

**University of North Texas at Dallas**  
**Spring 2015**  
**SYLLABUS**

<b>BIOL3451D.090: Genetics: 3 hrs</b>	
<b>Department of Life and Health Sciences</b>	<b>Division of Liberal Arts and Life Sciences</b>
<b>Instructor Name:</b>	Dr. Irene T. Rodriguez
<b>Office Location:</b>	Room 253, Founders Hall (DAL2)
<b>Office Phone:</b>	972-338-1525
<b>Email Address:</b>	Irene.Rodriguez@untdallas.edu
<b>Office Hours:</b>	Monday: 3:30 – 5:30 pm; Tuesday and Thursday: 10:00 am - 12:00 pm; or by appointment
<b>Virtual Office Hours:</b>	N/A
<b>Classroom Location:</b>	Room 213, Founders Hall (DAL2)
<b>Class Meeting Days &amp; Times:</b>	Tuesday and Thursday 8:30 am – 9:50 am
<b>Course Catalog Description:</b>	Genetic structure and inheritance in viruses, bacteria and higher organisms with emphasis on gene biochemistry, Mendelian genetics and population genetics
<b>Prerequisites:</b>	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
<b>Co-requisites:</b>	None
<b>Required Text:</b>	<b>Recommended text:</b> 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
<b>Access to Learning Resources:</b>	UNT Dallas Library: phone: 972.338.1616 e-mail: <a href="mailto:UNTDLibrary@unt.edu">UNTDLibrary@unt.edu</a> web: <a href="http://www.untdallas.edu/library">http://www.untdallas.edu/library</a> UNT Dallas Bookstore: phone: (972) 780-3652 e-mail: <a href="mailto:untdallas@bkstr.com">untdallas@bkstr.com</a> web: <a href="http://www.untdallas.edu/bookstore">http://www.untdallas.edu/bookstore</a>
<b>Course Goals or Overview:</b>	
	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
<b>Learning Objectives/Outcomes:</b>	
	<ol style="list-style-type: none"> <li>1. Understand the basic concepts of genetics</li> <li>2. Understand genetic structure and inheritance in viruses, bacteria and higher organisms</li> <li>3. Apply the principles of gene biochemistry, Mendelian genetics and population genetics on developing problem solving skills</li> <li>4. Be able to locate, evaluate, and organize scientific information, including the use of information technologies</li> </ol>

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	HOMEWORK DUE
1	Jan 20 Jan 22	Introduction to Genetics Mitosis and Meiosis	1 2	
2	Jan 27 Jan 29	Mendelian Genetics Extensions of Mendelian Genetics Chromosome Mapping in Eukaryotes	3 4 5	HW 1
3	Feb 3 Feb 5	Genetic Analysis and Mapping in Bacteria Sex Determination and Sex Chromosomes	6 7	HW 2
4	Feb 10 Feb 12	Chromosome Mutations Extranuclear inheritance	8 9	HW 3
5	<b>Feb 17</b> <b>Feb 19</b>	<b>Review for Exam</b> <b>Exam 1</b>	<b>1-9</b>	
6	Feb 24 Feb 26	DNA Structure and Analysis DNA Replication and Recombination DNA Organization in Chromosomes	10 11 12	HW 4
7	Mar 3 Mar 5	The Genetic Code and Transcription Translation and Proteins Gene Mutation, DNA Repair and Transposition Regulation of Gene Expression in Eukaryotes	13 14 15 17	HW 5
8	<b>Mar 10</b> <b>Mar 12</b>	<b>Presentations 1, 2. Review for Exam</b> <b>Exam 2</b>	<b>10-15, 17</b>	
9	<i>Mar 17</i> <i>Mar 19</i>	<i>SPRING BREAK</i>		
10	Mar 24 Mar 26	Developmental Genetics Cancer and Regulation of the Cell Cycle	18 19	HW 6
11	Mar 31 Apr 2	Recombinant DNA Technology Genomics, Bioinformatics, and Proteomics	20 21	HW 7
12	Apr 7 <b>Apr 9</b>	Applications and Ethics of Genetic Engineering and Biotechnology <b>Presentations 3, 5</b>	22	HW 8
13	<b>Apr 14</b> <b>Apr 16</b>	<b>Presentations 4, 6. Review for Exam</b> <b>Exam 3</b>	<b>18-22</b>	
14	Apr 21 Apr 23	Quantitative Genetics Neurogenetics	23 24	HW 9
15	Apr 28 Apr 30	Population and Evolutionary Genetics	25	HW 10
16	<b>May 5</b> <b>May 7</b>	<b>Review for Exam</b> <b>Exam 4</b>	<b>23-25</b>	
17	<b>May 12</b>	<b>Final Exam – Comprehensive – 8:00 AM to 10:00 AM</b>	<b>All</b>	

## 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. Each homework is worth 20 points. (See the Course Policies and Procedures below regarding late assignments).

**Written Review and Oral presentation of a Special Topic in Modern Genetics (150 points)** – The students will work in groups of 2 to 4 students to research, critically read, analyze and prepare a written review of a topic in modern genetics, which will be assigned by the instructor. The written review of the topic will be worth 100 points. In addition, each student will participate in a group presentation and discussion of the same topic to the class. This presentation/discussion 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 points – 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).***

## Grading Matrix

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

### 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 10% of the points will be deducted. Exams will only be administered on the dates provided in the syllabus. 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.

## **University Policies and Procedures**

### **Students with Disabilities (ADA Compliance)**

The University of North Texas Dallas faculty is committed to complying with the Americans with Disabilities Act (ADA). Any student requesting academic accommodations based on a disability is required to register with Disability Services each semester. A letter of verification for approved accommodations can be obtained from this office. Please be sure the letter is delivered to me as early in the semester as possible. Disability Services is located in the **Student Life Office in DAL2, Suite 200** and is open **8:30 a.m. – 5:00 pm, Monday through Friday**. The phone number is (972) 338-1775.

### **Student Evaluation of Teaching Effectiveness Policy**

The Student Evaluation of Teaching Effectiveness (SETE) is a requirement for all classes at UNT. 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 the SETE to be an important part of your participation in this class.

### **Assignment Policy**

Assignments are intended to reinforce material covered in lecture, and prepare you for the exams. Collaborative efforts on completing the assignments are encouraged so long as all member of the collaboration contribute equally. As with all other graded assessments, cheating will not be tolerated. While collaborations are encouraged, each student must submit their own work, which cannot be identical to the work submitted by the other members of the collaboration. Assignments should be turned in on time. Late assignments will be graded, but with a penalty of 10%.

### **Exam Policy**

Exams should be taken as scheduled. No makeup examinations will be allowed except for documented emergencies (See Student Handbook). Any student caught cheating will automatically receive a 0 on the exam, and the instructor may pursue further disciplinary action. After the first exam is turned in, no more exams will be distributed to students that arrive late to the exam period.

### **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.unt.edu/unt-dallas/policies/Chapter%2007%20Student%20Affairs.%20Education.%20and%20Funding/7.002%20Code%20of%20Academic\\_Integrity.pdf](http://www.unt.edu/unt-dallas/policies/Chapter%2007%20Student%20Affairs.%20Education.%20and%20Funding/7.002%20Code%20of%20Academic_Integrity.pdf) for complete provisions of this code.

In addition, all academic work submitted for this class, including exams, papers, and written assignments should include the following statement:

***On my honor, I have not given, nor received, nor witnessed any unauthorized assistance that violates the UNTD Academic Integrity Policy.***

### **Bad Weather Policy**

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](http://www.unt.edu/dallas). Students are encouraged to update their Eagle Alert contact information, so they will receive this information automatically.

### **Attendance and Participation Policy**

The University attendance policy is in effect for this course. Class attendance and participation is expected because the class is designed as a shared learning experience and because essential information not in the textbook will be discussed in class. The dynamic and intensive nature of this course makes it impossible for students to make-up or to receive credit for missed classes. Attendance and participation in all class meetings is essential to the integration of course material and your ability to demonstrate proficiency. Students are responsible to notify the instructor if they are missing class and for what reason. Students are also responsible to make up any work covered in class. It is recommended that each student coordinate with a student colleague to obtain a copy of the class notes, if they are absent.

### **Diversity/Tolerance Policy**

Students are encouraged to contribute their perspectives and insights to class discussions. However, offensive and 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 that violate the Code of Student Conduct will be referred to the Office of Student Life as the instructor deems appropriate.

### **Use of Electronic Gadgets in the Classroom**

You are allowed to take notes using laptops/iPads/other electronic devices. You are allowed to record the lectures. The instructor reserves the right to ask you to discontinue use of an electronic device if it becomes disruptive to others in the classroom.

### **Food/Drink Policy**

NO food or drinks are allowed in the classroom.

## **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 **3<sup>rd</sup> floor of DAL 1** (big glass structure in front of the stairs). During the fall and spring semesters, we are available for appointments during the following hours:

**Mon-Thurs: 9:00a-7:00p      Fri: 3:00p-6:00p      Sat: 10:00a-3:00p**

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](http://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](http://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 **3<sup>rd</sup> floor of DAL 1 in room 336**. Students can walk-in at any time, and our hours of operation are as follows:

**Mon/Tues/Thurs: 12:00p-6:00p      Weds: 10:00a-7:00p**

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](http://www.untdallas.edu/smart).