

**University of North Texas at Dallas**  
**Spring 2016**  
**SYLLABUS**

<b>BIOL2042-001: Microbiology Laboratory : 1Hrs</b>	
<b>Department of</b>	<b>Health and Life Sciences</b>
<b>Division of</b>	<b>Liberal Arts and Sciences</b>
<b>Instructor Name:</b>	Dr. Aubrey Frantz
<b>Office Location:</b>	Room 251, Building 2
<b>Office Phone:</b>	972-338-1523
<b>Email Address:</b>	<a href="mailto:aubrey.frantz@untdallas.edu">aubrey.frantz@untdallas.edu</a>
<b>Office Hours:</b>	<b>Monday and Thursday 1:00-3:00 pm</b> <b>Tuesday and Thursday 10:30-11:30 am</b> <b>(If you need another time, please contact me)</b>
<b>Classroom Location:</b>	<b>Founders Hall 256</b>
<b>Class Meeting Days &amp; Times:</b>	<b>Mondays 1:00-4:50</b>
<b>Course Catalog Description:</b>	Laboratory techniques in general microbiology. Survey of microorganisms including bacteria, fungi, protozoa, and algae. Culture, staining, and identification of bacteria.
<b>Prerequisites:</b>	BIOL1710 and BIOL1730
<b>Co-requisites:</b>	<b>BIOL 2041</b>
<b>Required Text:</b>	<u>Foundations in Microbiology</u> , 9 <sup>th</sup> Ed. Talaro and Chess. McGraw Hill. 2015. ISBN: 978-0-07-352260
<b>Lab Manual</b>	<b><u>Benson's Microbiological Application</u>, 13<sup>th</sup> Ed. (Short Version). Brown and Smith. McGraw Hill. 2015.</b> ISBN: 978-0-07-340241-3
<b>Access to Learning Resources:</b>	UNT Dallas Library: phone: (972) 780-3625; web: <a href="http://www.unt.edu/unt-dallas/library.htm">http://www.unt.edu/unt-dallas/library.htm</a> UNT Dallas Bookstore: phone: (972) 780-3652; e-mail: <a href="mailto:1012mgr@fhcg.follett.com">1012mgr@fhcg.follett.com</a>
<b>Course Goals or Overview:</b>	
	The goal of this course is to provide the student with a broad understanding of the microbial world and general microbiology laboratory techniques.
<b>Learning Objectives/Outcomes:</b> At the end of this course, the student will	
1	Understand the ubiquity of microorganisms in the biosphere
2	Identify the morphological, biochemical and anatomical features of microorganisms
3	Demonstrate proper microbiology laboratory technique
4	Understand and explain the environmental factors that influence the growth of microorganisms

## Course Outline

***This schedule is subject to change by the instructor. Any changes to this schedule will be communicated by the instructor in class and/or on Blackboard.***

<b>TIMELINE</b>	<b>Exercises</b>
1/20	<b>No Lab</b>
1/27	Lab introduction and safety <b>Microscopy:</b> Exercises 1 – Brightfield Microscopy Exercise 4 – Microscopic Measurements <b>Survey of Microorganisms:</b> Exercise 5 – Microbiology of pond water
2/3	<b>Survey of Microorganisms:</b> Exercise 6 – Ubiquity of bacteria Exercise 7 – The Fungi: Molds and Yeast
2/10	<b>Staining and Observation of Microorganisms #1</b> Exercise 10 – Bacterial Smear Preparation Exercise 11 – Simple Staining Exercise 12 – Negative Staining Exercise 13 – Capsular Staining
2/17	<b>Staining and Observation of Microorganisms #2</b> Exercise 14 – Gram Staining Exercise 15 – Spore Staining Exercise 16 – Acid-Fast Staining Exercise 17 – Motility Determination
2/24	<b>Bacterial Viruses</b> Exercise 21 – Determination of Bacteriophage Titer Exercise 23 – Phage Typing
3/2	<b>EXAM I</b>
3/9	<b>OPEN LAB</b>
3/16	<i>SPRING VACATION</i>
3/23	<b>Environmental Influences and Control of Microbial Growth</b> Exercise 24 – Effects of Oxygen on Growth Exercise 25 – Effects of Temperature on Growth Select activities from Exercise 26 and 27 – Effects of pH and Osmotic Pressure on Microbial Growth
3/30	<b>Environmental Influences and Control of Microbial Growth</b> Exercise 30 – Evaluation of Alcohol Exercise 31 – Antimicrobial Sensitivity Testing Exercise 32 – Evaluation of Antiseptics Exercise 33 – Effectiveness of Hand Scrubbing
4/6	<b>Identification of Bacteria Unknowns</b> Exercise 34 – Morphological Study Exercise 35 – Cultural Characteristics Exercise 36-38 – Physiological Characteristics
4/13	<b>Identification of Bacteria Unknowns</b> Exercise 34 – Morphological Study Exercise 35 – Cultural Characteristics Exercise 36-38 – Physiological Characteristics
4/20	<b>Complete Identification of Bacteria Unknowns – Exercise 39</b> <b>Review for Exam II</b>
4/27	<b>EXAM II</b>
5/6	<b>No Lab</b>

## Course Evaluation Methods

This course will utilize the following instruments to determine student grades and proficiency of the learning outcomes for the course.

**Lab Exams** – There will be two lab exams, each worth 100 points. Attendance is required for all exams. *Any student found cheating on any exam will receive a zero for that exam and may face disciplinary action(s).*

**Laboratory Reports** - Review sheets corresponding to the laboratory exercises are due at the beginning of the class period. *Late assignments will be graded, but with a penalty of 10% each day it is late.*

**Pre-Lab Quizzes** - pre-lab quizzes (20 points/quiz) will be administered at the instructor's discretion. Your 5 highest quiz grades will be counted. You will have approximately 10 minutes to complete these quizzes. There are no make-up quizzes if you are late to class.

**Identification of Unknown Bacteria** – You will spend the last 3 lab sessions identifying an unknown bacteria. Proper testing, note-taking and identification of your unknown bacteria will be worth 50 points (Exercise 39 from the lab manual). Additional instructions will be given in class.

### Grading Matrix:

Instrument	Value (points)
Exam I	100
Exam II	100
Laboratory Reports	250
Quizzes	100
Identification of Unknown Bacteria	50
<b>Total:</b>	<b>600</b>

### Grade Determination:

A = 90% or better

B = 80 – 89 %

C = 70 – 79 %

D = 60 – 69 %

F = less than 60%

## University Policies and Procedures

### Students with Disabilities (ADA Compliance):

*The University of North Texas Dallas faculty is committed to complying with the Americans with Disabilities Act (ADA). Students' with documented disabilities are responsible for informing faculty of their needs for reasonable accommodations and providing written authorized documentation. Grades assigned before an accommodation is provided will not be changed as accommodations are not retroactive. For more information, you may visit the Student Life Office, Suite 200, Building 2 or call Laura Smith at 972-780-3632.*

### Student Evaluation of Teaching Effectiveness Policy:

*The Student Evaluation of Teaching Effectiveness (SETE) is a requirement for all organized classes at UNT. This short survey will be made available to you at the end of the semester, providing you a chance to comment on how this class is taught. I am very interested in the feedback I get from students, as I work to continually improve my teaching. I consider the SETE to be an important part of your participation in this class.*

**Exam Policy:**

*Exams should be taken as scheduled. No makeup examinations will be allowed except for documented emergencies (See Student Handbook).*

**Academic Integrity:**

*Academic integrity is a hallmark of higher education. You are expected to abide by the University's code of Academic Integrity policy. Any person suspected of academic dishonesty (i.e., cheating or plagiarism) will be handled in accordance with the University's policies and procedures. Refer to the Student Code of Academic Integrity at [http://www.unt.edu/unt-dallas/policies/Chapter%2007%20Student%20Affairs,%20Education,%20and%20Funding/7.002%20Code%20of%20Academic\\_Integrity.pdf](http://www.unt.edu/unt-dallas/policies/Chapter%2007%20Student%20Affairs,%20Education,%20and%20Funding/7.002%20Code%20of%20Academic_Integrity.pdf) for complete provisions of this code.*

**Attendance and Participation Policy:**

*The University attendance policy is in effect for this course. **Class attendance and participation is required for this laboratory course. The dynamic and intensive nature of this course makes it impossible for students to make-up or to receive credit for missed classes. Students who miss 2 or more laboratory sessions are in danger of failing this course.** Attendance and participation in all class meetings is essential to the integration of course material and your ability to demonstrate proficiency. Students are responsible to notify the instructor if they are missing class and for what reason. Students are also responsible to make up any work covered in class. It is recommended that each student coordinate with a student colleague to obtain a copy of the class notes, if they are absent.*