

SYLLABUS

Class description: Genetics BIOS 2600 is TR 9:30-10:45 AM, Aug 23, 2022 - Dec 6, 2022 in Howey, Lecture Hall #3. BIOS 2600 is a 3-credit class.

Prerequisites: BIOL 1510 or BIOL 1511 or ((BIOS 1107 or BIOS 1207) and (BIOS 1107L or BIOS 1207L)).

Instructor: Dr. Vincent Ciavatta (vciavat@emory.edu). Office hours: Immediately after class on Tuesday and Thursday and Wednesdays 9:00-10:00 AM, in virtual office (see the zoom link on the Genetics Canvas page).

Teaching Assistants: Piper Rackley (piperrackley@gmail.com), Jack Toppen (jtoppen3@gatech.edu), and Emily Hang (emilyhang@gatech.edu), Office hours: **TO BE DETERMINED**.

Learning Objectives: By the end of this class, you will be able to: (1) understand fundamental and applied concepts in genetics, (2) apply biological principles to solving genetics problems, (3) interpret and analyze genetics experiments, (4) explain techniques used in genetics, and (5) describe how biological information is stored and transmitted.

Information Related to Covid-19: The intention is that this class be taught in-person. However, conditions may change requiring alterations to our class experience. Students are expected to be familiar with and abide by the Institute guidelines, information, and updates related to Covid-19. If under University guidelines in place at the time, you are required to avoid coming to class in person, there will be an option to participate in class virtually through Zoom. The link for the Zoom session will be distributed via Canvas or to your gatech.edu email address. You are encouraged to get vaccinated and to wear a mask in indoor public places, including campus buildings. However, at this time, neither vaccination nor masking in indoor public spaces is required. <https://health.gatech.edu/tech-moving-forward>

Class attendance: Class time will be used for lectures, activities, and exams. If you miss lecture, you are responsible for obtaining all notes, announcements, and assignments. Written confirmation of a legitimate excuse, such as a severe illness, will be required if any assessment is missed. Georgia Tech's excused absence policy will be enforced in this course. <http://www.catalog.gatech.edu/rules/4/>. Lecture is a time when we all work together, so be courteous to your fellow students and do not disrupt class by entering and leaving the room, reading, talking, allowing cell phones to ring, etc.

Recordings of Class Sessions and Required Permissions: Classes may not be recorded by students without the expressed consent of the instructor unless it is pursuant to an accommodation granted by the Office of Disability services. Class recordings, lectures, presentations, and other materials posted on Canvas are for the sole purpose of educating the students currently enrolled in the course. Students may not record or share the materials or recordings, including screen capturing or automated bots, unless the instructor gives permission.

Learning Management System: We will use Canvas as a learning management system for class communication and coordination. Assignments and messages will be sent through Canvas on a regular basis. **CANVAS URL TO BE DETERMINED**

Textbooks and Learning Materials: WS Klug, MR Cummings, CA Spencer, MA Palladino, and DJ Killian. Concepts of Genetics. 12th edition. Pearson. 2019. We will use Pearson's Mastering Genetics and Learning Catalytics throughout the class, which will require purchasing an access code. This should come bundled together with the electronic textbook if purchased through the bookstore. You can also purchase access to Mastering Genetics, Learning Catalytics, and the textbook through Pearson directly. <https://www.pearson.com/us/higher-education/program/Klug-Modified-Mastering-Genetics-with-Pearson-e-Text-Standalone-Access-Card-for-Concepts-of-Genetics-12th-Edition/PGM1226214.html>

Student Use of Mobile Devices in the Classroom: You will need to have an electronic communication device (e.g., laptop, tablet, smartphone) to participate in class. Please do not use your electronic devices in class for non-class purposes.

Assessments

1. Pre-class knowledge evaluation: We will use Learning Catalytics so I can get an idea of how well you understand the assigned text material for that class. The scores on these evaluations will be based on successful completion (not correctness) but will make up part of your overall course grade. Internet connected computers, tablets, or smartphones will be needed to complete these evaluations.
2. In-class activities: We will use Learning Catalytics for interactive class sessions. To foster collaboration, the intent is to conduct these in-class activities in teams of up to 4 students. Scores on these activities will be based on successful completion. The Learning Catalytics assignment scores will make up part of your overall course grade. You can use any internet-enabled device (e.g., laptop, tablet, smartphone) to access Learning Catalytics during class.
3. Homework: Throughout the semester, you will have online homework assignments administered through Mastering Genetics. The Mastering Genetics assignment scores will comprise part of your overall course grade. In general, homework will be assigned after a Thursday class and will be due before the next class period. There is a link to Mastering on the Genetics Canvas webpage.
4. Exams: The class will include three exams. The exams will be held during class time on the dates provided on the class schedule (see below). The third exam will be held during the final exam period and will not be explicitly comprehensive. Exams are closed-book and will be made up of questions based on topics, materials, and discussions presented in lecture, through Learning Catalytics activities, in the assigned readings, and in the Mastering Genetics homework.

Your grade in genetics will be determined by your performance on three exams and homework, and successful completion of pre-class assessments and in-class activities. The relative values of these assessments are:

Assessment	Value
Learning Catalytics Assessments and Activities	12%
Mastering Genetics Homework	13%
Exam I	24%
Exam II	24%
Exam III	27%
Total	100%

The grading scale will be 90-100% an A, 80-89% a B, 70-79% a C, 60- 69% a D, and 59% or less an F. This scale is subject to adjustment at the professor's discretion.

Americans with Disabilities Act: Students with disabilities needing academic accommodation should (1) register with and provide documentation to the Office of Disability Services and (2) notify the Professor during the first week of class indicating and describing the need for accommodation. Appropriate accommodations will then be provided as needed. <http://disabilityservices.gatech.edu>

Academic Integrity: Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Any student suspected of cheating or plagiarizing on an exam or assignment will be reported to the Office of Student Integrity, which will investigate the incident and identify the appropriate penalty for violations. Attempts to facilitate team-based assignment credit to students who are not present in class, will be considered cheating. <https://policylibrary.gatech.edu/student-affairs/academic-honor-code>
<http://www.catalog.gatech.edu/rules/18/>

Late Assignments & Re-Scheduled/Missed Exams: Students that miss assignments or exams without a legitimate excuse will receive no credit for that assignment. However, students that miss homework or in-class assignments for approved Institute activities and religious observances will be excused for missed credit. Make up exams will only be given for approved activities. All legitimate excuses must be verified with written documentation. www.catalog.gatech.edu/rules/4/

Student-Faculty Expectations Agreement: At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. See www.catalog.gatech.edu/rules/22/ for an articulation of some basic expectation that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Regrade policy: The only way that changes to your grades will be considered is through the official regrade procedure. Regrades can be requested if: (a) there has been an error in adding your score, (b) you did not receive credit for an answer as given on the key, (c) there is a difference between your score and that of another student who gave the same answer, or (d) you did not receive credit for an answer that differs from that on the key but which is nevertheless correct. In general, regrades will not be considered for issues concerning the amount of partial credit awarded for an answer. To have an assignment regraded, you must email an explanation of the problem directly to the professor. For issues (a) and (b), it will generally suffice to simply describe the problem. For issue (c) you will need to submit an explanation of the problem, as well as the name of the other student involved. For issue (d) you must give a detailed and explicit account as to why your answer is correct. Deadlines for the submission of regrades will be given when assignments are handed back. No regrades will be considered after the deadline. Note that if you request a regrade for a particular question, the professor reserves the right to regrade your entire exam, which could result in a lowering of your overall score.

Tentative Class Schedule: The instructor may change this schedule as needed during the semester. Students will be notified if the schedule does change.

Week	Date	Day	Chapter	Content
1	23-Aug	Tues	1	Introduction to Genetics
	25-Aug	Thurs	2	Mitosis and Meiosis
2	30-Aug	Tues	3	Mendelian Genetics
	1-Sep	Thurs	4	Extensions of Mendelian Genetics
3	6-Sep	Tues	10	DNA Structure and Analysis
	8-Sep	Thurs	11	DNA Replication and Recombination
4	13-Sep	Tues	13, 14	The Genetic Code & Transcription, Translation & Proteins
	15-Sep	Thurs	15	Gene Mutations, DNA Repair, Transposition
5	20-Sep	Tues		Flex Day-TBD
	22-Sep	Thurs		EXAM I
6	27-Sep	Tues	16	Regulation of Gene Expression in Bacteria
	29-Sep	Thurs	17	Transcriptional Regulation in Eukaryotes
7	4-Oct	Tues	12	DNA Organization in Chromosomes
	6-Oct	Thurs	8	Chromosome Mutations
8	11-Oct	Tues	7	Sex Determination and Sex Chromosomes
	13-Oct	Thurs	9	Extranuclear inheritance
9	18-Oct	Tues		Fall break-No class
	20-Oct	Thurs	5	Chromosome Mapping in Eukaryotes
10	25-Oct	Tues	6	Genetic Analysis in Bacteria and Bacteriophages
	27-Oct	Thurs		Flex Day-TBD
11	1-Nov	Tues		EXAM II
	3-Nov	Thurs	19	Epigenetic Regulation in Eukaryotes*
12	8-Nov	Tues	20	Recombinant DNA Technology; CRISPR*
	10-Nov	Thurs	21	Genomic Analysis
13	15-Nov	Tues	22	Applications of Genetic Engineering
	17-Nov	Thurs	24	Cancer Genetics*
14	22-Nov	Tues	25	Quantitative Genetics
	24-Nov	Thurs		Holiday-no class
15	29-Nov	Tues	26	Population and Evolutionary Genetics
	1-Dec	Thurs		Flex Day-TBD
16	6-Dec	Tues		Flex Day-TBD-Final instructional class day
	8-Dec	Thurs		Finals Week
17	12-Dec	Mon		EXAM III; 8:00 AM -10:50 AM

*denotes possible guest lecturer for these classes