# ECURE COURSE SYLLABUS SAMPLES

1. Molecular and Cellular Biology Lab (BIOL301C) *Full Implementation*
2. Electronics 2 (ECE 322L) *Full Implementation*
3. Life in the Earth System (ENVS 322L) *Full Implementation*
4. Maps and GI Science (GEOG 1115) *Partial Implementation*
5. Intro to Comparative Politics (POLS 2110) *Partial Implementation*
6. Microbiology for Health Sciences (BIOL2305) *Full Implementation*

# Molecular and Cellular Biology Lab (BIOL301C)

## *Full Implementation*

DEPARTMENT OF BIOLOGY

# BIOL301C: Molecular and Cellular Biology Lab

## Fall 2025

Castetter Room 41

| Section # | Time | Day |
|---|---|---|
| 001 | 6:30 pm – 9:20 pm | Monday |
| 002 | 8:00 am – 10:50 am | Tuesday |
| 003 | 3:00 pm – 5:50 pm | Tuesday |
| 004 | 6:30 pm – 9:20 pm | Tuesday |
| 005 | 8:00 am – 10:50 am | Wednesday |
| 006 | 11:30 am – 2:20 pm | Wednesday |
| 007 | 3:00 pm – 5:50 pm | Wednesday |

## Instructors

| | |
|---|---|
| **Lab Coordinator** | Dr. Jenna Fonta (she/her) |
| **Email** | jennafonta@unm.edu |
| **Office** | 200 Castetter Hall |
| **Phone** | 505-277-8684 |
| **Drop-In Office Hours** | Wed 1-2pm, Fri 10-11am |

| Graduate TAs | Email | Sections |
|---|---|---|
| Manogya Chandar | mchandar@unm.edu | 002, 005 |
| Madeline Coburn | mcoburn8@unm.edu | 003, 004 |
| Lisa Garcia | lgarcia491@unm.edu | 001 |
| Halie Locke | hlocke985@unm.edu | 006, 007 |

Dr. Fonta will be available in person and on Zoom (link on Canvas) during Drop-In Office hours. If you would like to meet with me outside of the drop-in times, please set up an in-person or Zoom appointment with Dr. Fonta (link on Canvas). Also feel free to send any questions on course content or otherwise via email.

## Course Description:

Biology 301C Molecular and Cellular Biology is one of the 300-level intermediate courses for the Biology major, and this laboratory is 1 credit of the 4-credit course. The laboratory gives students an opportunity to apply and practice the concepts from lecture as well as learn other skills that are important for implementing the scientific process in Molecular and Cellular Biology.

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This lab course may be challenging because it will require you to apply the knowledge you are gaining in the lecture as well as learning new skills. This lab therefore requires that you to keep up with the lecture material. Take advantage of learning resources, such as drop-in hours with me or your TAs, your lab group, form a study group, CTL resources, etc., to support your learning in the various lab assignments.

A variety of assignment types are used in this lab course: pre-lab assignments, in-class worksheets, in-class writing responses, a group research project, and formal lab reports. Attendance will also be recorded weekly, which will count toward a participation grade. Assignments are designed such that any student who participates in the exercises, completes assignments according to rubrics, and acts as a contributing group member should do well. However, if you find yourself unsatisfied with your progress or are unable to keep up with material, please contact us or TAs ASAP. We care about the success of each of you and will work with you to develop strategies that will help you achieve desired progress.

## ECURE

This lab is designed as an ECURE (Expanding Course-Based Undergraduate Research Experiences) with *Full* implementation. ECURE is a project funded by the National Science Foundation (NSF) to introduce students to research concepts and to create better pathways for students to participate in more advanced research opportunities as they advance in their programs of study.

| **Learning Goals**<br><br>***After successful completion of the course, students will:*** | **Learning Objectives**<br><br>***After successful completion of the course, students will be able to:*** | **Evidence from key learning activities** |
|---|---|---|
| Understand concepts and methods of research in molecular and cell biology. | A. Demonstrate concepts via hands-on exercises<br>B. Complete standard research procedures following a protocol<br>C. Interpret results from these procedures | • Hands-on exercises focused on cell biology concepts<br>• Completion of cell culturing, gel electrophoresis, spectrophotometry, and other lab methods<br>• Write up results of experiments in a research report |
| Understand how to utilize the scientific process in molecular and cell biology | A. Propose a research question based on scientific literature<br>B. Propose a research plan to answer a research question<br>C. Interpret results from a set of laboratory experiments | • Group project research proposal<br>• Introduction, results and discussion in research report |

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| | | |
|---|---|---|
| Appreciate the value of research in molecular and cell biology | A. Read a scientific paper and summarize main points<br>B. Apply findings of scientific literature to a research question | • Reading primary literature activity<br>• Research proposal introduction of research report utilizing primary literature<br>• Research report discussion of research report utilizing primary literature |

## Course Conduct

We are committed to creating a learning environment where diverse perspectives are recognized and valued as a source of strength. We request that all students work with us to create a class culture based on open communication, mutual respect, and inclusion. As a class we will approach all discussions with respect and civility. Disagreements and debates in academic discourse are expected and welcome, but personal attacks are never okay and will not be tolerated. We strive to ensure an open and welcoming classroom for all students. If we ever miss the mark, please don't hesitate to come and talk to us. We are all learning together.

You will be working in a laboratory environment with many potentially hazardous materials and tools. You are expected to follow all Lab Safety Procedures, which will be provided to you.

We reserve the right to intervene and enforce standards of respectful behavior when lab conduct is inconsistent with University and lab safety expectations. Interventions and enforcement may include but are not limited to required meetings to discuss lab expectations, written notification of expectations, and/or removal from a class meeting. Removal from a class meeting will result in an unexcused absence.

## Credit Hour Statement

This is a 1 credit-hour lab course that is taken concurrently with the 3 credit-hour lecture. Lab meets for one 2-hour 50-minute session of direct instruction for fifteen weeks. Please plan for a minimum of three hours of out-of-class work (for pre-labs, lab report preparation, etc.) each week.

## Prerequisite and Corequisite Courses:

All students must have received a 'C' or better in BIOL 2101, BIOL2102, and BIOL2103 or equivalents as determined by the instructor and Biology Advisement.

## Required Materials:

*Becker's World of the Cell*, Hardin and Lodolce, Pearson Publishing – E-book available via MyShelf on Canvas (see Course Materials Access below). You do not need to bring the book to lab with you.

There is currently no additional lab manual that you need to purchase. Materials will be provided to you via Canvas or as hand-outs in class.

It will be helpful to bring a personal laptop to work on and submit assignments via Canvas during lab, but we will also have some laptops available if needed.

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### Course Materials Access:

Your digital course materials are directly available now on the My Shelf link in Canvas. Your physical course materials, such as books and required lab/studio course kits, are available at the UNM Bookstore, and you will receive an email about how to pick them up. To simplify your course materials access, you are automatically enrolled in a Complete option at a flat rate of $279 per semester. This will show up on your bursar bill. The Complete option covers all your required course materials for all your Albuquerque campus courses, including any graduate courses you may be taking (branch campus course materials are billed and available separately). If you are interested in course materials access for only selected courses, or if you want to opt out entirely, you will need to select the option you want in the My Shelf link in Canvas. You can change your selected option in the My Shelf link in Canvas until the registrar's "Last Day to Drop Without a 'W' Grade and 100% Tuition Refund." Make sure that you review the video and information here to understand cost and the options for Complete (automatic enrollment), Select (take action), and Opt-out (take action).

## Grading Policy:

The lab assignments will contribute to 25% of the total course grade (75% of grade will be from lecture exams). The lab portion of student grades are based the assignments listed below. We will make every effort to provide timely feedback on student assignments via Canvas, and students should actively track their grades on Canvas. Due dates will be posted on assignments via Canvas. Rubrics will be provided for the lab report assignments.

If you are unsatisfied with your progress in the lab assignments or have a question about an assignment grade, please discuss with us as soon as possible upon receiving the graded work. Lab grades are considered permanent 2 weeks after a grade is assigned. This course is not offered for Credit/No Credit.

### Late/Missing Assignments and Extensions

We will drop your two lowest in-class worksheet grades and two lowest participation grades to give you some flexibility with missing assignments. Assignments are considered late if they are not turned in by the posted due date. Late assignments will lose 25% of the maximum points (e.g. -5 on a 20 point Homework) for every day late that they are submitted.

Extensions of due dates (1 week) can be requested on lab assignments. Request an extension by filling out the online form **before** the original due date. You do not need to provide us with a reason for the extension; we understand that if you are asking for an extension, you need it for whatever the reason.

| **Assignments** | **Percentage of Lab Grade** |
|---|---|
| Welcome assignment | 1% |
| EASE Workshop | 1% |
| Pre-Labs | 3% |
| In-Class Worksheets | 30% |
| Group Project Proposal and Lab Report | 35% |
| Participation | 30% |
| *Total* | *100%* |

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## Welcome Assignment and EASE Workshops

The Welcome assignment will be completed in the first few weeks of class to ensure that students understand the expectations of the course and the layout in Canvas. EASE Workshops will be completed in the first few weeks of class to introduce or review certain skills that will help students complete lab activities

## Pre-Labs

Pre-lab assignments will be brief quizzes taken on Canvas that will require students to review the material and protocols to be done in lab that week. Pre-labs will not be completed before every lab session, but they will be due at 11:59pm the day before the first lab section begins.

## In-Class Worksheets/Activities

Students will be completing a variety of different lab activities throughout the semester, and most will be accompanied by an in-class worksheet or activity that will be turned in at the end of lab on Canvas. Many of these activities will be discussed amongst your lab group, but all students will turn in individual final products.

Some of the in-lab writing activities will ask students to bring their own perspective and opinion to a scenario related to molecular and cellular biology. We will ask you to be respectful when sharing and discussing opinions with your group and the class.

## Group Project Proposal and Lab Report

Students will complete one project proposal and one lab report based on the long-term experiment that will be completed in groups throughout the semester. This assignment will be submitted in parts in order to incorporate feedback from your TA into the final draft.

Parts of assignment:
*Saccharomyces* Project Proposal (Bibliography, Research Question)
*Saccharomyces* Project Proposal (Introduction, Proposed Methods, Expected Results)
*Saccharomyces* Lab Report First Draft (Introduction, Methods, Results, Discussion)
*Saccharomyces* Lab Report Final Draft

## Participation/Attendance

The emphasis of this lab course is for you to experience a molecular and cell lab environment, interact with the material you are learning in lecture, and have exposure to the research process. The emphasis of this course is not to always get the 'correct' answer or result. Therefore, participation in activities and attendance is weighted heavily in this course.

If you know in advance that you will miss a day of lab, you may have the option to attend an alternate section during the same week. You must submit an excused lab absence request online form in advance of your absence, and it will be at our discretion whether you may attend another section, mostly dependent on the activities of lab that week. The earlier you notify us, the more likely it will be to arrange a make-up.

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While we encourage you to make every effort to be in lab, every student is allowed two absences during the semester for unanticipated circumstances. You do not need to notify us of the reason for your absence. Your absence will be automatically accounted for in your participation grade, and the two lowest in-class worksheets will also be dropped to allow for these two absences.

### Withdrawal Policy:

We understand that for a multitude of reasons and circumstances that you may decide to withdraw from the course. This course can be dropped without receiving a 'W' up until the end of Week 3 (Friday). After this date, students will receive a 'W' at the time of withdrawal. Students complete the withdrawal themselves on LoboWeb. Please see the Registrar's Office for more details.

## Academic Resources

**Drop-in Office Hours**

TAs and Dr. Fonta have hours set aside each week to answer questions about course material or your progress in the course. Feel free to drop-in on your own or with a classmate to ask your questions.

**Center for Teaching and Learning (CTL):**

http://ctl.unm.edu/undergraduate-students/index.html

CTL is open for all students to gain study skills and access resources to meet their academic goals. Most students access CTL resources at some point in their academic careers. You may find the writing center particularly useful for the lab writing assignments.

- Drop-in Tutoring
- STEM Tutoring
- Writing Tutoring
- Learning Strategies Consultations

**Support Across Campus:**

Students are especially successful at UNM when they take advantage of support and get involved in campus and academic life. Your MyUNM login page provides direct links to wellbeing resources, including financial capability, mental health, food, jobs, and resource centers. MyUNM will help you identify academic resources like peer tutoring and opportunities like study abroad. You can contact academic advisors and resource advisors for information and guidance via Student Hub on MyUNM. I look forward to providing you with information about academic opportunities related to our class and to helping you find support resources.

## Academic Integrity

In a difficult course, it can be very tempting to cheat. It can also be difficult to understand exactly what academic dishonesty is. We want you to be at a place in your learning where you feel confident that you can succeed on your own merits and find value in the learning experience.

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While we encourage students to work together on lab assignments, questions should be answered by each of you individually in your own words. We know that many assignments are found on the internet or can be generated using AI. Finding information online and using AI to help you learn is acceptable, but using pre-written answers and submitting it as your own is not. If using AI to aid in your writing, include a statement with your submission describing how you used the tool(s) in the writing process. For writing submitted that does not seem to be in your own words and has no statement disclosing AI use, we reserve the right to use AI detectors and deduct points for work that was fully AI generated. We much prefer to receive writing assignments in your own words than to have a 'beautified' product with the help of AI.

If your answers match another student's answer, both parties will receive a zero on the entire assignment. If that happens more than once, you will be referred to UNM Academic Affairs. You deserve to give your courses your best, and we expect that you will.

## School-Life Conflict

Many students face obstacles to their education due to work, family obligations, mental health issues or other personal difficulties. We have great respect for the many responsibilities that students juggle and understand when life gets in the way of school. If you are experiencing challenges that impact your ability to succeed, please reach out to any of the course facilitators immediately so that we can work together to form a plan for your academic success.

If you feel that you are unable to speak to us directly, there are many useful resources on campus that can help facilitate communication between us. These organizations do not share information with anyone else without a student's signed permission.

LoboRESPECT Advocacy Center (loborespect.unm.edu/) 277-2911
Women's Resource Center (women.unm.edu) 277-3716
LGBTQ Resource Center (lgbtqrc.unm.edu) 277-5428
Student Health and Counseling (shac.unm.edu) 277-3136
Agora Crisis Center (agoracares.org) 277-3013
Lobo Food Pantry (SUB 1093, M-R 11:00 am – 5:00 pm)
Center for Financial Capability (cfc.unm.edu) 277- 3361

## UNM Indigenous Peoples Land and Territory Acknowledgement:

The following was written by UNM indigenous faculty members on behalf of the university, and we firmly support their message. See more about this statement here: https://diverse.unm.edu/assets/documents/unm-indigenous-peoples-land-and-territory-acknowledgment-brown-paper.pdf

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.

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## University Policy on Discrimination

Our classroom and university should foster mutual respect, kindness, and support. If you have concerns about discrimination, harassment, or violence, please seek support and report incidents. Find confidential services at LoboRESPECT Advocacy Center, the Women's Resource Center, and the LGBTQ Resource Center. UNM prohibits discrimination on the basis of sex (including gender, sex stereotyping, gender expression, and gender identity). All instructors are "responsible employees" who must communicate reports of sexual harassment, sexual misconduct and sexual violence to Compliance, Ethics and Equal Opportunity. For more information, please see UAP 2720 and UAP 2740.

## Accommodations

UNM is committed to providing equitable access to learning opportunities for students with documented disabilities. As your instructor, it is my objective to facilitate an inclusive classroom setting, in which students have full access and opportunity to participate. To engage in a confidential conversation about the process for requesting reasonable accommodations for this class and/or program, please contact Accessibility Resource Center at arcsrvs@unm.edu or 505-277-3506.

## Citizenship Status Statement:

All students are welcome in this class regardless of citizenship, residency, or immigration status. We will respect your privacy if you choose to disclose your status. UNM as an institution has made a core commitment to the success of all our students, including members of our undocumented community. The UNM Administration's welcome message is available at undocumented.unm.edu**.**

## COVID-19 Health and Awareness:

UNM is a mask friendly, but not a mask required, community. If you are experiencing COVID-19 symptoms, please do not come to class. If you have a positive COVID-19 test, please stay home and isolate yourself from others. If you do need to stay home, please communicate with us. Please let us know that you need support so that we can connect you to the right resources.

Support:
Student Health and Counseling (SHAC) at (505) 277-3136.
LoboRESPECT Advocacy Center (505) 277-2911 can offer help with contacting faculty and managing challenges that impact your UNM experience.

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| Week | Topic and Activities | Assignments Due |
|---|---|---|
| 01<br>8/18 | Introduction, Safety<br><br>Biological Molecules Lab | Welcome Assignment<br>Worksheet<br>Pre-Lab |
| 02<br>8/25 | Pipette Techniques<br><br>DNA to Protein virtual lab | EASE Assignment<br>Pre-Lab<br>Worksheet |
| 03<br>9/1 | *Labor Day – No Labs* | |
| 04<br>9/8 | Fish protein profiling – Day 1 (protein extract and gels) | Pre-Lab<br>Worksheet |
| 05<br>9/15 | Fish protein profiling – Day 2 (gel and Western blot analysis) | Pre-Lab<br>Worksheet |
| 06<br>9/22 | Microscope tutorial – Oil immersion<br><br>*Saccharomyces* Day 1—Introduction, Yeast Viability Assays | Pre-Lab<br>Worksheet |
| 07<br>9/29 | *Saccharomyces* Day 2 – Initial Growth Curves | Pre-Lab<br>Worksheet |
| 08<br>10/6 | Membrane Transport virtual lab: Solving the mystery of the mitochondrial pyruvate transporter<br><br>*Saccharomyces* Day 3—Finding and Using Primary Literature, Planning experiment/treatments | Pre-Lab<br>Worksheet |
| 09<br>10/13 | Cell Signaling Pathways virtual lab<br>Histology with prepared slides | Pre-Lab<br>Worksheet<br>*Saccharomyces* Project Proposal |
| 10<br>10/20 | *Saccharomyces* Day 4—Running experiments | Pre-Lab |
| 11<br>10/27 | *Saccharomyces* Day 5—Running experiments | Pre-Lab |

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|---|---|---|
| 12<br>11/3 | *Saccharomyces* Day 6—Data analysis, Preparing the presentation | Pre-Lab<br>Worksheet |
| 13<br>11/10 | *Saccharomyces* Day 7—Presentations | |
| 14<br>11/17 | Cellular Respiration with Computational Modeling and Simulations | Pre-Lab<br>Worksheet<br>*Saccharomyces* lab report Final draft |
| 15<br>11/24 | *Thanksgiving Break – No Labs* | |
| 16<br>12/1 | Photosynthesis Analysis through Comics | Worksheet |
| 17<br>12/8 | *Final Exams Week – No Labs* | |

# ELECTRONICS 2
# (ECE 322L)

## *Full Implementation*

# ECE 322L – ELECTRONICS 2 (Spring 2025)

Welcome to ECE 322L at the University of New Mexico!

## Land acknowledgment

The University of New Mexico (founded in 1889) 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.

## Wise feedback statement

I will hold you to a high standard in this class, as it is foundational for electrical engineers. I believe in your potential to meet and exceed my high expectations, so I will strive to provide you with as much support as possible and constructive feedback.

## Growth mindset statement

With your effort and my support, I believe ALL of you will succeed in this course. Throughout the semester, I will provide feedback to help you grow as electrical engineers. Be prepared to take action, and feel free to reach out to discuss the details of my recommendations.

## General information

**Instructor:** Dr. Francesca Cavallo (she/her/hers)
**E-mail:** fcavallo@unm.edu
**Office Location:** CHTM 139
**Students drop-in hours**: Friday, 9:00-11:00 am or by appointment in CHTM 139
**Course Credits:** 4
**Lecture Days:** TR
**Lecture Time:** 11:00 am – 12:15 pm
**Lecture mode:** Face-to-face
**Lecture (location):** DSH 225
**Lab sessions (location)**: ECE 311
**Lab sessions (times):** Monday, 3:30-6:00 pm (Sect 001); Tuesday, 5:00-7:30 pm (Sect 002); Wednesday, 3:30-6:00 pm (Sect 003).

## Technology requirements

Access to UNM Canvas (https://canvas.unm.edu/)

## Class Website

https://canvas.unm.edu/courses/51159
The website requires you to log in using your UNM NetID.

## Graduate Assistants (GAs)

Faiyaz Ahmed fahmed1@unm.edu
Samanta Zeesan Alam samanta@unm.edu
Micheale (Mike) Habte Tesfai mtesfai@unm.edu
Ram Krishna Yadav ramkrishyad@unm.edu

**Credit-hour statement**

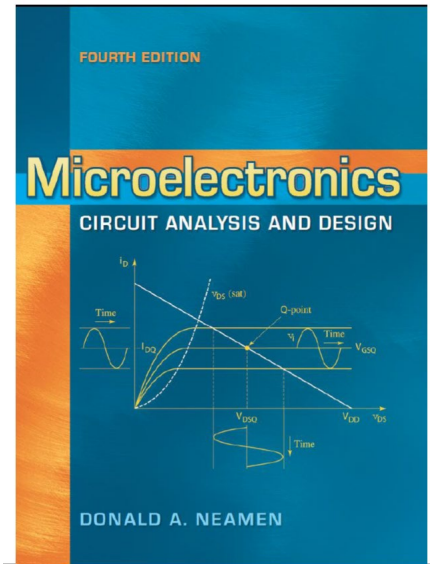
This is a four-credit-hour course. Class meets for two 75-minute sessions of direct instruction as in-class lectures and one 150-minute laboratory session of direct instruction each week for fifteen weeks during the Spring 2025 semester. Please plan for a minimum of six hours of out-of-class work each week.

**Prerequisite**

ECE 321L (Required), ECE 371 (Recommended). If you have not mastered the concepts covered in ECE 321L, you should visit the instructor or the GAs, who will provide resources to help you review ECE321L and prepare you for this course.

**Textbook and Reference Material**

- Microelectronics Circuit Analysis and Design by Donald A. Neamen, 4th Edition, McGraw Hill (***TEXTBOOK***).




- Microelectronics Circuits by Sedra and Smith, any edition. I follow the 6th Edition.
- Lecture slides, notes, and handouts

**Course Description**

This course focuses on the analysis, design, and characterization of analog electronic circuits with a specific focus on single and multi-stage amplifiers

**Learning Goals**

At the end of the course,

- you will have mastered the basic principles to design a signal amplifier and evaluate its performance;
- you will have an understanding of how to conduct a research project;
- you will develop an appreciation for all the elements of teamwork, especially diversity of backgrounds, experiences, and perspectives.

**Learning Objectives**

At the end of the course, you will be able to

- Analyze the operation of FETs and determine the DC/AC response of the FET.

- Design and analyze the response of various MOSFET functional circuits, such as amplifiers (CS, CG, CD, etc.), using AC/DC load line analysis.
- Analyze the operation of a BJT and determine the DC/AC response of the BJT.
- Design and analyze the response of various BJT functional circuits, such as amplifiers (CE, CC, CB, cascade, cascode, Darlington pair, etc.), using AC/DC load line analysis.
- Construct Bode plots of the gain magnitude and phase of various amplifier circuits considering circuit capacitors and time constants and determine their frequency response.
- Determine the short circuit gain versus frequency of a BJT and the unity-gain-bandwidth of an FET and determine their Miller capacitances using the expanded hybrid-p model.
- Analyze and design various circuit configurations of power transistors and amplifiers.
- Maintain a logbook with procedures prepared before lab, information recorded while performing an experiment, data analysis and calculations completed following experimental work.
- Learn and implement actual research practices.
- Work together in a team and evaluate/assess your individual performance and the performance of your teammates.

| ***Learning Goals:*** *After successful completion of the course,* | ***Learning Objectives:*** *After successful completion of the course, students will be able to:* | ***Evidence from key Learning/Instructional Activities*** |
|---|---|---|
| Students will have mastered the basic principles to design a signal amplifier and evaluate its performance. | ➢ Analyze the operation of FETs and determine the DC/AC response of the FET.<br>➢ Design and analyze the response of various MOSFET functional circuits such as amplifiers (CS, CG, CD, etc.), using AC/DC load line analysis.<br>➢ Analyze the operation of a BJT and determine the DC/AC response of the BJT.<br>➢ Design and analyze the response of various BJT functional circuits such as amplifiers (CE, CC, CB, cascade, cascode, Darlington pair, etc.), using AC/DC load line analysis.<br>➢ Construct Bode plots of the gain magnitude and phase of various amplifier circuits considering circuit capacitors and time constants and determine their frequency response.<br>➢ Determine the short circuit gain versus frequency of a BJT and the unity gain bandwidth of a FET and determine their Miller capacitances using the expanded hybrid-p model. | ➢ In-class tests<br>➢ Research-based laboratory experience<br>➢ In-class activities (problem-solving, writing to learn, discussion, etc.)<br>➢ Research project |

| | | |
|---|---|---|
| | ➢ Analyze and design various circuit configurations of power transistors and amplifiers. | |
| Students will have an understanding of how to conduct a research project. | ➢ Learn and implement actual research practices. | ➢ Research-based laboratory experience<br>➢ Research project |
| Students will develop an appreciation for all the elements of teamwork, especially diversity of backgrounds, experiences, and perspectives. | ➢ Work together in a team and evaluate/assess your individual performance and the performance of your teammates. | ➢ Research-based laboratory experience<br>➢ In-class activities (problem-solving, writing to learn, discussion, etc.)<br>➢ Research project |

**Course-Based Undergraduate Research Experience**

You will be involved in a Course-based Undergraduate Research Experience (CURE) by learning and implementing actual research practices in a classroom setting. These research practices include:

- surveying previous work in the field,
- identifying knowledge gaps,
- formulating hypothesis,
- gathering and analyzing data,
- maintaining a laboratory notebook
- developing and critiquing interpretations,
- working effectively in a team,
- communicating findings orally and in writing.

During the course, the instructor will support you through a rapid transition from working through predefined protocols to get a "correct" answer to formulating and answering open-ended research questions.

**Teamwork and Group Activities**

This course emphasizes teamwork, as you will be expected to work in teams when you graduate and go off to the "real world". The class will be divided into teams of 3-4 people to participate in the research-based laboratory experience and complete the research project.

In addition, you will have the opportunity to work with your peers while solving problems and discussing concepts during the lectures.

**Assessment**

- **Examinations**-Average grades of 2 midterm exams and one final exam **30%** of the final grade
- **RLab**-Average grade across all deliverables **30%** of the final grade
- **Research Project**- Average grade across all deliverables. **40%** of the final grade

Please see the rubrics on UNM Canvas for more information about the assessment.

**Final Grades-Scale**

| Letter grade | Percentage Points |
|---|---|
| A+ | 96-100 |

| | |
|---|---|
| A | 92-95.9 |
| A- | 88-91.9 |
| B+ | 84-87.9 |
| B | 80-83.9 |
| B- | 76-79.9 |
| C+ | 72-75.9 |
| C | 68-71.9 |
| **F:** | **Below 68** |

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**Late Assignments and Stuff Happens Card**

Late Assignments

How late is the assignment?

| | |
|---|---|
| < 15 min | Loss of 10% of possible points |
| 15 min − 8 hours | Loss of 25% of possible points |
| 8 − 48 hours | Loss of 50% of possible points |
| More than 48 hours | No credit |

Stuff happens card

You will have one opportunity to extend a deadline without losing points within the semester. You will NOT have to provide a justification to use the "stuff happens card."

**Research-based Laboratory Experience (RLab)-From Hypotheses to Characterization of Circuits.**

In addition to the two lectures, you will have a lab session every week. The instructor will ensure good continuity between the lecture and the lab contents.

Lab assignments will be made available in advance on UNM Canvas. You will be required to maintain a laboratory notebook with procedures prepared before lab, information recorded while performing an experiment and analyses, calculations completed following experimental work, conclusions, and proposed work moving forward.

Per each experimental activity, you must formulate a hypothesis, justify the hypothesis, lay out an experimental plan to verify the hypothesis, perform the experiment, collect and analyze data, outline findings, and draw conclusions. All these activities must be documented in a lab report and the laboratory logbook.

*Deliverables:*

*In-person circuit demo-**Due at the end of each RLab session.***

*Lab reports-**Due one week after your designated lab session (i.e., Mon, Tue, or Wed at 11:59 pm).***

*Laboratory notebooks-**Due on the day of your lab session at 11:59 pm.***

**Research Project-Design, Practical Realization, and Performance Evaluation of a Signal Amplifier**

The goal of the research project is to design, model, build, and characterize an amplifier circuit for an application of your choice. Students will find the project assignment on UNM Canvas in the folder named "Research Project."

In pursuit of the final goal of the research project, you will perform the tasks listed below:

- Research applications that require the use of an amplifier
- Select a specific application that you will develop an amplifier for

- Determine a number of specifications that the amplifier will have to fulfill.
- Compile a list of expected findings of the project.
- Establish a design to be tested by modeling and iterate on that design.
- Realize an experimental version of the modeled amplifier.
- Characterize the amplifier and analyze collected data.
- Iterate on the design (if needed to fulfill the specifications) using both modeling and implementation, characterization, and data analysis.
- Communicate findings via a written report and a presentation.

Every team is required to keep a logbook of the activities related to the research project.

Deliverables of the research project and due dates

| Deliverable | Content | Due date |
|---|---|---|
| **Team contract** | 1-2 page team contract that clearly states, among other things, the roles and responsibilities of each member, project managing strategies, conflict resolution techniques, etc. | 01/31/2025-11:59 pm |
| **Progress report no. 1** | Summary of the outcome of the literature review. Selection of the goal of the project, i.e., a specification of the selected application for which the team will design the amplifier and a list of required specifications. The team must also provide a rationale for their choice and justify the list of selected specifications. One per team, but submission will be individual. | 03/11/2025-11:59 pm |
| **Progress report no. 2** | Description of the initial amplifier design, including theoretically predicted and experimentally measured performance parameters. The report should also include a list of proposed changes to the initial amplifier design and a detailed justification for those changes. One per team, but submission will be individual. | 04/15/2025-11:59 pm |
| **Operating circuit** | In-person demonstration of the operation of the final circuit design. Demos will be individual. | 4/28/2025-4/30/20205 at the designated lab time. A schedule for the demos will be agreed upon with the course assistants. |
| **Oral presentation** | A media presentation describing the goal, the relevant background, the implementation, and the outcome of the design project | 5/6/2025 and 5/8/20205 during lecture time. A schedule for presentations will be provided as the dates get closer. |
| **Final report** | A written report describing the goal, the relevant background, the implementation, and the outcome of the design project. The final report will be individual. | 05/09/2025, 11:59 pm |
| **Logbook** | A laboratory notebook. Lab notebook will be one per team, but submission will be individual. | 05/09/2025, 11:59 pm |
| **Peer** | A form including an evaluation of your team | 05/09/2025, 11:59 pm |

| | | |
|---|---|---|
| **evaluation form** | members. Individual assignment and submission. | |

**Examinations**
There will be three written exams on the following dates and times
Midterm Exam 1
Tue, 02/18/2025, 11:00 am-12:15 pm
Midterm Exam 2
Tue 04/01/2025, 11:00 am-12:15 pm
Final Exam
Tue, 05/13/2025, 12:30-2:30 pm.

**Student Feedback**
Apart from the formal feedback at the end of the course, you will also have opportunities to provide real-time feedback through anonymous surveys during the course.

**Class Policies and Expectations**

**Attendance Policy**
Regular and punctual attendance is critical to student success as the course relies on laboratory activities as well as student-student and student-teacher interactions during lectures and lab time. UNM pathfinder policies apply, which in part means instructor drops based on non-attendance are possible. Two unexcused absences from lab sessions will result in you being dropped from the course. Please see the UNM policy about attendance here for a list of excused absences. Attendance will be taken during each lab session, during which you will be required to show your Lobocard when signing the attendance sheet. Attendance will also be taken occasionally during lectures following the same procedure described above. Each student will receive a -1 score to be added to their final grade if they are found absent on that day attendance is taken during a lecture.

**Respectful Conduct Expectations**
I am committed to building with you a positive classroom environment in which everyone can learn. I reserve the right to intervene and enforce standards of respectful behavior when classroom conduct is inconsistent with University expectations. Interventions and enforcement may include but are not limited to, required meetings to discuss classroom expectations, written notification of expectations, and/or removal from a class meeting. Removal from a class meeting will result in an unexcused absence. The University of New Mexico ensures freedom of academic inquiry, free expression and open debate, and a respectful campus through adherence to the following policies: D75: Classroom Conduct, Student Code of Conduct, University Policy 2240 – Respectful Campus, University Policy 2210 – Campus Violence.

**Cell Phones and Technology**
As a matter of courtesy, please put devices such as cell phones, watches, and laptops away during lectures. Please also turn off cell phones, pagers, and other communication and entertainment devices prior to the beginning of class, as alerts and notifications from devices can distract you and others. Notify me in advance if you are monitoring an emergency for which cell phone ringers should be switched to vibrate.

**Name and pronouns**

All people have the right to be addressed and referred to in accordance with their personal identity. Please advise me of preferences early in the semester so that I may make appropriate changes to my records.

**Netiquette**
These rules of Netiquette should cover all communications from all members of the course: students and faculty.

One of the overriding principles in online conversations is to "craft your responses effectively." It is sometimes difficult to remember that real people are reading posted messages. This is especially true of online communication, where others do not have the opportunity to see body language or hear the tone of voice; therefore, misunderstandings are more likely.

Please, follow these guidelines in your online responses and discussion postings.

- Honor everyone's right to an opinion.
- Respect the right of each person to disagree with others.
- Respond honestly but thoughtfully and respectfully; use language that others will not consider foul or abusive. You may also use emoticons to convey a lighter tone. ☺
- Respect your privacy and the privacy of others by not revealing information that you deem private and feel might embarrass you or others.
- Be prepared to clarify statements that might be misunderstood or misinterpreted by others.

***A Special Note about Anger***

- Do not send messages that you have written when you are angry, even anonymous ones. In the online world, angry messages are known as "flaming" and are considered bad behavior. Venting and flaming are two different things. It is possible to vent without becoming "ugly." Stick to the facts, without name-calling, of what is causing you frustration.
- Do not send messages written all in upper case; this is the visual equivalent of SHOUTING. It is considered aggressive and is regarded as bad behavior. If you ever feel like shouting a message, take a deep breath and wait until you have calmed down before responding. Then, respond in a calm and factual manner. Sometimes I type it all out in a Word Document to get it out of my system and then immediately delete it and start over.

*When course communication does not meet these Netiquette standards, please document the offense with a screenshot and contact the instructor through private e-mail.*

**Use of Generative Artificial Intelligence**
A core goal of this course is to develop critical and analytic thinking and metacognitive skills. Writing is integral to thinking. Generative AI does not replace the development of these skills. I am here to teach you and to develop these skills. Thus, in this course, the use of GEN-AI (e.g., Chat GPT) is not allowed. Using these tools may stifle your independent thinking, metacognitive abilities, and creativity, constraining engagement with the specific themes developed in our lectures.
Written work created by generative AI tools is not original work. You may not submit any written work generated by an AI program as your own. All assignments should be your original work created for this class.

## General Campus Policies

**COVID-19 Health and Awareness**

Wellness: If you need to stay home due to illness or are experiencing a wellness challenge, please take advantage of the resources below. You can communicate with me at fcavallo@unm.edu, and I can work with you to provide alternatives for course participation and completion. Let me, an advisor, or another UNM staff member know that you need support so we can connect you to the right resources. UNM is a mask-friendly community but not a mask-required one. If you are experiencing COVID-19 symptoms, please do not come to class.

**Academic Honesty/Integrity**

Academic integrity encompasses the core values and basic principles of honesty and responsibility that govern our practices as scholars, researchers, and creative artists at the University. Unfortunately, incidents of academic dishonesty have been increasing throughout colleges and universities in the United States. Academic dishonesty includes cheating, fabricating or falsifying information or sources, improper collaboration, submitting the same paper for different classes without permission, and plagiarism. Plagiarism is the act, intentional or unintentional, of using other people's words or ideas as your own. This trend, in part, results from the ready availability of papers and resources on the Internet. Cheating and plagiarism are often driven by lack of time, desperation, or lack of knowledge about how to identify a source. Communicate with me and ask for help, even at the last minute, rather than risking your academic career by committing academic dishonesty. Refer to the **UNM Pathfinder** and the **UNM Catalog** for the University's policy on Academic Dishonesty. Following the guidelines of UNM policy, any act of academic dishonesty in this class will be reported to the department and to the Dean of Student's office and may result in receiving an F on the assignment, dismissal from class with a final grade of F, and even suspension or expulsion from the University, depending upon the severity of the violation. Familiarize yourself with UNM's **Student Code of Conduct** and **UNM's policies** on academic dishonesty**.**

**More Information about Plagiarism**. Plagiarism is taking credit for someone else's work, deliberately or unintentionally. This includes but is not limited to turning in all or part of an essay written by someone other than yourself (a friend, an Internet source, etc.) and claiming it as your own, and including information or ideas from research material without citing the source. The University of New Mexico considers plagiarism a serious form of academic dishonesty. Avoid plagiarism by carefully and correctly citing your sources whenever you use someone else's words, equations, graphics, or ideas. If you are unsure of something and are worried you may be plagiarizing, come see me, or go to CAPS. Plagiarism in this course results in one or more of the following consequences: failure of the assignment, failure of the course, and/or disciplinary action by the University. Cite sources carefully, completely, and meticulously; when in doubt, cite. Consult **UNM's Plagiarism Guidelines**, the Pathfinder for UNM's **Student Code of Conduct** and the Dean of Student's **Academic Integrity/Honesty** for more information.

Forms of plagiarism include, but are not limited to, the following:

- Use of direct quotations without the use of quotation marks and referencing of the source of the quotation.
- Incorrect paraphrasing information without proper citation of the source.
- Failure to provide adequate citations for material used.
- The purchase of a scholarly paper or any other academic product from the Internet or any other commercial sources and submitting it as your own work.
- Downloading work from the Internet and submitting it without citation.
- Directly copying and pasting from any source, electronic or written, into any academic assignment without explicit citation of the original source.
- Submission of a work product from a previous course for credit in a current course without direct permission of the instructor.

- Submission of work produces generative AI as your own.

Also refer to

- **Anderson School of Management Honesty Code**
- **Physician Assistant Student Code of Professional Conduct**

**Accommodations**

In accordance with University Policy 2310 and the Americans with Disabilities Act (ADA), academic accommodations may be made for any student who notifies the instructor of the need for an accommodation. It is imperative that you take the initiative to bring such needs to the instructor's attention, as I am not legally permitted to inquire. Students who may require assistance in emergency evacuations should contact the instructor as to the most appropriate procedures to follow. Contact Accessibility Resource Center at 277-3506 for additional information.

"If you need accommodation based on how course requirements interact with the impact of a disability, you should contact me to arrange an appointment as soon as possible. At the appointment, we can discuss the course format and requirements, anticipate the need for adjustments and explore potential accommodations. I rely on the Disability Services Office for assistance in developing strategies and verifying accommodation needs. If you have not previously contacted them, I encourage you to do so."

UNM is committed to providing equitable access to learning opportunities for students with documented disabilities. As your instructor, it is my objective to facilitate an inclusive classroom setting, in which students have full access and opportunity to participate. To engage in a confidential conversation about the process for requesting reasonable accommodations for this class and/or program, please contact Accessibility Resource Center (https://arc.unm.edu/) at arcsrvs@unm.edu or by phone at 505-277-3506.

**Title IX**

Our classroom and university should always be spaces of mutual respect, kindness, and support, without fear of discrimination, harassment, or violence. If you ever need assistance or have concerns about incidents that violate this principle, please access campus support resources. These include confidential services at LoboRESPECT Advocacy Center, the Women's Resource Center, and the LGBTQ Resource Center. The University of New Mexico prohibits discrimination on the basis of sex (including gender, sex stereotyping, gender expression, and gender identity). UNM faculty and graduate teaching assistants are considered "responsible employees." "Responsible employees" must communicate reports of sexual harassment, sexual misconduct and sexual violence to Compliance, Ethics and Equal Opportunity. For more information on the campus policy regarding sexual misconduct, reporting, and reporting for "responsible employees," please see UAP 2720 and UAP 2740.

**Equal Opportunity**

Harassment is a form of discrimination. When University faculty, administrators, and supervisors witness or receive a written or oral report or complaint of discrimination or harassment, they are required to engage in appropriate measures to prevent violations of this policy and promptly notify OEO, including notification of any actions taken to achieve informal resolution of the complaint. The University relies on its employees to notify the University's OEO office of all disclosures of discrimination and harassment as defined in this policy. https://policy.unm.edu/university-policies/2000/2720.html

**Citizenship and/or Immigration Status**

All students are welcome in this class regardless of citizenship, residency, or immigration status. As an educator, I fully support the rights of undocumented students to an education and to live free from the fear of deportation. I will maintain confidentiality and work with students who require immigration-related accommodations. I 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**
Students who ask for help are successful students. 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, such as peer tutoring at CAPS and http://mentalhealth.unm.edu. There are plenty of ways to find your place and your pack at UNM: see the "student guide" tab on my.unm, students.unm.edu, or ask me for information about the right resource center or person to contact.

**Doing the Right Thing**
UNM has policies to preserve and protect you and the academic community available in the Student Pathfinder as well as in the Faculty Handbook. These include policies on student grievances D175 (undergraduates) and D176 (graduate and professional students), academic dishonesty (D100), and respectful campus (CO9)..

**Library and Tutorial Services**
UNM-Main campus provides many library services and some tutorial services for distance students. For library services, go to http://www.unm.edu/libraries/ to link to a specific library or to contact a librarian. For tutorial services, go to http://caps.unm.edu/online to explore UNM's online services.

**Weather Policy**
In the event of severe weather conditions, UNM may close. Please call 277-SNOW to check UNM's status during questionable weather conditions.

**Copyright Policy and Law:** *(University Counsel's Office - Subject to Change Without Notice)*
The unauthorized distribution of copyrighted material, including through peer-to-peer file sharing, may subject a student to criminal and civil penalties. The laws that govern copyright are not specific to any one technology. Students can violate the rights of a copyright holder using many different types of technology. Both uploading and downloading of files can pose a violation of the copyright law. Students should be cautious when obtaining any copyrighted material. As a rule of thumb, before a student receives anything for free, they should research whether that source provides material licensed by the copyright owner. A group called EDUCAUSE has a list of legal file sharing alternatives at http://www.educause.edu/legalcontent.

Individuals who violate copyright law by illegally uploading and downloading copyrighted files may be subject to civil penalties of between $750 and $150,000 per song. These penalties are established by federal law. In the past, pre-litigation settlements offered by copyright owners have been in the $3,000 to $4,000 and up range while juries in some jurisdictions have issued verdicts of hundreds of thousands and up. In addition, a court may, in its discretion, grant the copyright owner reasonable attorney fees. Although criminal prosecution of students for file sharing is extremely rare, federal law lays out criminal penalties for intentional copyright infringement which can include fines and jail time. In addition to potentially violating the law, unauthorized distribution or receipt of copyrighted material is a violation of University Business Policies and Procedures Manual 2500. That policy states that: "Users shall respect all copyrights including software copyright. Use of University computing services in violation of applicable laws or University policy may result in sanctions, including withdrawal of use privilege; disciplinary action, up to and including, expulsion from the University or discharge from a position; and

legal prosecution under applicable federal and/or state law."

**Tentative schedule of the course**

| Date | Lec # | Topics | Lab schedule |
|---|---|---|---|
| **Module 0-Course overview and key concepts** | | | |
| **01/21/2025 Tue** | **1** | **Course overview** | **No lab** |
| **Module 1- Field-effect transistors and amplifiers** | | | |
| **01/23/2025 Thu** | **2** | **Intro to amplifiers** | **No lab** |
| **01/28/2025 Tue** | **3** | **Basics of NMOS transistor and DC circuit analysis** | **Lab 1+ Safety briefing** |
| **01/30/2025 Thu** | **4** | **DC circuit analysis Biasing configurations** | |
| **02/04/2025 Tue** | **5** | **MOSFET amplifiers: small-signal model** | **Lab 2** |
| **02/06/2025 Thu** | **6** | **Common source amplifiers** | |
| **02/11/2025 Tue** | **7** | **Source follower and common gate amplifier** | **Lab 3** |
| **02/13/2025 Thu** | **8** | **Integrated amplifiers** | |
| **02/18/2025 Tue** | **9** | **Midterm Examination 1** | **Lab 4** |
| **02/20/2025 Thu** | **10** | **Multi-stage FET amplifiers** | |
| **Module 2-Bipolar junction transistors and amplifiers** | | | |
| **02/25/2025 Tue** | **11** | **Basics of BJTs** | **Lab 5** |
| **02/27/2025 Thu** | **12** | **DC circuit analysis** | |
| **03/04/2025 Tue** | **13** | **Biasing configurations** | **Lab 6** |
| **03/06/2025 Thu** | **14** | **BJT as linear amplifier: small signal model and ac analysis of the CE** | |
| **03/11/2025 Tue** | **15** | **CB and CC amplifiers** | **Lab 7** |
| **03/13/2025 Thu** | **16** | **AC load line and symmetrical signal swing** | |
| **03/17-21/2025** | **Spring break** | | **No lab** |
| **03/25/2025** | **17** | **Power considerations** | **Project** |

| | | | |
|---|---|---|---|
| **Tue** | | | **implementation** |
| **03/27/2025 Thu** | **18** | **Midterm Examination 2** | |
| **Module 3 – Frequency response** | | | |
| **04/01/2025 Tue** | **19** | **Frequency response of an amplifier-Effect of circuit capacitors 1** | **Project implementation** |
| **04/03/2025 Thu** | **20** | **Frequency response of an amplifier-Effect of circuit capacitors 2** | |
| **04/08/2025 Tue** | **21** | **Frequency response: BJT** | |
| **04/10/2025 Thu** | **22** | **Frequency response: FET** | |
| **04/15/2025 Tue** | **23** | **High-frequency response and two-stage amplifiers** | |
| **04/17/2025 Thu** | **24** | **Frequency response: examples** | **Project implementation** |
| **Module 4-Power amplifiers** | | | |
| **04/22/2025 Tue** | **25** | **Introduction to power transistors and amplifiers** | |
| **04/24/2025 Thu** | **26** | **Classes of amplifiers/Class A and B power amplifiers** | |
| **04/29/2025 Tue** | **27** | **Class AB power amplifier** | |
| **05/01/2025 Thu** | **28** | **Course review** | |
| **05/06/2025 Tue** | **29** | **Final project presentations** | **No lab** |
| **05/08/2025 Thu** | **30** | **Final project presentations** | **No lab** |

# LIFE IN THE EARTH SYSTEM (ENVS 322L)

## *Full Implementation*

# ENVS 322L: LIFE IN THE EARTH SYSTEM
## FALL 2025

**UNM Land Acknowledgement:**

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.

**ALL students are welcome in this class regardless of citizenship, residency, or immigration status.** I will respect your privacy if you choose to disclose your status. UNM as an institution has made a core commitment to the success of all our students, including members of our undocumented community.

**A note about recent events:** Over the past few years, the U.S. has experienced both the emergence of the global pandemic and the painful consequences of long-endured violence against the Black community and other people of color in the United States. These events have caused, and continue to cause, fear, stress, and pain for many members of our community, and will continue to impact each of us in various ways throughout this term. Under these circumstances, it is normal to feel overwhelmed or anxious, and to have difficulty concentrating. I have designed this course with these challenges in mind and am committed to continuing to work with all of you to create a positive and supportive learning environment throughout the term. If your health, well-being, or schoolwork are being impacted by recent events I encourage you to make use of the resources UNM provides, which I have included at the end of this syllabus.

**Instructor:** Dr. Corinne (Cori) Myers
**Email:** cemyers@unm.edu
**Office Location:** Northrop, rm 226
**Drop-in Hours:** TBA OR by appointment

**Class Meets:** T/Th 12:30 – 1:45pm
**Lab Meets:** Mon 2:00 – 4:50pm
**Course Credits:** 4

**About your Instructor:** I got interested in Earth Sciences in high school because I loved the outdoors and the history of our planet. However, during my first semester in college I found myself doing very poorly on my geology exams; this made me wonder if I was cut out for being a geologist or any kind of scientist. The support of a few instructors showed me that struggling was normal and expected, which helped me learn what resources I needed (like attending drop-in hours) to be more successful in my math and science classes. In doing a PhD I've discovered a passion for understanding the history of life; I hope to share that passion with you!

**TA:** Esteban Lopéz Murillo
**TA Email:** elopezmurillo98@unm.edu
**Office Location:** Northrop, rm 224D
**TA Drop-in Hours:** TBA OR by appointment

**About your TA:** I am from Costa Rica, in Central America. Since I was a kid, I visited my grandma's house in the Nicoya region of Costa Rica. On my way there, I saw high hills with limestones popping out of the forest. In elementary school, my favorite place was an adventure park near my house that has Miocene limestones with big clam fossils. As time went on, I was debating on becoming an historian or a paleontologist just before entering college. I decided for the latter, so I entered a geology major in Costa Rica. I had the idea of becoming a dino-guy, but in my first semester, I discovered rudist bivalves (special clams of the Cretaceous period), and my previous love for limestones converted me in an invertebrate-guy! I did an internship at the AMNH in New York, that's how I got in contact with Cori. After my undergrad, I came to UNM to work with Cori to do my Master's. I worked with the Late Cretaceous

mollusks of the Nicoya region of Costa Rica. This semester I begin my PhD program, expanding my Late Cretaceous molluscan research into the context of the Americas. I love fieldwork, collecting fossils and understanding the history and evolution of the rocks and landscapes I see.

## Course Description

This course will investigate interactions between the Earth and life, and the consequences of those interactions on biodiversity, evolution, ecology, and biogeochemical cycles. We will build an understanding of Earth-life interactions at different scales of space and time and apply these principles to better understand current and future global changes in environment and biodiversity. We will also gain an appreciation for applying scientific skills, such as critical analysis, to everyday life. In-class discussions and activities, labs, and field trips are geared towards establishing expertise in hypothesis generation, data collection, basic statistical analysis, visualization, and spatial analysis using a GIS, and interpretation and communication of scientific results. This course also implements the FULL Level of UNM's ECURE program (Expanding Course-based Research Experiences for undergraduates). ECURE practices will be implemented in our class via activities designed to encourage you to critically evaluate scientific claims, build an identity as a scientist, and practice aspects of the scientific process (e.g., developing scientific hypotheses and interpreting scientific data).

**Pre-Requisites:** BIOL 1140/1140L (Biology for Health-Related Sciences and Non-Majors + Lab) and ENVS 1130/1130L (The Blue Planet + Lab) and MATH 1240 (Pre-Calculus Mathematics) or MATH 1250 (Pre-Calculus and Trigonometry). **Pre-requisites or Co-requisites:** ENVS 320L (Environmental Systems) and ENVS 321L (Earth Materials); **OR** permission from instructor.

**A note about this course:** This course will include challenging material and *expecting to complete activities/labs perfectly the first time is not realistic*. Assignments and activities are designed so that students need to attend class consistently, work with the TA and myself on troubleshooting labs, work outside of class, and use or develop good study strategies. **Struggling does not mean that you can't or won't succeed in this course but may mean that you need some help!** Contact me or Esteban and we can provide resources to help you succeed. I hope and expect that every student will develop a thorough understanding of the course material and ultimately succeed in the course.

**Textbook and Supplies:** There is no required textbook for this course. Instead, I will provide book chapters and readings from primary literature. These will be posted on the UNM Canvas course website.

**Course Objectives and Student Learning Outcomes:** You may find many of the course learning objectives below initially *unfamiliar* and that is *normal*. If you engage with classmates, get support when needed, and complete course work in good faith, by the end of the semester, you will understand and recognize how they relate to Life in the Earth System and your life. The below course map outlines how classroom activities connect with course learning objectives and goals. Use this chart to help connect your learning progress to desired class outcomes!

| **Learning Goals**<br>*After successful completion of this course, students will:* | **Learning Objectives**<br>*After successful completion of this course, students will be able to:* | **Evidence from key learning activities**<br>*Students will gauge their mastery of course content and skills through the following activities:* |
|---|---|---|
| 1. Understand fundamental concepts of the Biosphere and how the Earth System influences biodiversity, ecology, and evolution – including scale and geological context. | a. Summarize the deep time historical context for Earth-life interactions.<br><br>b. Analyze feedbacks at different spatial and temporal scales. | i. Discussion board posts<br>ii. Exams<br>iii. Lab activities |
| 2. Critically evaluate potential outcomes of current environmental and biodiversity changes. | a. Apply an understanding of Earth-life interactions to predict and evaluate potential outcomes of current global environmental and biodiversity changes.<br><br>b. Recommend solutions for any negative outcomes. | i. ENM Independent Project<br>ii. Climate Change Debate<br>iii. Letter to a Lawmaker |
| 3. Communicate about the Biosphere and Earth System science in a meaningful way. | a. Make informed and responsible decisions regarding the Biosphere and its resources.<br><br>b. Effectively communicate results of scientific research through written and oral communication, including analyzing primary literature, writing research reports, oral presentation, and debate of policy recommendations. | i. Discussion board posts<br>ii. Exams<br>iii. Lab activities<br>iv. ENM Independent Project<br>v. Climate Change Debate<br>vi. Letter to a Lawmaker |
| 4. Think like a scientist: be competent in research practices and critical evaluation of information. | a. Extend principles of critical analysis to everyday life, including hypothesis generation and testing, and data evaluation and interpretation. | i. Discussion board posts<br>ii. Extra credit opportunities |

**Course Evaluation**

| Method of Assessment | % Final Grade | Description (500pts total) |
|---|---|---|
| Discussion Posts | 8% | You will respond to 8 posted Discussion Questions via a Group Discussion page on Canvas (due Thursdays at 11:59pm; see course schedule). Each Discussion Post that you make is worth 5pts (40pts total). |
| Discussion Post Peer Responses | 6% | For each Discussion Post, you will respond to the posts of 2 other students (due Mondays at 11:59pm; see course schedule). Each Discussion Peer Review that you post is worth 4pts (32pts total). |
| Labs | 20% | Participation in each lab and completion of lab written assignments (12 labs; 100pts total). |
| Exams | 21% | You will have a chance to apply what we've learned in class and lab via 3 exams composed of 4ish essay-styled questions; each exam is worth 34pts (103pts total). I am interested in your learning and your approach to problems. Therefore, partial credit will be given when you have solved parts of the problem correctly. |
| ENM Independent Project | 15% | In-class presentation of species ecological niche modeling project under climate change (75pts). |
| Climate and Policy Debate | 20% | Participation in final debate on human impacts on biosphere (100pts). |
| Letter to a Lawmaker | 10% | Write a concise and persuasive letter to a lawmaker of your choice that describes 1 or 2 biosphere issues that you think are important to inform local, state, or national environmental policy. Bring an addressed envelope to the final exam and I will mail your letter! (50pts) |
| Extra Credit | BONUS | There are several opportunities for extra credit (details in attached docs on Canvas Syllabus page). |
| | | |

**Course Grading:** I provide multiple opportunities for students to receive feedback on their performance throughout the course: this allows you to see how you are doing *and* identify places you need to apply more effort or new study strategies, seek help if struggling, and improve throughout the semester. My hope is that all students will develop the knowledge and skills they need to do well in this course and that all students—even those who perform well early in the semester—will improve and develop greater knowledge and skills through practice on quizzes, mini-exams, labs, and other activities.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| A+ | 97 – 100 | B+ | 87 – 89 | C+ | 77 – 79 | D+ | 67 – 69 | F | 0 – 59 |
| A | 93 – 96 | B | 83 – 86 | C | 73 – 76 | D | 63 – 66 | | |
| A- | 90 – 92 | B- | 80 – 82 | C- | 70 – 72 | D- | 60 – 62 | | |

(decimal points are rounded down if below 0.5; rounded up if 0.5 or above)

****The Canvas schedule will be updated during the semester, including changes to readings and/or assignment information****

| WEEK | MONDAY | TUESDAY | THURSDAY |
|---|---|---|---|
| **1**<br>Aug 18 – 22 | **NO LAB THIS WEEK** | Lec 1: Intro to the course<br>Read: *nada* | Lec 2: Intro to Life in the Earth Sys<br>Read: *Embed Nature* article<br>**Disc Post #1 DUE** |
| **2**<br>Aug 25 – 29 | Lab 1: Biodiversity: campus *iNaturalist*<br>**Disc Resp #1 DUE** | Lec 3: A Recipe for Life<br>Read: *CH8 – Earth's Evolving System* | Lec 4: Cambrian Explosion<br>Read: *CH11 – Bringing Fossils to Life*<br>**Disc Post #2 DUE** |
| **3**<br>Sep 1 – 5 | **NO LAB**<br>**LABOR DAY**<br>**Disc Resp #2 DUE** | Lec5: Biodiversity and Extinction<br>Read: *CH44 – How Life Works* | Lec 6: Evolution I<br>Read: *CH19 – Ecology (Krebs)*<br>**Disc Post #3 DUE** |
| **4**<br>Sept 8 – 12 | Lab 2: Biodiv: Field Trip: Bosque *iNat*<br>**Disc Resp #3 DUE** | Lec 7: Evolution II<br>Read: *CH5 – Futuyma 1998* | Lec 8: Evolution III<br>Read: *CH2 – Essentials in Ecology* |
| **5**<br>Sept 15 – 19 | Lab 3: Biodiv: Field Trip: Embudito *iNat* | Lec 9: Great Ordovician Biodiv Event<br>Read: *CH11 – Earth's Evolving Sys*<br>**Exam 1 DUE** | Lec 10: Evolution IV<br>Read: *Prothero 1992* |
| **6**<br>Sept 22 – 26 | Lab 4: Phylogenetics | Lec 11: End-Ordovician Mass Ext<br>Read: *Algeo et al 2016* | Lec 12: Abiotic Feedbacks, Nutrient Cycles I<br>Read: *CH 2 & 3 – Fund. of Geobio*<br>**Disc Post #4 DUE** |
| **7**<br>Sept 29 – Oct 3 | Lab 5: Biogeochemistry<br>**Disc Resp #4 DUE** | Lec 13: A-Feedbacks, Nut Cycles II<br>Read: *Sabine et al. 2004*<br>*Feely et al. 2004* | Lec 14: A-Feedbacks, Nut Cycles III<br>Read: *CH 4 – Fund. of Geobio*<br>**Disc Post #5 DUE** |
| **8**<br>Oct 6 – 10 | Lab 6: ENM I - occurrences & environmental data<br>**Disc Resp #5 DUE** | Lec 15: End-Devonian Mass Ext<br>Read: *CH 11 – Earth's Evolving Sys* | **NO CLASS – FALL BREAK**<br>**Disc Post #6 DUE** |
| **9**<br>Oct 13 – 17 | Lab 7: ENM II – occur & environ data<br>**Disc Resp #6 DUE** | Lec 16: Life on Land<br>Read: *CH12 – Earth's Evolving Sys* | Lec 17: A-Feedbacks, Nut Cycles IV<br>Read: *Diaz & Rosenberg 2008*<br>*Watson 2016* |
| **10**<br>Oct 20 –24 | **NO LAB** | Lec 18: P/T Mass Ext<br>Read: *CH6 – Bringing Fossils to Life*<br>*Payne & Clapham 2012*<br>**Exam 2 DUE** | Lec 19: Ecology I<br>Read: *Violle et al 2007* |
| **11**<br>Oct 27 – 31 | Lab 8: ENM III – ArcMap & Maxent | Lec 20: Ecology II<br>Read: *CH46 – How Life Works* | Lec 21: T/J Mass Ext<br>Read: *CH13 – Earth's Evolving Sys*<br>**Disc Post #7 DUE** |
| **12**<br>Nov 3 – 7 | Lab 9: ENM IV – Maxent & digital data<br>**Disc Resp #7 DUE** | Lec 22: Ecology III<br>Read: *CH47 – How Life Works* | Lec 23: Ecology IV<br>Read: *CH47 – How Life Works*<br>**Disc Post #8 DUE** |
| **13**<br>Nov 10 – 14 | Lab 10: ENM V – Independent Project<br>**Disc Resp #8 DUE** | Lec 24: Ecology V<br>Read: *Smith et al. 2008,*<br>*CH18 – Ecology* | Lec 25: Mesozoic Marine Revolution<br>Read: *CH13 – Earth's Evolving Sys* |
| **14**<br>Nov 17 – 21 | **Lab 11: ENM VI – Ind. Project Presentations** | Lec 26: Catch-up Day!<br>Read: *nada* | Lec 28: Humans & the Biosphere I<br>Read: *Steffen et al. 2018*<br>*Williams et al. 2015* |
| **15**<br>Nov 24 – 28 | Lab 12: Climate and Policy I | Lec 27: K/Pg Mass Ext<br>Read: *CH13 – Earth's Evolving Sys*<br>**Exam 3 DUE** | **NO CLASS**<br>**THANKSGIVING BREAK!**<br>(enjoy a break – and your framily ☺) |
| **16**<br>Dec 1 – Dec 5 | Lab 13: Climate and Policy II | Lec 29: Humans & the Biosphere II<br>Read: *Ceballos et al. 2015*<br>*Urban 2015* | Lec 30: Humans & the Biosphere III<br>Read: *Tilman et al. 2017*<br>*Worm 2017* |
| **TBA cause UNM hasn't decided yet: FINAL EXAM – CLIMATE AND POLICY DEBATE** | | | |

## Additional Course Policies:

It is not uncommon for students to feel that they are not doing well and are uncertain about whether they belonged in this class or this major. I always advise these students to hang in there, and in the meantime to access the tutoring center, put in some extra hours studying, and join a study group. Students have reported back that after some time had passed and they had taken some positive steps, they did feel like they belonged in the class and in the ENVS major. Recommendations for resources available to help you succeed in this course, please see the "*Policies Supporting Equity and Inclusion*," "*Library and Tutoring Services*," and "*Safety, Mental Health, and Counseling Services*" sections of the syllabus below.

**Preferred Names and Pronouns:** If your preferred name and/or pronoun is not the same as the name/pronoun that appears on the university provided roster for the course, please let me know so that I can use your preferred name and pronouns ☺. My preferred name is Dr. Myers, Professor Myers, or Cori. My pronouns are she/her/hers. Your TA's preferred name is Esteban; Esteban's preferred pronouns are he/him/his.

**Course Conduct and Inclusive Learning:** I am committed to creating a positive learning environment where diverse perspectives are recognized and valued as a source of strength. I urge all students to be self-reflexive about behaviors or comments that have been identified as racist, homophobic, transphobic, ableist, etc. This self-reflection applies to me as well; *we are all in the process of unlearning the institutional pressures that dominant our society; I recognize that change is ongoing and no one is perfect.* You have a right to express your opposing views, but you must do so in a respectful manner. I request that all students work with me to create a classroom culture based on open communication, mutual respect, and inclusion. As a class we will approach all discussions with respect and civility. Disagreements and debates in academic discourse are expected and welcome, but personal attacks are never okay, and will not be tolerated. **Disruptive behavior of any kind will result in a student being asked to leave a class or zoom meeting, which will be recorded as an unexcused absence.** That said, I strive to ensure an open and welcoming classroom for all students. If I ever miss the mark, please come talk to me! We are all learning together 😊. More information about UNM's commitment to a respectful campus can be found on the student Pathfinder under the "Student Code of Conduct" section.

**Class Communication:** Class communication will primarily occur through email, in-class announcements, and announcements posted on Canvas. Email communication will be through your university email account. At some points during the semester, my email inbox gets very full, but I do want to hear from you! I will do my best to respond to emails within 72hrs, if you still haven't heard from me, please send me a reminder email – I appreciate the nudge! We will be using Canvas as a course tool, and it requires a UNM NetID account for access. Updates and/or changes to the class, as well as reminders or help for assignments will be primarily provided by email and secondarily posted to the Canvas *Announcements* page. You will need access to your UNM email to get these announcements. Canvas and Zoom will also be important platforms for course materials and communication. Please get in touch with Esteban or me if we can help navigating these programs. Please also reach out if you have unstable or only periodic access to internet resources. We will work with you to be successful accessing course materials!

**Canvas Resources:** We will be using the Canvas platform this semester in class to provide assignment information, hold course discussions, and enter grades (among other things!). Student Help Resources and Overview of Canvas websites provide info and tutorials on how to use this new program. Please also feel free to always reach out to me or Esteban with questions about accessing Canvas course materials.

**Attendance Policy:** Regular and punctual attendance to in-person or Zoom lectures is expected and appreciated. If you cannot make a lecture or lab due to life, illness, or related events, a recording of the

lecture/lab introduction from Fall 2020 will be posted to Canvas for review (under the *Course Materials* page for that week). Note that these materials may have changed from since 2020, however, the overall content will be similar. *Also note that class activities or zoom break-out sessions will not be available to those who do not attend the lecture.* UNM Pathfinder policies apply, which in part means **instructor drops based on non-attendance/non-remote participation are possible after 6 or more unexcused absences**. However, I will do my best to reach out to you, including use of the Early Alert Student Referral system, prior to an instructor drop. This policy applies regardless of the grading option you have chosen.

**Late Work Policy:** All assignments will be discussed in class and posted to UNM Canvas with a clear time and date that they are due. Late work will be penalized by 5% per day late. However, once during the semester, you may utilize a **late-work-grace period** and turn in an assignment up to three days (72hrs) late and still received full credit. *In order to receive full credit on the assignment,* you *must notify Esteban or me at least 24hrs prior to the original due date* that you will use your late-work-grace period. You do not need to provide a reason for using the grace period.

**Cell Phones and Zoom Etiquette:** Please turn off cell phones, pagers, and other communication and entertainment devices prior to the beginning of class (or Zoom lecture) and lab sessions. Please also mute your microphone during Zoom lectures unless actively participating in a group discussion or asking/answering a question. *Please DO leave your camera ON during Zoom lectures if possible.* Seeing faces allows me to assess in real time how lecture content is working or not working.

**Academic Integrity:** Academic Dishonesty (also known as plagiarism) occurs when someone—knowingly or unknowingly—presents the words or ideas of another person as their own. Any work turned in for this class must meet UNM standards for academic honesty. This may include a reduced or failing grade for a plagiarized assignment and/or for the course. Students most often plagiarize if they are particularly stressed about an assignment or are running out of time; sometimes students don't fully understand the assignment or think they don't have anything worth saying. If you are concerned about how you are doing in this course, please come speak with me instead of considering academic misconduct. You are taking this course because you want to be a skilled and competent professional in your field. *You are capable of meeting my expectations and completing the assignments for this course. However, you may need some help or resources to reach your academic goals; this is normal and expected.* Please reach out to me or Esteban; we are here to help you succeed. UNM offers excellent academic resources/workshops at the Center for Academic Program Support (CAPS). You may also learn more about UNM policies on academic integrity, student grievances, and expectations for respectful student conduct on the student Pathfinder website.

**AI in the classroom:** In this course, YOU must be the author of all coursework. The information derived from these tools is based on previously published materials. Therefore, presenting AI-generated output as your original work and/or without proper citation is considered plagiarism and constitutes a violation of the UNM standards for academic honesty (see above). Be aware that AI-generated text is often factually inaccurate and this can include fabricated (non-existent) academic references (ask me about how cat memes break AI!). There are now also several ways of identifying AI-generated text for instructors. **You may use AI in some minor or non-substantive ways.** For example, unless otherwise specified in the assignment, you may use AI to define terms that are unknown or confusing, checking grammar, brainstorming ideas, or look for peer-reviewed literature relevant to an assignment. **If AI is used on any Exam, Discussion Post, Letter to a Lawmaker, or any other written assignment, you must: (1) provide the exact question and answer input into the AI, (2) provide a paragraph indicating how this answer is accurate or inaccurate, and (3) re-write the answer in your own words.** Failure to follow these steps will result in a zero on the assignment. If you have questions about the appropriate use of AI in our classroom, please reach out to me ahead of the assignment due date.

**Credit Hour Statement:** This is a 4 credit-hour course. Class meets for two 75-minute lectures and one 3-hour lab session of direct instruction for 15 weeks during the Fall 2025 semester. **Please plan for a *minimum* of 6 hours of out-of-class work (including readings, discussion post activities, study time, and lab assignment completion) each week.** Federal Credit Hour Definition. Many students have found that time management workshops can help them meet their course goals; for information on these services, please get in touch with the UNM Center for Academic Program Support (CAPS) at: https://caps.unm.edu/ and click the tab for *Services*.

**Policies Supporting Equity and Inclusion:**

**a. AccessAbility:** Many students have visible or invisible disabilities/diversities, and the college offers accommodations that allow them to achieve their full potential. The Accessibility Resource Center (ARC: #505-277-3506, email: arcsrvs@unm.edu) collaborates with all academic departments to arrange accommodations for students with disabilities/diversities in accordance with University Policy 2310 and the Americans with Disabilities Act (ADA), without compromising the academic integrity of the curriculum. If you have a documented disability/diversity or suspect you have an undocumented disability/diversity, contact me and/or ARC as early as possible in the term to find out what supports are available to you. Please note that you need to approach me because I am not legally permitted to ask about your potential need of classroom accommodations.

**UNM Accommodation statement:** UNM is committed to providing equitable access to learning opportunities for students with documented disabilities. As your instructor, it is my objective to facilitate an inclusive classroom setting, in which students have full access and opportunity to participate. To engage in a confidential conversation about the process for requesting reasonable accommodations for this class and/or program, please contact Accessibility Resource Center at arcsrvs@unm.edu or 505-277-3506.

UAP 2720 and 2740. Our classroom and university should foster mutual respect, kindness, and support. If you have concerns about discrimination, harassment, or violence, please seek support and report incidents. Find confidential services at LoboRESPECT Advocacy Center, the Women's Resource Center, and the LGBTQ Resource Center. UNM prohibits discrimination on the basis of sex (including gender, sex stereotyping, gender expression, and gender identity). All instructors are "responsible employees" who must communicate reports of sexual harassment, sexual misconduct and sexual violence to Compliance, Ethics and Equal Opportunity. For more information, please see UAP 2720 and UAP 2740.

**b. Title IX Statement:** Our classroom and our university should always be spaces of mutual respect, kindness, and support, without fear of discrimination, harassment, or violence. Should you ever need assistance or have concerns about incidents that violate this principle, please access the resources available to you on campus. Title IX prohibitions on sex discrimination include various forms of sexual misconduct, such as sexual assault, rape, sexual harassment, domestic and dating violence, and stalking. Current UNM policy designates instructors as mandatory reporters, which means that if instructors are notified (outside of classroom activities) about any Title IX violations, they must report this information to the UNM Title IX coordinator at the Office of Equal Opportunity (oeo.unm.edu). However, the American Association of University Professors' (AAUP) "Statement on Professional Ethics" requires that Professors protect students' academic freedom and "respect[s] the confidential nature of the relationship between professor and student." *Therefore, as a professor I pledge to honor student confidentiality and will strive to respect your wishes regarding reporting.* If you or someone you know has been harassed or assaulted and would like to receive support and academic advocacy, there are numerous confidential routes available to you, such as:

- Women's Resource Center: #505-277-3716; email women@unm.edu
- LGBTQ Resource Center: #505-277-5428; email lgbtqrc@unm.edu

- Student Health and Counseling (SHAC): #505-277-3136; email shac.unm.edu
- LoboRESPECT: 24-hour crisis line at #505-277-2911; email loborespect@unm.edu

You can receive *non-confidential* support and learn more about Title IX through the Title IX Coordinator at (505) 277-5251 and http://oeo.unm.edu/title-ix/. Reports to law enforcement can be made to UNM Police Department at (505) 277-2241.

**UNM Title IX statement:** The University of New Mexico and its faculty are committed to supporting our students and providing an environment that is free of bias, discrimination, and harassment. The University's programs and activities, including the classroom, should always provide a space of mutual respect, kindness, and support without fear of harassment, violence, or discrimination. Discrimination on the basis of sex includes discrimination on the basis of assigned sex at birth, sex characteristics, pregnancy and pregnancy related conditions, sexual orientation and gender identity. If you have encountered any form of discrimination on the basis of sex, including sexual harassment, sexual assault, stalking, domestic or dating violence, we encourage you to report this to the University. You can access the confidential resources available on campus at the LoboRESPECT Advocacy Center (https://loborespect.unm.edu), the Women's Resource Center (https://women.unm.edu), and the LGBTQ Resource Center (https://lgbtqrc.unm.edu). If you speak with an instructor (including a TA or a GA) regarding an incident connected to discrimination on the basis of sex, they must notify UNM's Title IX Coordinator that you shared an experience relating to Title IX, even if you ask the instructor not to disclose it. The Title IX Coordinator is available to assist you in understanding your options and in connecting you with all possible resources on and off campus. For more information on the campus policy regarding sexual misconduct and reporting, please see https://policy.unm.edu/university-policies/2000/2740.html and CEEO's website. If you are pregnant or experiencing a pregnancy-related condition, you may contact UNM's Office of Compliance, Ethics, and Equal Opportunity at ceeo@unm.edu. The CEEO staff will provide you with access to available resources and supportive measures and assist you in understanding your rights.

**c. Caregiver Responsibilities Policy:** I have great respect for students who are balancing their pursuit of education with the responsibilities of caring for children or other family members. If you run into challenges that require you to miss a class, or if your caregiving responsibilities are interfering with your ability to engage in course learning, please contact me or Esteban. You may use **your late-work-grace period** at any time; we can discuss how to support your learning if additional disruptions occur.

**d. School-Life Conflict:** Many students face obstacles to their education because of work, family obligations, or unforeseen personal difficulties. If you are experiencing challenges throughout the term that are impacting your ability to succeed in this course, please reach out to me or Esteban so that we can work together to form a plan for your academic success. If you are unable to attend my or the Esteban's drop-in hours, please email us to set up a time that works for you.

**Library and Tutorial Services:** UNM-Main campus provides many library services and some tutorial services for distance students. For library services, go to http://www.unm.edu/libraries/ to link to a specific library or to contact a librarian. For tutorial services, go to http://caps.unm.edu/online to explore UNM's online services.

**Safety, Mental Health, and Counseling Services:** All of us need a support system, and many students benefit from the help of others. UNM offers several resources to help keep Lobos safe.

- LoboGuardian is a mobile app that increases user safety by creating a virtual safety network of friends and family
- The entire UNM campus has blue light emergency phones

- UNM Police Department (#505-277-2241), offers a free escort service for safety as needed
- Lobo Alerts is UNM's emergency text messaging system that can inform you of any occurrences that impact safety
- Get Help Now at LoboRespect Advocacy Center for concerns such as sexual misconduct, hate/bias, bullying, hazing, etc.
- SHAC - Student Health Services and Counseling - provides counseling and health services to all students. They work with students to identify and address issues related to personal growth, self-confidence, anxiety, depression, eating disorders, academic difficulties, and career indecision. They offer telephone and video appointments.
- Mental Health Resources
- CAPS (Center for Academic Support) - includes tutoring, workshops, and much more!
- Student Resource Center website - connections with student groups, activities, career resources and more!
- Lobo Food Pantry supports food security and nutrition for the UNM community
- Student Employment Office - connect with available jobs on campus
- Dean of Students – connect with advisors and advocates to help you find student opportunities and needed supports!

PHEW! I appreciate when students read the entire syllabus – congratulations if you have read this far! Email me your favorite internet picture/cartoon of modern or ancient life by Sept 2nd and receive four extra credit points added to your final point total! Please don't share this opportunity with any current or future classmates; let them discover it on their own (this is intended to be a reward for those who diligently read through the syllabus ☺).

# MAPS AND GI SCIENCE (GEOG 1115)

## *Partial Implementation*

DEPARTMENT OF GEOGRAPHY & ENVIRONMENTAL STUDIES

# COURSE SYLLABUS

FALL 2023
MAPS AND GISCIENCE
GEOG 1115 (3.0)

## Instructor Information

Caitlin L. Lippitt, Ph.D.
Department of Geography & Environmental Studies
Email: caitlippitt@unm.edu
Office: Bandelier Hall West 219
Drop-in Hours: Tuesdays 10:00-10:50 AM, Wednesdays 10:00-10:50 AM, by Appt (in-person & Zoom)

## Course Information

| | |
|---|---|
| Course Title | Maps and GIScience |
| Course Number | GEOG 1115 |
| Course Credits | 3.0 |
| Time & Place | MWF 12:00 pm-12:50 pm, Bandelier Hall East 106 |

## Course Description

Discover the dynamic world of geospatial information and its vital role across the physical, natural, and social sciences. In this course, you'll delve into cutting-edge technologies reshaping our understanding of the world. From mapping cultural trends to analyzing environmental changes, geospatial tools are at the forefront of modern scientific exploration. Through hands-on learning and real-world applications, you'll master the essentials of cartography, Geographic Information Systems (GIS), remote sensing, Global Positioning Systems (GPS), and geovisualization. You'll access and work with relevant data sources, honing your skills in data collection, management, analysis, and representation.

This course offers a comprehensive introduction to the exciting field of geospatial science. Whether you're a Geography major, minor, or simply curious about the power of geospatial technology, this class is your gateway to new insights and career opportunities. Whether you are new to GIScience or have some experience, this course is designed to be accessible to everyone. Every student can grow their skills with consistent effort, and I'm committed to helping you do that. Our class is a community of learners, and everyone's perspectives and experiences enrich our discussions and projects. Your voice matters, and I encourage you to participate and share your ideas.

This course will include challenging material. However, the assignments are designed so that any student willing to consistently attend class, prepare outside of class, use and develop good

study strategies, and contact the instructor when they are struggling can develop a thorough understanding of the course material and succeed in the course.

## Course Objectives

By the end of this course, you will have developed a strong foundation in geospatial technologies and gained confidence in applying these tools to real-world problems. You will also have honed your critical thinking skills about spatial data and its applications.

C1: Define geographic information and articulate its significance in decision-making processes and natural resource management.
C2: Develop proficiency in map creation, including design principles, thematic map displays, map projections, and effective cartographic techniques.
C3: Distinguish between GIS, global navigation satellite systems, remote sensing, and cartographic design, and explain their respective roles in observing and analyzing spatial data.
C4: Acquire, create, and manage spatial data confidently and accurately.
C5: Improve observation, data collection, mapping, and data analysis skills through the development and execution of a scientific research project.

## Prerequisites and Co-requisites

This course assumes no prior experience with GIS, and I will provide all the guidance and resources you need to succeed. If you encounter any difficulties, please reach out—I'm here to help you every step of the way.

## Specific Course Requirements

This course does not assume previous experience with geographic information systems or mapping technologies. Some prior experience with Windows is expected. It is recommended (not required) that GEOG 1115L be taken concurrently. Students in this class should have regular access to a computer and a robust and reliable internet connection. The Spatial Computing Lab (Bandelier East 106) is open from 9:00-5:00 PM, Monday through Friday. It provides our students with state-of-the-art GIS software and a safe and comfortable space to work on class assignments, study, catch up on email, and connect with peers. Plan and leave plenty of time to visit the lab to prepare and complete tasks.

## Instructor Information

I am passionate about helping students discover the fascinating world of geospatial science. My goal is to support you in developing your skills and confidence in this field, no matter your previous experience. Please feel free to reach out during drop-in hours or by appointment; I'm here to help you succeed!

## Course Format

Active participation is crucial in this course. Engaging with the material, your peers, and me during class will enhance your learning experience and help you develop a strong sense of belonging within our learning community. Geography 1115 is a 100% face-to-face course. Readings, discussions, and/or assignments are due each week. Although I will send updates and announcements, you are responsible for staying on top of course communications, assignments, due dates, and course obligations.

## Course-Based Undergraduate Research Experience (CURE)

This course has been chosen to be part of the UNM project "Expanding Course-based Undergraduate Research Experiences" (ECURE). Geography 1115 aims to equip students with various research skills and a foundation in standard research practices within GIScience. An ECURE class features five elements that reflect authentic research: 1) engaging students in scientific practices; 2) emphasizing collaboration; 3) examining broadly relevant topics; 4) exploring questions with unknown answers to expose students to the process of scientific discovery; and 5) incorporating iteration into the course so students can see how science develops over time.

## Why take a Course-Based Undergraduate Research Experience (CURE) course?

Many faculty members choose to teach CUREs and many institutions offer CUREs to benefit their students. A growing body of literature has shown that CUREs can help students:

- Increase interest and enjoyment of science, both for majors and nonmajors
- Develop science practice skills and learning scientific content
- Develop confidence in their ability to do science, and increased scientific identity
- Improved sense of belonging both at college and within the scientific community
- Increase interest in taking additional science courses, coauthoring conference presentations and research articles, and completing a science major.

## ECURE Petroglyph National Monument

For the ECURE project in GEOG 1115: Maps and GIScience, students will use a science-based and community-engaged approach to explore the collection and preparation of park infrastructure data at Petroglyph National Monument in Albuquerque, New Mexico. Students will gather and visualize geographic data, develop a research question related to park infrastructure and needs, and incorporate their personal interests and field explorations. They will geolocate and identify trail infrastructure, map the distribution of selected materials or phenomena along park trails, evaluate trail needs and potential additions, and collect relevant geospatial data using GIS software and applications learned in class to investigate their research question or hypothesis. Students will collaborate in small groups and as a whole class to critique each other's work, share data resources, and partner with Petroglyph National Monument staff and National Park Service GIS managers to collect and develop GIS data for park facilities at Petroglyph National Monument.

## Coursework & Participation

**Instructor Response Time**

I routinely check email Monday through Friday (9:00 AM to 5:00 PM). You can anticipate a 48-hour response from me Monday through Thursday. If you have an emergency over the weekend, please know I will be checking the course on Monday and should respond to you by Monday at 5:00 PM. If I don't respond within 48 hours, please email me again—sometimes, I get bogged down in messages and need a reminder!

I understand that life can be unpredictable. If you're facing challenges impacting your coursework, please communicate with me as soon as possible. I'm committed to working with

you to find solutions. If my office hours don't work for you, please don't hesitate to request an appointment at a time that does. Your success is important to me.

**Course Timing & Due Dates**
The class will meet MWF 12:00-12:50 PM until otherwise stated in the syllabus. All assignments are due on Sundays at 11:59 PM. Assignment due dates are listed in the Course Schedule on the last page of this Course Syllabus.

**Completing Coursework & Canvas**
The syllabus, lecture notes, activities, and grades will be posted on UNM Canvas. To access Canvas, go to https://canvas.unm.edu. Any assignments or schedule changes will be announced in class and posted on Canvas. It is your responsibility to check Canvas regularly. **All messages to your Instructor and written work should be submitted via Canvas.** Preferred file types include Microsoft Word .doc or docx, .pdf, and .jpg unless otherwise indicated. If you have difficulty using a tool to complete work for this course, please contact your instructor with any issues.

**Course Fees**
The Department of Geography & Environmental Studies assesses a curriculum fee of $50 for every undergraduate class (excluding independent study and internship credits). Because you have enrolled in this course and paid a curriculum fee, you can access various departmental resources and facilities, as detailed on our website.

## Textbook and Supplemental Materials

Required Textbook
*Introduction to Geospatial Technologies*, Bradley A. Shellito, ***6th Edition***, 2023, W.H. Freeman.
The course textbook is available at:

UNM Bookstore OR Macmillan

## Assessment and Grading

Your grade in this course is a reflection of your learning journey. Improvement, effort, and participation will be considered in your final grade. Remember, it's not about where you start but how much you grow.

**Procedures for Completing Assessments**

- All written work needs to be submitted online via Canvas.
- If you anticipate difficulty meeting a deadline, please contact Dr. Lippitt (caitlippitt@unm.edu) at least 24 hours before the assignment deadline.
- If a sudden illness or emergency occurs, make every attempt to contact the instructor to make sure to complete all due dates.

**Grading Procedures**
Assignments, quizzes, and exams should be completed by the due date listed in the Course Schedule. Students can expect grades to be completed and available two weeks after the

deadline unless indicated otherwise by the instructor. I understand that sometimes circumstances may prevent you from meeting a deadline. If this happens, please communicate with me as soon as possible, and we'll work together to find a solution.

**Grading Breakdown**

| | |
|---|---|
| Student Needs Survey | 20 points |
| Introduction Slide | 20 points |
| ECURE Survey 1 | 25 points |
| Hands-On Applications (10 x 20 pts) | 200 points |
| Activities (8) | 160 points |
| ECURE Survey 2 | 25 points |
| Peer Review (3) | 30 points |
| Class Project | 100 points |
| Total Points | 580 points |

**Grading Scale**

Final grades will be assigned based on the cumulative scores from all coursework using the grade distribution below. *Improvement, effort, and participation may be considered when determining your final grade.*

| | |
|---|---|
| A: 558 points and above | C: 438 to 461.9 points |
| A-: 540 to 557.9 points | C-: 420 to 437.9 points |
| B+: 522 to 539.9 points | D+: 402 to 419.9 points |
| B: 498 to 521.9 points | D: 360 to 401.9 points |
| B-: 480 to 497.9 points | F: Less than 360 points |
| C+: 462 to 479.9 points | |

## Assignments and Participation

**Student Needs Survey** *(20 points)*

The brief student survey helps Dr. Lippitt learn a bit about you, your background and skills, your expectations for this course, and any special needs you may have.

**Introduction** (*20 points)* Each student will use Microsoft PowerPoint to create a slide to introduce yourself to the class (similar to Dr. Lippitt's bio on Canvas).

**Hands-on Applications (HOAS)** *(10 x 20 points)*

Throughout the semester, you will engage in activities using a variety of online geospatial applications. The activities will ask you to apply the information you learn from your reading to specific geospatial problems. Activities will vary in terms of the type of exercise and the length of the activity, but the outputs will be graded, so your participation is mandatory. Embedded within each chapter of your textbook are 'Hands-On Applications.' Hands-on applications summarize an application or set of applications, necessary web links, and 'Expansion Questions.'

**Activities** (*160 points*)
Various learning activities focused on GIS data collection and research provide students with a foundation for future research endeavors. Activities will occur in class, in the Spatial Computing Lab, and online.

**Class Project** (*100 points*)
The class project focuses on enhancing students' skills in observation, data collection, mapping, and data analysis by guiding them through the development and execution of a scientific research project. Students will engage in hands-on activities, including fieldwork, data recording, and creating maps, then analyzing their collected data to draw meaningful conclusions. The project aims to provide practical experience in scientific research methods, fostering critical thinking and technical skills in these key areas.

**ECURE Surveys** *(25 points each)*
To determine the value and effectiveness of the ECURE approach, students will be asked to take a voluntary survey at the beginning and end of the semester. Surveys are anonymous to the teacher (but provided to ECURE researchers), and will not be graded. Full points are awarded for completing the survey.

**Expectations for Participation**
- time required (9 hours per week)
- students should get support to address technical problems immediately
- students will benefit from learning how to navigate in Canvas
- students should keep up to date with course announcements
- students will benefit from keeping the instructor informed of class-related problems or issues that may prevent the student from full participation
- students should observe course netiquette (see Ground Rules below)

**Course Ground Rules**
Our classroom is a space where everyone's ideas and contributions are valued. Respect for one another is essential to creating a supportive and productive learning environment. Let's work together to ensure that everyone feels heard and respected. "In following the UNM Student Handbook, all students will show respect to their fellow students and instructor when interacting in this course.

## UNM Resources

**CAPS Tutoring Services** http://caps.unm.edu/programs/online-tutoring/
CAPS is a free-of-charge educational assistance program available to UNM students. Online services include the Online Writing Lab, Chatting with or asking a question of a Tutor.

**UNM Libraries** http://library.unm.edu

**Student Health & Counseling (SHAC) Online Services**
http://online.unm.edu/help/learn/support/shac

## UNM Policies

**Copyright Issues**

All materials in this course fall under copyright laws and should not be downloaded, distributed, or used by students for any purpose outside this course.
(http://www.unm.edu/~counsel/general/copyright.htm)

**Accommodations**

UNM is committed to providing equitable access to learning opportunities for students with documented disabilities. As your instructor, it is my objective to facilitate an inclusive classroom setting, in which students have full access and opportunity to participate. To engage in a confidential conversation about the process for requesting reasonable accommodations for this class and/or program, please contact Accessibility Resource Center (https://arc.unm.edu/) at arcsrvs@unm.edu or by phone at 505-277-3506.

**Title IX**

The University of New Mexico and its faculty are committed to supporting our students and providing an environment that is free of bias, discrimination, and harassment. The University's programs and activities, including the classroom, should always provide a space of mutual respect, kindness, and support without fear of harassment, violence, or discrimination. Discrimination on the basis of sex includes discrimination on the basis of assigned sex at birth, sex characteristics, pregnancy and pregnancy related conditions, sexual orientation and gender identity. If you have encountered any form of discrimination on the basis of sex, including sexual harassment, sexual assault, stalking, domestic or dating violence, we encourage you to report this to the University. You can access the confidential resources available on campus at the LoboRESPECT Advocacy Center (https://loborespect.unm.edu), the Women's Resource Center (https://women.unm.edu), and the LGBTQ Resource Center (https://lgbtqrc.unm.edu). If you speak with an instructor (including a TA or a GA) regarding an incident connected to discrimination on the basis of sex, they must notify UNM's Title IX Coordinator that you shared an experience relating to Title IX, even if you ask the instructor not to disclose it. The Title IX Coordinator is available to assist you in understanding your options and in connecting you with all possible resources on and off campus. For more information on the campus policy regarding sexual misconduct and reporting, please see https://policy.unm.edu/university-policies/2000/2740.html and CEEO's website.

If you are pregnant or experiencing a pregnancy-related condition, you may contact UNM's Office of Compliance, Ethics, and Equal Opportunity at ceeo@unm.edu. The CEEO staff will provide you with access to available resources and supportive measures and assist you in understanding your rights.

**Student Support**

Connecting to Campus and Finding Support: UNM has many resources and centers to help you thrive, including opportunities to get involved in campus life, research experiences, mental health resources, academic support such as tutoring, resource centers for people like you, free food at Lobo Food Pantry, jobs on campus and financial capability support. Your advisor, staff at the resource centers, and I can help you find the right opportunities for you.

Wellness: If you need to stay home due to illness or are experiencing a wellness challenge, please take advantage of the resources below. You can communicate with me and I can work with you to provide alternatives for course participation and completion. Let me, an advisor, or another UNM staff member know that you need support so we can connect you to the right resources.

Academic Support: Many students have found that time management workshops or work with peer tutors can help them meet their goals. These and other resources, including support on how to cite a source, are available through Student Learning Assistance at the Center for Teaching and Learning.

Confidential student services are available at LoboRESPECT Advocacy Center, Women's Resource Center, and the LGBTQ Resource Center. The Women's Resource Center supports all students, including those who are pregnant or are parents. UNM's lactation stations are marked on the UNM campus map.

**Citizenship and 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 usually 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/.

**Land Acknowledgement**
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.

**Credit-hour statement**
This is a three-credit-hour course. Class meets for three 50-minute sessions of direct instruction for fifteen weeks during the Fall 2024 semester. Please plan for at least six hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week.

**Respectful Conduct Expectations:** I am committed to building a positive classroom environment where everyone can learn with you. I reserve the right to intervene and enforce standards of respectful behavior when classroom conduct is inconsistent with University expectations [and/or classroom community agreements]. Interventions and enforcement may include but are not limited to required meetings to discuss classroom expectations, written notification of expectations, and/or removal from a class meeting. Removal from a class meeting will result in an unexcused absence. Three or more unexcused absences may result in permanent removal and a drop from the course (see attendance policy). The University of New

Mexico ensures freedom of academic inquiry, free expression and open debate, and a respectful campus through adherence to the following policies: D75: Classroom Conduct, Student Code of Conduct, University Policy 2240 – Respectful Campus, University Policy 2210 – Campus Violence.

**Responsible Learning and Academic Honesty**

Cheating and plagiarism (academic dishonesty) are often driven by a lack of time, desperation, or lack of knowledge about how to identify a source. Communicate with me and ask for help, even at the last minute, rather than risking your academic career by committing academic dishonesty. Academic dishonesty involves presenting material as your own that has been generated on a website, in a publication, by an artificial intelligence algorithm (AI), by another person, or by otherwise breaking the rules of an assignment or exam. A Student Code of Conduct violation can lead to a disciplinary procedure. When you use a resource (such as an AI, article, a friend's work, or a website) in the work submitted for this class, document how you used it and distinguish between your original work and the material taken from the resource.

**Safety**

UNM offers several resources to help keep Lobos safe.

- LoboGuardian, https://loboguardian.unm.edu, is a mobile app that increases user safety by creating a virtual network of friends and family.
- The entire UNM campus has blue light emergency phones. UNM Police Department, tel.: (505) 277-2241, offers a free escort service for safety.
- Lobo Alerts, https://loboalerts.unm.edu, is UNM's emergency text messaging system. It can inform you of any occurrences that impact safety.
- Get Help Now at https://loborespect.unm.edu/Get%20Help%20now/index.html LoboRespect Advocacy Center for sexual misconduct, hate/bias, bullying, and hazing.
- Student Health Services https://shac.unm.edu provides counseling and health services to all students.

| WEEK | BREAKS/HOLIDAYS | TOPIC | READING | ASSIGNMENT DUE DATES<br>(*all assignments due Sundays 11:59PM)* |
|---|---|---|---|---|
| **1** 8/19 - 8/24 | | Course Orientation; Introductions; The Geospatial World | Course Syllabus & Introductions | Student Needs Survey; **Survey 1** |
| **2** 8/26 – 8/30 | | The Geospatial World, cont. | Shellito, Ch. 1 | **9/2: HOA 1.1, 1.3, 1.7** |
| **3** 9/2 - 9/6 | *Labor Day:* No Class 9/2 | Coordinate Systems & Projections | Shellito, Ch. 2 | **9/8: HOA 2.3 & 2.5; Activity 1** |
| **4** 9/9- 9/13 | | Georeferencing | Shellito, Ch. 3 | **9/15: HOA 3.1, 3.3; Activity 2** |
| **5** 9/16 - 9/20 | | Global Positioning Systems | Shellito, Ch. 4 | **9/22: GPS Campus Exercise; Activity 3** |
| **6** 9/23 - 9/27 | | Geographic Information Systems | Shellito, Ch. 5 | **9/29: HOA 5.1 & 5.2; Activity 4** |
| **7** 9/30 - 10/4 | | Spatial Analysis | Shellito, Ch. 6 | **10/6: HOA 6.1 & 6.2, 6.3** |
| **8** 10/7 - 10/11 | *Fall Break:*<br>No Class 10/9 or 10/11 | Cartography | Shellito, Ch. 7 | **10/13: Project Topic due** |
| **9** 10/14 - 10/18 | No Class 10/14 | Cartography, cont. | Shellito, Ch. 7 | **10/20: HOA 7.2 & 7.3; Activity 5** |
| **10** 10/21 - 10/25 | | Class Project Week | Selected readings on Canvas | **10/27: Activity 6** |
| **11** 10/28 - 11/1 | | Introduction to Remote Sensing | Shellito, Ch. 9 | **11/3: HOA 9.3, 9.4; Activity 7** |
| **12** 11/4 - 11/08 | | How Remote Sensing Works | Shellito, Ch. 10 | **11/10: HOA 10.2, 10.5; Activity 8** |
| **13:** 11/11 - 11/15 | No Class 11/11 | Remote Sensing from Space | Shellito, Ch. 11 & 12 | 11/17: **HOA 12.3 & 12.4** |
| **14** 11/18- 11/22 | | Digital Landscaping | Shellito, Ch. 13 | **11/24: Project Methods due** |
| **15** 11/25 – 11/29 | *Thanksgiving Break: No Class this Week* | *Thanksgiving Break: No Class this Week* | No reading this week | **HOA: 13.1 and 13.2**<br>**Project PPT Draft due** |
| **16** 12/2 - 12/6 | | Class Projects | No reading this week | **12/1: Class Project Presentations, Survey 2** |
| **17** 12/9 - 12/13 | *Finals Week: No Class* | Finals Week | No reading this week | **12/8: Class Project PPTs due to Canvas** |

# Intro to Comparative Politics (POLS 2110)

## *Partial Implementation*

# Politics around the World

## POLS 2110: Intro to Comparative Politics

Fall 2023
Monday, Wednesday and Friday 02:00 - 02:50
Collaborative Teaching & Learn, Room 330

## Instructors

Jami Nelson Nuñez (she/ella/Doctor), Associate Professor
**Drop-In, Help/Support and Office hours:** Mondays and Wednesdays 3-4, Tuesday 11-12 and by appointment
**Office:** Social Sciences Building Rm. 2063
**Email**: jaminunez@unm.edu

**Teaching Assistants:**
**Brisa Carvalho** (bguadalupe23@unm.edu) drop-in hour 1:00 on Mondays
**Fairooz Hafiz** (fhafiz@unm.edu) drop-in hour 1:00 on Wednesdays

## Course Overview

### Course Description

This course offers an introduction to the academic field of comparative and global politics. It covers the historical, core concerns of the field including the development of the modern state, state failure and civil war, democratization, authoritarian regimes, nationalism and multiculturalism, political parties and electoral systems, the formation of racial identities and hierarchies, the relationship between the state and the market, and challenges to economic and social development, including gender disadvantage. It also gives students opportunities to engage in the practice of doing research in comparative politics. Readings and examples are drawn from all regions of the world.

### Political Science Program Student Learning Objectives:

- Students will demonstrate an ability to think critically about political problems, trends, and developments.
- Students will demonstrate an ability to communicate effectively.
- Students will demonstrate strong analytical writing skills.
- Students will demonstrate knowledge and understanding of fundamental concepts and theories in political science.
- Students will be able to apply political science theories and/or concepts to real-world cases.
- Students will be able to evaluate theories in light of empirical evidence.
- Students will demonstrate knowledge and understanding of their rights and obligations as citizens.

## Course Goals and Objectives

| POLS 2110 Goals | Learning Objectives | Learning Activities & Formative Assessment | Summative Assessment |
|---|---|---|---|
| 1. Understand how and why political institutions vary across the world | Students will<br>a. ***Describe*** the concept of the state and processes of state formation.<br>b. ***Conceptualize*** authoritarian and democratic regimes, with reference to real-world examples.<br>c. ***Identify*** the causes of democratization and democratic backsliding.<br>d. ***Describe*** the key institutional differences across democracies (i.e. parliamentary vs. presidential systems and electoral systems).<br>e. ***Characterize*** the relationship between governments and markets in both developing and advanced economies. | • Writing Points<br>• Research critique activities<br>• Hypothesis generation activities<br>• Concept/measure development activities<br>• Dictatorship simulation<br>• Parliamentary simulation | Quizzes |
| | | | |
| 2. Understand how institutions structure political behavior, political identities and social realities | Students will<br>f. ***Explain*** how different types of states (and varying state capacity) shapes economic and social outcomes.<br>g. ***Evaluate*** how different democratic institutional arrangements shape social and political outcomes.<br>h. ***Analyze*** how the state policies shape social identities, hierarchies, and inequalities. | • Writing Points<br>• Concept/measure development activities<br>• Hypothesis generation activities<br>• Research critique activities | Quizzes |

| | | | |
|---|---|---|---|
| 3. Understand research practices in comparative politics | Students will<br>i. ***Describe*** and contrast at least three research processes common in comparative politics<br>j. ***Differentiate*** between claims backed by a research study and those not backed by a research study<br>k. ***Explain*** how research in comparative politics leads to advances in knowledge/practice | • Journal comparison exercise across the years | Quizzes |
| | | | |
| 4. Understand how to direct research in comparative politics. | Students will<br>l. ***Develop*** ways to measure a political science concept<br>m. ***Pose*** a testable or investigable research question<br>n. ***Plan*** a study to investigate the question | • Concept/measure development activities<br>• Research critique class activities<br>• Hypothesis development activities | Quizzes |

# REQUIREMENTS

| Requirement | Percentage of Final Grade |
|---|---|
| Class attendance | 10% |
| Class participation | 10% |
| Writing Activities | 10% |
| Reading points | 20% |
| Quizzes | 50% |

## ATTENDANCE

The attendance component (10%) works as follows. Attendance will be taken each day – at the end and beginning of class. **Attendance only fully counts for the day for students who are present for the whole class.** Students will be allowed five "freebie" absences. Beyond five absences, the attendance grade will be lowered from 100 by five percentage points per absence. Because all students receive an ample allotment of freebies (equivalent to missing almost two weeks of class), you don't need to discuss, request excuses for, or argue about absences. Note that religious holidays, sickness, and other reasons for absence that are "legitimate" do count against your freebie absences. You are strongly advised to use your freebies for these purposes. Students who miss more than five classes may be dropped by the professor without sufficient documentation to explain the absences.

If you are sick but want to sit in on class, you can zoom in for one or two classes with permission of a TA or the instructor before noon on the day of class. In order to get attendance for the day, however, you will have to 1) have your camera one throughout the class and be present, and 2) submit questions and participation on the zoom chat or unmute. Beyond this 1-2 class period, we will need medical documentation for additional zoom accommodations.

## PARTICIPATION

The participation component (10%) of the grade is based on student engagement and participation in class discussions. Participation and engagement includes contributions to discussion and attentive listening to others' contributions. If we have to have class on zoom, having your camera on during class and showing that you are present counts for a point. Unmuting to ask questions, respond to questions, or contribute ideas (including presenting for your group) counts as participation points.

## READING POINTS

Reading point assignments will be posted on Canvas corresponding to the readings. They will be due by the start of class. To score the point, you must respond to the prompt (including the given length of the response in the prompt). Submitted responses that make it clear that the reading was done will get a point**. If the response is too vague or wrong, you won't get the point** so do what you can to at least demonstrate you read the piece. You must get 20 points throughout the course of the semester to get full credit for this portion of your grade.

## WRITING ACTIVITIES

Throughout the semester, you will have short writing activities that will be graded on primarily on effort. The grades will be 0 (insufficient effort so revise and resubmit), 1 (sufficient effort), or 2

(high effort). Each assignment will have an accompanying rubric to help you understand how to achieve these scores. Each writing activity is worth 2% of your final grade.

## QUIZZES

There will be five quizzes during the semester. The format for these quizzes will be short essay responses asking you to 1) draw upon course material (lectures and readings) to critique a fictional research example and 2) synthesize the material you learned in that section. Quizzes will be available on Canvas at the end of each unit and due before the next class.

## COURSE-BASED UNDERGRADUATE RESEARCH EXPERIENCE

In addition to teaching students the foundations of comparative politics, this course aims to encourage students to begin delving into research experience. The five quizzes and five writing assignments will help to engage you in thinking about research. We will also do several activities in the course of the semester that will help you develop skills in how to conduct research in comparative politics. Below are some of the activities we will strive to incorporate into class:

**Developing measures:** In both quantitative and qualitative research, scholars must develop ways of observing the concepts we theorize are happening in the world. During these exercises, students will develop ways to categorize, code, and operationalize comparative politics concepts.

- Classifying states: what patterns are important in understanding the diversity of states across the world today and throughout the past? In groups, students will develop categories of states and rules on how to code states into these categories.
- Coding state violence: What types of violence do states engage in within their own borders? In groups, students will generate ideas on how researchers could begin to create datasets to capture types of state violence.
- Coding democratic regimes: How can we categorize some states as democratic and others as non-democratic? In groups, students will develop a set of criteria that establishes whether a country is democratic or not and will then work to code a set of countries according to these criteria.
- Measuring democratic and authoritarian attitudes in public opinion surveys: if democratic attitudes matter in bolstering democratic regimes, then how can we know if people (and which people) hold democratic or autocratic attitudes? In groups, students will develop a survey measure on democratic or autocratic attitudes, which we will then use in a survey in class.
- Measuring political identities: How can we observe the formation of political identities? Two perspectives portray the creation of political identities in contrasting ways: primordialism and constructivism. Students will brainstorm ways to observe primordialism and constructivism.
- Measuring Marxist ideas: Marx posited a number of interesting concepts (alienation, crisis theory, etc.). Students will explore the validity of these concepts by developing measures to identify them.

**Generating testable hypotheses**: A key component of understanding causal relationships and explaining variation in the world (e.g. why do some countries become democracies? Why do some states count race in the census? Why do some people vote and not others?) is to develop hypotheses (theories) that are testable with data. In class, students will work together to develop hypotheses to explain the variation in concepts we will be discussing.

- Understanding state formation, survival and failure: Why do some states survive and others do not?

- Understanding political violence: Why do some states engage in political violence, such as targeting groups for expulsion? In this exercise, students will develop hypotheses and then explore a newly released data set to see if there is any evidence to support these hypotheses.
- Understanding the effects of electoral systems: How do electoral systems shape political outcomes? Why might different electoral systems make a difference in social and political realities across countries?

**Critiquing research**: Comparative political scientists build upon research of other scholars. To do this, we need to understand what some of the weaknesses of existing ideas might be, what approaches best help us to identify causality, and what ways we may be able to build upon or contest existing work. In these in-class exercises, students will practice critiquing hypotheses and existing work and will even engage in using case studies to test theories.

- Research critique: Modernization arguments state that development leads to democracy. In this exercise, students will use a case study of China (which has been very successful in economic development but has not democratized) to critique modernization ideas and develop new theories about the relationship between development and regime type.
- Research critique: Walt Whitman Rostow is a key contributor to modernization theory. Students will read an excerpt of his work on the Stages of Growth to identify shortcomings in his theoretical and methodological approach.

## Recognition

The history of the United States and New Mexico is characterized by achievements to celebrate as well as exploitation, violent conflict, and the appropriation of land and resources. The darker aspects of our historical roots have contributed to sustained inequities that have excluded people from full participation in academic institutions (through formal rules and informal norms and due to requirements of resources that many have had significant difficulty accessing). The academic institutions we know today that afford us the opportunity to learn, share and contribute are rooted in this history of appropriation and inequality. They have also developed from the courage, compassion and dedication of many individuals and communities who have worked to better our society, our political systems, and our universities.

I gratefully recognize the contributions of those before us who have made this opportunity of higher education possible. This includes respectfully recognizing that the land on which the University of New Mexico is located is 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. You can find more information about this territorial history and these contributions here.

## How to Do Well

**Who should take this class**: This class is open to students of a wide array of backgrounds and varying levels of knowledge about the world and political science. Many students in this class may have little experience in political science or in studying contexts outside of the United States. The material we will cover in this course is challenging, both in terms of the breadth of the subject

matter, and its complexity. Nearly every student will be challenged by course material at some point in this term.

**What to plan for as a time commitment in this course:** This is a three credit-hour course. Class meets for three 50-minute sessions of direct instruction for fifteen weeks during the semester. Please plan for a minimum of six hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week.

**How to be successful in this course:** I have found that students who are most successful in this course are those who attend class consistently, complete the writing points, thoughtfully review feedback, develop good study strategies, and take advantage of the academic support resources made available by the university (see below).

Students who grow their abilities the most also make use of my and the TA's drop-in hours and are quick to reach out when they find themselves struggling or confused about anything. If you are having a hard time with course material or keeping up with the pace of the class, let me or the TAs know as soon as you realize you are struggling. We will be in a much better position to support your learning if you seek support as soon as you are experiencing difficulty. **This advice is relevant for this and other courses: it is always better to reach out sooner than later!**

**School-Life Conflicts**: Many students face obstacles to their education as a result of work or family obligations or unforeseen personal difficulties. If you are experiencing challenges throughout the term that are impacting your ability to succeed in this course, or in your undergraduate career more broadly, please reach out to me or your TA immediately so that we can work together to form a plan for your academic success. If you are unable to attend my or the TAs' student drop-in hours, please email to set up a time that works for you.

**Caregiver Responsibilities Policy**: I have great respect for students who are balancing their pursuit of education with the responsibilities of caring for children or other family members. If you run into challenges that require you to miss a class, or if your caregiving responsibilities are interfering with your ability to engage in remote learning, please contact me or the TAs. Mothers who need to nurse children are welcome to do so in my class. I also understand that illnesses and unforeseen disruptions in childcare often put parents in the position of having to choose between missing class to stay home with a child and leaving him or her with someone you or the child does not feel comfortable with. While this is not meant to be a long-term childcare solution, occasionally bringing a child to class in order to cover gaps in care is perfectly acceptable as long as children who come to class are healthy.

**Support and Accommodations:**
This campus provides extensive academic supports for students, and these supports are there to let students achieve the academic success they are truly capable of. Most students access them at some point in pursuit of their degree.

> Academic Support: Stopping by a professor or TA's office hours is a great idea if you are confused about assignments, readings or lectures. It always helps to come with questions. There are also many services at UNM to help you succeed academically, such as peer tutoring at CAPS and http://mentalhealth.unm.edu. There are plenty of ways to find your place and your pack at UNM: see the "student guide" tab on my.unm, students.unm.edu, or ask me for information about the right resource center or person to contact.

Accessibility Services: Many students have visible or invisible disabilities, and the college offers accommodations that allow them to achieve their full potential. Accessibility Services collaborates with all academic departments to arrange appropriate accommodations for students with disabilities, without compromising the academic integrity of the curriculum. If you have a documented disability or suspect you have an undocumented disability, contact them as early as possible in the term to find out what supports are available to you. If you have accommodations, please bring this to my attention as I am not legally permitted to inquire. Accessibility Resource Center can be reached at arcsrvs@unm.edu or by phone at 505-277-3506; https://arc.unm.edu/

Mental Health and Counseling Services: All of us need a support system, and many students benefit from the use of counseling services. SHAC, located across from the SUB and next to the Johnson Rec Center, works with students to identify and address issues related to personal growth, self-confidence, anxiety, depression, eating disorders, academic difficulties, and career indecision. UNM provides counseling services to students at no cost and are offering virtual appointments to students during this time. For urgent mental health needs, students should call or walk into the student health center, which is still open to support students' mental and physical health.

Immigration Support: All students are welcome in this class regardless of citizenship, residency, or immigration status. I will respect your privacy if you choose to disclose your status. UNM as an institution has made a core commitment to the success of all our students, including members of our undocumented community. More info here.

Preferred names and gender pronouns: Class rosters are provided to the instructor with the students' legal names. If you have a preferred name or gender that is different as to what will be listed in the roster, please email me so that your preferences can be respected.

Concerns about discrimination, harassment or violence: Our classroom and our university should always be spaces of mutual respect, kindness, and support, without fear of discrimination, harassment, or violence. Should you ever need assistance or have concerns about incidents that violate this principle, the LoboRESPECT Advocacy Center and the support services listed on its website (http://loborespect.unm.edu/) are important resources available to you. Please note that, because UNM faculty, TAs, and GAs are considered "responsible employees" by the Department of Education, any disclosure of gender discrimination (including sexual harassment, sexual misconduct, and sexual violence) made to a faculty member, TA, or GA must be reported by that faculty member, TA, or GA to the university's Title IX coordinator. For more information, see: https://policy.unm.edu/university-policies/2000/2740.html.

## Classroom Behavior and Expectations

Creating trust and cultivating a participatory classroom requires everyone's patience, respect, support and willingness to contribute. In this class, we will be discussing issues about which some students may have strong opinions or with which students may have personal experience (such as exposure to violence or discrimination). All participants in this course must commit to mutually respectful debate and must make arguments based on evidence and explicit interpretation rather than merely stating opinions. I will cut short any verbal interactions that I believe do not advance the class discussion. I may disenroll from the class any student who persistently fails to contribute

constructively, stay on topic, or respect others. I expect all students to create a supportive classroom by:

- being careful to not dominate discussion;
- being diligent with language (words and body language) that could be disrespectful or offensive to others; and
- finding courage to ask questions in class or during office hours if you do not understand something.

If we have class on Zoom:

- **Video: All participants should turn on their video**. It is helpful to be able to see each other, just as in an in-person class. I will ask everyone to do this and you should let me know if you have reasons for turning off your camera. **Students with videos on gain a free participation point for class for the day** (in addition to attendance)**.**
- Realize that class meetings on Zoom (including video, audio, and chat text) may be recorded.
- Sign in with your full first name and last name as listed on the class roster or that you established with me via email.
- Be in contact with me if you are having difficulty with access.
- Mute your microphone when you are not talking. This helps eliminate background noise.

The University of New Mexico Student Code of Conduct applies to online behavior as well as in-person or classroom behavior. Violations are subject to the UNM State Student Code of Conduct and will be adjudicated accordingly. Students can be withdrawn from class if they continue to engage in disrespectful behavior after receiving a warning.

## Pandemic Policies

COVID-19 Health and Awareness. UNM is a mask friendly, but not a mask required, community. To be registered or employed at UNM, Students, faculty, and staff must all meet UNM's Administrative Mandate on Required COVID-19 vaccination. If you are experiencing COVID-19 symptoms, please do not come to class. If you have a positive COVID-19 test, please stay home for five days and isolate yourself from others, per the Centers for Disease Control (CDC) guidelines. If you do need to stay home, please communicate with me at jaminunez@unm.edu; I can work with you to provide alternatives for course participation and completion. UNM faculty and staff know that these are challenging times. Please let me, an advisor, or another UNM staff member know that you need support so that we can connect you to the right resources. Please be aware that UNM will publish information on websites and email about any changes to our public health status and community response.

Support: Student Health and Counseling (SHAC) at (505) 277-3136. If you are having active respiratory symptoms (e.g., fever, cough, sore throat, etc.) AND need testing for COVID-19; OR if you recently tested positive and may need oral treatment, call SHAC.

LoboRESPECT Advocacy Center (505) 277-2911 can offer help with contacting faculty and managing challenges that impact your UNM experience.

## Academic Honesty Policy

**Doing the Right Thing:** UNM has policies to preserve and protect you and the academic community available in the Student Pathfinder as well as in the Faculty Handbook. These include

policies on student grievances D175, academic dishonesty (D100), and respectful campus (CO9). Please ask for help in understanding and avoiding plagiarism (passing the work or words of others off as your own work or words) or other forms academic dishonesty. Doing something dishonest in a class or on an assignment can lead to serious academic consequences. Come talk with me about your concerns or needs for academic flexibility or talk with support staff at one of our student resource centers before you do something that may endanger your career. In short: any work that you present as your own, whether a paper, exam, or quiz, must be entirely your own intellectual work. Any written material taken from another source should be cited. Any substantial information, interpretation, or argument that is not common knowledge should be cited, in sufficient detail that a reader would be able to find the same source. ChatGPT and other AI platforms are useful to students but can also serve to undermine the development of critical skills, the building of which are the essential goals of this class. They are ***not*** **to be used** unless indicated otherwise.

## SCHEDULE

### UNIT 1: COMPARATIVE POLITICS, STATES AND ORDER

#### WEEK 1: INTRO TO COMPARATIVE POLITICS

| | |
|---|---|
| Monday, August 21 | Welcome! |
| Wednesday, August 23 | Familiarize yourself with Canvas and syllabus<br>ECURE Survey on Canvas |
| Friday, August 25 | Reading: David Samuels, *Comparative Politics* (Boston: Pearson Education, 2013), pp. 1-27. |

#### WEEK 2: POLITICAL ORDER, AUTHORITY AND INSTITUTIONS

| | |
|---|---|
| Monday, August 28 | Methods of Comparative Politics |
| Wednesday, August 30 | Thomas Hobbes, *Leviathan* (Cambridge edition ed. Richard Tuck), chapter 17 |
| Friday, September 1 | Samuel Huntington, *Political Order in Changing Societies* (New Haven: Yale University Press, 1968), pp. 1-59. |

#### WEEK 3: ORIGINS AND DEVELOPMENT OF THE STATE

| | |
|---|---|
| Monday, September 4 | Labor Day Holiday, no class |
| Wednesday, September 6 | NPR segment |
| Friday, September 8 | Charles Tilly, Coercion, Capital, and European States, AD 990-1992 (Blackwell, 1992), pp. 1-5, 16-23, 96-9. Also excerpted as Chapter 16 of Craig Calhoun et. al., eds. Contemporary Sociological Theory (John Wiley and Sons, 2012). |

#### WEEK 4: FAILURES OF STATES

| | |
|---|---|
| Monday, September 11 | Jeffrey Herbst, "War and the State in Africa," pp. 28-32 (reprinted from International Security 14, 4 (1990)) (READ FIRST FIVE PAGES ONLY) |
| Wednesday, September 13 | Jeffrey Herbst, "Responding to State Failure in Africa," International Security 21, 3 (1996), pp. 120-132. |
| Friday, September 15 | Samuels chapter 10 |

### WEEK 5: POLITICAL VIOLENCE

| | |
|---|---|
| Monday, September 18 | Political violence and the Chilean dictatorship: reading TBD<br><br>Special event: Chile after Pinochet: The Limits of Post-Dictatorship Transition<br>Pascale Bonnefoy, School of Journalism, University of Chile<br>Monday, September 18, 2023 \| 03:30 pm<br>Latin American and Iberian Institute (801 Yale Blvd NE) |
| Wednesday, September 20 | Philip Gourevitch, "After the Genocide. When a people murders up to a million fellow-countrymen, what does it mean to survive?" *The New Yorker*. December 18, 1995. http://www.newyorker.com/magazine/1995/12/18/after-the-genocide |
| Friday, September 22 | Paul Mozur, "A Genocide Incited on Facebook, With Posts From Myanmar's Military," The New York Times, October 15, 2018. https://www.nytimes.com/2018/10/15/technology/myanmar-facebook-genocide.html<br><br>**Quiz 1** |

## UNIT 2: DEMOCRACY, AUTOCRACY AND REGIME CHANGE

### WEEK 6: DEMOCRACY AND DEMOCRATIZATION

| | |
|---|---|
| Monday, September 25 | Coding democracies exercise |
| Wednesday, September 27 | Robert Dahl, *Polyarchy: Participation and Opposition* (Yale Press, 1973), chapter 1. |
| Friday, September 29 | Seymour Martin Lipset, *Political Man* (New York: Anchor Books, 1963), pp. 27-63. |

### WEEK 7: AUTHORITARIAN REGIMES

| | |
|---|---|
| Monday, October 2 | Georgy Egerov and Konstantin Sonin, "Authoritarian Politics 101: Examples and Exercises."<br><br>Dictator simulation in class |
| Wednesday, October 4 | Jennifer Gandhi and Ellen Lust-Okar. "Elections under authoritarianism." Annual review of political science 12 (2009): 403-422.<br><br>Amy Qin and Javier Hernandez, "How China's Rulers Control Society" *New York Times,* November 25, 2018. https://www.nytimes.com/interactive/2018/11/25/world/asia/china-freedoms-control.html |
| Friday, October 6 | David Collier, "Introduction." In The New Authoritarianism in Latin America (1979), pp. 3–16. |

### WEEK 8: DEMOCRATIC BACKSLIDING AND DECAY

| | |
|---|---|
| Monday, October 9 | Waldner and Lust. 2018. "Unwelcome Change: Coming to Terms with Democratic Backsliding." *Annual Review of Political Science* https://www.annualreviews.org/doi/full/10.1146/annurev-polisci-050517-114628 |

| | |
|---|---|
| Wednesday, October 11 | Nicole Curato, "Democratic expressions amidst fragile institutions," *Brookings*. January 22, 2021 https://www.brookings.edu/articles/democratic-expressions-amidst-fragile-institutions-possibilities-for-reform-in-dutertes-philippines/<br><br>**Quiz 2** |
| Friday, October 13 | Fall break |

## UNIT 3: DEMOCRATIC INSTITUTIONS

### WEEK 9: PRESIDENTIAL VERSUS PARLIAMENTARY SYSTEMS

| | |
|---|---|
| Monday, October 16 | Arend Lijphart, *Patterns of Democracy: government forms and performance in thirty-six countries* (New Haven: Yale University Press, 1999), introduction. |
| Wednesday, October 18 | Stephen Orvis and Carol Ann Drogus. 2018. "Chapter 5: Governing Institutions in Democracy." In Introducing Comparative Politics. Pages 214-247 |
| Friday, October 20 | TBD |

### WEEK 10: PARTIES AND ELECTORAL SYSTEMS

| | |
|---|---|
| Monday, October 23 | Simulation Prep |
| Wednesday, October 25 | Scott Mainwaring. *Rethinking party systems in the third wave of democratization: the case of Brazil* (Stanford University Press, 1999), Chapters 2. |
| Friday, October 27 | https://www.currentaffairs.org/2022/06/proportional-representation-is-a-terrible-idea-that-the-left-should-not-embrace |

### WEEK 11: INTERACTING EXECUTIVE-LEGISLATIVE RELATIONS & ELECTORAL SYSTEMS

| | |
|---|---|
| Monday, October 30 | Simulation |
| Wednesday, November 1 | Simulation Part 2 & Wrap Up |
| Friday, November 3 | **Quiz 3** |

## UNIT 4: IDENTITIES, HIERARCHIES, AND INEQUALITIES

### WEEK 12: RACE AND ETHNICITY

| | |
|---|---|
| Monday, November 6 | Kenneth Prewitt, "Racial classification in America: where do we go from here?" Daedalus 134.1 (2005): 5-17. |
| Wednesday, November 8 | Mala Htun, "Emergence of an Organized Politics of Race in Latin America," in Juliet Hooker and Alvin Tillery, eds. Race, Class, and Ethnicity in the Americas. Report of the APSA Task Force on Race and Class in the Americas. 2016. |
| Friday, November 10 | Rough Translation Podcast |

### WEEK 13: CITIZENSHIP, NATIONALISM, AND MULTICULTURALISM

| | |
|---|---|
| Monday, November 13 | TBD |

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|---|---|
| Wednesday, November 15 | Onishi. 2020. "A Racial Awakening in France" https://www.nytimes.com/2020/07/14/world/europe/france-racism-universalism.html |
| Friday, November 17 | Berman. "The Causes of Populism in the West" https://www.annualreviews.org/doi/pdf/10.1146/annurev-polisci-041719-102503 https://link.springer.com/article/10.1007/s11186-017-9301-7<br><br>**Quiz 4** |

## UNIT 5: POLITICAL ECONOMY, STATES AND MARKETS

### WEEK 14:

| | |
|---|---|
| Monday, November 20 | Adam Smith, *The Wealth of Nations*, ed. Edwin Cannan (University of Chicago Press [1776] 1976), pp. 7-25. |
| Wednesday, November 22 | Karl Marx and Friedrich Engels, *The Communist Manifesto* in O'Neil and Rogowski, eds, *Essential Readings in Comparative Politics*, pp. 323-336. |
| Friday, November 24 | Thanksgiving break |

### WEEK 15: WELFARE STATES

| | |
|---|---|
| Monday, November 27 | Orvis and Drogus. "Public Policies when Markets Fail," Chapter 12 in *Introducing Comparative Politics*, pages 543-557. |
| Wednesday, November 29 | Katrin Bennhold, "In Sweden, Men Can Have It All." *New York Times*, June 9, 2010. Available at: http://www.nytimes.com/2010/06/10/world/europe/10iht-sweden.html?_r=1&pagewanted=all<br><br>Nathan Heller, "Northern Lights: Do the Scandinavians really have it all figured out?" *The New Yorker*, February 26, 2015. http://www.newyorker.com/magazine/2015/02/16/northern-lights-4 |
| Friday, December 1 | Hacker video |

### WEEK 16: POLITICAL ECONOMY OF DEVELOPMENT

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|---|---|
| Monday, December 4 | Rostow. The Stages of Economic Growth |
| Wednesday, December 6 | Jennifer Brass. 2016. "Development Theory," In *Handbook on Theories of Governance*, eds. Christopher Ansell and Jacob Torfing. Northhampton: Edward Elgar Publishing, Inc. pp. 115-125. |
| Friday, December 8 | **Quiz 5** |

### FINALS WEEK

ECURE Assessment 2 due the day of our scheduled final. UNM posts finals schedules on the following link: https://schedule.unm.edu/ (see the left hand menu link for "Final Exams"). As of August 21, 2023, this date has not been posted but the ECURE assessment will be due at the end of the day designated as our class time final.

# MICROBIOLOGY FOR HEALTH SCIENCES (BIOL2305)

## *Full Implementation*

GALLUP

# Syllabus

# Microbiology for Health Sciences

## BIOL2305 Section 400

## Spring 2024

## (January15 - May 11)

**We are a Part of UNM's ECURE Project!**

The ECURE (Expanding Course-Based Undergraduate Research Experiences) is an NSF-funded grant designed to leverage UNM's research mission to enrich undergraduate education in STEM general education and portal courses. Our Microbiology for Health Sciences course (BIOL2305) has been designated to incorporate the ***ECURE Full Immersion*** research project. In this course, we will engage in all stages of the research project. Throughout the course of the semester, in addition to the regular lab activities, we will engage in research project, where you ask or answer research questions to which the answers are unknown. I will guide you to choose the research steps. In addition, as a part of the project, we will participate in "ECURE" surveys in our class. You can find more details about the project in this syllabus.

**Benefits of Our ECURE Course**

- You will get an opportunity to gain experience about research without conducting the intense research!
- Your engagement in our course based undergraduate research (UGR) will help you to connect course content to professional, community and research applications.
- Your experience with our UGR will positively impact your science literacy, science identity, and research self-efficacy, as well as to persist, graduate, and pursue your higher education.

Dr. Arunachalam Muthaiyan, Ph.D.
Division of Mathematics, Physical and Natural Sciences

|  | **Microbiology for Health Sciences**<br>**BIOL 2305 Section 400**<br>**CRN: 53250** |
|---|---|
| **If I have questions, concerns, and need help to succeed in this course, how do I contact my professor?** | Your success is the most important goal of my teaching. If you have questions, concerns or need help to improve your learning experience on our course, I welcome you to visit my office or contact me by any one of the following methods:<br>1. **Visit:** Calvin Hall 226 on M 2:00-4:00; T 1:00-2:00; W 2:00-4:00<br>2. **Meet virtually:** available by appointment.<br>3. **Email:** muthaiyan@unm.edu<br>4. **Call or Text:** using UNM Microsoft Teams App<br>5. **Post:** UNM Canvas Questions and Comments Forum |
| **Where does our class meet? What day and time should we attend our class?** | **Lecture:** Tuesday & Thursday / 3:30 pm - 4:45 pm in Calvin Hall Room 177<br><br>**Lab:** Tuesday & Thursday / 5:00 pm - 6:15 pm in Calvin Hall Room 269 |
| **About our course**<br>*(Course Description)*<br><br>**Support:** UNMG-Academic Advisors are available in Student Affairs Office to assist students select classes, plan course schedules, decide on degree programs. | This course is designed for those obtaining a career in the health sciences. This course introduces you to the basic principles of microbial structure, genetics, physiology, virology, parasitology, disease, pathogenicity, epidemiology, and immunology.<br><br>As you have already completed BIOL1140, only some emphasis is given on basic biological principles.<br><br>Not accepted toward a Biology major or minor. Credit for both this course and BIOL **351/**352L may not be applied toward a degree program.<br><br>Prerequisite: ((BIOL1140 and 1140L) or BIOL2110C) and (CHEM 1120C or (CHEM 1215 and CHEM 1215L)) with minimum Grade of C. |

| | |
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| **What are our goals?** (*Course goals*)<br>After completion of our course, you will: | • Know the different groups of microorganisms and appreciate their role in our life.<br>• Understand microbial structure, physiology, genetics, and know how microbes interact with humans.<br>• Understand the role of immune system, microbial identification techniques, and microbial growth control methods in the medical field.<br>• Have the effective collaborative lab skills, and ability to use the tools and techniques used in microbiology. |
| **What do we learn?**<br>*(Learning Outcomes)*<br>After successful completion of our course, you will be able to: | • Explain the fundamental nature of microorganisms.<br>• Describe the structure and physiology of prokaryotic and eukaryotic microorganisms, and viruses.<br>• Use the tools, different culture media, and basic techniques used in microbiology.<br>• Evaluate the growth pattern and growth requirements of microorganisms.<br>• Understand microbial genetics.<br>• Apply different microbial growth control methods.<br>• Describe the microbe-human interaction and disease process.<br>• Describe the immune system.<br>• Relate the immune system with vaccine function.<br>• Evaluate the implication of antibiotic resistance in medical field.<br>• Apply basic microbiology laboratory techniques. |
| **How much effort should we put to succeed in this course?** | This is a four (4) credit-hour course. Class meets for four 50-minute sessions of direct instruction every week during the semester. You are expected to complete a *minimum* of eight hours of out-of-class work (or homework, study, assignment completion, and class preparation) each week. Please be prepared to schedule a time for this course.<br>**Support:** The Center for Academic Learning (CAL) offers free academic support for all UNM-Gallup students. |

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| **Accommodation and Inclusion Available on Our Course!**<br><br>• Student Health and Counseling (SHAC) offers medical and counseling services to all UNM students. | If you have a specific need, to engage in a confidential conversation about the process for requesting reasonable accommodations for this class, please contact the UNM-Gallup Accessibility Resource Center (ARC) at galluparc@unm.edu or (505) 863-7527 to arrange an appointment. ARC, located in Gurley Hall 1127, will conduct an intake and, if appropriate, will provide an approved academic accommodation notification. At that point, you and I can work out the details of any specific accommodation needed for this course. |
| **Title IX Reporting Obligations**<br><br>**Support:** LoboRESPECT Advocacy Center and the support services listed on its website, the Women's Resource Center and the LGBTQ Resource Center all offer confidential services and reporting. | Our classroom and our university should always be spaces of mutual respect, kindness, and support, without fear of discrimination, harassment, or violence. Should you ever need assistance or have concerns about incidents that violate this principle, please access the resources available to you on campus, especially the LoboRESPECT Advocacy Center and its support services.<br><br>Please note that, because UNM faculty are considered "responsible employees" by the Department of Education, any disclosure of gender discrimination (including sexual harassment, sexual misconduct, and sexual violence) made to a faculty member must be reported by that faculty member to the university's Title IX coordinator. For more information, check the campus policy regarding sexual misconduct, and resources for addressing potential Title IX disclosures. |
| **We Treat Equally!**<br><br>**Support:**<br>• UNM Gallup Title IX Coordinator and Director of Student Affairs, SSTC Room 276. Telephone: 505-863-7508.<br><br>• For Section 504 compliance: Student Success Specialist, Gurley Hall Room 1127. Telephone: 505-863-7527. | The UNM-Gallup, as an equal opportunity/affirmative action employer and educator, complies with all applicable federal and state laws regarding nondiscrimination and affirmative action.<br><br>The UNM-Gallup is committed to a policy of equal opportunity for all persons and does not discriminate on the basis of race/ethnicity, national origin, ancestry, serious medical condition, physical or mental disability, pregnancy, age, religion, sex, sexual orientation, gender identity, spousal affiliation, veteran status, genetic information, or other characteristics protected by applicable law in employment, educational programs and activities, and admissions. Inquiries or complaints may be addressed to the Office of Equal Opportunity whose Director serves as the 504/ADA Coordinator and which also houses the Title IX Coordinator. |

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| **In the event of inclement weather, your safety is important!**<br><br>**Resource:** In the event of a weather-related delay or closure, the University Administrative Policy 3435 on Inclement Weather describes what delay and closure mean and how class schedules are affected. | In the event of inclement weather, UNM-Gallup will follow the weather-related decisions of the Gallup McKinley County School District. Once a decision is made, communications will begin with the UNM-Gallup community utilizing the following methods:<br><br>• **Lobo Alerts:** is the University emergency messaging text/email system. All registered students are automatically enrolled. To confirm your contact information, visit the Lobo Alerts website. Although this is a voluntary system, it is advised that you maintain access to Lobo Alerts as a means of receiving all emergency communications from the campus.<br><br>• **Switchboard Message:** The switchboard message will be changed to reflect a weather-related delay or closure. Dial (505) 863-7500 to check on campus status. |
| **Your wellness is most important!**<br><br>• TimelyCare: Free 24/7 virtual care services (medical, emotional support, health coaching, self-care, basic needs support.<br><br>• LoboRESPECT Advocacy Center (505) 277-2911 can offer help managing challenges that impact your UNM experience. | If you do need to stay home due to illness or are experiencing a wellness challenge, please take advantage of the resources below. You can communicate with me at muthaiyan@unm.edu; I can work with you to provide alternatives for course participation and completion. Let me, an advisor, or another UNM staff member know that you need support so that we can connect you with the right resources. UNM is a mask friendly, but not a mask required, community. If you are experiencing COVID-19 symptoms, please do not come to class.<br><br>**Support:**<br><br>• UNM Mental Health Resources<br><br>• Student Health and Counseling (SHAC) at (505) 277-3136 offers medical and counseling services to all UNM students. |

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| **We thankfully acknowledge the land!**<br><br>Resource: Division for Equity and Inclusion. | Founded in 1968, The University of New Mexico-Gallup sits on the traditional homelands of the Pueblo of Zuni Nation and Navajo Nation. The original peoples of New Mexico-Pueblo, and Navajo, 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 acknowledge our committed relationship to Indigenous peoples. We thankfully recognize our history, strive to build robust relationships with sovereign Native Nations and Indigenous peoples, and commit to maintain a diverse and inclusive environment with respect, understanding, and appreciation of all. |
| **Responsible Learning and Academic Honesty**<br><br>**Support:** Many students have found that time management workshops or work with peer tutors can help them meet their goals. Resources are available through Student Learning Support at the Center for Teaching and Learning. | We all have shared responsibility for ensuring that learning occurs safely, honestly, and equitably. Submitting material as your own work that has been generated on a website, in a publication, by an artificial intelligence algorithm (AI), by another person, or by breaking the rules of an assignment constitutes academic dishonesty. It is a student code of conduct violation that can lead to a disciplinary procedure. *Please ask me for help in finding the resources you need to be successful on this course. I can help you use study resources responsibly and effectively.*<br><br>Off-campus paper writing services, problem-checkers and services, websites, and AIs can produce incorrect or misleading results. Learning the course material depends on completing and submitting your own work. UNM preserves and protects the integrity of the academic community through multiple policies including policies on student grievances (Faculty Handbook D175 and D176), academic dishonesty (FH D100), and respectful campus (FH CO9). These are in the *Student Pathfinder* and the *Faculty Handbook*. |

## COURSE OUTLINE

**How do we learn in this course?**

**Teaching Methods:** The primary goal of my teaching is to help you to learn, understand, gain knowledge, and to learn how to apply the learned information to analyze the real-world situation to make informed decision in the day-to-day life and your profession.

To encourage active learning, face-to-face lectures and labs, group activities, class discussions, presentations, and self-reflective learning reports will be used. To enhance your learning experience, we will complete certain pre- and post-lab and -lecture activities such as self-learning reading modules, interactive homework, and virtual prelab activities assigned from McGraw Hill Connect integrated within our course page on UNM Canvas.

The lecture materials, instructions, course announcements, and links to assigned readings will be available in our course page on UNM Canvas.

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**Do we need any textbook, supporting materials, and online access?**

The following access and learning materials are required.

1. **UNM Canvas Access:** Announcements, notices, discussions, assignments, reports, and course related materials will be posted on UNM Canvas website.
2. **Technology:** This course requires students to have a personal computer/laptop with reliable internet connectivity to complete the interactive learning assignments.
3. **eTextbook and Virtual Lab:** Microbiology: A Systems Approach **Connect Access card with eBook,** 7th Edition, By Marjorie Kelly Cowan. McGraw-Hill. ISBN: 9781264846795 from UNMG bookstore. Virtual lab is a part of your Connect Access. You do not have to buy any lab manuals! See below for Connect registration and access instruction.

**ECURE Project (40 points): "Alternative Antimicrobial Strategies Against Antimicrobial Resistance"**
You will be assigned in a group to work with other students in a guided research project. Each group will be assigned to read research articles. Then, the members will discuss and prepare a report and a research plan. I will review your report and research plan and give you feedback. These are formative assessments. So, you will not lose any points. After the approval of your research plan, your group will execute the experiment, collect data, and interpret the results. On the scheduled day, your group will present the research findings to the class. More details will be discussed in the class. Refer to the syllabus cover page to learn about ECURE.

| **Learning Goals** *After successful completion of the project, you will:* | **Learning Objectives** *After successful completion of the project, you will be able to:* | **Evidence from key learning activities** | **Learning Activity** | **Assessment** |
|---|---|---|---|---|
| 1. Understand the importance of antibiotic resistance and drug discovery in the medical field | A. Identify the research articles related to the research topic.<br>B. Distinguish the steps in the research study.<br>C. Identify sources of antimicrobial drugs | • Using the library resources to search for relevant articles<br>• Preparing a literature review report on the research topic | • Read chapter12: Antimicrobial Treatment<br>• Read research/review articles about antibiotic resistance and drug discovery.<br>• Attend the library visit | Formative **(5 points)**<br>• A report containing (1) the impact of antibiotic resistance in the medical field, (2) sources of natural antimicrobials, (3) current trend in drug discovery |
| 2. Understand research practices in antimicrobial research study | A. Develop research questions.<br>B. Summarize the methods for testing antimicrobial susceptibility.<br>C. Plan a study to investigate the antibacterial property of a compound.<br>D. Interpret the research findings | • Choose a test compound / herbal plant based on the literature survey or from traditional medicine and submit a report.<br>• Preparing a research plan<br>• Executing the experiment, analyzing the data | • Read chapter12: Antimicrobial Treatment<br>• Choose an herbal plant or antimicrobial compound for the experiment.<br>• Develop research plans.<br>• Conduct the experiment and collect data.<br>• Analyze the data | Formative **(15 points)**<br>• Research report – introduction, plan for the experiment that contains objectives, hypothesis, and methods, results, and conclusions. |
| 3. Gain experience to present and share the research findings | A. Evaluate research findings of peers.<br>B. Explain how antimicrobial research leads to drug discovery and advances in health sciences | • Class presentation<br>• Evaluation of peers' presentations | • Interpret the results.<br>• Discuss with group members.<br>• Preparing a report for presentation | Summative **(10 points)**<br>• Poster presentation |
| ECURE Pre- and Post-Assessment Participation **(5 + 5 points)** | | | | |

**Evaluation of Your Progress:** Your progress will be evaluated by 1. Assigned readings and homework, 2. Learning reports, 3. Exams, 4. Participation in class discussion and presentation, group activities, and 5. Lab activities.

| Learning Activities | Points |
|---|---|
| **Lecture Activities (530 points)** | |
| Connect Homework Assignments (14 chapters)<br>(one missed or lowest score will be dropped 14 - 1 = 13 x 10 points = 130) | 130 |
| Lecture Exam (80%) (1, 2, 3, 4 x 80) | 320 |
| Lecture Group Exam (20%) (1, 2, 3, 4 x 20) | 80 |
| **Laboratory Activities (180 points)** | |
| Virtual Prelab (24 activities) 24 x 5 points = 120 | 120 |
| Lab Activities and Learning Reports (13 reports x 5 points)<br>(one missed or lowest score will be dropped 13 - 1 = 12 x 5 points = 60) | 60 |
| **ECURE Project (40 points)** | 40 |
| **Course Final Total (100%)** | **750** |

➢ **Grades:** Your final grade will be determined based on the percentage of total points earned in the course as shown on the Table. Letter grades will not be assigned until the end of the semester. However, you can monitor your progress by checking "Grades" on UNM Canvas.

If you feel, an error in grading has been made, then you have one week (24 hours for final exam) from the time of the assignment is returned to you (or the grade is posted on the web, whichever is later) to request a review of the grade. The request must be in writing (email is acceptable) and must include a specific statement as to what is in error, how it should be corrected, and what supporting evidence is available. It is highly recommended that you keep copies of your graded assignments.

| Grades Scored Between | | | | Will Equal |
|---|---|---|---|---|
| 97 | % and | 100 | % | A+ |
| 94 | % and Less Than | 97% | | A |
| 90 | % and Less Than | 94% | | A- |
| 87 | % and Less Than | 90% | | B+ |
| 84 | % and Less Than | 87% | | B |
| 80 | % and Less Than | 84% | | B- |
| 77 | % and Less Than | 80% | | C+ |
| 74 | % and Less Than | 77% | | C |
| 70 | % and Less Than | 74% | | C- |
| 67 | % and Less Than | 70% | | D+ |
| 64 | % and Less Than | 67% | | D |
| 60 | % and Less Than | 64% | | D- |
| 0 | % and Less Than | 60% | | F |

**Spring 2024 BIOL2305 Section 400 Lecture and Lab Schedule**
**(January 15 - May 11)**
**Tuesday & Thursday**

**Visit our course page on UNM Canvas for Announcements, Assignments, Grades**
(Students are strongly advised to schedule a dedicated time to complete their weekly activities)

**ECURE Research Project:** Every week, specific time will be designated to discuss and work on the ECURE project that is related to our course and future career!

| Week (T & R) | Lecture and Lab Activities |
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| **Week - 1** (1/16 & 18) | **Introduction to BIOL2305 Class**<br>• Explore our course page on UNM Canvas<br>• Register to access the McGraw Hill Connect eTextbook, homework, and virtual prelab on UNM Canvas.<br>• **Lecture Ch 1: The Main Themes of Microbiology**<br>• **Lab 1: Lab Safety Introduction**<br>*Lab 1.1: Lab Safety*<br>*Lab 1.2: Hand Washing Effectiveness*<br>• **ECURE Project:** Introduction |
| **Week - 2** (1/23 & 25) | • **Lecture Ch 3: Tools of the Laboratory**<br>• **Lab 2: Ubiquity of Microorganisms**<br>• ECURE Pre-Assessment Survey |
| **Week - 3** (1/30 & 2/1) | • **Lecture Ch 4: Bacteria and Archaea (Prokaryotic Microorganisms)**<br>• **Lab 3: Common Aseptic Transfers and inoculation Methods**<br>*Lab 3.1: Aseptic Technique - Broth Culture to Sterile Agar Plate*<br>*Lab 3.2: Aseptic Technique - Broth Culture to Sterile Broth*<br>*Lab 3.3: Aseptic Technique - Slant Culture to Sterile Agar Slant*<br>• ECURE Project - Literature Survey and Discussion |
| **Week - 4** (2/6 & 8) | • **Lecture Ch 5: Eukaryotic Cells and Microorganisms**<br>• **Lab 4: Isolation Technique**<br>*Lab 4.1: Isolation Methods - Quadrant Streak Plate Method*<br>*Lab 4.2: Isolation Methods - Pour Plating Method*<br>• ECURE Project - Literature Survey and Discussion |
| **Exam-1**<br>**Week - 5**<br>(2/13 & 15)<br>UROC Registration Due 2/16 | • **Connect Homework Due** 2/12 11:00 pm (Ch. 1, 3, 4, 5)<br>• **Exam, and Group Exam-1** on 2/13 (Ch. 1, 3, 4, 5)<br>• **Lecture Ch 9: Microbial Nutrition and Growth**<br>• **Lab 6: Microbial Growth**<br>*Lab 6.1: Microbial Growth - Effects of Temperature*<br>*Lab 6.2: Microbial Growth - Effects of pH*<br>*Lab 6.3: Microbial Growth - Oxygen Requirements and Anaerobic Jar* |
| **Week - 6** (2/20 & 22) | • **Lecture Ch 9: Microbial Nutrition and Growth &**<br>• **Lecture Ch 10: Microbial Metabolism**<br>• **Lab 6: Microbial Growth**<br>• ECURE Project – Literature Report, Experiment Plan Discussion |

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| **Week - 7**<br>(2/27 & 29)<br>Literature Report Due 3/3 | • **Lecture Ch 6: Microbial Genetics**<br>• **Lab 7: Bacterial Genetics - Bacterial Transformation** (virtual lab)<br>• ECURE– Literature Report due 3/3<br>• ECURE Project - Experiment and Data Collection |
| **Week - 8**<br>(3/5 & 7) | • **Lecture Ch 11: Physical and Chemical Control of Microbes**<br>• **Lab 8: Control of Microbial Growth**<br>*Lab 8.1: Control of Microbial Growth - Effect of Ultraviolet Light*<br>*Lab 8.2: Control of Microbial Growth - Effect of Antiseptics and Disinfectants*<br>• ECURE Project Full Report Draft, UROC/ URI – Poster / Presentation Draft |
| **Week - 9** | **Spring Break: March 10-17. No class** |
| **Exam-2**<br>**Week - 10**<br>(3/19 & 21)<br>ECURE Project – Full Report Due 3/24 | • **Connect Homework Due** 3/18 11:00 pm (Ch 9, 10, 6, 11)<br>• **Exam and Group Exam-2** on 3/19 (Chapters 9, 10, 6, 11)<br>• **Lab 5: Introduction to Light Microscope**<br>*Lab 5.1: Microscopy - Operation of Brightfield Microscope*<br>*Lab 5.2: Microscopy - Oil Immersion*<br>• **Lab 9: Staining - Preparing a smear and simple stain**<br>• **Lecture Ch 13: Microbe-Human Interactions**<br>• ECURE Project – UROC / URI – Poster / Presentation Draft |
| **Week - 11**<br>(3/26 & 28) | • **Lecture Ch 13: Microbe-Human Interactions**<br>• **Lab 10: Differential Staining - Gram stain and Acid-fast stain**<br>*Lab 10.1: Staining - Gram Staining*<br>*Lab 10.2: Acid-Fast Staining*<br>• ECURE Project - UNMG Poster Group Meeting<br>• ECURE Project UROC/URI–Poster/Presentation Final Draft / Rehearsal-1 |
| **Week - 12**<br>(4/2 & 4) | • **Lecture Ch 15: Host Defenses I – Overview and Innate Immunity**<br>• **Lab 11: Special Staining – Capsule and Spore**<br>*Lab 11.1: Capsule Staining*<br>*Lab 11.2: Spore Staining*<br>• ECURE Project UROC / URI – Poster / Presentation Rehearsal-2 |
| **Exam-3**<br>**Week - 13**<br>(4/9 & 11)<br>**UROC at ABQ 4/12** | • **Lecture Ch 16: Host Defenses II – Adaptive Immunity and Immunization**<br>• **Connect Homework Due** 4/10 11:00 pm (Ch 13, 15, 16)<br>• **Exam, and Group Exam-3** on 4/11 (Chapters 13, 15, 16)<br>• ECURE Project UROC / URI – Poster / Presentation Rehearsal-3<br>• UNM-ABQ Undergraduate Research Opportunities Conference, April 12 (Friday) |
| **Week - 14**<br>(4/16 & 18)<br><br>**UR Inspiration Conference 4/16** | • **Lecture Ch 18: Diagnosing Infections**<br>• **Lab 12: Identification of Unknown Bacteria**<br>• UR Inspiration Virtual Conference, April 16 (Tuesday)<br>• ECURE Poster at UNMG – Group Poster Preparation |

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| **Week - 15**<br>(4/23 & 25) | • **Lecture Ch 12: Antimicrobial Treatment**<br>• **Lab 13: Medical Microbiology**<br>*Lab 13.1: Antibiotic Sensitivity Testing (Kirby-Bauer Method)*<br>*Lab 13.2: Bacterial Antibiotic Resistance*<br>• ECURE Poster at UNMG – Group Poster Preparation |
| **Week - 16**<br>(4/30 & 5/2)<br>**ECURE Poster at UNMG 5/2** | • **Lecture Ch 7: Viruses**<br>• ECURE Project Poster Presentation at UNMG on 5/2<br>• ECURE Post-Assessment Survey |
| **Finals Week**<br>(5/7) | • **Connect Homework Due** 5/6 11:00 pm (Ch 7, 12, 18)<br>• **Exam, and Group Exam-4** on 5/7 (Ch 7, 12, 18) |