

## **NUR 3197: Introduction to Genetics and Genomics in Health Care**

All sections

Fall 2025

2 Credits

### **Instructor**

Dr. Jennifer Drew

Instructional Professor, Microbiology & Cell Science Department

Email: Through Canvas (or jdrew@ufl.edu if you cannot access Canvas)

Student Hours on Zoom: Thursdays at 9am on Zoom

### **Pre-requisites**

Admission to the RN to BSN Program--University of Florida College of Nursing

### **Course Description**

The field of genetics is moving at a fast pace, and its possible to use the sequence of an individual's own genome to make medical decisions. Genetic information plays a significant role in Precision Medicine and more broadly, Precision Health. Therefore, a sound knowledge of genetics and genomics is essential for health care providers in evaluating needs of patients and delivering of care to patients and families. The course will prepare nursing students by reinforcing the basic principles of genetics while exploring new advances and discussing how these advances will affect personalized health care. The course material will address many of the core competencies identified by the American Nurses Association and other professional entities and outlined in *Essentials Genomic Nursing: Competencies and Outcome Indicators, 3rd Edition (2023)*

### **Course Goals:**

At the end of this course, you will be able to:

Demonstrate a solid foundation in molecular biology by articulating how a genome determines traits.

Analyze the role of genetics and genomics in the development, detection, prevention, and treatment of disease.

Explain the major types of genetic disease, their characteristics, patterns of inheritance and predict risk.

Outline the biotechnological processes used in detecting, diagnosing, and treating a disease.

Discuss complex genetic terminology, tools, resources and research with colleagues and explain to patients.

Assess the role of genomics in precision health including ethical and psychosocial issues.

### **List of Topics and Calendar – (subject to change because of hurricane closures, etc)**

Module	Dates*	Topic	Assessments**
Orientation	Aug 21-31	Orientation activities	Syllabus Quiz + Perusal Activity
1	Aug 21 - 31	Gene Action: From Gene to Protein	Quiz + Intro Discussion Board

2	Sep 1 - 7	Variants	Quiz + Case Study Mod 2/3
3	Sep 8 - 14	Cells and Development	Quiz + Case Study Mod 2/3
4	Sept 15 - 21	Mendel's Laws on Inheritance	Quiz + Mendelian Genetic Infographic/Discussion
5	Sept 22 - 28	Beyond Mendel's Laws	Quiz + Mendelian Genetic Infographic/Discussion
6	Sep 29 – Oct 5	Family Health History	Pedigree construction and interpretation Activity
7	Oct 6 - 12	Chromosomal Disorders	Quiz
8	Oct 13 - 19	Genetics of Complex Traits	Quiz + Case Study
9	Oct 20 - 26	Genetic technology, testing and treatment	Quiz + Discussion Board Mod 9/10
10	Oct 27 – Nov 2	Personalized Genomics and Precision Health	Quiz + Discussion Board Mod 9/10
11	Nov 3 - 9	Cancer Genetics	Quiz + Discussion Board
12	Nov 10 - 16	Genetics of Behavior and Immunity	Quiz + Case Study + Individual Reflection

\*Quizzes and module assignments due by 11:59 PM EST of the last day of module unless otherwise stated

\*\*Some assignments span two modules

### **Textbook (Required)**

Lewis, R. (2024). Human Genetics: Concepts and Applications, (14th ed.) Boston: McGraw-Hill Publishers.

Available via UF All Access.

Specific reading assignments are posted in each module.

### **E-learning system - Canvas**

The course will be managed entirely through the e-Learning in Canvas (elearning.ufl.edu). The e-learning homepage contains tips and tutorials for students as well as computer requirements. It is your responsibility to become familiar with Canvas and to ensure that you have the appropriate browsers, settings, internet speed, etc. For any technical questions regarding Canvas, please visit the LSS site (<https://wiki.helpdesk.ufl.edu/FAQs/E-Learning>) and/or the UF Help desk (<http://helpdesk.ufl.edu/>). They can address technical issues such as not being able to view course materials, not being able to access the quizzes, not being able to send mail, etc. **All technical issues/questions/comments should go to the Help Desk first (352-392-HELP).** They are the experts. The Help Desk suggests that if you encounter any problem (error messages, etc.) that you take a screen shot of the problem and save it. This will help the Help Desk in fixing your problem.

### **Email and Announcements**

All email communication regarding this course will be done through the Conversations tool (Inbox) of Canvas. This mail system is private and secure. It is your responsibility to check your Canvas mail and Announcements **frequently** to stay updated on the course. Please check the course site **a minimum of two times per week** to be certain that you are not missing any important communications. As the instructor, I will respond to your questions and emails as

promptly as I can. By maintaining all email communication through Canvas instead of other email domains, it reduces the chance that discussions will get lost among outside accounts.

### **Course Structure and Flow**

The course will be entirely web-based, and all lectures will be delivered online. The reading assignments, course lecture materials and online activities will be posted each module (approx. 1 module/week). There will be a quiz and related assignments each module.

The course is structured as 12 Modules – approximately one each per week of the semester. Each module focuses on a different topic. The topics build on each other. An entire module's worth of material is posted at once. New modules are posted every Monday morning.

For each module, there will be several items to complete. The first item will always list the **objectives** for the week. Keep the objectives in mind as you learn the material. If you meet the learning objectives, you should do very well on the quiz and assessments. After reading the learning objectives, please go through the material in the order presented. The next item in the list will usually be the reading assignment, followed by the lectures, and links to any online tutorials or modules. After you go through the material in the order presented, you are always free to return and visit any of the content. The lecture slides of each module will also be posted for your convenience. Each module includes a quiz. Quizzes are usually due by 11:59 PM EST on the day the module closes (Sundays).

### **Assessments**

#### **Quizzes (45%)**

Brief quizzes will be given that cover each module. Quizzes may be taken **two times** and your highest score will count for the quiz grade. You can drop your **two lowest** quiz scores. Any quizzes not taken by the due date will be converted to a grade of 0 and count towards your drops. Thus, dropped quiz grades will include any quizzes missed for **any** reason. This includes illness, travel, conferences, and technical problems etc. Quizzes are open-note (hard copy paper notes allowed). Note sharing is not allowed. Quizzes will be proctored with Honorlock. Because of how the proctoring works, digital, electronic or screen-based notes or other sites are **not permitted** during quizzes. A room scan will be required as part of the proctoring.

#### **Participation and Engagement (11%)**

Most lectures have embedded Playposit quiz questions for credit. The questions can be answered multiple times to maximize credit. The Playposit questions must be answered by the close of the module to get the credit.

#### **Collaborative Case Studies (13%)**

To facilitate collaboration and engagement with each other and the concepts, brief case studies will be presented, and students will respond through Perusall.

#### **Discussion Boards (13%)**

Brief discussion board assignments will provide opportunities to share and reflect with each other on concepts and advances in genetics.

**Individual Assignments (14%)**

Two active learning individual assignments to create an infographic resource on a Mendelian disease for colleagues and patients and to create and evaluate a family history.

**Orientation and Reflection (4%)**

Short activities at beginning and end of course to prepare and reflect.

**Grade Adjustments**

Following the posting of a grade (or close of a quiz), you have one week to contest your grade. Any request for a grade adjustment should include a fully written justification (a paragraph), with evidence if possible, in support of the proposed grade change (i.e. why is the proposed answer a better fit or equally as good a fit as the answer on the grade key).

**Grading Scale**

A	95-100 (4.0)
A-	93-94 (3.67)
B+	91- 92 (3.33)
B	84-90 (3.0)
B-	82-83 (2.67)
C+	80-81 (2.33)
C	74-79 (2.0) **
C-	72-73 (1.67)
D+	70-71 (1.33)
D	64-69 (1.0)
D-	62-63 (0.67)
E	61 or below (0.0)

\*\* 74 is the minimal passing grade.

**No extra credit is given in this course.**

**Make up and attendance policy.** Requirements for class attendance and make-up exams and assignments in this course are consistent with university policies that can be found at: [catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/](http://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/)

There are **no make-ups or extensions** without proper documentation of excused events/circumstances and prior notification (in the case of scheduled events). See UF policy for excused events. Documentation must clearly state why you are unable to participate in the course and complete your work for at least five days as assessments are available for at least 7 days.

Quizzes – There are no make-ups or extensions for module quizzes as the 2 lowest quiz scores will be dropped. Missed quizzes for any reason will count as one of your dropped quiz grades.

Late submissions on assignments (other than quizzes) - will be assessed a late penalty should a student choose to submit the assignment late. The penalty is 10% per day late up to 3 days. Missed assignments count as a zero.

**For UNFORSEEN LIFE EVENTS:** For ALL matters that require special consideration, please contact U\_Matter, We Care in the Office of the Dean of Students ([https://care.dso.ufl.edu/instructor-notifications/Links to an external site.](https://care.dso.ufl.edu/instructor-notifications/Links%20to%20an%20external%20site)). They will verify your case and contact me and offer guidance on make-ups, extensions, etc. The final decision on how to proceed is up to instructor discretion.

### **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.dsoufl.edu/SCCR/honorcodes/honorcode.php>.

### **Additional comments regarding academic integrity:**

Students are encouraged to discuss material with each other from the course, help each other understand concepts, study together, and even discuss assessment questions with each other once the quiz window is closed. However, the following is considered academic dishonesty, and I expect that no student will ever do any of the following:

- Have another person complete a quiz for you
- Copy another student’s quiz in this course
- Collaborate with anyone while taking a quiz in this course
- Discuss the questions and answers of a quiz with other students while the quiz window is still open
- Manipulate and/or distribute any materials provided in this course for any purpose (including course lecture slides).

- Use any notes, slides, posts, etc. provided by a previous student in the course

### **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.

### **Generative AI statement**

While you may use generative AI tools to help you bounce ideas, look up terms, and contextualize concepts, it is crucial to ensure that your submission of any work reflects *your own* understanding, writing, and analysis of the topic. Any indication of misuse, such as copying and pasting responses directly from generative AI outputs, will result in a zero score for that question or assignment. Remember, a primary goal is to develop your critical thinking. This requires that you engage thoughtfully with the material. Accordingly, we expect that your own original insights will be reflected in your work. Also note that you are responsible for what is submitted. AI is often misleading and inaccurate.

### **Campus Helping Resources**

Students experiencing crisis 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.

### **Health and Wellness**

*U Matter, We Care:* If you or someone you know is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu), 352-392-1575, or visit U Matter, We Care website to refer or report a concern and a team member will reach out to the student in distress.

*Counseling and Wellness Center:* Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.

*Student Health Care Center:* Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website.

*University Police Department:* Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).

*UF Health Shands Emergency Room / Trauma Center:* For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road,

Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.

*GatorWell Health Promotion Services:* For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website or call 352-273-4450.

### **Academic Resources**

*E-learning technical support:* Contact the UF Computing Help Desk at 352-392-4357 or

via e-mail at [helpdesk@ufl.edu](mailto:helpdesk@ufl.edu).

*Career Connections Center:* Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

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

*Teaching Center:* Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

*Writing Studio:* 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

*On-Line Students Complaints:* View the Distance Learning Student Complaint Process.

### **Students with Disabilities**

Students requesting class 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.

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. 0001 Reid Hall, 352-392-8565, [www.dso.ufl.edu/drc/](http://www.dso.ufl.edu/drc/)

### **Statement on Distance Education Courses**

Should you have any complaints with your experience in this course, please visit <http://www.distance.ufl.edu/student-complaints>.

### **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.ua.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.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.ua.ufl.edu/public-results/>.

### **Course Recordings**

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation,

assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Conduct Code.