AGR3303 Genetics (Honors), Fall 2025, 3 credits

(Honors Section # 21360)

Instructor: **Dr. M A Babar**
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Names of TAs	Email	Monday	Tuesday	Wednesday	Thursday	Friday
Nuoya Xu	nuoyaxu@ufl.edu		5-6pm		5-6pm	
Samuel Adewale	sadewale@ufl.edu			4-5pm	4-5pm	
Janam Acharya (Honors Section)	janamacharya@ufl.edu	4-5pm				4-5pm
Sadia Rafa	sadia.rafa@ufl.edu	5-6pm		4-5pm		
Poorvi Narendranath	narendranath.p@ufl.edu		2-3pm	5-6pm		
Kruti Bosmia & Rushi Patel	k.bosmia@ufl.edu; rushi.patel@ufl.edu		6-7pm		5-6pm	
Mya Griner	mya.griner@ufl.edu		3-4pm	4-5pm		
Katherine Kavanagh	kavanaghk@ufl.edu	7-8pm	6-7pm			
Syed Ali	sali4@ufl.edu	8-9pm				5-6pm
Zoleylla Sanchez	zoleylla.sanchez@ufl.edu		4-5pm	4-5pm		

TA office hours are open to all students. However, to maximize help needed for students to be successful in the course, each student will be assigned to a specific TA for communication beyond the TA hour to discuss any specific questions, issues, quizzes, exams, homework assignments, discussions, etc. Each TA will form a group in Canvas to communicate with the assigned students. Zoom office hour links will be on Canvas in the "Zoom Conferences" page. Samuel Adewale and Janam Acharya are Graduate Teaching Assistants from Dr. Babar's lab here at UF. The other TAs are undergraduate students who have taken this course before and are excited to help you succeed in it too. **All honors students will be assigned to Janam Acharya. The rest of the students will be assigned to other TAs. TAs will contact their assigned students.**

Course Description:

AGR3303 Genetics presents 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.

Prerequisites:

None. But some biology courses would be helpful, including Biological Sciences (BSC 2009), Integrated Principles of Biology 1 (BSC 2010), and Integrated Principles of Biology 2 (BSC 2011).

Course Objectives:

Upon completion of AGR 3303 Genetics, students should be able to:

- Students will be able to explain the principles of genetics and its impact on society.

- Students will be able to analyze the chemical nature and structure of genetic materials.
- Students will be able to differentiate types of mutations and their effects.
- Students will be able to determine appropriate genetic analysis techniques based off specific needs and application.
- Students will be able to discuss and elaborate the principle of inheritance.
- Students will be able to apply principles of inheritance to other related areas.

Class format and Delivery Method:

Online–Canvas (https://elearning.ufl.edu) Asynchronous. Lectures will be posted online in PowerPoint format with a voiceover recording and videos. Download and run presentations on your computer to view.

Learning Materials and Supplies:

1) Course website

E-Learning system, Canvas at http://elearning.ufl.edu is the online source for the majority of the learning resources. All lecture handouts will be uploaded in the "Module" section of Canvas under "Exam". Review question materials will be provided in the same folder. Course announcements regarding general course information will be posted in Canvas throughout the semester. Students need to log in with GatorLink username and password for access. If you do not have a GatorLink ID, go to http://gatorlink.ufl.edu or the Help Desk: 392-HELP for assistance.

2) Online Resources and Electronic Textbook:

Achieve with the ebook of "Genetics, A Conceptual Approach, 7th edition by Benjamin A. Pierce is required. Selected readings are suggested from the textbook. Animations and some additional practice questions in Achieve are selected for students to review and practice, respectively. Almost all the lectures are prepared based on the materials in the textbook. The ebook provides more details and perspectives than the lecture notes. Achieve is an online assignment and tutorial system from the textbook publisher and will be offered at the lowest cost ($89.99) option through UF All Access. UF All Access is a digital textbook program.

- To gain access to Achieve, click on the following link https://bsd.ufl.edu/allaccess.
- Here is the instruction on how to utilize UF all access https://drive.google.com/file/d/1tpBN9jhOz-m103cnZYE1qtBQrFIQiwxM/view?usp=sharing
- This prompts you to log in with your GatorLink account.
- Students are shown a list of classes in which they are enrolled that are participating in UF All Access, with the prices.
- Students should click the Opt-in check box next to the class they are trying to get access to.
- Students then need to click the button below to authorize the charges.
- Log in to Genetics on Canvas
- Click on an Achieve assignment within Canvas. If prompted, enter your name and email address associated with your Canvas account.
- Agree to Macmillan Learning's terms of use and end-user agreement.
- **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://mhe.my.site.com/macmillanlearning/s/

Chat: https://mhe.my.site.com/macmillanlearning/s/chat-with-us

3) Honorlock

- You'll be using Honorlock proctoring service for exams.
- You are **required** to have a webcam, headset/speakers, and microphone.
- A webcam, either an internal or external camera, can be used. Cameras must be positioned to show your desk/scratch paper up to and including your head throughout the exam. Your camera view must match one of the following images:


Instructor Interaction Plan:

- Expect an instructor response to email and Canvas message within 24 hours during weekdays
- Please do not wait very late to complete assignments, as I may not be available to answer emails or messages as quickly.
- Expect feedback for submitted assignments within one week after the assignment deadline
- Grades for assessments will be released within 24 hours of the deadline
- If you ever have questions or need clarification on instructor feedback, please message or arrange office hours.
- TAs will post an announcement at least once a week to give updates and class feedback.
- I will monitor and read the discussions.
- I invite your feedback in both midterm and end-of-term GatorEvals. Your opinion is highly valued.

Required Technology & How to Obtain the Technology

- Required peripherals, such as speakers, a microphone, extended reality accessories, or a headset.
- Links to access to Honorlock account are provided on Canvas.
- Instructions are provided for how to purchase Achieve and an Electronic Textbook in Canvas and in the syllabus.
- Zoom conference link is available in Canvas

Required Technology & Digital Information Literacy Skills

Technical skills include:

- Using the canvas course website
- Using email with attachments
- Creating and submitting files in commonly used word processing program formats
- Downloading and installing software
- Using the Zoom conference tool

- Using Honorlock proctoring service
- Using web conferencing tools and software

Digital information literacy skills include:

- Using computer networks to locate and store files or data
- Using online search tools for specific academic purposes, including the ability to use search criteria, keywords, and filters
- Properly citing information sources
- Preparing a presentation of research findings

Communication Guidelines and Expectations:

- Use **Course Discussion Board**, for general course questions that others may have too.
- Use **Canvas Inbox (messaging tool)** for questions that are specific to your grades or submissions.
- **Email & phone correspondence** are for (1) setting a meeting time for office hours, (2) DRC accommodations; (3) emergency situations; or (4) highly sensitive situations.
- A respectful tone is used by all community members in all forms of communication.
- Written communication, both formal and informal, uses the official language of instruction rather than popular online abbreviations and graphic elements such as those sometimes used in social media.
- Video interactions reflect a respectful tone in verbal communications and body language.
- The instructor expects students to attend the TA office hours via Zoom each week, if not, at least possible every other week. The assigned TA for each student will keep track of the attendance of the students for the TA hour.
- Students are expected to update themselves with the course content and activities every week.
- Students are expected to spend 3-4 hours/week to perform well in the course.

Technical Support:

UF Computing Help Desk & Ticket Number: All technical issues require a UF Helpdesk Ticket Number. The UF Helpdesk is available 24 hours a day, 7 days a week. https://helpdesk.ufl.edu/ | 352-392-4357

Course Schedule:

Topics	**Textbook (7th edition)**
Week 1	
Importance of genetics, genetic materials, & DNA-RNA structure	Ch. 1, 2, 10
Week 2	
DNA replication	Ch. 12
Week 3	
Transcription (Prokaryotes)	Ch. 13
Transcription (eukaryotic)	Ch. 13
Week 4	
RNA processing (Eukaryotes)	Ch. 14
Exam-1 Review with Dr. Babar	**September 18, 5-7 pm**
Exam-01	**From 6 am on September 19, 2025, to 11:59 pm on September 20. Exam time is 80 mins.**

Week 5	
Genetics code and translation	Ch. 15
Week 6	
Gene expression regulation in bacteria	Ch. 16
Eukaryotic gene expression regulation	Ch. 11, 14, 17
Week 7	
Gene mutations and DNA repair	Ch. 18
Week 8	
Molecular genetic analysis and biotechnology	Ch. 19
Genomics	Ch. 20
Week 9	
Mitosis and meiosis	Ch. 2
Chromosome number variation	Ch. 8
Exam-2 Review with Dr. Babar	**October 23, 5-7 pm**
Exam-02	**From 6 am on October 24 to 11:59 pm on October 25, 2025. Exam time is 105 mins.**
Week 10	
Principles of heredity – Segregation and independent assortment	Ch. 3
Week 11	
Extensions and modifications of basic principles	Ch. 5
Week 12	
Linkage & recombination	Ch. 7
Week 13	
Quantitative genetics	Ch. 24
Week 14 (Thanksgiving Holiday)	
Week 15	
Sex-Linked Characteristics	Ch. 4
Pedigree Analysis	Ch. 6
Exam-3 Review with Dr. Babar	**December 3, 5-7 pm**
Exam-03	**From 6 am on December 4, 2025, to 11:59 pm on December 6, 2026. Exam time is 105 mins.**
Course GatorEval Survey	**November 26 to December 6, 2024**

We will attempt to maintain the exam schedule; however, material may be altered for any given exam depending on time and coverage of lectures.

Grading:

The final grades are based on the total points of the **three exams** (**250 points**), **ten homework assignments** (**30 points**), **10 quizzes (10 points)**, **and four discussions (10 points)**, **6 seminar reports and power point presentations** (**50 points**) plus a bonus student introduction and a bonus 10 most important concepts learning assignment.

1) ***Exams:*** three exams are required. The exams will be conducted through "Honor lock". **There will be no final exam. Exam-1 will be graded on 70 points; Exam-2 on 90 points; and Exam-3 on 90 points. A total of 250 points.** A zero will be given for the missed exam.

The exam format will be multiple-choice questions, and 2 points. For exam-1, there will be 35 questions; for exam-2 & 3, 45 questions each. All the exams will be given with closed notes and books. Students will be given 80 minutes to complete the exam-1; 105 minutes for exam-2 and 3 each.

Make-up exam policy: A make-up exam will be provided to the students with a **legitimate excuse** (medical, family emergency, official university off day). Excuses for missed exams must be documented and approved by the instructor.

Programmable, TI-83, or TI-89 calculators and phones are not allowed during exams.

***Exam feedback*:** 5 questions with the highest wrong answers will be posted after each exam. Individual exam feedback will be available for students immediately after posting the grade, but they need to follow up with TAs or the instructor.

2) ***Homework assignment:*** **12 homework assignments** will be conducted through "**Achieve**". Out of those homework assignments, **the 10 best ones** will be selected for each student. Each homework assignment will be graded in **3 points.** 10 homework assignments will be worth a total of **30 points.** Homework assignments will cover the main concepts of the course, including genetic materials and structure, replication, transcription and RNA processing, translation and genetic code, gene regulation, gene mutation, chromosome number variation, Mendelian genetics, linkage and crossing over, and quantitative genetics. Each homework assignment will have 8-10 questions. **A zero** will be given for the missed assignment.

Homework policies:

- Up to 2 attempts per question.
- 50% point reduction for incorrect attempts.
- No time limit.
- No late submissions.

Make-up homework policy: **There will be no make-up for homework assignments**, so students can miss a maximum of 2.

Homework feedback: Homework assignment questions will be available one day after posting the grade for students, but they need to follow up with TAs or the instructor for individual feedback.

3) Seminar Reports and presentations (50 points):

a) Honors students are required to attend 6 genetics-related seminars during the fall semester and to turn in written summaries of the seminars, and also a 30-minute presentation to Dr. Babar or TA Janam Acharya. Honors students have to schedule the presentation between Dec 2-6, 2025.

b) Students must attend six seminars presented by graduate students or faculty, with at least three from the Fall 2025 semester. Attendance may be either in person or via Zoom. If you attend via Zoom, send a screenshot to TA Janam Acharya. Three recorded seminars are acceptable, provided they were presented no earlier than fall 2024. This requirement is intended to help students stay updated on current research in the field of genetics.

c) Suggested sources of seminars are the Agronomy Department, Horticultural Sciences Department, Environmental Horticulture Department, Plant Molecular and Cell Biology (PMCB) Program, Forestry, Botany, Animal Sciences, the Vet School, Animal Molecular and

Cellular Biology (AMCB) Program, and the Genetics Institute. Other sources may be suggested by the student.

d) The student must identify and get approval for all seminar topics and complete a summary.
e) Each report is worth **5 points** for a total of 30 points.
f) The presentation is worth **20 points**.

4) ***Quiz Points:*** **Quizzes worth 1 point** each will be given on Friday. These quizzes will be conducted through Canvas. **Each quiz consists of 4-5 questions on class concepts covered in that week's class content. Students will be given 10 minutes to answer the questions.** Students can expect **13 quizzes** throughout the semester. **The 10 best ones will be selected for each student. 10 quizzes will be worth a total of 10 points.**

Make-up quiz policy: There is no make-up quiz. So students can miss a maximum of 2. It is your responsibility to make sure that your computer is connected to the internet.

Quiz feedback: will be available after posting grade for students, but need to follow up with TAs or the instructor for individual feedback.

5) ***Discussion Points:*** Students can post 3 "**discussion topics**" on Canvas. Each discussion topic will be graded for **3.33** points. So, a student can get **a total of 10 points.** The discussion topics will be on a topic related to genetics, and students must write at least a **300-word summary** on the findings and significance of the topics, how that is related to our class learning, and submit it as an assignment. Two students from the same TA group must respond to the topic and participate in the discussion. If two students don't participate in the discussion, the posting student will not be graded for the discussion. The assigned TA for the posting student will grade the discussion. Each discussion topic posting will be due on each exam date. Students must select a topic from the contents covered by each exam.

Discussion feedback: Grading and feedback will be posted within a week of the assignment submission deadline, but you need to follow up with TAs or the instructor for individual feedback.

6) Grading Policy:

Assignment Type	Percent of Final Grade
Exams (three)	71.4%
Achieve Homework Assignment	8.6%
Seminar Reports and Presentations	14.3%
Quiz	2.85%
Discussion	2.85%
Bonus student introduction	0%
Bonus 10 most important concepts learning assignment	0%

7) Grading scale for the course:

A 92% or above
A- 89 to 91.99%
B+ 86% to 88.99%
B 83% to 85.99%
B- 80% to 82.99%
C+ 77% to 79.99%
C 74% to 76.99%

C- 70% to 73.99%
D+ 67% to 69.99%
D- 64% to 66.99%
D 60% to 63.99%
E < 60%

Grades and Grade Points Effective May 11, 2009 - Summer A
https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Passing Grade	**A**	**A-**	**B+**	**B**	**B-**	**C+**	**C**	**C-**	**D+**	**D**	**D-**	**E**
Grade Points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1	0.67	0

Proctored Exams:

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

- Test your equipment well before your exam.
  - Make certain that your webcam and microphone function properly.
  - 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.
  - T**his 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 coffeehouse or other public location.
- If you have not followed the steps listed above, any request for a makeup exam will not be granted.

Academic Honesty:

University of Florida students are bound by the Honor Pledge. As a student at the University of Florida, you have committed yourself to upholding 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 by abiding by the Student Honor Code." 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 the Student Conduct Code Process.

No use of generative AI tools permitted:

In this course, all assignments should be fully prepared by the student. Therefore, the use of generative AI tools to complete any aspect of homework assignments, exams, quizzes, and discussions for this course is not permitted and will be treated as plagiarism. If you have questions about what constitutes a violation of this statement, please contact me.

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/.

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 for 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 with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. It is important for students to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester.

Campus 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 lack clear career or academic goals, which interfere with their academic performance.

Health and Wellness

- *U Matter, We Care*: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or https://umatter.ufl.edu/ to refer or report a concern and a team member will reach out to the student in distress.
- *Counseling and Wellness Center*: Visit https://counseling.ufl.edu/ or call 352-392-1575 for information on crisis services as well as non-crisis services.
- Student *Health Care Center*: Call 352-392-1161 for 24/7 information to help you find the care you need, or visit https://shcc.ufl.edu/
- *University Police Department*: Visit https://police.ufl.edu/ or call 352-392-1111 (or 9-1-1 for emergencies).
- *UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; visit https://ufhealth.org/locations/uf-health-shands-emergency-room-trauma-center
- *GatorWell Health Promotion Services*: For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit https://gatorwell.ufsa.ufl.edu/ or call 352-273-4450.

Academic Resources

- *E-learning technical support*: Contact the UF Computing Help Desk at 352-392-4357 https://it.ufl.edu/helpdesk/ or via e-mail at helpdesk@ufl.edu.

- *Career Connections Center*: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.
- *Library Support*: Various ways to receive assistance concerning using the libraries or finding resources.
- *Student Concern*: Report Student Concerns or Conduct

Student Complaints:

- Online Course: https://pfs.tnt.aa.ufl.edu/state-authorization-status/#student-complaint

Additional Information:

- The instructor reserves the right to change any information contained in this and other handouts in this course.

Privacy and Accessibility Policies:

For information about the privacy policies of the tools used in this course, see the links below:

- Honorlock
  - Honorlock Privacy Policy
  - Honorlock Accessibility
- Instructure (Canvas)
  - Instructure Privacy Policy
  - Instructure Accessibility
- Microsoft
  - Microsoft Privacy Policy
  - Microsoft Accessibility
- Zoom
  - Zoom Privacy Policy
  - Zoom Accessibility
- McMillan Learning
  - https://www.macmillanlearning.com/ed/uk/our-story/accessibility
  - https://store.macmillanlearning.com/us/privacy-notice