

Syllabus Fall 2020



CANINE AND FELINE GENETICS



COURSE SYLLABUS

Course

ANS 4388 On-line course

Lecture

On line (Canvas website)

Instructor

Dr. Raluca Mateescu

Office: Room 106, Animal
Science – Bldg 459

Phone: (352) 392-2367

e-mail: raluca@ufl.edu

Office Hours

Online zoom meetings available
by appointment.

Course Objective

To understand basic Mendelian
genetic the inheritance of
simple traits in cats and dogs.



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Course Objectives

To understand the principles of animal breeding and genetics and their application in the improvement of animals.

Instructor

Instructor: Dr. Raluca Mateescu

E-mail: Please use the Inbox email tool in Canvas, or email raluca@ufl.edu

Virtual Office Hours: By appointment

Phone: 352-392-2367

The instructor will be available for students. Please make arrangements to visit at your convenience. If you call and I am not available, leave your name and telephone number or e-mail address and you will be contacted as soon as the message is received. The best method to reach me is through e-mail. **DO NOT WAIT UNTIL EXAMINATION TIME!**

It is important to keep up and not fall behind. Get started on the first day of class – do your homework on time, get help when you need it – and remember there is no substitute for **DAILY PREPARATION. It is much easier on all of us if you get answers to questions one or two days after class rather than one or two days before an exam.**

Course Description

The course covers basic Mendelian genetics with direct application to dogs and cats. Lectures and lab exercises on basic genetic principles and inheritance of particular canine and feline characteristics will provide a more in depth understanding of how simple traits, including coat color and some common genetic disorders, are inherited.

Learning Objectives

By the end of the semester, the student should be able to:

1. Understand basic Mendelian inheritance of simple traits in cats and dogs.
2. Understand the principles of recombination, gender and inheritance, epistasis as they apply to the inheritance of simple traits.
3. Understand the inheritance of coat color in cats and dogs.
4. Understanding the use of probabilities and statistical tests to predict progeny distribution from different matings.
5. Understand the concept of genetic linkage and how can be applied in searching for genes controlling feline and canine traits.
6. Examine several case studies related to specific canine or feline genetic disorders and understand the technologies and steps needed to study these disorders.

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Course Communication

Course materials and messages will be delivered through the Canvas e-Learning site. Assignments and assessments will only be accepted through Canvas. Email can be sent either through the Canvas system, or the standard @ufl.edu system. Please be sure you change your canvas settings so that you receive course announcements daily, not once a week, so that you get messages on time!

Attendance Policy

This course requires active participation, independently completed activities and online discussion with your peers. As such, skillful time management and good organization is imperative for success. University policies for class attendance and make-up exams, assignments and other work can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>. It is your personal responsibility to obtain information presented in each module and to ensure that your assignments are completed before the due date. Documentation of approved absences (personal illness, family emergency etc.) must be presented within three business days of your return in order to make-up quizzes and assignments. University approved absences for sports and student organizations must be disclosed at least two weeks in advance. Unexcused late assignments will be penalized 25% for the first 24 hours beyond the due date, 50% for 24-48hrs late, and will not be accepted thereafter. No late quizzes or discussions will be allowed—these will close on Canvas at the specified date/time and they will not be available past the deadline.

Text

No formal text is required. Students will be provided handouts, which are current and relevant to topics discussed in class. A suggested reading list is provided as well as links to free published sources.

Course Organization.

The course is divided into weekly modules (plus a preparatory module “0”) on canvas. You can access these modules by the “modules” link in the menu on the left-hand pane of the course dashboard. In order to access a module you must complete the prior module. Within each module you will find pages with assigned readings and instructions for the module, links to narrated slideshows, comprehension quizzes and activities. All quizzes and activities must be turned in by midnight on the FRIDAY of that module.

Grading Policy

11 Quizzes (10 pts)	110 pts
14 Assignments (10 pts)	140 pts
11 Discussions (4 pts)	44 pts
<u>Term Paper</u>	<u>200 pts</u>
Total	494 pts

Letter grades will be assigned based upon the following scale:

A 93-100%	B 83-86.9%	C 73-76.9%	D 63-66.9%-
A- 90-92.9%	B- 80-82.9%	C- 70-72.9%	D- 60-62.9%-
B+ 87-89.9%	C+ 77-79.9%	D+ 67-69.9%	E 60% and Below

The scale may be lowered but will not be raised.

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Tentative Outline

(Note: This schedule is subject to revision as the course progresses.)

Week	Date	Lecture/Assignment	
1	31-Aug	Lecture 1	Dog & Cat Domestication
		Assign 1 & Quiz 1 & Discussion 1	Early canid domestication-the farm-fox experiment; Perspectives on domestication_The history of our relationship with man's best friend
2	7-Sep	Lecture 2	Basic Genetic Concepts
		Assign 2 & Quiz 2	Problem Set 1
3	14-Sep	Lecture 3	Gender and Inheritance
		Assign 3 & Quiz 3	Problem Set 2
4	21-Sep	Lecture 4	Multiple allelic systems and lethal allele
		Assign 4 & Quiz 4 & Discussion 2	Feline Genetics_Clinical Applications and Genetic Testing; Canine Morphology Hunting for Genes and Tracking Mutations
5	28-Sep	Lecture 5	Epistasis
		Assign 5 & Quiz 5 & Discussion 3 Paper Topic	The taming of the cat; Canine Behavioral Genetics
6	5-Oct	Lecture 6	Genetics of Feline Coat Color
		Assign 6 & Quiz 6 & Discussion 4	Summary of genes determining coat color in cats
7	12-Oct	Lecture 7	Genetics of Canine Coat Color
		Assign 7 & Quiz 7 & Discussion 5	Summary of genes determining coat color in dogs
8	19-Oct	Lecture 8	Probabilities
		Assign 8 & Quiz 8 & Discussion 6	International and collaborative strategies to enhance genetic health in purebred dogs; Deafness in blue-eyed white cats
9	26-Oct	Lecture 9	Testing Genetic Hypothesis
		Assign 9 & Quiz 9	Problem Set 3
10	2-Nov	Lecture 10	Linkage
		Assign 10 & Quiz 10 & Discussion 7	Dogs really are man's best friend; State of cat genomics
11	9-Nov	Lecture 11	Detecting Recessive Alleles
		Assign 11 & Quiz 11 & Discussion 8 Paper Outline	Genetic diversity, inbreeding and breeding practices in dogs; Risk assessment in the improvement of inherited disorders in pedigree dogs
12	16-Nov	Lecture 12	Canine Hip Dysplasia
		Assign 12 & Discussion 9	Identification of quantitative trait loci for osteoarthritis of hip joints in dogs
13	23-Nov	Lecture 13	Progressive Retinal Atrophy
		Assign 13 & Discussion 10	Genetic and phenotypic variations of inherited retinal diseases in dogs: the power of within- and across-breed studies
14	30-Nov	Lecture 14	Inherited Bleeding Disorders
		Assign 14 & Discussion 11	A review of canine inherited bleeding disorders: biochemical and molecular strategies for disease characterization and carrier detection
15	7-Dec	Final Paper	Final Paper

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General information

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, <https://disability.ufl.edu/>

Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies>.

Online course evaluation process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. 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.

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."*

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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>.

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, www.counseling.ufl.edu/cwc/
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/

Student Complaint Process

Residential Course: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code>

Online Course: <http://www.distance.ufl.edu/student-complaint-process>