



BIOL 2316 – Human Genetics (Online)

Course Syllabus: Spring 2021

“Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed.”

Professor James Ward

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	8:30-9:30	8:30-9:30	8:30-9:30	8:30-9:30	By Appt.	All Office Hours Online
	11:00-12:30	9:30-11:00	11:00-12:30	9:30-11:00		

This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities.

Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified.

Course Description:

3 credit hours: Lecture: Three hours of lecture each week.

Study of the principles of molecular and classical genetics and the function and transmission of hereditary material. Emphasis on human genetics.

Note: Additional course fee(s) required.

Prerequisite(s): 8 hours of Biology

Student Learning Outcomes:

1. Define genetics and heredity and explain how DNA is maintained and how it provides information to construct a protein.
2. Distinguish somatic cells from germ cells and diploid from haploid along with describing the main events of the cell cycle.
3. Explain the steps in sperm and oocyte formation and how meiosis is necessary to reproduction.
4. Solve single-gene and multiple-gene inheritance problems in light of Mendelian genetics.
5. Describe the impact of epistasis, penetrance, expressivity, pleiotropy, gene linkage, and sex-linkage on gene expression.
6. Explain how mitochondrial DNA differs from nuclear DNA and the mode of inheritance of a mitochondrial trait.
7. Define multifactorial traits and heritability.
8. Explain the structure of the DNA molecule and the mechanisms of replication, transcription and translation.
9. Describe the nature of gene variants.
10. Draw and describe the major components of a chromosome and distinguish between normal chromosome number and abnormal chromosome number.

Evaluation/Grading Policy:

Grading Points (1000 points):

100 points – Online Assignments/Discussions
100 points – Research Paper
400 points – Lecture Exams (4)
200 points – Midterm Exam
200 points – Final Exam

Grade Assignment:

A = 90-100% (900-1000 pts)
B = 80-89% (800-899 pts)
C = 70-79% (700-799 pts)
D = 60-69% (600-699 pts)
F = 0-59% (0-719 pts)

Online Assignments:

Each chapter has an assigned Smartbook activity, chapter assignment, and chapter quiz to check your understanding of chapter topics and reading assignments. These are completed online in Connect which is accessed through blackboard. You will need to login to blackboard on the 1st day of the semester. Students will work at their own pace prior to due dates. Activities and Assignments are not timed. The chapter quizzes each consist of 20 questions with a 25 minute timer. Students will need to earn 4000 connect points for a 100 connect grade. Anything over 4000 will earn 1 extra credit point per 100 connect points. There are 6600 available points thus 26 available extra credit points. **Connect chapter assignments are always due on Saturdays at 11:59pm. These dates are firm – no makeups for missed online work will be allowed.**

Online Discussions:

Chapter readings, videos, and discussions will be assigned to check your understanding of chapter topics. These are completed online in blackboard. Students will post an initial response to each chapter discussion thread by Wednesday of each week with 2 follow up posts replying to other students posts by Friday each week. Each post must be a minimum of 100 words and contain and least 2 scientific points.

Research Paper:

A 6-8 page research paper over an approved topic in human genetics will be written double-spaced with Times New Roman 12-point font in APA Format. A separate cover page is required. A minimum of five sources (not including the textbook) should be included on a separate reference page. A one page topic prospectus with a minimum of two references must be submitted for approval by the instructor by **February 8, 2021** and the final paper must be submitted by **Monday, April 26, 2021**.

Lecture Tests/Exams:

The lecture exams may include both objective questions (multiple choice, matching, etc.) over text materials, and readings as well as descriptive questions requiring detailed explanations over broad themes. Success on the exams is a function of anxiety regulation, test prep, study strategies, and studying for retention. Retention requires repetitions, which requires time! The 4 unit exams will be accessed through blackboard. They will be completed **online via Connect monitored by Proctorio**. Each exam is 100 questions worth 100 points with a 90 minute timer. Exams will not be made up for any reason as multiple days exist for students to complete the exams. **Exams will open on Thursday and close the following Tuesday at 11:59pm. The Tuesday due dates are firm – no makeups for missed exams will be allowed.**

Proctored Mid-Term Exam:

A comprehensive exam will be accessed through blackboard. It will be given **online via connect monitored by Proctorio**. Each exam is 200 questions worth 200 points with a 150 minute timer. **The Mid-Term Exam Exam will open on Monday, March 8th and close on Friday, March 12th at 11:59pm. The Friday due date is firm – no makeups for missed exams will be allowed.**

Proctored Final Exam:

A comprehensive exam will be accessed through blackboard. It will be given **online via connect monitored by Proctorio**. Each exam is 200 questions worth 200 points with a 150 minute timer. **The Final Exam will open on Friday, May 7th and close on Wednesday, May 12th at 11:59pm. The Wednesday due date is firm – no makeups for missed exams will be allowed.**

Required Instructional Materials: Lewis: Human Genetics, 13th ed with Connect Inclusive Access

Publisher: McGraw Hill

ISBN Number: Available through NTCC Bookstore

Optional Instructional Materials: none

Minimum Technology Requirements:

- Internet capable desktop, laptop, or chromebook (Tablets/ipads/Phones not recommended)
- Microsoft Office for Lab Workbook in Microsoft Word
- Video conferencing capability with webcam and microphone using Zoom
- Access to printer if hard copies of assignments are desired

Required Computer Literacy Skills: Blackboard; Microsoft Office; Zoom

- Web browsing skills for working with the online homework system
- Ability to use Blackboard for access to course information and assignments
- Functional use of Microsoft Office and ability to insert images into word docs
- Ability to use camera and microphone for video and sound in zoom
- Competent and professional emailing skills
 - Emails should have the following format in subject line: Last Name, First Name -Course ID
 - Example: Ward, James - BIOL 1406.001

Student Expectations:

- Adhere to Classroom Etiquette including Zoom Virtual Classroom (see addendum in Blackboard)
- Adhere to Proctored Exam Etiquette (see addendum in Blackboard)
 - Proctored exams are monitored by McGraw Hill through Connect with Proctorio
 - Students will be recorded in the following ways during proctored exams:
 - Video, Audio, Screen, and Environment
 - Testing Violations from all recordings will be reported by Proctorio

Communications: Turnaround time for email responses is 24 hours during workweek.

NTCC email is the official form of communication used by the college.

Institutional/Course Policy: Withdraw Date

The last day to withdraw from the course in **Thursday, April 8th**. Discontinuing with the course without officially dropping the course by this date will result in a grade earned, in most instances an “F”. A stoppage in attendance does not equate to dropping the course.

Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements:

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC’s website (<http://www.ntcc.edu/>) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information. Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

NTCC Academic Honesty/Ethics Statement:

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

ADA Statement:

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to request accommodations. An appointment can be made with the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website.

Family Educational Rights and Privacy Act (FERPA):

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.

BIOL 2316 ONLINE COURSE SCHEDULE

All 3 credit college courses require 9 hours of lecture work per week. Typically 3 hours are done on campus in class with an instructor and the remaining 6 hours are spent working outside of scheduled class time. Online courses are no different except all 9 weekly work hours are done outside of scheduled class time. You will work at your own pace and can always work ahead but never behind. The online course weekly schedule will go from Monday to Saturday as follows:

LECTURE

Monday – Complete Chapter Reading and Notation Assignments

Tuesday – Review Blackboard Video and Content in Chapter Resource Folder

Wednesday – Complete Initial Chapter Discussion Board Post

Thursday – Make Final Preparations Needed to Successfully Complete Upcoming Assignments

Friday – Reply to 2 Posts on Chapter Discussion Boards

Saturday – Chapter Connect Assignments Due

Tentative Course Timeline:

(*note* instructor reserves the right to make adjustments to this timeline at any point in the term):

BIOL 2316

Online Lecture

Week 1: JAN 18-24

Orientation/Syllabus

Syllabus Agreement Due Jan 23

Syllabus Quiz Due Jan 23

Week 2: JAN 25-31

CH 1 Information in a Human Genome

CH 1 Connect Due Saturday Jan 30

Week 3: FEB 1-7

CH 2 Cells

CH 2 Connect Due Saturday Feb 6

Week 4: FEB 8-14

RESEARCH PROSPECTUS DUE MONDAY, FEBRUARY 8th

CH 3 Meiosis, Development, & Aging

CH 3 Connect Due Saturday Feb 13

EXAM 1 over PART I: CH 1-3 (available online Thur, Feb 11 – Tue, Feb 16)

Week 5: FEB 15-21

CH 4 Single Gene Inheritance & CH 5 Beyond Mendel's Laws

CH 4 & 5 Connect Due Saturday Feb 20

Week 6: FEB 22-28

CH 6 Matters of Sex

CH 6 Connect Due Saturday Feb 27

Week 7: MAR 1-7

CH 7 Complex Traits

CH 7 Connect Due Saturday Mar 6

EXAM 2 over PART II: CH 4-7 (available online Thur, Mar 4 – Tue, Mar 9)

Week 8: MAR 8-14

MIDTERM EXAM CH 1-7 (available online Mon, Mar 8 – Fri, Mar 12)

NOTE: Part III after spring break will cover 5 chapters in 3 weeks so it is highly recommended that you work ahead this week after taking the Mid Term Exam!!!

SPRING BREAK: MAR 15-19

Week 9: MAR 22-28	CH 9 DNA Structure and Replication & CH 10 Gene Action: From DNA to Protein CH 9 & 10 Connect Due Saturday Mar 27
Week 10: MAR 29-APR 4	CH 11 Gene Expression and Epigenetics CH 11 Connect Due Saturday Apr 3
Week 11: APR 5-11 (Apr 8 th Drop Date)	CH 12 Gene Mutation & CH 13 Chromosomes CH 12 & 13 Connect Due Saturday Apr 10 EXAM 3 over PART III: CH 9-13 (available online Thur, Apr 8 – Tue, Apr 13)
Week 12: APR 12-18	CH 17 Human Ancestry and Evolution (Part IV Selection) CH 17 Connect Due Saturday Apr 17
Week 13: APR 19-25	CH 20 Cancer Genetics (Part V Selection) CH 20 Connect Due Saturday Apr 24
Week 14: APR 26-MAY 2	RESEARCH PAPER DUE MONDAY, APRIL 26th CH 23 Reproductive Technologies (Part VI Selection) CH 23 Connect Due Sat May 1 EXAM 4 over PARTS IV-VI: CH 17, 20, 23 (available online Thur, Apr 29 – Tue, May 4)
Week 15: MAY 3-9	Review for Final Exam
Week 16: MAY 10-12	FINAL EXAM over CH 1-7, 9-13, 17, 20, 23 (available Fri, May 7 – Wed, May 12)