

GENETICS - ONLINE AGR 3303: SPRING 2020

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 Office Hours: Thursday, 9:00 am to 11:00 am*

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Office hours	TBD	TBD

*These office hours are specifically when I will be available in the office for questions. If a student needs to come by at other times, it is wise to schedule an appointment (send an e-mail) to make sure someone is available.

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.

LOCATION AND TIME

Online – Canvas (<https://elearning.ufl.edu>) Asynchronous

COURSE OBJECTIVES

Upon completion of AGR 3303 Genetics, 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

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).

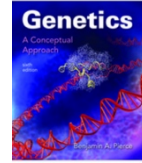
COURSE WEBSITE

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 "Files" folder of Canvas. Course announcements regarding general course information will be posted at Canvas

throughout the semester. Students need to login with 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: 392-HELP for assistance.

REQUIRED TEXT AND EQUIPMENT

- A. **Textbook:** Genetics, A Conceptual Approach, Benjamin Pierce, 6th Edition.
- B. **Online Resources and Electronic Textbook:** SaplingPlus is an online assignments and tutorial system from the textbook publisher and is required for AGR 3303. SaplingPlus and eBook registration found on course website, Canvas (<https://elearning.ufl.edu>).
- C. You are **required** to have a webcam, headset/speakers and microphone. **NOTE: ProctorU will mail webcam/mic to you at the start of the term.** You'll be using this for your ProctorU exams.



GRADING AND ASSIGNMENT SUMMARY

The final grades are based on the total points of the BEST FOUR out of FIVE exams (**400 points**) and the BEST TEN out of ELEVEN homework assignments (100 points).

- Exams: FOUR 100-point exams will be given over lecture material. 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. An optional 100-point comprehensive final exam will be available for those that want to replace their lowest exam grade. All the exams will be proctored through Canvas and ProctorU.

- There will be NO make-up exams given. If you miss an exam you can take the comprehensive final to replace the missed exam.

- The four exam grades will be worth 80% of your final grade.

(Programmable calculators and phones are not allowed for use during exams).

- Homework: they will be delivered through SaplingPlus. ELEVEN homework assignments due dates will coincide with bi-weekly lectures. Ten best homework assignments will be used towards your final grade. Each homework worth 10 points for a total of 100 points. Your average homework grade at the end of the semester will be worth 20% of your final grade.

Grading scale for the course:

- A 90% (≥ 450)
- B+ 85% to 89.99% (425 – 449.95 points)
- B 80% to 84.99% (400 – 424.95 points)
- C+ 75% to 79.99% (375 – 399.95 points)
- C 70% to 74.99% (350 – 374.95 points)
- D+ 65% to 69.99% (325 – 349.95 points)
- D 60% to 64.99% (300 – 324.95 points)
- E < 60% (≤ 299.95 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

COURSE OUTLINE

Module/Lesson	Week	Topics	Textbook Chapter	Assignment
Module 1				
Lesson 1	1	Introduction of course and genetics	1, 2	
Lesson 2	1	DNA-RNA structure	10	HW 1
Lesson 3	2	DNA replication	12	
Lesson 4	2	Transcription in prokaryotes	13	HW 2
Lesson 5	3	Transcription in eukaryotes	13, 14	
Lesson 6	3	Translation	15	HW 3
	4	Exam 1		
Module 2				
Lesson 7	5	Regulation of Gene Expression in Prokaryotes	16	
Lesson 8	5	Regulation of Gene Expression in Eukaryotes	11, 14, 17	HW 4
Lesson 9	6	Gene mutation and repair	18	
Lesson 10	6	Cancer genetics	23	HW 5
Lesson 11	7	Molecular genetic analysis	9, 19	
Lesson 12	7	DNA sequencing Technologies and Genomics	19, 20	HW 6
	8	Exam 2		
Module 3				
Lesson 13	10	Mitosis and Meiosis	2	
Lesson 14	10	Chromosomal Variations	8	HW 7
Lesson 15	11	Law of segregation	3	
Lesson 16	11	Law of independent assortment	3	HW 8
Lesson 17	12	Extensions and modification of Mendelian principles	5	
	12	Exam 3		
Module 4				
Lesson 18	13	Sex determination and sex-linked characteristics	4, 23	
Lesson 19	13	Pedigree analysis	6	HW 9
Lesson 20	14	linkage and recombination	7	
Lesson 21	14	Gene mapping	7	HW 10
Lesson 22	15	Quantitative genetics	24	
Lesson 23	15	Population genetics	25	HW 11
	16	Exam 4		
	17	Final Exam		

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. UF Online students are proctored through ProctorU. For details on how this works, visit the [Proctored Exams Student Guide](#). In order to use this service, you **MUST** have a webcam, headset or working speakers and a microphone. **A webcam/microphone will be mailed to you at the start of the term.** See the [ProctorU Technical Specifications](#). Follow these steps for a trouble-free exam:

- Sign up early!
 - Set up your account during the first week of classes
 - Schedule your exam appointments as early as you can
 - Test your equipment well before your exam (that means do it as soon as you receive your camera!)
 - Make certain that your webcam and microphone function properly
 - [Go to the ProctorU Testpage](#)
 - 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 ProctorU 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!
 - [How to connect your Ethernet cable](#)
 - 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: <http://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.

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,*
www.counseling.ufl.edu
Counseling Services
Groups and Workshops
Outreach and Consultation
Self-Help Library
Wellness Coaching
- U Matter We Care, www.umatter.ufl.edu/
- *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.