

# Genetics in Human Performance

PET5936 | 3 Credits | SPRING 2024

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## Course Info

### INSTRUCTOR

**Basma Yacoubi Keyhani, PhD**

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Office Phone: 294-1749

Email: [basma@ufl.edu](mailto:basma@ufl.edu)

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.

## **Course & University Policies**

### **ATTENDANCE POLICY**

This is a fully online course and physical attendance is not a component of the course. Students are strongly encouraged to engage with peers and the instructor through Canvas Discussions.

### **PERSONAL CONDUCT POLICY**

Students are expected to exhibit behaviors that reflect highly upon themselves and our University. 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 Honor Code (<http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions.

Furthermore, you are obliged to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult your instructor.

### **EXAM MAKE-UP POLICY**

Quizzes and Exams may not be submitted late, unless due to illness or emergency. Students will be permitted to access the exams early upon receipt of evidence of a viable explanation for the need for such an accommodation.

There are opportunities for submitting some assignments after the due date for 50% of the grade. These are listed in your Course Schedule (see at the end of the syllabus).

A student experiencing an illness should visit the UF Student Health Care Center or their preferred healthcare provider to seek medical advice and obtain documentation. If you have an illness, family emergency or death, please contact the Dean of Students Office ([www.dso.ufl.edu](http://www.dso.ufl.edu)) and follow the DSO Care Team procedures for documentation and submission of a request for make-up assignment (<https://care.dso.ufl.edu/instructor-notifications/>). The DSO will contact the instructor. Do not provide any documentation to the instructor regarding illness or family emergency. This is your personal and protected information. The DSO is qualified to receive and verify the documents you provide. The instructor will follow the recommendations from the DSO. Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the online catalog at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

### **ACCOMMODATING STUDENTS WITH DISABILITIES**

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting their Get Started page at

<https://disability.ufl.edu/students/get-started/>. 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.

## **COURSE EVALUATIONS**

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/>.

## **Getting Help**

### **HEALTH & WELLNESS**

- U Matter, We Care: If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352 392-1575
- Counseling and Wellness Center: <https://counseling.ufl.edu/>, 352-392-1575
- Sexual Assault Recovery Services (SARS) - Student Health Care Center, 392-1161
- University Police Department, 392-1111 (or 9-1-1 for emergencies) <http://www.police.ufl.edu/>

### **ACADEMIC RESOURCES**

- E-learning technical support, 352-392-4357 (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu).  
<https://lss.at.ufl.edu/help.shtml>
- Career Connections Center, Reitz Union, 392-1601. Career assistance and counseling.  
<https://career.ufl.edu/>
- Library Support, <http://cms.uflib.ufl.edu/ask>. 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.  
<http://teachingcenter.ufl.edu/>
- Writing Studio, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.  
<http://writing.ufl.edu/writing-studio/>
- Student Complaints On-Campus: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/> On-Line Students Complaints: <http://distance.ufl.edu/student-complaint-process/>

### **INCLUSION, DIVERSITY, EQUITY, AND ACCESSIBILITY RESOURCES**

For suggestions or concerns related to IDEA, please reach out to any of the following:

- Dr. Ashley Smuder, PhD, APK DEI committee chair, [asmuder@ufl.edu](mailto:asmuder@ufl.edu) Dr. Rachael Seidler, APK Graduate Coordinator, [rachaelseidler@ufl.edu](mailto:rachaelseidler@ufl.edu)
- Dr. Joslyn Ahlgren, APK Undergraduate Coordinator, [jahlgren@ufl.edu](mailto:jahlgren@ufl.edu)

## Grading

**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.

Evaluation Components (number of each)	Approximate % of Total Grade
Exams (2)	40%
Homework (6)	20%
Quizzes (6)	20%
Presentation (1)	20%

**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.**

Any requests for additional extra credit or special exceptions to these grading policies will be interpreted as an honor code violation (i.e., asking for preferential treatment) and will be handled accordingly.

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

## Schedule

### CRITICAL DATES & UF OBSERVED HOLIDAYS

Complete list available here: <https://catalog.ufl.edu/UGRD/dates-deadlines/2021-2022/>

### WEEKLY SCHEDULE

H: Homework; Q: Quiz

Week	Dates	Lecture Topic (required reading pages)	Assignments
1	1/8	Class introduction and Syllabus Module 1-Genetics: Basics and Techniques	Introduction (Sunday 1/14)
2	1/16		
3	1/22		Q1 and H1 (Sunday 1/28)
4	1/29	Module 2- Performance traits	
5	2/5		Q2 and H2 (Sunday 2/11)
6	2/12	Module 3-Gene variants	
7	2/19		Q3 and H3 (by Sunday 2/25)
8	2/26	Module 4-Gene variants	Exam 1 (M1-M3 due 3/2)
9	3/4		Q4 and H4 (by Sunday 3/10)
10	3/11		
11	3/18	Module 5-Ethnicity / Sex & Gender	
12	3/25		Q5 and H5 (by Sunday 3/31)
13	4/1	Module 6-Genetic testing and gene doping	
14	4/8		Q6 and H6 (by Sunday 4/14)
15	4/15	Presentation	Presentation (Draft) (by Sunday 4/21)
16	4/22 (reading days 25/26)	Presentation	Presentation (Final) (Post by Sunday 4/27)
17	4/29 (exam week)	Watch presentations and submit evaluations by 5/2	Exam 2 (M3-M6) (due 5/2)

## **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.

## **Copyright Statement**

The materials used in this course are copyrighted. The content presented is the property of UF and may not be duplicated in any format without permission from the College of Health and Human Performance and UF, and may not be used for any commercial purposes.

Content includes but is not limited to syllabi, videos, slides, quizzes, exams, lab problems, in-class materials, review sheets, and additional problem sets. Because these materials are copyrighted, you do not have the right to copy or distribute the course materials, unless permission is expressly granted. Students violating this policy may be subject to disciplinary action under the UF Conduct Code.

## **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.