

BIOL861P: Human Genetics

Fall 2023

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COURSE DESCRIPTION

Human Genetics focuses on contemporary human genetics with emphases on genetic diseases. Some class topics may be upsetting in terms of ethics, human relationships, or religion. Contact the instructor in advance if you have any questions or concerns.

COURSE OBJECTIVES

- 1) Understanding the role of genetics in human disease
 - 2) Understanding the genes, DNA, mutation, and control of gene expression
 - 3) Understanding the analysis of genetic transmission in families and populations
 - 4) Understanding genetic technologies and developing the writing skills through case studies
 - 5) Discussion the role of human genetics in medicine and society
- Students will achieve these objectives through lectures, online quizzes/exams, and discussion board.*

COURSE MATERIALS

- Textbook: Human Genetics (13th edition) by Ricki Lewis (ISBN #9781260240894), McGraw Hill
- Announcements, assignments, exams, and quizzes will be available on Canvas. Students should check Canvas regularly.
- All students MUST use their UNK email account to communicate with the instructor. You should check your email at least once per day.
- Respondus Lockdown Browser is **REQUIRED/MANDATORY** for all quizzes and exams! Here is the link to download: <https://download.respondus.com/lockdown/download.php?id=477439341%20>. More information is on Canvas. This will NOT work on a Chromebook or Linux computer.

EXPECTATIONS

Grades are based on participation and quality of discussion, quizzes, exams, and assignments. Students must participate online for all discussion topics. You are expected to interact with other classmates on Canvas weekly discussion board. The quality of the discussion is exhibited by the contribution of original ideas, respect for differing opinions, and evidence of knowledge on the subject matter. Students are required to maintain a professional and cordial mannerism when communicating with the instructor and other students. When you are taking an online course, it is expected that you will read all of the materials and keep up with due dates on your own. I will not be reminding you of the due dates for the course. The calendar I created has all of the course due dates and you should be sure to download it and either transfer the dates to your calendar or keep a copy to make sure you don't miss any due dates. Students are encouraged to communicate with the instructor by email about their questions and concerns for the class contents, assignments, quizzes, and exams. I will check my email Mondays to Fridays between 9 am and 5 pm CT. I do not check email after 5 pm CT and rarely on weekends. I will respond to your emails within 24 hours.

NOTICE ON USE OF COPYRIGHT MATERIAL

The materials on the course Canvas site and given in lecture are only for the use of students enrolled in this course for purposes associated with this course and may not be retained or further disseminated. The materials on the course Canvas site and in class may be protected by copyright, and any further use or dissemination of this material may be in violation of Federal copyright law and University sanctions including failure in the course.

LECTURE TOPICS

All Lectures will be available on Canvas on Mondays at 8:00am CT. The PowerPoint slides materials are copyrighted by the book publisher and can't be distributed. Chapters 1, 2, 3, 9, and 10 are considered as the review of materials that you should have had in a basic biology course. You are solely responsible for this material. My PowerPoint slides will **not** cover Chapters 1, 2, 3, 9, and 10, but the outlines will be available on Canvas for your study. You will be given five 10-point overview quizzes (10 choice questions) over Chapters 1, 2, 3, 9, and 10. These overview quizzes can be taken at any time during the semester, but must be completed by September 3rd at 11:59 pm CT. At this time, the quiz will be removed from Canvas.

GRADE SCALE

Grades will be assigned using the standard grading scale for the Department of Biology, as follows: A+ (98.0-100%), A (92.0-97.9%), A- (90.0-91.9%), B+ (88.0-89.9%), B (82.0-87.9%), B- (80.0-81.9%), C+ (78.0-79.9%), C (72.0-77.9%), C- (70.0-71.9%), D+ (68.0-69.9%), D (62.0-67.9%), D- (60.0-61.9%), and F (below 60%). Grade assignments are final unless there is a calculation error.

GRADING SCHEME

Changes may be made at the discretion of the instructor.

Activities	Points	Due date
Case Study (10 @ 15 pts each)	150	11:59 pm CT on the Sunday of the week
Discussion (10 @ 5 pts each, plus 1 self-introduction 5-pts)	55	11:59 pm CT on the Sunday of the week
Quizzes (17 @ 10 pts each, including 5 overview quizzes)	170	11:59 pm CT on the Sunday of the week Overview quizzes due at 11:59 pm CT on Sep 3rd
Exam #1	100	October 1st Sunday by 11:59 pm CT
Exam #2	100	October 29th Sunday by 11:59 pm CT
Exam #3	100	December 13th Wednesday by 11:59 pm CT
Total Points	675	

EXAMS: Exams are composed of multiple choice, application problems, and short essay questions. The material on the exam will cover lecture material only, not the Case Studies. Respondus Lockdown Browser is required for online exams and quizzes. The amount of time allotted will be announced at the time of the test. If you run out of time while taking the test, you will not be given extra time. If you have a problem while taking your test, send me an email and I will deal with it as soon as possible. The computer displays a message to me that tells me what kind of problem you had, whether you took too much time or there was a computer problem. **You must take all three exams to receive full credit. If you miss an exam, you will automatically fail and receive a letter grade of an "F".** The dates for the exams are listed on the schedule. The exam will be made available at 8:00 am CT on Monday of the week listed and taken off at 11:59 pm CT on the dates listed in Grading Scheme. **THE DEADLINE IS FINAL!** Makeup exams will be given only under extreme or extenuating circumstances, which can be documented! In any and all cases, the final validity and acceptability of any excuse for absence are at the instructor's discretion. The grading will be finished within a week after the quizzes, exams, and assignments are closed.

QUIZZES: Throughout the semester, you will be given 17 timed quizzes worth 10 points each, which will be taken using the Respondus Lockdown Browser. Of these, five overview quizzes (over the review material for Chapters 1, 2, 3, 9, and 10) must be taken by 11:59pm CT on Sep 3rd. The other 12 quizzes will cover the book/lecture materials (not including the case studies). The dates for the quizzes are listed on the schedule and will be open at 8:00 am CT on the Monday of the week and closed at 11:59 pm CT on Sunday of the week. For all quizzes, you will be answering 10 multiple choice or true/false questions. If we have done calculations in the lecture for a certain week, make sure to have a calculator with you at the time of the test. If you run out of time while taking the quiz, you will not be given extra time. If you have a problem while taking your quiz, send me an email and I will deal with it as soon as possible. **THE DEADLINE IS FINAL! The quiz will be removed at 11:59 pm CT on the Sunday due date.**

CASE STUDY: Students are to finish 10 case study assignments (15 points each) related to your learning materials throughout the semester. You are to format the document as follows with 1" margins all around, 12pt Arial font, Single spacing, Students name in the *right hand corner of the header*, Case study # and the date in *left hand corner of the header*.

DISCUSSION BOARD: There are 11 graded weekly Discussion Boards worth 5 points each. You are expected to communicate with your classmates every week. In Week 1 you are to post a self-introduction to let other classmates to know more about you. Since Week 2, you are to post at least one short paragraph by Friday to summarize a clinical correlation related to the weekly case study or learning materials (the references should be included). Your weekly post is due every Friday of the week to give your group mates enough time to respond. Every week you are to reply to at least two posts from the other group mates. Your response / comments will be due every Sunday of the week. Each weekly discussion will be scored out of 5 points. You will be graded not on the number of posts per week but on the **quality** of posts.

The score for your posts will be based upon:

- a) Connection with real-life situations
- b) Depth and detail of posts
- c) Respect for classmates
- d) Discussion with classmates

UNK LIBRARY

The library is a good resource when looking for articles that may not be available online. The following links are especially usefully to distance students.

<http://library.unk.edu/services/distance.php>

<http://library.unk.edu/services/illdd.php>

LEARNING COMMONS (TUTORING)

The UNK Learning Commons offers support for this course! The Learning Commons, located on the 2nd floor of the Calvin T. Ryan Library, offers Subject Tutoring, the Writing Center, Success Coaching, and Language Support. These services are available to all UNK students in-person and on Zoom. The Learning Commons can help you with course content for select subjects, time-management skills, getting organized for class, and any type of writing project. To get the most out of your time with the Learning Commons, visit early and often! Contact the Learning Commons at 308-865-8905, unklearningcommons@unk.edu, or stop by in person. Website: www.unk.edu/lc

ATTENDANCE POLICY

Class attendance is different based on the mode of class delivery (face to face and online) and determined by the primary instructor. For face to face classes, regular attendance is desirable and expected. Depending on if online courses are synchronous or asynchronous dictates online class attendance/participation. If a student is absent or anticipates an absence for either class mode, the student's primary responsibility is to directly contact the primary instructor, and the student should consult with them accordingly. A student who misses a class or does not have an online presence is personally responsible for information and assignments communicated during that class session. The University-wide attendance policy will apply.

[Undergraduate Student Attendance Policy](#)

[Graduate Student Attendance Policy](#)

ACADEMIC HONESTY POLICY

Academic honesty is essential to the existence and integrity of an institution of higher education. The responsibility for maintaining that integrity is shared by all members of the academic community. To further serve this end, the University of Nebraska at Kearney has a policy relating to academic integrity.

[Undergraduate Academic Integrity Policy](#)

[Graduate Academic Integrity Policy](#)

FINALS WEEK POLICY

The final exam will be administered in the time period scheduled during finals week in accordance with University policy ([Final Exam Schedule](#)). More information about UNK's Finals Week Policy, including when it is appropriate to ask for special accommodations to move a course's final exam, can be found here: [Finals Week Policy](#).

LATE WORK/MAKE-UP EXAM POLICY

Assignments, quizzes, and exams are announced during class and/or on Canvas in advance. Students are strongly encouraged to complete assignments, quizzes, and exams on time. Makeup will be given only under extreme or extenuating circumstances, which can be documented! In any and all cases, the final validity and acceptability of any excuse for absence are at the instructor's discretion.

STUDENTS WITH DISABILITIES

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students with documented disabilities. To receive accommodation services for a disability, students must be registered with the UNK Disabilities Services for Students (DSS) office, 175 Memorial Student Affairs Building, 308-865-8214 or by email unkdso@unk.edu

STUDENTS WHO ARE PREGNANT

It is the policy of the University of Nebraska at Kearney to provide flexible and individualized reasonable accommodation to students who are pregnant. To receive accommodation services due to pregnancy, students must contact the Student Health office at 308-865-8218. The following links provide information for students and faculty regarding pregnancy rights. <https://thepregnantscholar.org/title-ix-basics/>
<https://nwlc.org/resource/faq-pregnant-and-parenting-college-graduate-students-rights/>

UNK STATEMENT OF DIVERSITY & INCLUSION

UNK stands in solidarity and unity with our students of color, our Latinx and international students, our LGBTQIA+ students and students from other marginalized groups in opposition to racism and prejudice in any form, wherever it may exist. It is the job of institutions of higher education, indeed their duty, to provide a haven for the safe and meaningful exchange of ideas and to support peaceful disagreement and discussion. In our classes, we strive to maintain a positive learning environment based upon open communication and mutual respect. UNK does not discriminate on the basis of race, color, national origin, age, religion, sex, gender, sexual orientation, disability or political affiliation. Respect for the diversity of our backgrounds and varied life experiences is essential to learning from our similarities as well as our differences. The following link provides resources and other information regarding D&I: <https://www.unk.edu/about/equity-access-diversity.php>

REPORTING STUDENT SEXUAL HARASSMENT, SEXUAL VIOLENCE OR SEXUAL ASSAULT

Reporting allegations of rape, domestic violence, dating violence, sexual assault, sexual harassment, and stalking enables the University to promptly provide support to the impacted student(s), and to take appropriate action to prevent a recurrence of such sexual misconduct and protect the campus community. Confidentiality will be respected to the greatest degree possible. Any student who believes she or he may be the victim of sexual misconduct is encouraged to report to one or more of the following resources:

- **Local Domestic Violence, Sexual Assault Advocacy Agency** 308-237-2599
- **Campus Police (or Security)** 308-865-8911
- **Title IX Coordinator** 308-865-8655

Retaliation against the student making the report, whether by students or University employees, will not be tolerated.

COURSE TIMELINE

Topics and dates are tentative and subject to change by the instructor.

Week / Date	Chapter / Topic	Activities
#1 / (8/21 – 8/27)	Introduction	Overview quizzes Discussion 01 (Introduction)
#2 / (8/28 – 9/3)	Ch.13: Chromosomes	Overview quizzes
#3 / (9/4 – 9/10)	Ch.4: Single Gene Inheritance	Timed Quiz 01 Case study 01 Discussion 02
#4 / (9/11 – 9/17)	Ch.5: Beyond Mendelian's Law	Timed Quiz 02 Case study 02 Discussion 03
#5 / (9/18 – 9/24)	Ch.6: Matters of Sex	Timed Quiz 03 Case study 03 Discussion 04
#6 / (9/25 – 10/1)	Exam 1	Exam 1 (Ch.13, 4-6)
#7 / (10/2 – 10/8)	Ch.7: Complex Traits	Timed Quiz 04 Case study 04 Discussion 05
#8 / (10/9 – 10/15)	Ch.8: Genetics of Behavior	Timed Quiz 05 Case study 05 Discussion 06
#9 / (10/16 – 10/22)	Ch.11: Gene Expression and Epigenetics	Timed Quiz 06 No Case Study – Fall Break
#10 / (10/23 – 10/29)	Ch.12: Gene Mutation Exam 2	Timed Quiz 07 Exam 2 (Ch.7,8,11,12)
#11 / (10/30 – 11/5)	Ch.14: Genomes Ch.15: Constant Allele Frequencies	Timed Quiz 08 Case study 06 Discussion 07
#12 / (11/6 – 11/12)	Ch.16: Changing Allele Frequencies	Timed Quiz 09 Case study 07 Discussion 08
#13 / (11/13 – 11/19)	Ch.20: Cancer Genetics	Timed Quiz 10 Case study 08 Discussion 09
#14 / (11/20 – 11/26)	No Class	Thanksgiving Break
#15 / (11/27 – 12/3)	Ch.21: DNA Technologies	Timed Quiz 11 Case study 09 Discussion 10
#16 / (12/4 – 12/10)	Ch.22: Genetic Testing & Treatment	Timed Quiz 12 Case study 10 Discussion 11
#17 / (12/11 – 12/14)	Finals Week: Exam 3	Exam 3 (Ch.14-16, 20-22)