

University of North Texas at Dallas
Spring 2016
SYLLABUS

BIOL3451.001: Genetics: 3 hrs	
Department of Life and Health Sciences	School of Liberal Arts and Sciences
Instructor Name:	Dr. Irene T. Rodriguez
Office Location:	Room 253, Founders Hall (DAL2)
Office Phone:	972-338-1525
Email Address:	Irene.Rodriguez@untdallas.edu
Office Hours:	Tuesday and Thursday: 10:00 am - 11:00 am; or by appointment
Virtual Office Hours:	N/A
Classroom Location:	Room 240, Founders Hall (DAL2)
Class Meeting Days & Times:	Tuesday and Thursday 8:30 am – 9:50 am
Course Catalog Description:	Genetic structure and inheritance in viruses, bacteria and higher organisms with emphasis on gene biochemistry, Mendelian genetics and population genetics
Prerequisites:	Prerequisite(s): BIOL 1710 / 1730 or BIOL 1711 / 1733; BIOL 1720 / 1740 or BIOL 1722 / 1744; BIOL 2041 / 2042 or BIOL 2140 or BIOL 2241 or BIOL 2251 or BIOL 2302 / 2312; CHEM 2370 (may be taken concurrently) or consent of department
Co-requisites:	None
Recommended Text:	Klug, W.S., Cummings, M.R., Spencer, C.A., and Palladino, M.A. 2015. <i>Concepts of Genetics</i> . Eleventh Edition. Pearson Education, Inc. ISBN-10: 0321948912 / ISBN-13: 9780321948915 Or, Klug, W.S., Cummings, M.R., Spencer, C.A., and Palladino, M.A. 2012. <i>Concepts of Genetics</i> . Tenth Edition. Pearson Education, Inc. ISBN-10: 0321724127 / ISBN-13: 9780321724120
Access to Learning Resources:	UNT Dallas Library: phone: 972.338.1616 e-mail: UNTDLibrary@unt.edu web: http://www.untdallas.edu/library UNT Dallas Bookstore: phone: (972) 780-3652 e-mail: untdallas@bkstr.com web: http://www.untdallas.edu/bookstore
Course Goals or Overview:	The goal of this course is to provide the student with a broad background in genetics, including genetic structure and inheritance in viruses, bacteria and higher organisms with emphasis on gene biochemistry, Mendelian genetics and population genetics
Learning Objectives/Outcomes:	<ol style="list-style-type: none"> 1. Understand the basic concepts of genetics 2. Understand genetic structure and inheritance in viruses, bacteria and higher organisms 3. Apply the principles of gene biochemistry, Mendelian genetics and population genetics on developing problem solving skills 4. Be able to locate, evaluate, and organize scientific information, including the use of information technologies 5. Critically read, analyze, and orally communicate primary scientific data and literature, engaging with others in thoughtful and well-crafted discussions 6. Improve on written communication skills by using appropriate grammar, vocabulary, and content
Assessment Plan:	Student learning outcomes will be assessed by course content examinations, problem solving homework, written review of primary literature, oral presentation and discussion of current topics in genetics and modern genetic applications

Course Outline and Schedule

This schedule is subject to change by the instructor. Any changes will be communicated by the instructor in class.

WEEK	DATES	TOPIC	CHAPTER	DUE ON TUESDAY
1	Jan 19	Introduction to Genetics	1	
	Jan 21	Mitosis and Meiosis	2	
2	Jan 26	Mendelian Genetics	3	Homework 1
	Jan 28	Extensions of Mendelian Genetics	4	
3	Feb 2	Chromosome Mapping in Eukaryotes	5	Homework 2
	Feb 4	Sex Determination and Sex Chromosomes	7	
4	Feb 9	Chromosome Mutations	8	Homework 3
	Feb 11	Extranuclear inheritance	9	
5	Feb 16 Feb 18	Complete and review for exam EXAM 1	1-5, 7-9	
6	Feb 23	DNA Structure and Analysis	10	Homework 4
	Feb 25	DNA Replication and Recombination	11	
		DNA Organization in Chromosomes	12	
7	Mar 1	The Genetic Code and Transcription	13	Homework 5
	Mar 3	Translation and Proteins	14	
		Gene Mutation, DNA Repair and Transposition	15	
		Regulation of Gene Expression in Eukaryotes	17	
8	Mar 8 Mar 10	Complete and review for exam EXAM 2	10-15, 17	
9	Mar 14-20	SPRING BREAK!		
10	Mar 22	Developmental Genetics	18	Homework 6
	Mar 24	Cancer and Regulation of the Cell Cycle	19	
11	Mar 29	Recombinant DNA Technology	20	Homework 7
	Mar 31	Genomics, Bioinformatics, and Proteomics	21	
12	Apr 5 Apr 7	Complete and review for exam EXAM 3	18-21	
13	Apr 12	Applications and Ethics of Genetic Engineering and Biotechnology	22	Homework 8
	Apr 14	Genetically Modified Foods	Special Topics	
		DNA Forensics		
14	Apr 19	Emerging Roles of RNA	Special Topics	Homework 9
	Apr 21	Gene Therapy GENE EDITING SEMINAR: Student Presentations		
15	Apr 26	Neurogenetics	24	Homework 10
	Apr 28	Population and Evolutionary Genetics	25	
16	May 3 May 5	Complete and review for exam EXAM 4	22, 24-25, Special Topics	
17	May 10	Final Exam – Comprehensive – 8:00 AM to 10:00 AM	All	

Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course:

Problem Solving Homework (200 points) – Each week the student will solve the assigned problems and he/she will turn them in at the beginning of the class on Tuesday, as shown on the schedule. The students can work in groups to solve the homework, but each student should turn his/her own homework individually. Each homework is worth 20 points. Assignments should be turned in on time. **Late assignments will be graded, but with a penalty of 20%.**

Gene Editing Seminar - Written Review and Oral Presentation (150 points) – The students will work in groups of 2 to 4 students to research, critically read, analyze and prepare a written review and oral presentation on the topic of gene editing. The written review of the topic will be worth 100 points and the oral presentation will be worth 50 points. Detailed guidelines for these assignments will be provided in class.

Participation in class discussions (50 points) – Participation points will be assigned depending on the student's contribution to the discussions in class and during the student presentations.

Exams (600 points) – You will be given four in-class examinations. Each exam will be worth 100 points and it will consist of a combination of multiple choice, short answer, and essay items. The final exam will be comprehensive and worth 200 points. Materials in the textbook not covered in lecture will not be included in the exams, but materials covered in the lecture that are not found in the textbook will be considered materials for the exams. Therefore, **it is highly recommended and expected that you attend every lecture and be on time!** Attendance and punctuality are required for all exams.

Extra point quizzes – In order to encourage student to read the topic before coming to class, several opportunities for extra points will be provided in the form of quizzes at the beginning of selected classes. Only those students that are on time for such classes will be provided with these opportunities (i.e., if you are late for class, then you will miss the opportunity to take the corresponding quiz and earn extra points).

Grading Matrix

Instrument	Total points	Percentage value
Problem solving homework	200	20 %
Written Review	100	10 %
Oral presentation	50	5 %
Participation	50	5 %
Exam 1	100	10 %
Exam 2	100	10 %
Exam 3	100	10 %
Exam 4	100	10 %
Final exam - comprehensive	200	20 %
Total	1000	100 %

Grade Determination

A = 90% or better
B = 80 – 89 %
C = 70 – 79 %
D = 60 – 69 %
F = less than 60%

Course Policies and Procedures

Late work and make-up exams

No late assignments will be accepted without obtaining prior authorization or proving validity of absence. In such a case, the assignment should be turned in at the beginning of the following class and **20% of the points will be deducted.** Exams will only be administered on the dates and times provided in the syllabus. **Attendance and punctuality are required** for all exams. Once the first person finishes the exam, no one will be permitted to take it thereafter. You will NOT be allowed to leave the classroom and return during the exam (i.e. go to the restroom before the exam!). If you will be observing a religious holy day that is coincidental with an exam, make your instructor aware before its observance. Make-up exams will be administered during the class period **preceding** the regular exam date.

Cell phone policy

Do NOT use your cell phone in class; this includes calling, texting, internet surfing, and gaming. If your cell phone must be on during class, apply its "silent" settings. If you keep your phone on during class time, do not keep it on top of the table you are sitting at, please keep it in your pocket, purse, or bag. If your phone rings during an exam, even if the silent setting has been applied, you must turn in your exam immediately.

Laptop policy

You may use your laptop in class to take notes, but **only to take notes**. If it becomes apparent that laptops are being used by the student for activities other than lecture note taking, **all laptop use will be prohibited during class time**. Laptops are not to be used during exams. If you bring a laptop to an exam, it must remain in a bag and under the table.

Cheating and plagiarism

Cheating will NOT be tolerated in this course. If you are found cheating on an assignment or exam, you will not receive credit for the assignment/exam, and student services will be notified. Cheating includes using unauthorized material or devices on an exam, the work of another individual without proper citations, using larger portions of another's work, even with proper citations, and copying the work of a classmate. There are no exceptions to this policy.

Diversity/Tolerance Policy

Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive & inappropriate language (swearing) and remarks offensive to others of particular nationalities, ethnic groups, sexual preferences, religious groups, genders, or other ascribed statuses will not be tolerated. Disruptions which violate the Code of Student Conduct will be referred to the Dean of Students as the instructor deems appropriate.

Food/Drink Policy

No food is allowed in the classroom. Drinks (like water and coffee) are allowed only if they are well contained (in a bottle or a cup with a lid).

University Policies and Procedures

Students with Disabilities (ADA Compliance)

Chapter 7(7.004) Disability Accommodations for Students

The University of North Texas at Dallas makes reasonable academic accommodation for students with disabilities. Students seeking accommodations must first register with the Disability Services Office (DSO) to verify their eligibility. If a disability is verified, the DSO will provide you with an accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request accommodations at any time, however, DSO notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet/communicate with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information see the Disability Services Office website at <http://www.untDallas.edu/disability>. You may also contact them by phone at 972-338-1777; by email at UNTDdisability@untDallas.edu or at Building 2, room 204.

Student Evaluation of Teaching Effectiveness Policy

Student's evaluations of teaching effectiveness is a requirement for all organized classes at UNT Dallas. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider students' evaluations to be an important part of your participation in this class.

Academic Integrity

Academic integrity is a hallmark of higher education. You are expected to abide by the University's code of Academic Integrity policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University's policies and procedures. Refer to the Student Code of Academic Integrity at http://www.untDallas.edu/sites/default/files/page_level2/pdf/policy/7.002%20Code%20of%20Academic_Integrity.pdf for complete provisions of this code.

Academic dishonesty includes, but is not limited to, cheating, plagiarizing, fabrication of information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students.

Bad Weather

This policy applies *only if the campus is closed*. On those days that present severe weather and driving conditions, a decision may be made to close the campus. In case of inclement weather, call UNT Dallas Campus main voicemail number (972) 780-3600 or search postings on the campus website www.unt.edu/dallas. Students are encouraged to update their Eagle Alert contact information, so they will receive this information automatically.

UNT Dallas Learning Commons

Writing Center

The UNT Dallas Writing Center offers free, one-on-one or group tutoring services to all registered undergraduate and graduate students. Our goal is to help students write a good paper, and most importantly, become better writers. We work with students on any type of written or oral project and can help students at any stage of the writing process (from brainstorming and outlining to citing and looking over a final draft).

The Writing Center is located on the **3rd floor of DAL 1** (big glass structure in front of the stairs).

We are available for appointments during the following hours: **Mon-Thurs: 9:00am-7:00pm; Fri: 3:00pm-7:00pm; Sat: 10am-3:00pm; Sun: closed.**

To make an appointment, browse the Writing Center's online resources, or see a list of our student FAQ's, please visit www.untdallas.edu/wc. If students cannot come in for a face-to-face appointment, students can take advantage of our free online tutoring service through SMARTHINKING. To submit drafts and get more information about this service, visit www.untdallas.edu/smart.

To make the best use of your time, please bring as much information as possible with you to your appointment (assignment, grading rubric, previous graded papers from the class, etc.). The Writing Center will not proofread papers or talk with you about grades, but we will help you become better writers over time.

Math Lab

The UNT Dallas Math Lab offers free, one-on-one or group tutoring services to all registered undergraduate students. Our goal is to help students improve their math skills, succeed in all of courses requiring math, and learn math-related skills they will need post-graduation. We work with students enrolled in all MATH courses at UNT Dallas and provide limited assistance with STATS and ACCT courses.

The Math Lab is located on the **3rd floor of DAL 1 in room 336**. Students can walk-in at any time. Check the hours at: <http://www.untdallas.edu/ml>

If students cannot come in for face-to-face tutoring, students can take advantage of our free online tutoring service through SMARTHINKING. To get more information about this service, visit www.untdallas.edu/smart.