

Spring 2025 AGR 3303: Genetics

Instructor: Dr. Kara Riggs

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Office Hours*: Thursdays from 9:30-11:30am and by appointment via Zoom (email kcasy@ufl.edu for meeting requests)

Teaching Assistant (TA) Office Hours*:

Group	Instructor/Teaching Assistant	Email Address	Office Hours*
	Dr. Kara Riggs	kcasy@ufl.edu	9:30-11:30am on Thursdays
1	Brayden Foster	brayden.foster@ufl.edu	4-6pm on Mondays
	Katherine Sturgeon	sturgeonk@ufl.edu	4-6pm on Mondays
2	Julia Lancaster	julialancaster@ufl.edu	1-3pm on Tuesdays
	Lauren Smith	laurensmith2@ufl.edu	1-3pm on Tuesdays
3	Aakanksha Bandarupalli	abandarupalli@ufl.edu	3-5pm on Wednesdays
	Madison Templeton	madisontempleton@ufl.edu	3-5pm on Wednesdays
4	Nicholas Raney	nraney@ufl.edu	2:30-4:30pm on Thursdays
	Tatiana Copja	tcopja@ufl.edu	2:30-4:30pm on Thursdays
5	Aruna Thomas	aruna.thomas@phhp.ufl.edu	11-1pm on Fridays
	Meera Nair	nairmeera@ufl.edu	11-1pm on Fridays
6 (Honors)	Marcus Amoranto	mamoranto@ufl.edu	Asynchronous Discussion Board
	Julia DeMasi	annajulia.demasi@ufl.edu	Asynchronous Discussion Board
UF Online	Lopamudra Saha	lsaha@ufl.edu	Asynchronous Discussion Board
	Sharon Bridgemohan	sbridgemohan@ufl.edu	Asynchronous Discussion Board
	Mikerley Joseph	mikerlyjoseph@ufl.edu	3-5pm on Thursdays

Office hours are open for all students via Zoom. However, to maximize help needed for students to be successful in the course, each student will be assigned to a TA Team for communication beyond office hours to discuss any specific questions, issues, exams, and homework assignments. Each TA Team will form a group page in Canvas to communicate with their group of students.

*Zoom office hour links will be on Canvas in the “Office Hours” page.

Mikerly Joseph (mikerlyjoseph@ufl.edu) and Emmanuel Affram (ei.affram@ufl.edu) are our Graduate Teaching Assistants this semester. The other TAs are undergraduate students who have taken this course before and are excited to help you succeed in it too.

Course Location and Time: Online–Canvas (<https://elearning.ufl.edu>) Asynchronous. Lectures will be posted online in PowerPoint format with a voiceover recording. Students may opt to download and run the PowerPoint presentations on their computer to view, or they may watch the Media Site video links also provided in Canvas.

Course Website: The E-Learning system Canvas (<https://elearning.ufl.edu>) is the online source for all the learning resources. All lecture learning objectives and suggested reading materials are uploaded in the “Files” folder of Canvas. Course announcements regarding general course information will be posted in Canvas throughout the semester. Students need to login with their GatorLink username and password for access. If you do not have a GatorLink ID, go to <http://gatorlink.ufl.edu> or to the Help Desk: 352-392-HELP for assistance.

Course Description: AGR 3303, Genetics, will present a comprehensive coverage of the principles, theory, and applications of genetics. Topics include the chemical nature and structure of genetic material, gene expression and regulation, cell division, chromosome number and structure variation, principles of inheritance, molecular genetic techniques, and basic concepts in population and quantitative genetics.

Course Objectives: Upon successful completion of this course students should be able to:

1. Define basic genetic terms.
2. Describe what chemical nature and structure of genetic materials are, how genes are expressed, and how gene expression is regulated.
3. Understand the chromosome structure, variation, gene mutation, and their effects.
4. Determine genotype and phenotype of progeny based on the parents’ genotypes or determine parental genotypes and phenotypes through analyzing their progeny’s genotypes and phenotypes.
5. Name and explain the basic molecular genetic techniques and their applications.
6. Extend knowledge learned in Genetics to other related areas, such as molecular genetics, quantitative genetics, population genetics, genomics, breeding, evolution, biochemistry, and biotechnology.

Prerequisites: A basic course in biology, botany, or zoology.

Required Text and Equipment:

1. Textbook: Genetics, A Conceptual Approach, Benjamin Pierce, 7th Edition.
2. Online Resources and Electronic Textbook:
Achieve is an online assignments and tutorial system from the textbook publisher and is required for AGR 3303. Achieve and e-book will be offered at the **lowest cost** option through UF All Access. If you wish to have a print copy of the text they will be provided in the UF bookstore.
 - a. To gain access to Achieve click on the following link <https://bsd.ufl.edu/allaccess>. This prompts you to log in with your GatorLink account.
 - b. Students are shown a list of classes in which they are enrolled that are participating in UF All Access, with the prices.
 - c. Students should click the **Opt-in** check box next to the class they are trying to get access to.
 - d. Students then need to click the button below to authorize the charges.
 - e. You will be given a code.
 - f. Log in to Genetics on Canvas
 - g. Click on Assignment
 - h. Click on Achieve
 - i. Click on the link that indicates Achieve will open in a new window
 - j. Log in or create an account
 - k. Once Achieve is open click on the payment link
 - l. Enter the code you received when you opted in to UF All Access
 - m. **Need Help?**
Answers to many common questions are found in our Student Support Community. If you need

direct assistance you can also contact technical support:

<https://macmillan.force.com/macmillanlearning/s/>

3. Honorlock

- a. All exams will be proctored using Honorlock proctoring service.
- b. Students are **required** to have a webcam, speakers and a microphone.
- c. A Practice Quiz is included in Canvas to test the connection.
- d. Notes, calculators, and any secondary devices are not allowed for use during exams.
- e. Students may bring one blank sheet of scrap paper to the exam. Students will be required to show both sides of the scratch paper at the beginning of the exam, and it must be ripped up and discarded at the end of the exam.

Grading and Assignment Summary:

Graded Activity	Points Each	Total Points
Exams (5*)	100	400
Achieve Homework (14*)	17	221
Discussion Activity (1)	17	17
Extra Credit Quizzes (10)	2	0**
Total		638

**Lowest score is dropped when final grades are calculated.*

***Extra credit quizzes are not required.*

1. **Final Grades:** Based on the total points of the best four out of five exams (400 points), the best thirteen out of fourteen homework assignments (221 points), and an in-person discussion activity (17 points).
2. **Exams** (62.7% of final grade):
 - a. Five 100-point exams will be given over the lecture material.
 - b. Each exam will have 8 true/false questions worth 2 points each and 24 multiple choice questions worth 3.5 points each with a total of 100 points.
 - c. The final exam is comprehensive.
 - d. All of the exams will be proctored through Canvas and Honorlock.
 - e. Notes, calculators, and any secondary devices are not allowed for use during exams.
 - f. **Exam grades will be posted at 5pm on the next business day** following the exam. Dr. Riggs needs this time to review any flags and violations from the exam with the UF Honorlock specialist. Hopefully knowing this in advance will ease any anxiety about when the scores will be posted in the Canvas gradebook.
3. **Makeup Exams:**
 - a. There will be no makeup exams, but the lowest exam grade is dropped.
 - b. If you miss an exam you can take the comprehensive final to replace the missed exam.
 - c. For excused absences during the semester, please contact the [Dean of Students Office](#), so that they can notify all of your instructors of the excused absence and how to proceed with makeup assignments.
 - d. If the [Dean of Students Office](#) approves the excused absence, we'll work together to find another alternative.
4. **Homework:**
 - a. Homework assignments will be delivered through Achieve.
 - b. Fourteen homework assignment due dates will coincide with weekly lectures.

- c. Thirteen best homework assignments will be used towards your final grade. Each homework assignment is worth 17 points for a total of 221 points.
- d. Late work: For excused absences during the semester, please contact the [Dean of Students Office](#), so that they can notify all of your instructors of the excused absence and how to proceed with extending due dates for assignments. If the [Dean of Students Office](#) approves the excused absence, homework due dates will be adjusted. *Without the excused absence, homework due dates will not be adjusted.* Achieve will accept late submissions and automatically deduct 10% off the assignment points per day it is submitted late. The lowest homework score will be dropped while calculating final grades at the end of the semester.

5. Discussion Activity:

- a. Students will be required to complete one in-person discussion activity, reviewing a relevant journal article and recent developments in the field.
- b. Because discussion sessions will be limited to 80 students, a sign-up sheet will be posted in Canvas with multiple days and times.
- c. Students based at West Florida Research and Education Center in Milton will be contacted by Dr. Riggs, as she arranges a time for a discussion session based at your REC.

6. Extra Credit:

- a. Achieve adaptive learning quizzes are available for extra credit.
- b. There will be ten quizzes worth two points each.
- c. **Please Note:** *When Achieve pushes grade updates to the class gradebook in Canvas, it incorrectly displays the extra credit "assignment" as if it's scored out of 2 points instead of 0 points, so it will always appear to be scored out of 2 points in Canvas.* However, the extra credit quizzes are scored out of 0 points, and the extra credit quizzes are *not* required. Please refer to the grade scale below to confirm your final score and grade in the class. (Of course, Dr. Riggs would be happy to answer any questions you may have as well!)

7. Grading Scale:

- A 90% (≥ 574.2)
- B+ 85% to 89.99% (542.3–574.19 points)
- B 80% to 84.99% (510.4–542.29 points)
- C+ 75% to 79.99% (478.5–510.39 points)
- C 70% to 74.99% (446.6–478.49 points)
- D+ 65% to 69.99% (414.7–446.59 points)
- D 60% to 64.99% (382.8–414.69 points)
- E< 60% (≤ 382.79 points)

Note: No minus grades are given

More information on grades and grading policies is here:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Passing Grade	A	B+	B	C+	C	D+	D	S
Grade Points	4.0	3.33	3.0	2.33	2.0	1.33	1.0	0

Course Outline:

Module/Lesson	Topics	Textbook Chapter	Assignment Date
Module 1			
Lesson 1	Introduction of the Course and Genetics	1, 2	
Lesson 2	DNA-RNA Structure	10	Ch 1 & Ch 10: 1/25/25

Lesson 3	DNA Replication	12	
Lesson 4	Transcription in Prokaryotes	13	Ch 12 & Ch 13: 2/1/25
Lesson 5	Transcription in Eukaryotes	13, 14	
Lesson 6	Translation	15	Ch 14 & Ch 15: 2/8/25
			<i>Exam 1 Review: 2/12/25 from 6-7pm</i>
	Exam 1		Exam 1: 2/14/25
Module 2			
Lesson 7	Regulation of Gene Expression in Prokaryotes	16	
Lesson 8	Regulation of Gene Expression in Eukaryotes	11, 14, 17	Ch 16 & Ch 17: 2/22/25
Lesson 9	Gene Mutation and Repair	18	Ch 18: 2/22/25
Lesson 10	Cancer Genetics	23	Ch 23: 3/1/25
Lesson 11	Molecular Genetic Analysis	9, 19	Ch 19: 3/1/25
Lesson 12	DNA Sequencing Technologies and Genomics	19, 20	
			<i>Exam 2 Review: 3/5/25 from 8:30-9:30pm</i>
	Exam 2		Exam 2: 3/7/25
Module 3			
Lesson 13	Mitosis and Meiosis	2	Ch 2: 3/15/25
Lesson 14	Chromosomal Variations	8	Ch 8: 3/15/25
Lesson 15	Law of Segregation	3	
Lesson 16	Law of Independent Assortment	3	Ch 3: 3/29/25
Lesson 17	Extensions and Modification of Mendelian Principles	5	Ch 5: 3/29/25
			<i>Exam 3 Review: 4/3/25 from 6-7pm</i>
	Exam 3		Exam 3: 4/4/25
Module 4			
Lesson 18	Sex Determination and Sex-Linked Characteristics	4, 23	Ch 4: 4/12/25
Lesson 19	Pedigree Analysis	6	Ch 6: 4/12/25
Lesson 20	Linkage and Recombination	7	
Lesson 21	Gene Mapping	7	Ch 7: 4/19/25
Lesson 22	Quantitative Genetics and Population Genetics	24, 25	
			<i>Exam 4 Review: 4/19/25 from 1-2pm</i>
	Exam 4		Exam 4: 4/23/25
	Final Exam		Final Exam: 4/29/25

NOTE: The instructor reserves the right to change any/all information contained in this and other materials in this course.

Online Course Evaluation Process: Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Proctored Exams: To ensure the academic integrity of the degrees awarded by the University of Florida, this course proctors the midterm and final exams through Honorlock. For details on how this works, visit the Proctored Exams Student Guide. In order to use this service, you **MUST** have a webcam, working speakers, a microphone, and Google Chrome browser. Follow these steps for a trouble-free exam:

- Test your equipment well before your exam.
 - Make certain that your camera and microphone function properly
 - Go to the Practice Quiz
 - You are strongly urged to take the extra step to connect to a live person
 - Test your equipment again the day before your exam
- Download and install Google Chrome on your computer
 - Chrome is the only supported browser for Honorlock exams
- Use a wired connection
 - **This is the number one cause of problems with online exams!**
 - The extra load of the proctoring software can cause even the best wireless connection to fail—don't take that chance!
- Find a quiet and private location
 - You will not be able to take your exam in a coffee house or other public location
- If you have not followed the steps listed above, any request for a makeup exam will not be granted.

Syllabus Changes: This syllabus is subject to change. Any changes will be announced well in advance of deadlines.

Academic Honesty: As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: *"We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity."* You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: *"On my honor, I have neither given nor received unauthorized aid in doing this assignment."*

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>

Software Use: All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities: The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Getting Help: For issues with technical difficulties for e-Learning in Canvas, please contact the UF Help Desk at:

- Learning-support@ufl.edu
- (352) 392-HELP -select option 2
- <https://lss.at.ufl.edu/help.shtml>

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail your instructor or TA within 24 hours of the technical difficulty if you wish to request a make-up.

Campus Helping Resources: Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

- *University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575,*
<http://www.counseling.ufl.edu/cwc/>
Counseling Services
Groups and Workshops
Outreach and Consultation
Self-Help Library
Wellness Coaching
- *Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/next-level*
- *Student Complaints:*
 - *Residential Course:*
https://www.dso.ufl.edu/documents/UF_Complaints_policy.pdf

Harassment: UF provides an educational and working environment that is free from sex discrimination and sexual harassment for its students, staff, and faculty. <http://www.hr.ufl.edu/eo/sexharassment.htm>

Disruptive Behavior: Faculty, students, administrative and professional staff members, and other employees (hereinafter referred to as ‘member(s)’ of the university), who intentionally act to impair, interfere with, or obstruct the mission, purposes, order, operations, processes, and functions of the university shall be subject to appropriate disciplinary action by university authorities for misconduct, as set forth in the applicable rules of the Board of Regents and the university and state law governing such actions. Be advised that you can and will be dismissed from class if you engage in disruptive behavior. For more information: <http://regulations.ufl.edu/wp-content/uploads/2012/09/1008.pdf>

Twelve-Day Rule: Students who participate in official athletic or scholastic extracurricular activities are permitted twelve (12) scholastic day absences per semester without penalty. In any case, it is the student’s responsibility to maintain satisfactory academic performance and attendance.