

# Introductory Biology Laboratory BIOLOGY 2281 Spring 2026 – Updated 1/5/26

**Lecture:** 001: FRIDAY: 8:00 AM-8:50 AM at HH 2.402  
002: FRIDAY: 9:00 AM-9:50 AM at HH 2.402

**Lab:** See Table below:

Day of the Week	Section #	Time	Location	Instructor
Monday	301	10:00 AM – 12:45 PM	SLC 2. 215	Dr. Mehta
Monday	302	10:00 AM – 12:45 PM	SLC 2.206	Dr. Salamat
Monday	303	1:00 PM – 3:45 PM	SLC 2.206	Dr. Salamat
Monday	304	1:00 PM – 3:45 PM	SLC 2.215	Dr. Pickett
Tuesday	307	9:00 AM – 11:45 AM	SLC 2.215	Dr. Mehta
Tuesday	308	9:00 AM – 11:45 AM	SLC 2.206	Dr. Salamat
Tuesday	309	12:00 PM – 2:45 PM	SLC 2.215	Dr. Esparza
Tuesday	310	12:00 PM – 2:45 PM	SLC 2.206	Dr. Davenport
Tuesday	311	3:00 PM – 5:45 PM	SLC 2.215	Dr. Huang
Tuesday	312	3:00 PM – 5:45 PM	SLC 2.206	Dr. Davenport
Tuesday	801	6:00 PM – 8:45 PM	SLC 2.215	Dr. Huang
Tuesday	802	6:00 PM – 8:45 PM	SLC 2.206	Dr. Esparza
Wednesday	313	9:00 AM – 11:45 AM	SLC 2.215	Dr. Pickett
Wednesday	314	9:00 AM – 11:45 AM	SLC 2.206	Dr. Davenport
Wednesday	315	12:00 PM – 2:45 PM	SLC 2.215	Dr. Esparza
Wednesday	316	12:00 PM – 2:45 PM	SLC 2.206	Dr. Davenport
Wednesday	317	3:00 PM – 5:45 PM	SLC 2.215	Dr. Huang
Wednesday	321	3:00 PM – 5:45 PM	SLC 2.206	Dr. Salamat
Wednesday	803	6:00 PM – 8:45 PM	SLC 2.215	Dr. Huang
Wednesday	805	6:00 PM – 8:45 PM	SLC 2.206	Dr. Salamat
Thursday	318	9:00 AM – 11:45 AM	SLC 2.215	Dr. Mehta
Thursday	322	9:00 AM – 11:45 AM	SLC 2.206	Dr. Pickett
Thursday	319	12:00 PM – 2:45 PM	SLC 2.215	Dr. Esparza
Thursday	320	3:00 PM – 5:45 PM	SLC 2.215	Dr. Huang
Thursday	804	6:00 PM – 8:45 PM	SLC 2.215	Dr. Huang

### Instructor Contact Information

- Dr. Elizabeth Pickett [beth.pickett@utdallas.edu](mailto:beth.pickett@utdallas.edu)
- Dr. Iti Mehta [iti.mehta@utdallas.edu](mailto:iti.mehta@utdallas.edu)
- Dr. Yi Huang [yi.huang@utdallas.edu](mailto:yi.huang@utdallas.edu)
- Dr. Anne Davenport [anne.davenport@utdallas.edu](mailto:anne.davenport@utdallas.edu)
- Dr. Narges Salamat [narges.salamat@utdallas.edu](mailto:narges.salamat@utdallas.edu)
- Dr. Matthew Esparza [matthew.esparza@utdallas.edu](mailto:matthew.esparza@utdallas.edu)

**Instructor Office hours and locations: (announced in each eLearning lab section)**

- The FIRST FRIDAY MEETINGS START ON Jan 23 in HH 2.402 (section 001 and 002).
- THE FIRST LAB STARTS Jan 26-29 IN SLC 2.215 or SLC 2.206 (assigned according to student's enrolled lab section).

## COURSE MODALITY

<b>Instructional Mode</b>	BIOL2281 Lab sections (301-805) and Lecture sections (001-002) are offered in Traditional classroom/laboratory in-person instruction. See the description: <a href="https://registrar.utdallas.edu/registration/">https://registrar.utdallas.edu/registration/</a>
<b>Course Platform</b>	Course content can be accessed using your UT Dallas NetID account on the <a href="#">eLearning</a> website. Please see the course access and navigation section of the <a href="#">Getting Started with eLearning</a> and the <a href="#">Student eLearning Tutorials</a> webpage for more information.
<b>Expectations</b>	See COURSE EVALUATION and COURSE CALENDAR below

## CLASSROOM CONDUCT REQUIREMENTS RELATED TO PUBLIC HEALTH MEASURES

UT Dallas will follow the public health and safety guidelines put forth by the Centers for Disease Control and Prevention (CDC), the Texas Department of State Health Services (DSHS), and local public health agencies that are in effect at that time during the Spring 2026 semester.

## COURSE PRE-REQUISITES: BIOL 2311

## COURSE DESCRIPTION

The primary goal of this semester-long course is to provide you with opportunities to learn bioinformatics and various laboratory skills and techniques used in molecular biology. Lectures discuss the theoretical aspects of the experiments carried out in the laboratory. Each laboratory experience builds or interconnects with the others and seeks a balance between biological content and conceptual understanding. The curriculum is tailored to the mission and strengths of the Department of Biological Sciences at the University of Texas at Dallas.

## STUDENT LEARNING OBJECTIVES/OUTCOMES

**Objectives:** The goal of this course is to give students opportunities for hands-on learning of biological principles. This course teaches students the basic concepts of bioinformatics; the microbiological concepts and techniques such as microscopy and aseptic handling of microorganisms; bacterial transformation; eukaryotic cell divisions; biochemical concepts and techniques such as properties and identification of macromolecules, determination of the rate of an enzyme-catalyzed reaction and protein gel electrophoresis; DNA-centered molecular biology principles and techniques including polymerase chain reaction, restriction digestion, plasmid mapping and DNA agarose gel electrophoresis. Each laboratory experience builds or interconnects with the others and seeks a balance between biological content and conceptual understanding.

**Outcomes:** Students will therefore:

1. Be able to define, explain, and give examples of the basic concepts in bioinformatics, structure and properties of biologically important macromolecules, enzyme kinetics, eukaryotic cell divisions and bacterial transformation, and polymerase chain reaction.
2. Be able to perform basic molecular biology techniques in DNA manipulation.
3. Be able to use common biological laboratory skills, techniques, and instrumentations.
4. Learn how to properly present and process data, interpret data analytically and draw appropriate conclusions.

## COURSE MATERIAL

- Biology 2281 Lab Manual, 2026 by Drs. Elizabeth Pickett, Iti Mehta, Yi Huang, Anne Davenport, Narges Salamat, and Matthew Esparza:  
 Files of lab procedures and lecture slides will be available at <http://elearning.utdallas.edu> starting Jan 20th, no purchase required. Several topics include graph paper and report pages that should be printed **single-sided** for accurate grading. A laptop is **required** for each lab exercise. Students need to install Microsoft Word and Excel on their laptops to process data and complete lab reports before the end of lab sessions. Instructions on how to install Office (on up to 5 personally-owned PCs or Macs) are posted in this link: <https://oit.utdallas.edu/o365/>. If you need help with Office 365, contact the OIT Help Desk. If you do not own a laptop, The library has laptops that can be checked out for up to 3 days at a time. <https://library.utdallas.edu/about-the-library/library-policies/userguide/>

An electronic device with internet connection/capability is required to access eLearning during lecture sections. Participation/Attendance Points obtained during lectures will be posted in My Grades of section 001 and 002 weekly. Failure to bring a device, sign-in to the correct section in eLearning, or attend your enrolled section will result in zero points earned for that lecture.

- Suggested reference book:  
Textbook for BIOL2311

## COURSE EVALUATION/GRADING SCHEMES

Students may earn a maximum of **550** points. The following table lists the details of assessment items and the point distributions.

Assessment Activity	Points	Your points
Mid-term Exam (including lab practicals)	110	
Final Exam (including lab practicals)	124	
10 out of 11 Post-Lab Reports (@ 20 pts each)	200	
11 Pre-lab (@ 6 pts each)	66	
Syllabus and Safety Pre-lab	10	
Course Participation/Attendance Points	40	
<b>Total</b>	<b>550</b>	

The final course grades will be assigned based upon the standard grading scale below.

<u>Points Earned</u>	<u>Letter Grade</u>	<u>Point Earned</u>	<u>Letter Grade</u>	<u>Point Earned</u>	<u>Letter Grade</u>
535	A+	460	B	385	C-
510	A	440	B-	365	D+
495	A-	420	C+	350	D
475	B+	400	C	330	D-

- Post-Lab Reports:** The format of lab reports will vary from week to week depending upon the experiment that was performed. Although some lab exercises will be performed in groups of two or more students, each student must turn in their own report for grading. Your report should reflect *your* independent processing and presentation of the data and answering of related questions posted for the current semester. Do not copy material from other students, past or present. Do not allow any other student to see or copy your work. All incidences of suspected scholastic dishonesty will be reported to OCSC. Your work will be graded based on accuracy, completeness, and neatness. **If you are not physically present during a particular lab, you are not entitled to turn in a post-lab report for credit.** Your lowest report score, excluding report E11, will be dropped from the course grade calculation.

- **Exams:** Midterm and final exams will be given during your scheduled lab period. Each exam will be composed of two parts: a written test and a practical demonstration of skills. The practical demonstration of skills will focus on important laboratory techniques and data analysis. The written test will be primarily short answers and multiple choice and may include diagrams and illustrations. The exams are designed to evaluate your understanding of the basic biological concepts and laboratory methodologies. You are responsible for studying the contents of any lab sessions that you do not attend. Accommodation letter provided by ARC is required to request extended exam period and/or provide an alternate testing environment.
- **Pre-Lab Assignments:** All lab exercises have pre-lab assignments to make sure that you are prepared for the experiment before you come to the lab. Pre-labs will be completed in eLearning, are independent work, allow unlimited scored attempts before the deadline, and will have the score of the highest attempt submitted before the deadline recorded in the grade center. Pre-lab assignments are due in eLearning BEFORE the start of your regularly scheduled lab section. Late pre-labs will not be accepted.
- **eLEARNING:** All course related lecture notes and other materials (including announcements, gel images, and grades) will be promptly posted on eLEARNING. Please check it regularly. Contact your instructor with concerns regarding any grades as soon as possible. Scores for R1-R5 will be finalized on **March 13**, scores for R6-R11 will be finalized on **April 23**.

## COURSE POLICIES

- Attendance and Class Participation:

Attendance of all lecture and laboratory sessions **ON TIME** is extremely important and thus mandatory. Lectures will be recorded. Students who fail to arrive to lab on time may miss important information and instruction on the safe and proper use of equipment and reagents. Those who do not receive this instruction could present a danger to themselves, others, and the equipment and therefore may be barred from participating in the experiment and turning in the corresponding lab report. Your performance in the course is dependent on your attendance, so please make every effort to attend all classes as scheduled. Moreover, you are also expected to actively participate in all class activities.

You will have the opportunity to earn points based on your participation in the lecture class. You will not be able to earn attendance points if you fail to bring your personal electronic device to lecture. Additionally, you will not earn attendance points if you fail to properly utilize your device during lecture (i.e., turning it on, logging in to eLearning, responding to posted questions, etc.). Submitting answers while not physically present at the lecture is considered academic dishonesty and such cases will be referred to the Office of Community Standards and Conduct. Each question is worth 2 points – 1 point for responding and 1 point having the correct answer. Students who earn between 70%-100%, 60-69%, 50-59%, or 0-49% of the total possible points will receive 40, 30, 20, or 0 course points respectively. Points will be earned during lectures #2-11. Practice questions designed to accustom you to using your personal electronic device will be presented during lecture #1 but will not contribute to your score.

Switching lab sessions after your scheduled lab is over is prohibited. Switching is only allowed if you have an excused absence such as a UTD-sponsored event, medical/graduate school interview, a planned medical treatment, or documented illness. To request approval for any section switch, you must inform your instructor **BY EMAIL** at least three business days before any planned absence or at least two hours before section start if due to illness. Include a list of alternate sections you are available to attend. If you have an emergency absence, contact your instructor by email as soon as is reasonably possible. Due to limited seating availability, the ability to switch sections upon request is **not guaranteed** and is at the discretion of the instructional team.

- Pre-read: Before you come to each lab, read the experiment packet for background information and procedures for the experiment you will be doing. This helps you not only do well on the pre-lab assessment, but also saves you time and avoids unnecessary mistakes during the lab. Part of the lab procedures may include report pages that will be completed in the lab session.
- Late work: Pre-lab assessments must be completed in eLearning BEFORE the start of your regularly scheduled lab section. Late pre-labs will not be accepted. Reports for E2, E4, E6, E8-Section A, E11 are due at the end of assigned lab hours. Reports for E1, E3, E5, E7, E8-Section B, E9, E10 are due the week after the experiment data analysis is completed. Save a complete copy of your lab report file before uploading it to eLearning or turning it in during lab. Any post-lab reports that are submitted late will be assessed a **3-point** penalty for each **day** (defined as a 24-hour period) they are late. It is your responsibility to confirm that your TA received your late submissions.
- Missed Exam  
Make-up exams will only be administered if the absence was due to extenuating circumstances, as judged by the instructor.
- Lab Safety: See handout provided on eLearning. Safety glasses and gloves will be provided in the laboratory.
- Class Materials:  
The instructor may provide class materials that will be made available to all students registered for this class as they are intended to supplement the classroom experience. These materials may be downloaded during the course. These materials are for registered students' use only. **Classroom materials may not be reproduced or shared with those not in class, or uploaded to other online environments (including ChatGPT, Chegg, Course Hero, etc.) except to implement an approved Accessibility Resource Center accommodation stated in an accommodation letter.** Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

## CLASS RECORDINGS

Students are expected to follow appropriate University policies and maintain the security of passwords used to access recorded lectures. Unless the AccessAbility Resource Center (ARC) has approved the student to record the instruction, students are expressly prohibited from recording any part of this course without instructor consent. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Student AccessAbility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

The instructor may record meetings of this course. These recordings will be made available to all students registered for this class if the intent is to supplement the classroom experience. If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law.

## ACADEMIC SUPPORT RESOURCES

The information contained in the following link lists the University's academic support resources for all students. Please see <http://go.utdallas.edu/academic-support-resources>.

## COURSE CALENDAR

- The **FIRST FRIDAY MEETINGS START ON Jan 23** in HH 2.402 (section 001 and 002).
- **THE FIRST LAB STARTS Jan 26-29** IN SLC 2.215 or SLC 2.206 (assigned according to student's enrolled lab section).

Week of	Monday through Friday Lab Exercises and Exams	Pre-Lab due	Report due	Friday Lecture Topic
Jan 20-22	No Labs (Holiday, TA training, and Lab setup)			Jan 23: E1
Jan 26-29	E1: Bioinformatics*	E1		Jan 30: E2
Feb 2-5	E2: Microscopy	E2	R1, <b>R2</b>	Feb 6: E3
Feb 9-12	E3: Microbial Techniques	E3		Feb 13: E4
Feb 16-19	E4: Eukaryotic Cell Division E3: Results Analysis	E4	<b>R4</b>	Feb 20: E5
Feb 23-26	E5: Restriction Enzyme Digest and Plasmid Mapping	E5	R3	Feb 27: E6
<b>March 2-5</b>	<b>Midterm Exam (E1-E5)</b>		R5	Mar 6: E7
March 9-12	E6: ELISA E7: Extracting and Amplifying mtDNA Day 1	E6 and E7	<b>R6</b>	March 13: E8
<b>March 16-20</b>	<b>Spring Break</b>			
March 23-26	E7: Extracting and Amplifying mtDNA Day 2 E8: Bacterial Transformation	E8	<b>R8-Sec A</b>	Mar 27: E9
Mar 30 – Apr 2	E9: Spectrophotometry* E8: Results Analysis	E9	R7	Apr 3: E10
April 6-9	E10: Enzyme Assay	E10	R8-Sec B, R9	Apr 10: E11
April 13-16	E11: Protein Separation by Gel Electrophoresis*	E11	R10, <b>R11</b>	
<b>April 20-23</b>	<b>Practical Practice/Make up week (in case of campus closures/class cancellations)</b>			Apr 24: Q & A
<b>April 27-30</b>	<b>Final Exam (E5 Electrophoresis, E6-E11)</b>			
<b>May 4-7</b>	<b>Make up week (in case of campus closures/class cancellations)</b>			

Abbreviations: E= Experiment; R=Report

**Highlighted in yellow:** due by the end of lab section

**Underlined:** paper copy report pages required

\*: Laptop **REQUIRED DURING LAB**

**Reports for E2, E4, E6, E8-SecA, E11 are due by the end of enrolled lab section.**

**Reports for E1, E3, E5, E7, E8-Sec B, E9, E10 are due before lab the week after the experiment data analysis is completed.**

The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to <http://go.utdallas.edu/syllabus-policies> for these policies.

These descriptions and timelines are subject to change at the discretion of the Professors.