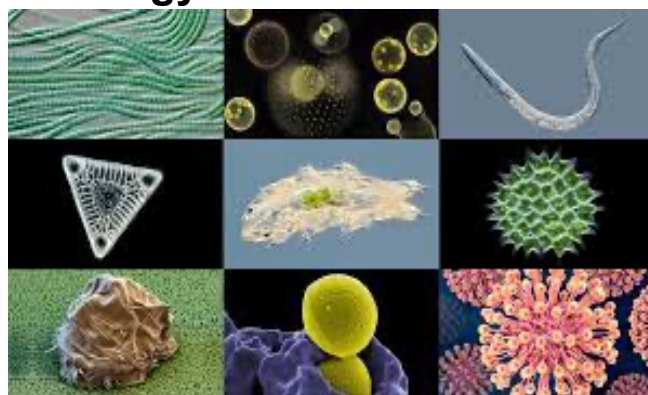


**BIOL3303.001 Introduction to Microbiology****SLC 1.210: Tues and Thurs 11:30-12:45 PM****Professor****Erica L. Sanchez, PhD****e-mail: [erica.sanchez@utdallas.edu](mailto:erica.sanchez@utdallas.edu)****Twitter: [@elsanchez09](https://twitter.com/elsanchez09)****Office Hours: On Teams by appointment.****Teaching Assistants****TBD****Course Modality and Expectations**

<b>Instructional Mode</b>	<u>Face to face</u> : The instructor and students are present in the classroom according to the class schedule.
<b>Attendance Expectations</b>	Students are expected to attend lecture and participate. Students should contact the Professor and TAs if they cannot attend lecture for any reason. Please see list of accepted excused absences in syllabus. Lectures will not be recorded but lecture slides will be posted.

**Classroom Conduct Requirements Related to COVID-19**

Please follow UT Dallas guidelines when on campus. UT Dallas **strongly encourages** all students and staff to wear a face covering that covers the nose and mouth in all university buildings and classrooms. UT Dallas also **strongly encourages** students and staff to get a COVID-19 vaccine to protect themselves and the Comet community. If you have questions or concerns about COVID-19 vaccines, please watch this [presentation](#), featuring experts from UT Southwestern that explains the safety and efficacy of available vaccines and the risks borne by the unvaccinated. UT Dallas also recommends that students register their vaccination status through the [voluntary vaccine reporting form](#).

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Students who have tested positive for COVID-19 or may have been exposed should not enter university buildings and should instead follow required disclosure notifications as posted on the university's website. The latest information on our guidance and resources for campus health and safety can be found on our [Comets United webpage](#).

### Class Attendance

Regular and punctual class attendance is expected. Students who are unable to attend lecture must notify the Professor and TAs. Lectures will NOT be recorded but lecture slides will be posted on eLearning. Due to the complexity of the course material, students who fail to attend class regularly are inviting scholastic difficulty. Disruption of lectures and inappropriate conduct will not be tolerated and students caught doing so may face disciplinary action for UTD Student Code of Conduct violations.

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### Class Participation

Regular class participation is expected. Class participation will be monitored by weekly reflections and in-class pop quizzes. Students are encouraged to raise their hand to ask questions during lecture. Class participation will be evaluated by your TAs and professor. Successful participation is defined as consistently adhering to University requirements, as presented in this syllabus.

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### 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 except to implement an approved Office of Student Access Ability accommodation. Failure to comply with these University requirements is a violation of the UTD Student Code of Conduct.

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### Class communication:

**SLACK Page: Join at this link!---- EVERYONE MUST JOIN ASAP!**

*link to be added before semester start*

- **SLACK is the primary and preferred form of communication this semester.**
- SLACK is the BEST way to communicate with your instructor, your TAs, AND your classmates will be on our class SLACK page. Information for joining will be provided.
- **Dr. Sanchez PREFERS SLACK message communication over email. Please use SLACK for questions for Dr. Sanchez, TAs, and to collaborate with classmates!**
- **SLACK will also be a space where supplemental learning resources will be posted.**

**E-mail: DO NOT** EMAIL Dr. Sanchez or TAs. ALL class communication should occur on SLACK. (See above)

**BIOL 3303.001 General Course Information****Pre-requisites, Co-requisites, & other restrictions**

BIOL 2281 (Introductory Biology Laboratory) and BIOL 2311 (Introduction to Modern Biology I) and BIOL 2312 (Introduction to Modern Biology II) or their equivalents.

**Course Description**

Microbes (i.e. bacteria, fungi, archaea, viruses) represent the most diverse and abundant set of living (and non-living) organisms on the planet. Microbes contribute to major biogeochemical processes, live in environments inhospitable to other organisms, and comprise the majority of biomass on Earth. They can form beneficial symbioses with multicellular organisms, including humans, where they play critical roles in development, metabolism, and immunity. In contrast, many microbes adopt pathogenic lifestyles where they thrive at the expense of their multicellular hosts. Consequently, some of these microbes have become global public health concerns. This course surveys the form and function of the microbial world focusing on examples of microbes from all domains of life.

**Learning Outcomes**

In this course students will learn basic principles of microbiology, including microbial cell structure and function, growth, metabolism, genetics, and how microbes interact with multicellular hosts. The course will emphasize modern problems and applications related to human health, including mechanisms of microbial pathogenesis, antibiotic resistance, and microbiome research. The goal is for students to acquire basic knowledge about microbial structure and function and to understand how microbes affect human health and society. Learning will be assessed through exam questions of various formats (e.g, multiple choice, fill in the blank, short answer, essay), and problem sets.

Upon completion of this course, students should be able to:

1. Define a microbe and describe the specialized attributes and life cycles of bacteria, fungi, archaea, and viruses.
2. Describe and analyze the following principles of microbiology: microbial cell structure and function, growth, metabolism, genetics, and interaction with multicellular hosts.
3. Describe the steps of key microbiological experiments
4. Formulate hypotheses, design experiments, and interpret experimental data relevant to the field of microbiology.

**Supplemental Text**

Microbe 2<sup>nd</sup> edition. Michele Swanson, Gemma Reguera, Moselio Schaechter, and Frederick C. Neidhardt. ASM Press [ISBN: 9781555819132]. eText and rental options available on [Amazon](#).

*Supplemental videos and readings will accompany some lectures. These materials will be posted on eLearning in advance of lecture. Slides will be posted on eLearning.*

**Note:** This syllabus and schedule are subject to change. If you are absent from class, it is your responsibility to check on announcements made while you were absent.

<b>Date</b>	<b>Topic</b>	<b>Chapters</b>
Jan 21	L1. Introduction to class: A Microbial Planet	Ch. 1
Jan 23	L2. A Microbial Planet and Microbial Diversity	TBA
Jan 28	L3. Microbial Diversity	Ch. 14
Jan 30	L4. Prokaryotic Cell Exterior: Envelopes and Appendages	Ch. 2
Feb 4	L5. Prokaryotic Cell Interior	Ch. 3
Feb 6	L6. Viruses I	Ch.
<b>Feb 11</b>	L7. Viruses II <b>Problem Set #1 due</b>	Ch. 17
Feb 13	L8. Fungi	Ch. 15
Feb 18	L9. <b>Exam review and discussion</b>	Ch. 16
<b>Feb 20</b>	<b>Assessment 1</b>	
Feb 25	L10. Microbial Growth and Division	Ch. 4
Feb 27	L11. Microbial Metabolism	Ch. 5
Mar 4	L12. Synthesis of Building Blocks	Ch. 7
Mar 6	L13. Central Dogma	Ch. 8
Mar 11	L14. Mutations and Genetic Exchange	Ch. 10
<b>Mar 13</b>	L15. Motility & Chemotaxis; <b>Problem Set #2 due</b>	Ch. 12
Mar 18	<b>NO CLASS---Have a great Spring Break!</b>	
Mar 20		
Mar 25	L16. Microbial Stress Responses; Antimicrobial Resistance	Ch. 12
Mar 27	L17. Antimicrobial Resistance and Secretion Systems	
Apr 1	L18. <b>Exam review and discussion</b>	Ch. 9
<b>Apr 3</b>	<b>Assessment 2</b>	
Apr 8	L19. Infection: Innate and Adaptive Immunity	Ch. 22
Apr 10	L20. Epidemiology and Vaccination;	Ch. 22
<b>Apr 15</b>	L21. Microbiomes, <b>Problem Set #3 due</b>	
Apr 17	L22. Immunodeficiency and Opportunistic Infections	Ch. 23
Apr 22	L23. <i>Pseudomonas aeruginosa</i> , <i>Candida auris</i>	Ch. 24
Apr 24	L24. <i>Toxoplasma gondii</i> and <i>Mycobacterium tuberculosis</i>	Ch. 24
Apr 29	L25. Viral Pathogens	Ch. 26
May 1	L26. Viral Pathogens	Ch. 26
May 6	L27. <b>Exam review and discussion</b>	
<b>May 8</b>	<b>Assessment 3</b>	
	<b>No formal final during finals week</b>	

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## Course Policies

### GRADING CRITERIA

#### **3 Assessments: Each worth 15% of final grade (45% total—450 points total)**

*Content and format of Assessments:* Each Assessment is cumulative but will focus primarily on the most recently covered material. Assessment material will derive from course lectures and slides, class discussions, assigned readings, supplemental learning material provided. **Assessments will be completed on eLearning** on day listed in the syllabus. **Assessments are timed** and questions will be of multiple formats (e.g. multiple choice, fill in the blank, short answer, free response).

#### **3 problem sets: Each worth 10% of final grade (30% total---300 points total)**

Problem sets will be assigned at least two class periods before their due date on eLearning. Problem sets will give students an opportunity to apply knowledge learned in class and prepare students for exam questions. Questions in problems sets will be in various formats but the majority of questions will be free response.

#### **5 Pop Quizzes: Worth 10% of final grade (100 points total)**

**Given IN-CLASS (20 points each).** These will NOT be announced ahead of time and points can only be earned for those students who are present IN-PERSON in class.

#### **15 Weekly Reflections: Worth 15% of final grade (150 points total)**

Weekly reflections submitted on eLearning. (10 points each)

#### **Grading scale**

This standard grading scheme will be used to determine final grades: 90-100% A; 80-89% B; 70-79% C; 60-69% D; 59% or less, F. These ranges may be modified dependent on the class grade distribution. If the grades are curved, then the final grades will be assigned when final point totals are available.

**How to submit assignments:** Assignments including problem sets and the class project **must be uploaded via the link on eLearning.** If drawings/diagrams are required, generate a digital image using Powerpoint or another program and include it in the submitted assignment. **Do not** email or SLACK assignments to the TAs or Professor.

**\*\*\*ONLY eLearning submissions will be graded\*\*\***

**Can students work together on the assignments?** Yes, you may discuss the assignment; however, each of you will be graded individually, and **we expect each of you to write your own answers.**

**Good writing practices.** Some general rules to remember are: (1) Don't copy your classmates' writing. (2) Don't copy/paste directly from sources. Instead, synthesize information in your own words. (3) **Direct quotes are not allowed**, and points will be taken off if direct quotes are used. I encourage you to consult this resource:

<https://www.utdallas.edu/library/plagiarism/index.html>.

**NO AI (Artificial Intelligence):** Please note that AI tools are not acceptable for use on any of our assignments. AI scanners will be used to detect any unoriginal text for all assignments. Please remember to answer using only your words. Your voice and your thoughts are important and computer-generated answers are prohibited. Any assignments detected for AI-generated text will earn a "0".

**Make-up Assessments**

Assessments must be completed during the designated examination period. Make-up Assessments are not allowed unless there is a documented illness, emergency, or religious holiday. Students must communicate ahead of time, and notify Professor and TAs if they must miss an Assessment for an excused reason and schedule a make-up Assessment immediately. *Make-up Assessments may be different than the original administered exams.*

**Late Work**

Assignments should NOT be turned in late **except** in the case of serious illness or emergency. You are expected to manage your time effectively and turn the assignment in on time. ***Late assignments may receive a zero if submitted without documentation of a serious illness or emergency.***

**Extra Credit**

Extra Credit opportunities may be announced throughout the semester.

**Class Attendance**

If you are unable to attend class for an excused reason, please contact the course TAs and Professor. **DO NOT attend class if you test positive for COVID-19.** Please notify the Professor immediately and give proof of a positive test result so that accommodations may be made. If you must miss lecture due to another excused reason (e.g. religious holiday, school interview) **please notify the Professor and TAs BEFORE your absence.**

**Classroom Citizenship**

Please treat everyone with kindness, dignity, and respect. Please do not interrupt or raise your voice to the Professors, TAs, or your classmates during class. Please be mindful of the social distancing requests of your Professors, TAs and your classmates and consider wearing a face covering to protect yourself and others. If you arrive late to class, do so quietly. Please make sure all phones and electronic devices are on silent.

**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 <http://go.utdallas.edu/academic-support-resources>.

**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 <http://go.utdallas.edu/syllabus-policies> for these policies.

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

**BIOL3303.001: Spring 2025: Syllabus and Classroom Agreement**

**Please sign and submit THIS PAGE ONLY on eLearning as your Week 1 Reflection by Monday 1/27/2025 at 11:59.**

*I, \_\_\_\_\_ (student name), hereby designate that I have thoroughly read this syllabus and community agreement and have access to this document to continue to check course requirements, resources, and deadlines.*

*I understand the expectations described in this document and understand who and how to ask questions throughout this semester.*

*I also understand that if changes to our schedule and this syllabus need to be made by the professor that they will be announced to the class and it will be my responsibility to implement these changes.*

*I will be sure to stay informed by attending class, frequently reviewing our class SLACK and eLearning page, and checking with classmates, TAs, and the professor for clarification if necessary.*

**PRINT NAME:** \_\_\_\_\_

**SIGNATURE:** \_\_\_\_\_ **DATE:** \_\_\_\_\_