UF Department of Applied Physiology and Kinesiology
College of Health and Human Performance
UNIVERSITY of FLORIDA

Genetics in Human Performance

APK5620| 3 Credits Fall 2025

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Course Info

INSTRUCTOR	Basma Yacoubi Keyhani, PhD Office: 1A FLG Office Phone: 294-1749 Email: basma@ufl.edu Preferred Method of Contact: Canvas messaging
OFFICE HOURS	Request a zoom link by canvas messaging the instructor
MEETING TIME/LOCATION	Access course through Canvas on UF e-Learning (https://elearning.ufl.edu/) & the Canvas mobile app

COURSE DESCRIPTION

This course will introduce genomics, genetics principles, and technologies relevant to sports and human performance. It will analyze the evidence for the role of genetic variation in power, endurance, trainability, and injury. It will encourage developing analytical skills to critically reflect on the promise and practical applications of sports genetics.

PREREQUISITE KNOWLEDGE AND SKILLS

There are no prerequisites for this course.

REQUIRED AND RECOMMENDED MATERIALS

There are no required textbooks for this course. In addition to the lectures, research/review articles will be part of the reading assignments and will be provided (PDFs) as part of the course material.

COURSE FORMAT

You will watch pre-recorded lecture videos. You can do this at your own pace, however you will take a Quiz every other week, so I encourage you to adhere to the recommended schedule (see at the end of the syllabus). In addition to the pre-recorded lecture videos, you will have scientific articles to read, homework to turn in every other week as well as a group project due at the end of the course. There are two exams for this course.

COURSE LEARNING OBJECTIVES:

By the end of this course, students should be able to:

- Explain and define basic genetics and genomics methods and terminology introduced in the course.
- Analyze and evaluate the quality of research which associates genetic variation (small differences in DNA sequence among individuals) with sports performance and risk of injury traits.
- Use scientific evidence to compare different views on the future of genetics/genomics in sports especially regarding genetic testing, gene doping, and sex/gender differences in sports.

UF Academic Policies and resources

Up-to-date information on the topics listed below can be found at:
https://syllabus.ufl.edu/syllabus-policy/uf-syllabus-policy-links/

- Class attendance
- Disability Resource center
- Grading
- Feedback on the quality of instruction and Gator Evals
- The University's Honesty Policy
- In class recording
- Academic resources
- Campus health and wellness

Grading and assignments for this course

Evaluation Components (number of each)	Approximate % of Total Grade
Exams (x2)	40%
Homework (x6)	20%
Quizzes (x6)	20%
Presentation (1)	20%

Quizzes – A quiz pertaining to each module's material will include up to 20 questions (multiple choice and /or short answers) and will be due according to the course schedule. Quizzes are administered through the Honorlock proctoring service in Canvas and require students to use the Google Chrome browser to complete. These quizzes are to be completed within 1 hour, and must be completed in a single sitting while Honorlock records the session. Students will not be able to view their responses until after the due date of the quiz.

Homework – There is one homework assignment for each module and may include material from the research/review article readings when applicable. Questions are 1-5 short answer questions related to the content of the lecture or readings. You can work together (use "Discussion on Canvas) and use any material available to you for this but the work you turn in should be your own, written in your own words.

Exams – Each exam will cover 3 modules (lecture slides, recordings, quizzes, homework material, and assigned readings) and will include multiple choice and short answer questions. Some questions will be based on analyzing Figures and Tables provided within the question statement. Exams are administered through the Honorlock proctoring service in Canvas and require students to use the Google Chrome browser to complete. These exams are to be completed within 3 hours, and must be completed in a single sitting while Honorlock records the session. Students will not be able to view their responses until after the due date.

GRADING SCALE

All course assignments are administered and graded within the Canvas course page, so students will have access to all grades as they submit assignments. Any assignment that requires the instructor to manually grade some aspect of it will be graded within one week of its due date. Final Grades will be rounded up to the nearest one tenth of a percent.

The table on the right provides a reference. More detailed information regarding current UF grading policies can be found here: https://catalog.ufl.edu/UGRD/academic-regulations/gradesgrading-policies/

Extra-credit opportunities will be given throughout the semester. Extra-credit opportunities will be posted as an announcement.

Percent	Grade	Grade Points
90.0 - 100.0	A	4.00
87.0 - 89.9	A-	3.67
84.0 - 86.9	B+	3.33
81.0 – 83.9	B	3.00
78.0 - 80.9	B-	2.67
75.0 - 79.9	C+	2.33
72.0 – 74.9	C	2.00
69.0 - 71.9	C-	1.67
66.0 - 68.9	D+	1.33
63.0 - 65.9	D	1.00
60.0 - 62.9	D-	0.67
0 - 59.9	E	0.00

SUCCESS AND STUDY TIPS

- Complete all assigned requirements. Each one is meant to engage you on a regular basis with the material.
- Re-watching lectures more than once is recommended for studying.
- Reading assigned research papers is integral to the learning process. Only going over the lecture presentations is not enough to achieve the objectives of this course and earn a good grade.
- Read all announcements posted by the instructor. Extra-credit will be posted as an announcement.
- Reach out to your instructor. I am always available to answer questions and help. You can send me questions through canvas messaging. You can also set-up a zoom meeting.
- Reach out to other students in your class. Use the Canvas “Discussions” often to communicate with your peers.

Schedule

CRITICAL DATES & UF OBSERVED HOLIDAYS

Complete list available here: https://catalog.ufl.edu/UGRD/dates-deadlines and choosing the desired term.

WEEKLY SCHEDULE, IMPORTANT DATES AND DEADLINES

H: Homework; Q: Quiz

- You have approximately 3 days to complete Quizzes. Thus, all quizzes open Friday morning and are due the following Sunday by midnight
- Homework assignments are open at the same time as the Module.

Week	Dates	Lecture Topic (required reading pages)	Assignments
1	8/21	Class introduction and Syllabus Module 1-Genetics: Basics and Techniques	Introduction due (Sunday 8/24)
2	8/25		
3	9/1		Q1 and H1 (Sunday 9/7)
4	9/8	Module 2- Performance traits	
5	9/15		Q2 and H2 (Sunday 9/21)
6	9/22	Module 3-Gene variants	
7	9/29		Q3 and H3 (by Sunday 10/ 5
8	10/6	Exam week: Exam 1 opens Friday 10/10	Exam 1 (M1-M3 due Sunday 10/12)
9	10/13	Module 4-Gene variants	
10	10/20		Q4 and H4 (by Sunday 10/26)
11	10/27	Module 5-Ethnicity / Sex & Gender	
12	11/3		Q5 and H5 (by Sunday 11/9)
13	11/10	Module 6-Genetic testing and gene doping	
14	11/17		Q6 and H6 (by Sunday 11/23)
15	11/24 (Thanksgiving week)	Presentation week 1	Presentation (Draft) (by 11/30)
16	12/1 (reading days 12/4 & 5)	Presentation week 2	Presentation (Final) (Post by Sunday 12/7)
17	12/8 (exam week starts 12/6)	Exam 2 opens 12/6 Watch presentations and submit evaluations by 12/11	Exam 2 (M3-M6) due 12/9) Grades due 12/15

Copyright Statement

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Disclaimer

This syllabus represents the objectives and tentative plans for the course. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, will be communicated clearly, are not unusual, and should be expected.