

BIOL 1140_502: Biology for Health Sciences

Spring 2022 • CRN # 53618 • Lecture



VALENCIA

Syllabus

Face to Face

Lecture: Tues. & Thurs.
10:30am-11:45am
VAHS Rm. 101

COURSE INFORMATION

This introductory biology course for students interested in health science careers focuses on the concepts of chemistry, cell biology, metabolism, genetics, and regulation of gene expression.

Dr. T'S COURSE DESCRIPTION

I love teaching Biology - the study of life. In this class we will start by learning about the molecules that are part of all cells. Yes - your cells and everything we eat are composed of molecules. Most of the semester we will spend learning about the cell - such wonderful little machines that do all the work within an organism. First, we will have to learn about all the cell components - think of them as little organs (organelles). Then, we will learn about how our cells obtain energy from food we eat. Next, we will discuss DNA - our chromosomes; they are the ones that determine what we look like and everything about us. Have you ever thought about cell division? Why do cells divide? Why do we need to make more cells? These questions will be answered during our discussion on Mitosis and Meiosis. We also will discuss how traits are passed from generation to generation. Look at your family and see what traits you share. The last part of the semester we briefly study anatomy & physiology of the human body. How amazing is this? Now do you know why I love teaching Biology - we learn about our body and how it works.

Bring the knowledge that you have and take the journey with me as you continue your educational goals.



"I hope to continue to inspire our nation's youth to pursue careers in science, technology, engineering, and math so they, too, may reach for the stars."
--ELLEN OCHOA The First Hispanic Woman to Go to Space.



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COURSE LEARNING OUTCOMES (CLO)

At the completion of this course, students will be able to:

Introduction to Biology

CLO 1: Explain the central ideas and process of biology

CLO 2: Explain the role of science and critical thinking in society.

Introduction to chemistry

CLO 3: Apply basic chemistry to the biology cells

Cells

CLO 4: Describe the structures and functions associated with eukaryotic cells and compare/contrast to prokaryotic cells.

CLO 5: Describe the components and mechanisms of cellular metabolism

Genetics

CLO 6: Describe the DNA structure and replication, including mutation and DNA repair.

CLO 7: Explain the central dogma of genetic flow; explain gene expression and how it's regulated.

CLO 8: Explain the relationships between sexual reproduction, genetic diversity and inheritance.

CLO 9: Describe and contrast the processes of mitosis and meiosis.

CLO 10: Describe patterns of inheritance and human genetic disorders.

Human Physiology

CLO 11: Explain homeostasis and identify major tissues, organs and organ systems and their function.

The overall goal of the course is to help you become literate in these scientific concepts and be able to apply them in your life as you move forward in reaching your educational goal.

Instructors Information

Tammi R. Duncan, Ph.D.

Office: Rm 132, Arts & Sciences Building

Phone: 505-925-8726

Email: tammid31@unm.edu

Drop-in Hours (Office hours):

- Face2Face: Mon. 10:30am-12pm, Tues. 9:30am-10:30am, Wed. 2-3:30pm, Thurs. 9:30am-10:30am & 12:30pm-1:30pm.
- Zoom: Fri. Available by appt.
<https://unm.zoom.us/j/5736149969>
- Password: **biology**

I grew up riding horses on the Navajo Reservation. I found my passion studying bacteria at Diné College in Shiprock, NM in my first microbiology course.



REQUIRED LEARNING RESOURCES



1. Textbook: Inquiry into Life by S. Mader and M. Windelspecht, 16th edition, 2020, McGraw Hill Publisher. **REQUIRED.** The bookstore has a special edition of the book - Biology for Health Sciences-University of New Mexico-Valencia.

2. UNM Learn: <https://learn.unm.edu/>. The webpage contains resources you need to succeed in the course. Login using your UNM username and password. ***You are responsible for all announcements, assignments, quizzes, tests and/or any changes to the syllabus will be posted on the webpage. Please check regularly.***

3. Respondus LockDown Browser:

<https://download.respondus.com/lockdown/download.php?id=35671441>. Using this browser, ***are responsible for taking required quizzes and exams by the deadline.***

4. Technology and computer: In this course, you will need a dependable computer, reliable internet connection, computer speakers and **webcam**, Microsoft PowerPoint and Word, and Adobe Flash Player.

"Strive for progress, not perfection." -Unknown

TIPS FOR SUCCESS

PowerPoint Slides. Use the PowerPoint slides for each chapter to guide your reading and to identify the learning objectives. The Learning objectives should be used to test your knowledge of the material for each chapter.

Study habits. Your study habits that might have worked for you in high school, might have to be adjusted for college. Use metacognition, awareness and understanding of one's own thought process, to help you make adjustments in time and methods of your study habits. It's an ongoing process throughout your educational career. Plan time to review your Biology concepts everyday. I was encouraged as an undergraduate to think of attending college as an 8am-5pm job. The more you practice reanswering your concepts and learning objectives, the more you can remember it. Look at figures and read the chapter. It may take more than one reading to understand the material presented. Learn the vocabulary.

Drop-in hours. I am available to help you succeed in the class; stop by my office for face-to-face Drop-in hours or online via Zoom Drop-in (Zoom- Meeting ID: 573 614 9969 PW:5h8C25) and I can clarify information, coach you with homework, or bring up other methods besides flashcards to help you remember the material.



Learning Center. The learning center has tutors ready to help Biology 1140 students. To register and set up an appointment, go to the following link: <https://valencia.unm.edu/campus-resources/the-learning-center/learning-center.html>

Study groups. Form online study groups or use the 6 ft guidelines at the UNM Valencia library. I always found that by hearing my explanation of the concept in my own words to my classmate helps me remember the information.

TIPS FOR SUCCESS continue...

Suggestions from students who have taken the class before.

Potential study methods

1. Record yourself reading the textbook and actively (meaning you are picturing what the words are describing) listen to it later.
2. You can also audio record the information on your flashcards to help you remember.
3. You can write a story in your own words about a mechanism to help you remember.
4. You can imagine you are tiny and picture yourself in one cell. Imagine you are on a trip through the cytoplasm, visualizing the mitochondria producing ATP or energy, and see how the DNA is being made.
5. You can use your body to picture things. For example, to picture the H₂O water molecule, your hands can be the Hydrogens and your head can be the Oxygen. Your head is bigger than your hands, so it would have more electrons “hanging out” near it, therefore it is more electronegative.
6. You can also imagine your dog as a bacteria and his/her tail as a flagellum. Then you can take sticky notes and start labeling him/her. Or you can draw a big cell on a large piece of paper (or tape six notebook pieces of paper together) and use sticky notes to label the parts. In this practice- you can color code the parts that are in plants with green, the parts for animal cells in pink, and the parts for bacterial cells in black.
7. You can draw logos to describe a mechanism.
8. You can rewrite your notes or draw your notes out.
9. You can draw a [Concept Mapping: Chapter map](#) of what you are going to learn for the Chapter to help you see the big picture and orient you while you read the material.
10. You can use the Learning objectives at the end of the powerpoints as your chapter outline and while you read you can answer the questions as you go.
11. You can create analogies to help you remember the concept.
12. You can pronounce terms with a specific kind of pronunciation that will help you remember. For example, microtubules are small, hollow cylinders about 25um in diameter and 0.2-25um in length. I think of hollow as something that echos... so I would pronounce microtubules as an echo.... (sounds gets fainter and fainter). MICROTUBULES-MICROtubules-microtubules... written as a way that would get fainter and fainter.
13. Draw pictures in the word. For example, a nonstop mutation is mutation that changes an amino acid to a STOP codon. You can draw one of the o's as a  in the word, “n nstop”.

What's nice about making your own study tools is that you can save it and re-use it to study for your final and it could be one way to have fun. Use colors, color pencils, stick notes, music, smells, sounds.
-Dr. T

COURSE POLICIES

This is a three credit-hour Face to Face course. Class meets face to face for two 75-minute sessions of direct instruction for sixteen weeks during the Spring 2022 semester. Students are expected to complete a *minimum* of six hours of out-of-class work (readings, homework, study, assignment completion, and class preparation) each week.

Attendance. You must be in the class on time to get the most out of this course, participate in class discussions, and to get a good grade. You are responsible for "signing-in" to document your attendance in class. If you are missing more than 15 min. of class, it will count as an absence. The student will be held responsible for all material and information regardless of whether the student was in class. Exception will be made per student basis dependent on emergency.

Make-up Exams. Make-up exams will be given to students with a documented emergency. You must notify the instructor prior to the day of the missed exam.

Homework. These will be assigned weekly to help you master the concepts presented. They are due to UNM Learn at 11:59pm the evening before class. Be sure to include your name on each submitted homework assignment. A deduction of one point will be given if not. Be sure to answer each question before submission. A deduction of one point will be given if not.

Review. There will be four Reviews. These will help you apply the knowledge that you have gained. One will be due before each regular exam. Be sure to include your name on your Review. One point will be deducted if not.

Late assignment/homework. Late assignments/homework will only be accepted within the first week following the due date. There will be a 50% reduction in grade. I will not accept assignments after the first week.

Withdrawal. Last day to withdraw from class without a "W" on your transcript is **Feb. 4, 2022** at 5:00pm using UNM Learn. Last day to withdraw from class with out Dean's signature/permission is **Apr. 15, 2022.**

Cell phones. As a courtesy to the class, please silence any cell phones. Any sight of a cell phone during exams or quizzes will result in an automatic fail for that assignment. If you need a to step out, please leave phone on your table.

Disruptive behavior. Please avoid any disruptive behaviors in the classroom and online communications. For class, this includes going in and out of the class, texting, talking. For online communication and interactions follow netiquette.

Plagiarism. Only submit work that is yours. Always cite any work used using APA format. <https://libguides.unm.edu/c.php?g=326014&p=2187071> Copy and Paste from Google, your classmates, or your book is considered plagiarism. Write answers in your own words. *You will receive two warnings with the assignment given a zero. A third time you will be dropped from the course and the UNM Science & Wellness Department Chair notified.*

Netiquette. The rationale of providing **Rules of Netiquette** for students is to provide guidelines for online behavior and communication between you and your classmates. We (myself included) are all held to the following guidelines that will provide a safe and respectful online classroom space for constructive critiques, discussion, and scholarly reports between you and your classmates. These guidelines are expected to be upheld in any online communications (Email, Discussion Board Forums, Messaging, and Blogs) between all of us.

Rules of Netiquette continue.

1. Your online behavior and communication should be similar to how you would treat and speak to a person in standing in front of you.
2. Be mindful of different backgrounds, which include cultural, linguistic, political, and religious differences.
3. Be respectful of other's views and opinions and try to remain open minded. You can have respectful disagreements. Avoid flaming, which is publicly attacking or insulting another person's view.
4. Provide constructive and concise responses to the subject of the posts in Discussion Forums and Blogs. Stay on topic, read all comments/viewpoints in discussion before contributing to discussion, avoid slang and profanity, be prepared to correct information if your comment is misunderstood or misinterpreted, and avoid using personal identifying information.
5. Practice good grammar and spelling skills. Use 12 pt. font Times New Roman or Calibri, avoid text shortcuts, define acronyms, use correct spelling, limit use of emoticons, and use clear and concise language.
6. Avoid the use of all CAPITAL LETTERS. It suggests shouting, impoliteness, or can be aggressive. Reread you post, checking for sarcasm, slang or anger, before submitting it. Avoid sending a message out of anger or written if you are angry.
7. Call your instructor if you are in conflict with them or another student.
8. In relation to security, protect your passwords and don't send confidential information through email. If you suspect your password has been used, change your password.
9. There are specific listings of practices for email netiquette and message board netiquette below.

Email Netiquette

Write a concise email to @unm.edu accounts.

Include "Bio 1140" in your subject line to me.

Ask for permission of author before forwarding an email to classmate.

Include a formal salutation to your recipient.

Discussion Forum and Journal Netiquette

Include "topic-your name" in subject line.

Write concise paragraph on the topic.

Paraphrase and cite your references with APA and credit classmates work if appropriate.

Read all messages in thread before replying.

Don't repeat another person's post.

THINGS TO KEEP IN MIND

Accommodations:

If you have a documented disability and you need a reasonable accommodation made for you in this course, please consult with me immediately or the campus tutoring center as soon as possible so we can meet your needs suitably and quickly.

Academic Dishonesty: Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, up to and including dismissal, against any student who is found guilty of academic dishonesty or otherwise fails to meet the standards. Any student judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course.

Academic dishonesty includes, but not limited to, dishonesty in quizzes, tests, or assignments; Copying and pasting answers from Google; claiming credit for work not done or done by others, hindering the academic work of other students; misrepresenting academic or professional qualifications within or without the University; and nondisclosure or misrepresentation in filling out applications or other University records.

COVID-19. You can prevent the spread of the Coronavirus to your family, fellow students, and your community.

Protocol as of 1/17/2022 for vaccinated individuals testing positive (No quarantine for exposure).

1. Upload your information to the Self-Reporting of Positive Covid-19 Diagnosis (https://lobowebapp.unm.edu/apex_ods/f?p=135:LOGIN_DESKTOP:16863389260097:::).
2. Provide documentation (The Covid PCR Test) to me via email (you are not exempt from assignments or exams).
3. Isolate for 5 days- Day 0 is the onset of symptoms or positive viral test (The Covid PCR Test).

COVID-19 Symptoms and Positive Test Results:

Please do not come to a UNM campus if you are experiencing symptoms of illness or have received a positive COVID-19 test (even if you have no symptoms). Contact me and let me know that you should not come to class due to symptoms or diagnosis. Students who need support addressing a health or personal event or crisis can schedule an appointment with a counselor at UNM Valencia through the PASOS Resource Hub. To schedule an appointment call (505) 925-8591.

UNM Requirement on Masking in Indoor Spaces

All students, staff, and instructors are required to wear face masks in indoor classes, labs, studios and meetings on UNM campuses, see the **masking requirement**. Students who do not wear a mask indoors on UNM campuses can expect to be asked to leave the classroom and to be dropped from a class if failure to wear a mask occurs more than once in that class. Students and employees who do not wear a mask in classrooms and other indoor public spaces on UNM campuses are subject to disciplinary actions. Medical/health grade masks are the best protection against the omicron variant and these masks should be used, rather than cloth. ***I strongly recommend that you keep your masks on at all times.**

UNM Administrative Mandate on Required Vaccinations

UNM requires COVID-19 vaccination and a booster for all students, faculty, and staff, or an approved exemption (see: **UNM Administrative Mandate on Required Vaccinations**). Proof of vaccination and booster, or a **medical, religious, or online remote exemption**, must be uploaded to the **UNM vaccination verification site**. Failure to provide this proof may result in a registration hold and/or disenrollment for students and disciplinary action for UNM employees.

Booster Requirement: Individuals who received their second dose of a Pfizer or Moderna vaccine on or before June 15, 2021, or their single dose of a Johnson & Johnson vaccine on or before October 15, 2021, must provide documentation of receipt of a booster dose no later than January 17, 2022. Individuals who received their second dose of a Pfizer or Moderna vaccine after June 15, 2021 or who received their single dose of Johnson & Johnson after November 15, 2021 must provide documentation of receipt of a booster within four weeks of eligibility, according to the criteria provided by the FDA (6 months after completing an initial two-dose Moderna vaccine, 5 months after completing the Pfizer sequence, and 2 months after receiving a one-dose Johnson and Johnson vaccine).

Exemptions: Individuals who cannot yet obtain a booster due to illness should request a **medical, religious, or online remote exemption** (which may have an end date) and upload this to the **vaccination verification site**.

Medical and religious exemptions validated in Fall 2021 (see your email confirmation) are also valid for Spring 2022 unless an end date was specified in the granting of a limited medical exemption. Students must apply for a remote online exemption every semester.

Equal Opportunity and Non-discrimination In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered “responsible employees” by the Department of Education (see page 15--offices/list/ocr/docs/qa-201404-title-ix.pdf). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct, and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity (oeo.unm.edu). For more information on the campus policy regarding sexual misconduct, see: <https://oeo.unm.edu/title-ix/index.html>

Citizenship and/or Immigration Status: All students are welcome in this class regardless of citizenship, residency, or immigration status. Your professor will respect your privacy if you choose to disclose your status. As for all students in the class, family emergency-related absences are normally excused with reasonable notice to the professor, as noted in the attendance guidelines above. UNM as an institution has made a core commitment to the success of all our students, including members of our undocumented community. The Administration’s welcome is found on our website: <http://undocumented.unm.edu/>.

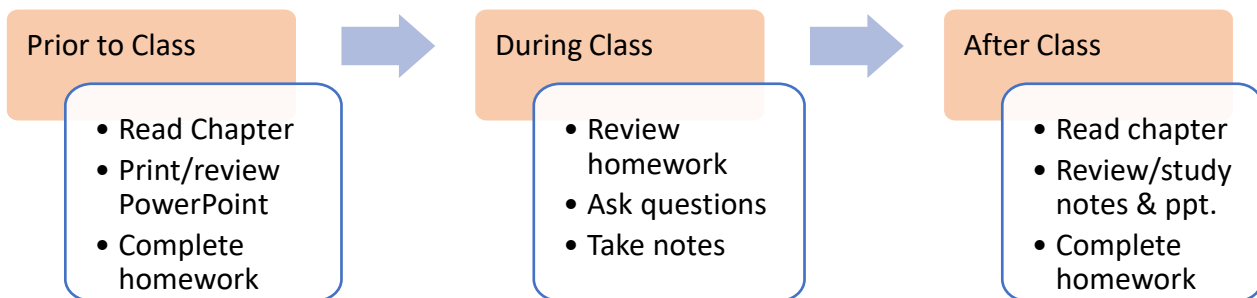
Support in Receiving Help and in Doing What is Right: I encourage students to be familiar with services and policies that can help them navigate UNM successfully. Many services exist to help you succeed academically and to find your place at UNM, see students.unm.edu or ask me for information about the right resource center or person to contact. UNM has important policies to preserve and protect the academic community, especially policies on student grievances (Faculty Handbook D175 and D176), academic dishonesty (FH D100), and respectful campus (FH CO9). These are in the *Student Pathfinder* (<https://pathfinder.unm.edu>) and the *Faculty Handbook* (<https://handbook.unm.edu>) Please ask for help in understanding and avoiding plagiarism or academic dishonesty, which can both have very serious disciplinary consequences.

Land Acknowledgement: (see <https://diverse.unm.edu> on appropriate use) Founded in 1889, the University of New Mexico sits on the traditional homelands of the Pueblo of Sandia. The original peoples of New Mexico Pueblo, Navajo, and Apache since time immemorial, have deep connections to the land and have made significant contributions to the broader community statewide. We honor the land itself and those who remain stewards of this land throughout the generations and also acknowledge our committed relationship to Indigenous peoples. We gratefully recognize our history.



DEVELOP GOOD STUDY HABITS. DON'T WAIT UNTIL THE LAST MINUTE.

For class: Review notes and readings everyday.



GRADING CRITERIA

Homework (HW): Homework are question sets that are each worth 10 pts. Homework is due to UNM Learn at 11:59pm the Wednesday evening before class. Bring a printed copy to class. *Failure to submit to UNM Learn will result in an automatic deduction of 4pts.* If submitted with no name will result in deduction of 1 point.

Exams: There are three exams. Two of the highest scores will count toward your grade. Each of these exams is worth 100 pts and their total is 200 pts. You will be given one class period to complete this exam. You will not be able to use your notes, textbook, or online resources. **The lowest score will be dropped.**

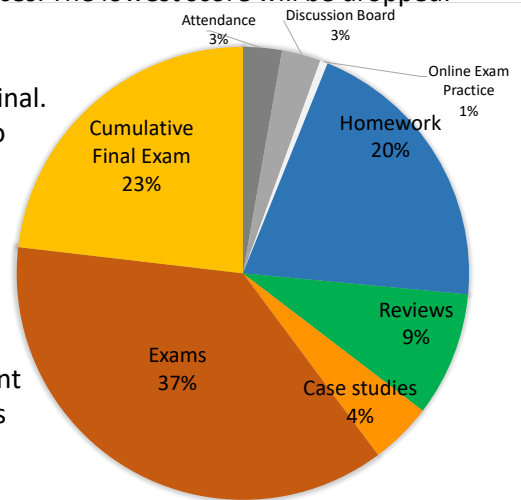
Reviews: There are four Reviews. Each of these Reviews are worth 12 pts each and their total is 48pts.

Reviews are tools to help you start preparing for your Exams or Final. Not solely used to study for the Exam or Final itself. You'll have to review class notes, homework, and learning objectives for each class to prepare. Review 4 is a review for your cumulative final.


Case studies: There are two Case studies that will help you build your critical thinking and self-assessment skills.

Attendance (A)/Discussion Board (DB): You must be in the class on time to get the most out of this course and participate on Discussion board. You are responsible for "signing-in" to document your attendance in class. If you are missing more than 15 minutes of class, it will count as an absence.

Cumulative Final: The Final is a 125pts exam at the end of the semester. You will have 1.5 hours to take this exam online using the Respondus LockDown Browser.



In summary, there is no extra credit. Every point counts. The due dates are firm. Communicate. Be on time. Study every day. Ask questions. Try your best. -Dr. T

	Points per assignment:	Total Points:	Percentage of overall grade:
Homework (11)	10 pts each	110 pts	20%
Intro. Online Exam	3pt	3pt	1%
Case studies (2)	12 pts each	24 pts	4%
Exams (2 of 3)	100 pts each	200 pts	37%
Reviews (4)	12 pts each	48 pts	9%
Attendance (A)	0.5pt/class	15 pts	3%
Discussion Board (DB)	1 pt/DB post	15 pts	3%
Final (Cumulative)	125 pts	125 pts	23%
TOTAL		540 pts	100 %
A+ 100% or higher A 91-99% A- 90%	B+ 88-89% B 81-87% B- 80%	C+ 78-79% C 71-77% C- 70%	D+ 68-69% D 61-67% D- 60% F <60%

● ● ● ● COURSE SCHEDULE ● ● ● ●

Week	Date	Chapter: Topic	Items Due	Due Date @ 11:59pm
1	Jan. 18 Tues.	Overview of Biology	Homework 1: Ch 1	Wed. 1/19
	Jan. 20 Thurs.	1: Study of Life	Intro. Online Quiz Intro. Online HW Discussion 1	Fri. 1/21 Fri. 1/21 Fri. 1/21
2	Jan. 25 Tues.	1: Scientific Method	Homework 2: Ch 2	Wed. 1/26
	Jan. 27 Thurs.	2: Basic Chemistry	Discussion 2	Fri. 1/28
3	Feb. 1 Tues.	2: Molecules of Life	Homework 3: Ch 3	Wed. 2/2
	Feb. 3 Thurs.	3: Cell Biology	Discussion 3	Fri. 2/4
		Feb. 4 Last day to drop class without "W"		
4	Feb. 8 Tues.	3: Cell Structure		
	Feb. 10 Thurs.	Review 1 (Ch. 1, 2, & 3)	Discussion 4	Fri. 2/11
5	Feb. 15 Tues.	Exam 1 (Ch. 1, 2, & 3)	Review 1 Homework 4: Ch 4	Tues. 2/15 Wed. 2/16
	Feb. 17 Thurs.	4: Cell membrane	Discussion 5	Fri. 2/18
6	Feb. 22 Tues.	Case Study 1	Homework 5: Ch 6	Wed. 2/23
	Feb. 24 Thurs.	6: Energy and Enzymes I	Case Study 1 Discussion 6	Fri. 2/25 Fri. 2/25
7	Mar. 1 Tues.	6: Energy and Enzymes II	Homework 6: Ch 7	Wed. 3/2
	Mar. 3 Thurs.	7: Cellular Respiration	Discussion 7	Fri. 3/4
8	Mar. 8 Tues.	Review 2 (Ch. 4, 6, & 7)		
	Mar. 10 Thurs.	Exam 2 (Ch. 4, 6, & 7)	Review 2 Discussion 8	Th. 3/10 Fri. 3/11
9	Mar. 14 to Mar. 18	Spring Break. No Classes		

• • • • COURSE SCHEDULE CONTINUE • • • •

Week	Date Tues. & Thurs.	Chapter: Topic	Items Due	Due Date @ 11:59pm
10	Mar. 22 Tues.	25: DNA Structure & DNA Replication	Homework 7: Ch 25	Wed. 3/23
	Mar. 24 Thurs.	25: Gene Expression	Discussion 9	Fri. 3/25
11	Mar. 29 Tues.	25: Gene Regulation & Mutations	Homework 8: Ch 5	Wed. 3/30
	Mar. 31 Thurs.	5: Cell Cycle	Discussion 10	Fri. 4/1
12	Apr. 5 Tues.	5: Cell Division	Homework 9: Ch 23	Wed. 4/6
	Apr. 7 Thurs.	23: Genetic Inheritance I	Discussion 11	Fri. 4/8
13	Apr. 12 Tues.	23: Genetic Inheritance II		
	Apr 14 Thurs.	Review 3 (Ch. 25, 5, & 23) Apr. 15 Last day to drop class without Dean's Permission	Discussion 12	Fri. 4/15
14	Apr. 19 Tues.	Exam 3 (Ch. 25, 5, & 23)	Review 3 Homework 10: Ch 24	Tues. 4/19 Wed. 4/20
	Apr. 21 Thurs.	24: Chromosomal Inheritance I	Discussion 13	Fri. 4/22
15	Apr. 26 Tues.	24: Chromosomal Inheritance II	Homework 11: Ch 11	Wed. 4/27
	Apr. 28 Thurs.	11: Human Organization Apr. 29 UNM Course Feedback open UNM Learn	Discussion 14	Fr. 4/29
16	May 3 Tues.	Case Study 2		
	May 5 Thurs.	Review 4 May 6 UNM Course Feedback close at 5pm	Review 4 Case Study 2 Discussion 15	Mon. 5/9 Fri. 5/6 Fri. 5/6
Final	5/10 Tuesday 10:30-12:30am	Cumulative Final Exam Remote	Remote Final Exam	Tues. 5/10

*I reserve the right to make necessary changes.