



CANINE AND FELINE GENETICS



COURSE SYLLABUS

Course

ANS 4388 On-line course

Lecture

On line (Canvas website)

Instructor

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Office Hours

Online zoom meetings available
by appointment.

Course Objective

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



Course Information

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.

Course Objectives

To understand basic Mendelian genetic the inheritance of simple traits in cats and dogs. By the end of the semester, the student should be able to:

1. Explain basic Mendelian inheritance of simple traits in cats and dogs.
2. Describe the principles of recombination, gender and inheritance, epistasis as they apply to the inheritance of simple traits.
3. Predict the inheritance of coat color in cats and dogs.
4. Use probabilities and statistical tests to predict progeny distribution from different matings.
5. Explain 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.

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 and Content

Course Organization

The course is organized in weekly **Modules**. You can access the Modules either through the Home Page (left panel, preferred mode of access), or through the Modules. Each weekly Module will open Monday 12:00 am and will close the following Sunday 11:59pm.

Lectures

Lectures are pre-recorded. Each 50-min lecture is divided into several smaller videos. A handout will be provided for each lecture and you are encouraged to print or download the PDF handouts and follow along and take notes when you watch the lectures, just like you in a regular class.

Quizzes

There will be a quiz following each Lecture. They will consist of short questions: multiple choice, true/false, fill in the blank or short answer. You will have a limited time to take it once you start the quiz (15 minutes) – so it is important that you study the lecture before you start to take the quiz. Make sure you have a secure internet connection (if you lose the internet connection your quiz will end and you will not be allowed to take it again).

Assignments and Discussions

Each weekly Module will have an assignment and a discussion. You will have the option of reading one of two articles closely related to information covered in the lecture. You will be asked to summarize this article and participate in a discussion related to a prompt from the article or the lecture. To get the full points for the discussions, you need to post your original comment (3-6 sentences) a few days before the due date to allow time for commentary and respond to others' posts at least 1-2 times using thoughtful statements or questions.

Research Paper

Each student will identify a canine or feline genetic trait of interest and write a five-page (minimum) paper (five pages of text including references cited).

Attendance Policy

This course requires active participation, independently completed activities and online discussion with your peers. 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 [HERE](#). It is your personal responsibility to obtain information presented in each module and to ensure that your assignments are completed before the due date.

The instructor will be available for students, 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 – watch the lectures, 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 day after class rather than one day before an exam.

Grading Policy

10 Quizzes (10 pts)	100 pts	21.1%
13 Assignments (10 pts)	130 pts	27.4%
11 Discussions (4 pts)	44 pts	9.3%
Term Paper	200 pts	42.2%
Total	494 pts	100%

Letter grades will be assigned based upon the following scale. The scale may be lowered but not raised.

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

Policy on Missed Examinations

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with [university policies](#). 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.

General information

Students Requiring Accommodations

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.

Grades and Grade Points

For information on current UF policies for assigning grade points, follow this [link](#).

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. [Click here for guidance on how to give feedback in a professional and respectful manner](#). 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 ufl.bluera.com/ufl/. [Summaries of course evaluation results are available to students here](#).

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. We, the members of the UF community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Use of Artificial Intelligence

Use of generative artificial intelligence is not permitted without written permission from the instructor. Use of generative artificial intelligence (including but not limited to Chat GPT) without permission, could result in a grade penalty. The university policy on plagiarism and the Honor Code (below) applies to the use of artificial intelligence.

Academic Honesty

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students 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.” The Conduct Code specifies a number of behaviors that are in violation of this code and the possible sanctions. [Click here to read the Conduct Code](#). If you have any questions or concerns, please consult with the instructor or TAs in this class.

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.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see [Notification to Students of FERPA Rights](#).

Campus Helping Resources

Health and Wellness

U Matter, We Care: If you or a friend is in distress, please contact umatter@ufl.edu or 352 392-1575 so that a team member can reach out to the student.

Counseling and Wellness Center: counseling.ufl.edu/cwc, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or police.ufl.edu.

Academic Resources

E-learning technical support, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu.

Career Resource Center, Reitz Union, 392-1601. Career assistance and counseling.

Library Support, Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.

Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints Campus

On-Line Students Complaints

Lecture Schedule

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

Week 1 <i>Thursday, August 21, 2025</i>	Lecture 1	Dog & Cat Domestication
	Quiz 1	
	Assignment 1	Early canid domestication-the farm-fox experiment; Perspectives on domestication_The history of our relationship with man's best friend
	Discussion 1	
Week 2 <i>Monday, August 25, 2025</i>	Lecture 2	Basic Genetic Concepts
	Quiz 2	
	Assignment 2	Problem Set 1
Week 3 <i>Monday, September 1, 2025</i>	Lecture 3	Gender and Inheritance
	Quiz 3	
	Assignment 3	Problem Set 2
Week 4 <i>Monday, September 8, 2025</i>	Lecture 4	Multiple allelic systems and lethal allele
	Quiz 4	
	Assignment 4	Feline Genetics_Clinical Applications and Genetic Testing; Canine Morphology Hunting for Genes and Tracking Mutations
	Discussion 2	
Week 5 <i>Monday, September 15, 2025</i>	Lecture 5	Epistasis
	Quiz 5	
	Assignment 5	The taming of the cat; Canine Behavioral Genetics
	Discussion 3	
	Paper Topic - Due Sunday, September 22	
Week 6 <i>Monday, September 22, 2025</i>	Lecture 6	Genetics of Feline Coat Color
	Quiz 6	
	Assignment 6	Summary of genes determining coat color in cats
	Discussion 4	
Week 7 <i>Monday, September 29, 2025</i>	Lecture 7	Genetics of Canine Coat Color
	Quiz 7	
	Assignment 7	Summary of genes determining coat color in dogs
	Discussion 5	
Week 8 <i>Monday, October 6, 2025</i>	Lecture 8	Probabilities
	Quiz 8	
	Assignment 8	International and collaborative strategies to enhance genetic health in purebred dogs; Deafness in blue-eyed white cats
	Discussion 6	
Week 10 <i>Monday, October 13, 2025</i>	Lecture 10	Linkage
	Quiz 10	
	Assignment 10	Dogs really are man's best friend; State of cat genomics
	Discussion 7	
Week 11 <i>Monday, October 27, 2025</i>	Lecture 11	Detecting Recessive Alleles
	Quiz 11	
	Assignment 11	Genetic diversity, inbreeding and breeding practices in dogs; Risk assessment in the improvement of inherited disorders in pedigree dogs
	Discussion 8	
	Paper Outline - Due Sunday, November 3rd	
Week 12 <i>Monday, November 3, 2025</i>	Lecture 12	Canine Hip Dysplasia
	Assignment 12	Identification of quantitative trait loci for osteoarthritis of hip joints in dogs
	Discussion 9	
Week 13 <i>Monday, November 10, 2025</i>	Lecture 13	Progressive Retinal Atrophy
	Assignment 13	Genetic and phenotypic variations of inherited retinal diseases in dogs: the power of within- and across-breed studies
	Discussion 10	
Week 14 <i>Monday, November 17, 2025</i>	Lecture 14	Inherited Bleeding Disorders
	Assignment 14	A review of canine inherited bleeding disorders: biochemical and molecular strategies for disease characterization and carrier detection
	Discussion 11	
	Final Paper	Final Paper - Due Sunday, November 23

The instructor reserves the right to modify the syllabus during the semester with verbal or written announcements in class. It is the student's responsibility to stay informed of such announcements.