GENE4200/4200H/6200 – Advanced Genetics

T/TH 12:45-2pm. Coverdell 0175

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COVID-19 POLICY: Masks are required to be worn properly and at all times while inside UGA buildings. Students not doing so in this class will be asked to immediately leave the classroom. Repeated infractions will result in administrative withdrawal. Students must sanitize their seating area on entry and exit from the classroom and must maintain 6ft social distancing at all times while in the classroom, as well as when entering and leaving the classroom. Students may only sit in designated chairs. When appropriate, classes may be held outside to further reduce COVID risk. Students will still be asked to wear masks even when the class is outdoors. Students must not attend class face to face if they have been diagnosed with COVID-19, feel at all unwell, have a fever or have been in close contact with anyone diagnosed with COVID-19 or suspected of having COVID-19. Additional COVID-19 related information for students is at the end of this syllabus. **Please take COVID-19 seriously as your health and that of your fellow students, friends, faculty, and family are on the line.**

ATTENDANCE: Attendance will not be taken. However, students are encouraged to attend weekly discussion groups either in person or by zoom as is consistent with their comfort level

COURSE FORMAT

The course will use a flipped structure. All material required for the class will be available online in the form of power point presentations and/or recorded lectures. For class time, students will be placed into 2 cohorts, with one cohort meeting for synchronous instruction on Tuesdays and the other on Thursdays. Synchronous instructional time will be used to provide a venue for students to ask question and discuss material they have already engaged with online. Attendance will not be taken but participation is strongly encouraged. Those who are unable to attend face to face may participate in synchronous instruction on their assigned day via zoom.

Students wishing to switch groups, but must get instructor permission first. If necessary, in some weeks, all sessions may be conducted by zoom for safety or instructional reasons.

Study groups can help your grade. We recommend that students meet in small groups (in a socially distanced way) to prepare ahead of discussion sessions and to review after sessions. It is our experience that study groups are very beneficial.

PREREQUISITES

GENE 3200-3200D or GENE 3200H

COURSE OBJECTIVES

After completion of this course you will have a foundation in the logic and methods of molecular genetics, and will be better equipped to understand new advances in this dynamic field. Specific objectives are to:

- Learn how scientists connect genes to biological functions and develop your own critical thinking skills for approaching genetic problems.
- Deepen your knowledge of the genetic processes that underlie biological phenomena, and the diverse forms of genetic regulation.
- Improve your ability to read, understand, and critically evaluate primary research articles on which our understanding of biology is based.

ASSESMENTS AND GRADING POLICY

Class grades will be based on a total of 510 point. Students will have the opportunity to earn:

100 points - Weekly written assignments (Goll-9/1-10/1)
100 points - Exam 1
100 points - Weekly written assignments (Ivanova 10/13-11/12)
100 points - Exam 2
100 points - final project-model organism presentations
10 points - course evaluations (5 per instructor)

Exams: Exams will be online and available on October 8th and November 19th. Each will be worth 100 points. Exams are composed of questions that require short to medium-length written answers. Exam content is based on lectures and reading assignments. You will be expected to apply the principles learned in class to new experimental scenarios.

Except for documented medical emergencies, you must provide a legitimate excuse for missing an exam *prior to the test day*. The instructors should be informed in advance of known conflicts (e.g. religious holidays). Disagreements with exam grading must be registered within 48 hours after exams are returned. A written argument must be provided for each answer that is under contention. The entire exam may be re-assessed at the discretion of the instructor.

Assignments: There will be 5 written assignments in each half of the class. For each half of the class you must complete 4 of the 5 assignments, and you will be able to earn a maximum of 25 points per assignment. If you complete all 5, the 4 best scoring assignments will count. Assignment will be given in most weeks, will correspond to that week's material and are to be submitted through eLC by the indicate due date. Late assignments will be penalized 5 points per day.

Final Project: A final online project will ask students to create a virtual presentation describing a model organism that is used in genetics research. Students will be asked to describe strengths and weaknesses of the model and to present how it has contributed to genetics research.

GENE4200H/GENE6200 Students: Intent to receive Honors credit must be registered with the instructors during the first two weeks of class. Honors and graduate students will be required to answer an additional take home question for each exam worth 25 points, and will be asked to complete more extensive final projects points. Grades for honors and graduate students will therefore be based on 560 points. In order to receive Honors credit, students must achieve grade of B- or better in the class.

Students are expected to adhere to the UGA Student Honor Code: "I will be academically honest in all of my academic work and will not tolerate academic dishonesty of others." A Culture of Honesty, the University's policy and procedures for handling cases of suspected dishonesty, can be found at www.uga.edu/ovpi.

Class			Topic	Instructor
1	Thursday	20-Aug	Introduction- **ZOOM ONLY**	Goll
2	Tuesday	25-Aug	Week 1: Genes, gene regulation and transgenes	Goll
3	Thursday	27-Aug		
4	Tuesday	1-Sep	Week 2: Classic tools to measure gene expression	Goll
5	Thursday	3-Sep		
6	Tuesday	8-Sep	Week 3: Genes in the genomics era	Goll
7	Thursday	10-Sep		
8	Tuesday	15-Sep	Week 4: Transposable elements/DNA methylation	Goll
9	Thursday	17-Sep		
10	Tuesday	22-Sep	Week 5: Chromatin in gene regulation	Goll
11	Thursday	24-Sep		
12	Tuesday	29-Sep	Week 6: Small RNAs	Goll
13	Thursday	1-Oct		
14	Tuesday	6-Oct	Exam Review - **ZOOM ONLY** all students welcome	Goll
15	Thursday	8-Oct	**Exam**	
16	Tuesday	13-Oct	Week 1: Mutants: Forward genetic screens, mapping in the genomics era	Ivanova
17	Thursday	15-Oct		
18	Tuesday	20-Oct	Week 2: Transposon tools: mutagenesis and enhancer trapping	Ivanova
19	Thursday	22-Oct		
20	Tuesday	27-Oct	Week 3: Reverse Genetics: classical and conditional approaches	Ivanova
21	Thursday	29-Oct		
22	Tuesday	3-Nov	Week 4: Reverse Genetics: CRISPR tools	Ivanova
23	Thursday	5-Nov		
24	Tuesday	10-Nov	Week 5: Human Genetics in the age of genomics	Ivanova
25	Thursday	12-Nov		
26	Tuesday	17-Nov	Exam Review- **ZOOM ONLY-** all students welcome	Ivanova
27	Thursday	19-Nov	**Exam**	
28	Tuesday	24-Nov	Flex class	
	Thursday	26-Nov	Thanksgiving	
29	Tuesday	1-Dec	Model organisms-final project presentations- **ZOOM ONLY**	Both
30	Thursday	3-Dec		

The course syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.

Coronavirus Information for Students

Face Coverings:

Effective July 15, 2020, the University of Georgia—along with all University System of Georgia (USG) institutions—requires all faculty, staff, students and visitors to wear an appropriate face covering while inside campus facilities/buildings where six feet social distancing may not always be possible. Face covering use is in addition to and is not a substitute for social distancing. Anyone not using a face covering when required will be asked to wear one or must leave the area. Reasonable accommodations may be made for those who are unable to wear a face covering for documented health reasons. Students seeking an accommodation related to face coverings should contact Disability Services at https://drc.uga.edu/.

DawgCheck:

Please perform a quick symptom check each weekday on DawgCheck—on the UGA app or website—whether you feel sick or not. It will help health providers monitor the health situation on campus: https://dawgcheck.uga.edu/

What do I do if I have symptoms?

Students showing symptoms should self-isolate and schedule an appointment with the University Health Center by calling 706-542-1162 (Monday-Friday, 8 a.m.-5 p.m.). Please DO NOT walk-in. For emergencies and after-hours care, see https://www.uhs.uga.edu/info/emergencies.

What do I do if I am notified that I have been exposed?

Students who learn they have been directly exposed to COVID-19 but are not showing symptoms should self-quarantine for 14 days consistent with Department of Public Health (DPH) and Centers for Disease Control and Prevention (CDC) guidelines. Please correspond with your instructor via email, with a cc: to Student Care & Outreach at sco@uga.edu, to coordinate continuing your coursework while self-quarantined. If you develop symptoms, you should contact the University Health Center to make an appointment to be tested. You should continue to monitor your symptoms daily on DawgCheck.

How do I get a test?

Students who are demonstrating symptoms of COVID-19 should call the University Health Center. UHC is offering testing by appointment for students; appointments may be booked by calling 706-542-1162.

UGA will also be recruiting asymptomatic students to participate in surveillance tests. Students living in residence halls, Greek housing and off-campus apartment complexes are encouraged to participate.

What do I do if I test positive?

Any student with a positive COVID-19 test is **required** to report the test in DawgCheck and should self-isolate immediately. Students should not attend classes in-person until the isolation period is completed. Once you report the positive test through DawgCheck, UGA Student Care and Outreach will follow up with you.