersonal violence (domestic violence and/or dating violence), and stalking. As a faculty member, I am a Responsible Employee meaning that I am obligated by law and ASU policy to report any allegations I am notified of to the Office of Title IX Compliance.

Students are encouraged to report any incidents of sexual misconduct directly to ASU's Office of Title IX Compliance and the Director of Title IX Compliance/Title IX Coordinator at:

Michelle Miller, J.D.

Special Assistant to the President and Title IX Coordinator

Mayer Administration Building, Room 210

325-486-6357

michelle.boone@angelo.edu

You may also [file a report online](#)⁷ 24/7.

If you are wishing to speak to someone about an incident in confidence you may contact the University Health Clinic and Counseling Center at 325-942-2173 or the ASU Crisis Helpline at 325-486-6345.

For more information, visit the [Title IX website](#).⁸

Modifications to the Syllabus

This syllabus, including grade evaluation and course schedule, is subject to modification.

Course Schedule

| Date | Topic | Chapter |
|-----------|--|---------|
| July 11 | Introduction to Genetics | 1 |
| July 12 | Mitosis & Meiosis | 2 |
| July 13 | Mendelian Genetics | 3 |
| July 14 | Extensions of Mendelian Genetics | 4 |
| July 15 | Chromosomal mapping in eukaryotes | 5 |
| July 18 | Genetic mapping in Bacteria | 6 |
| July 19 | Exam I | |
| July 20 | Sex determination | 7 |
| July 21 | Chromosomal mutations | 8 |
| July 22 | Extra nuclear inheritance | 9 |
| July 25 | DNA structure | 10 |
| July 26 | DNA Replication and Recombination | 11 |
| July 27 | Exam II | |
| July 28 | DNA organization in Chromosomes | 12 |
| July 29 | The Genetic Code and transcription | 13 |
| August 1 | Translation and Proteins | 14 |
| August 2 | Gene mutation, DNA Repair, and Transposition | 15 |
| August 3 | Regulation of gene expression in bacteria | 16 |
| August 4 | Exam III | |
| August 5 | Regulation in eukaryotes | 17 |
| August 8 | Posttranscriptional Regulation | 18 |
| August 9 | Epigenetics | 19 |
| August 10 | Recombinant DNA Technology | 20 |
| August 11 | Genomic Analysis and Applications of Genetic Engineering | 21 & 22 |
| August 12 | Exam IV | |

¹ <https://www.angelo.edu/current-students/student-handbook/>

² <https://www.angelo.edu/academics/catalog/>

³ <https://www.angelo.edu/live/files/27603-student-handbook-2020-21#page=96>

⁴ <https://www.angelo.edu/current-students/disability-services/>

⁵ <https://www.angelo.edu/content/files/14197-op-1011-grading-procedures>

⁶ <https://www.angelo.edu/content/files/14206-op-1019-student-absence-for-observance-of>

⁷ <http://www.angelo.edu/incident-form>

⁸ <https://www.angelo.edu/title-ix>