Introductory Biology Laboratory
BIOLOGY 2281
Spring 2021

CLASS INFORMATION

Lecture: 0w1**:** Online
Lab: Online See Table below:

Instructor	Lab Section #
Dr. Guidry	8w5
Dr. Guidry	8w6
Dr. Guidry	8w7
Dr. Klang	3w4
Dr. Klang	3w9
Dr. Klang	8w3
Dr. Lakoduk	303
Dr. Lakoduk	304
Dr. Lakoduk	305
Dr. Lin	3w1
Dr. Lin	3w5
Dr. Lin	3w6
Dr. Lin	3w7
Dr. Lin	3w8
Dr. Lin	8w4
Dr. Mehta	8w1
Dr. Pickett	301
Dr. Pickett	302
Dr. Pickett	3w2
Dr. Pickett	3w3
Dr. Pickett	8w2

Instructor Contact Information

- Dr. Paula Guidry Paula.Guidry@UTDallas.edu
- Dr. Ida Klang Ida.Klang@utdallas.edu
- Dr. Ashley Lakoduk ashley.Lakoduk@utdallas.edu
- Dr. Wenju Lin wenju@utdallas.edu
- Dr. Iti Mehta Iti.Mehta@utdallas.edu
- Dr. Elizabeth Pickett beth.pickett@utdallas.edu

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

Your Section's Teaching Assistants

Name	Email Address

COURSE MODALITY

Instructional Mode	BIOL2281 is offered in online mode according to the description: https://registrar.utdallas.edu/registration/
Course Platform	This course can be accessed using your UT Dallas NetID account on the eLearning website. Offic hours and review discussions will be held through MS Teams. https://www.utdallas.edu/oit/howto/microsoft-teams/Microsoft Teams Please see the course access and navigation section of the Getting Started with eLearning and the Student eLearning Tutorials webpage for more information.
Expectations	See COURSE EVALUATION and COURSE CALENDAR below

COVID-19 GUIDELINES AND RESOURCES

The information contained in the following link lists the University's COVID-19 resources for students and instructors of record. Please see http://go.utdallas.edu/syllabus-policies.

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, 2021 by Drs. Ida Klang, Wenju Lin, Iti Mehta and Elizabeth Pickett: Files of lab procedures and lecture slides will be posted at http://elearning.utdallas.edu, no purchase required.

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- Virtual lab simulations from Labster. Students will access through eLearning, no purchase required.

- Suggested reference books:
  Textbook for BIOL2311

TECHNICAL REQUIREMENTS

- In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the Getting Started with eLearning webpage.

  UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The eLearning Support Center includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

- **Communication**
  This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester. For more details, please visit the Student eLearning Tutorials webpage for video demonstrations on eLearning tools.

  Student emails and discussion board messages will be answered within 3 working days under normal circumstances.

- **Distance Learning Student Resources**
  Online students have access to resources including the McDermott Library, Academic Advising, The Office of Student AccessAbility, and many others. Please see the eLearning Current Students webpage for more information.

- **Server Unavailability or Other Technical Difficulties**
  The University is committed to providing a reliable learning management system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, the instructor will provide an appropriate accommodation based on the situation. Students should immediately report any problems to the instructor and also contact the online eLearning Help Desk. The instructor and the eLearning Help Desk will work with the student to resolve any issues at the earliest possible time.

COURSE EVALUATION/GRADING SCHEMES

Students may earn a maximum of 500 points. The following table lists the details of assessment items and the point distributions.

Assessment Activity	Points	Your points
Exam 1, 2, 3 (@80 pts each)	**240**	
simulation assessments	**160**	
4 Post-Lab Reports (@15 pts each)	**60**	
4 Pre-lab (@10 pts each)	**40**	
Total	**500**	

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

Points Earned	Letter Grade	Points Earned	Letter Grade	Points Earned	Letter Grade
490	A+	420	B	350	C-
470	A	400	B-	335	D+
450	A-	385	C+	320	D
435	B+	370	C	300	D-

- **Post-Lab Reports:** The format of lab reports will vary from week to week depending upon the type of experiment. Each student must turn in his or her own typed report online, in word document format, via eLearning through links that will be provided in lecture section. Your report should reflect your independent processing and presentation of data and answering related questions posted for current semester. Do not copy material from other students. Do not allow any other student to see or copy your work. Any incidence of suspected scholastic dishonesty will be reported to the Office of Community Standards and Conduct.

  Videos and/or photo essays will be provided for any lab experiments that you are unable to perform in person. Data will be provided for use in completing post-lab reports.

- **Lab Exams:** 3 Exams are scheduled online in lecture section on **Feb 18, April 1, May 6** at 4 PM (CT). The format of the written test will be primarily multiple choices, short answers and may include diagrams and illustrations. They are designed to evaluate your understanding of the basic biological concepts and laboratory methodologies.

- **Pre-Lab/ simulation assessments:** All lab exercises will have either pre-lab assignments or simulation assessments. Pre-labs and simulation assessments are INDEPENDENT work. Do not copy material from other students. Do not allow other students to copy your work.

  Pre-lab assignments must be completed in eLearning BEFORE assigned due dates. Late pre-labs will not be graded.

  Simulation assessments will be completed when you access weekly virtual labs. Students can work on a simulation numerous times and resume to a paused simulation. The first time you complete a simulation **(progress = 100%),** the grade of **first attempt** will be automatically updated on eLearning gradebook**.** You are allowed unlimited attempts before the due date of the assignment. Your best score will be used in calculating Total points in eLearning gradebook. Always read the theory first if you are not sure about the answer.

- **eLEARNING**: All course related lecture notes and other materials including announcements, pre-labs, photos of the lab results, review questions, and all the grades will be promptly posted on eLEARNING. Please check it regularly. Contact your instructor with concerns regarding grades as soon as possible. Grades regarding Week1- 6 will be finalized on **April 1**, grades regarding Week 7-14 will be finalized on **May 6**.

COURSE POLICIES

- Attendance and Class Participation:
  All BIOL2281 course materials and announcements will be accessible through your lab section (30X, 3wX or 8wX) in eLearning. Assessments included in virtual lab simulation can be completed when you complete each weekly topic.

- Exam schedule:
  Exams will be scheduled in lab sections on **Feb 18, April 1, May 6** at 4 PM (CT). Exams should start no later than 5:30 PM (CT).

  Students needing to request different exam hours should contact your instructor at least 24 hours prior exam start time with supporting documents and a 90-minutes period that you are available in the following day to take the exam.

- Missed Exam:
  Students who miss exams should contact your instructor within 24 hours after exam end time. A makeup exam will be scheduled upon receiving supporting documents and a 90-minutes period that you are available in the following day to make up the missed exam.

- Late work:
  Pre-labs are due in eLearning and no late pre-labs will be accepted. **Post-lab reports** are due in eLearning. Save the file of your lab report before you turn it in and preview the report before you log out. Any post-lab reports that are late will be assessed a **3-point** penalty for each **DAY** they are late. Keep the confirmation email of your report from eLearning until your report has been graded.

- Lab Safety:
  See lab simulation provided on eLearning.

- 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; however, 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 Chegg, Course Hero, etc.) except to implement an approved Office of Student AccessAbility accommodation.** Failure to comply with these University requirements is a violation of the Student Code of Conduct.

COURSE OUTLINE/CALENDAR

Week	Week of	Lab Topics	Pre-Lab/ Simulation (due dates)	Report (due dates)	Points (500)
1	Jan 19-22	Introduction Introquizweek1 Lab Safety Pipetting: Master the technique	Introquizweek1 (Jan 29,5 PM CT) (Feb 18,4 PM CT)		20
2	Jan 25-29	Introduction to Food Macromolecules Light microscopy Fluorescent Microscopy	(Feb 18,4 PM CT)		20
3	Feb 1-5	Aseptic Technique Bacterial Quantification by Culture: Count bacteria with serial dilution	(Feb 18,4 PM CT)		20
4	Feb 8-12	Mitosis, Meiosis	Pre-lab Mitosis-Meiosis (Feb 12,5 PM CT)	Lab Report Mitosis-Meiosis (Feb 12,5 PM CT)	25
5	Feb 15-19	**Exam 1**-Contents of Week 1-4	Exams should start between 4PM to 5:30 PM CT on **Feb 18**. Duration of exam:90 minutes.		80
6	Feb 22-26	Protein Synthesis	(Apr 1, 4 PM CT)		20
7	Mar 1-5	Experimental Design Antibodies: Why are some blood types incompatible**?**	(Apr 1, 4 PM CT)		20
8	Mar 8-12 Midterm grade due on Mar 13	ELISA	Prelab ELISA (Mar 12,5 PM CT) (Simulation, Apr 1, 4 PM CT)	Lab Report ELISA (Mar 12,5 PM CT)	25
	Mar 15-19	Spring Break			
9	Mar 22-26	Gel Electrophoresis PCR	(Apr 1, 4 PM CT)		20
10	Mar 29-Apr 2	**Exam 2**- Contents of Week 6-9	Exams should start between 4 PM to 5:30 PM CT on **Apr 1**. Duration of exam:90 minutes.		80
11	Apr 5-9	Spectrophotometry	Pre-Lab Spectrophotometry (Apr 9, 5 PM CT)	Lab Report Spectrophotometry (Apr 9, 5 PM CT)	25
12	Apr 12-16	Enzyme Assay	Pre-Lab Enzyme Assay (Apr 16,5 PM CT)	Lab Report Enzyme Assay (Apr 16,5 PM CT)	25
13	Apr 19-23	Molecular Cloning	(May 6,4 PM CT)		20
14	Apr 26-30	Plant Transcriptomics Gene Expression Unit	(May 6,4 PM CT)		20
15	May 3-7	**Exam 3-** Contents of Week 9-14	Exams should start between 4PM to 5:30 PM CT on **May 6**. Duration of exam:90 minutes.		80

Comet Creed
This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same:

"As a Comet, I pledge honesty, integrity, and service in all that I do."

Academic Support Resources
The information contained in the following link lists the University's academic support resources for all students.

Please go to Academic Support Resources webpage for these policies.

UT Dallas Syllabus Policies and Procedures
The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus.

Please go to UT Dallas Syllabus Policies webpage for these policies.

The descriptions and timelines contained in this syllabus are subject to change at the discretion of the Professor.