



**BIOL-2420-103HY  
Microbiology Non-Science  
Spring 2021**

**09:30AM-12:200PM, Tuesday via Collaborate in Blackboard  
09:30AM-12:200PM, Thursday, face to face at COM in room MS121 (lab)**

**Instructor Information:** Dr. James Mubiru, jmubiru@com.edu, Phone: 346-208-0301

**Student hours and location:** Tuesday/Thursday 8:30AM-9:30AM and 12:30PM-1:30PM

**Required Textbook/Materials:** Tortora, G.J., Funke, B.R. & Case, C.L., 2016. Microbiology: An Introduction, 13th edition, Boston, MA; Pearson Education, Inc. Publisher. ISBN-13: 9780134605180. This book is purchased at the time of registration as an e-book that you will gain access to once you are in Blackboard.

**Mastering Microbiology:** On-line component for the course. This is purchased at the time of registration.

**Lab Manual:** Alderson, G.D., 2015. Microbiology Experiments & Lab Techniques, 14th edition. Southlake, TX; Fountainhead Press Publisher. ISBN-13: 9781598718782

**LAB COAT-** made of polyester, cotton, or blend (No disposable plastic coats)  
Safety-glasses are recommended purchase if you do not want to use common ones

**Sharpie and Coloring pencils** to be used in the lab

**Course Description:**

This course covers basic microbiology and immunology and is primarily directed at pre-nursing, pre-allied health, and non-science majors. It provides an introduction to historical concepts of the nature of microorganisms, microbial diversity, the importance of microorganisms and acellular agents in the biosphere, and their roles in human and animal diseases. Major topics include bacterial structure as well as growth, physiology, genetics, and biochemistry of microorganisms. Emphasis is on medical microbiology, infectious diseases, and public health this course covers basics of culture and identification of bacteria and microbial ecology.

**Course requirements:**

*First Exam, Midterm Exam & Final Exam*

These exams will be taken online and will consist of multiple-choice, fill-in-the-blank, matching, true-false, essay and identification.

1. The first exam will be taken in week 4 and will cover chapters 1, 3, 4, 5, 27 and 28.
2. The mid-term exam will be taken in Week 8 and will cover the next set of chapters (8, 9, 10,12, and 13).
3. The Final exam is not cumulative and will only cover the last part of the course.

### *Lecture Quizzes*

You will have eight on-line quizzes that are found in Blackboard under the Quiz tab. Each quiz consists of 20 questions and you will have 30 minutes to answer these questions. These tests open on Thursday each week during the session and close the following Sunday. If you experience technical difficulty, please contact me. If I can verify the technical difficulty on my end, I can reset exams if the due date has not passed. I advise you to try and take the quiz earlier in the week vs. the last hour on Sunday!

### *Mastering Homework Assignments*

With the required Mastering Component, you will need to complete ten (10) Mastering Homework Assignments during the course. Please check the schedule for the due dates.

### *In-class activities (40 points)*

You will have in-class activities to cover material that reinforces the course material or is of clinical importance. The activities below will be done in class:

1. Cell wall craft (8 points)
2. Aerobic respiration craft (8 points)
3. Antibody craft (8 points)
4. Virus craft model (8 points)
5. "In the news" disease classroom discussion (8 points)

### *Pre-lab Quizzes*

I will expect for you to be preparing for the upcoming labs outside of class according to the schedule. Please refer to Blackboard for folders containing material to help you with your preparation of upcoming labs according to the schedule. To make sure you understand the BACKGROUND material and the PROCEDURES in the upcoming lab, you will need to take an on-line quiz to demonstrate that you are ready to enter the lab. If you score below 70%, then I will allow you to enter the lab if you have written by hand the procedures that will be covered in that laboratory exercise. Failure to come to class with a hand-written procedure means you will not be able to perform the lab and therefore forfeit the points associated with the laboratory exercises. If you score 70% or above, you do not need to write out the procedure and use your lab manual accordingly. This is a similar policy to how the laboratory exercises are conducted in nursing school. It is my hope that this will help prepare you for this type of laboratory training that most of you will need to have.

### *Lab Assignments*

For each laboratory experiment, there are questions that are associated with carrying out the procedures and analyzing the results. You will be responsible for turning in these questions at the end of every exercise.

**If a student does not follow proper laboratory safety protocol during the completion of the experiment, or does not clean the microscope, he/she will be penalized 2 point on the laboratory assignment.**

### *Lab Practicals*

There will be 2 laboratory practicals. The practicals will consist of a Power Point presentation and a written section.

### *Unknown Project*

Students will be expected to use their knowledge and experience in the lab to determine the identification of unknown samples. This will be accomplished by utilizing an assignment in Pearson Mastering and an also by students compiling a bacteria characteristic chart.

*Bonus Points (Extra points)*

There will be opportunities for you to earn bonus points. Bonus points are not part of the course requirements so any bonus points earned will help your grade and any bonus points lost will not affect your grade negatively. **In order to earn bonus points, attendance is mandatory!**

*Extra points (10 points added on the midterm)*

*Re-emerging diseases (research project)*

Students will write a two- page research paper on a disease that was previously controlled or eliminated but has recently re-emerged due to some parents refusing to vaccinate their children.

*Sickle cell club activities*

*COVID-19 vaccine project*

**Determination of Course Grade/Detailed Grading Formula:** (methods of evaluation to be employed to include a variety of means to evaluate student performance)

<b>Course Assessment</b>	<b>Total Points</b>	<b>Percentage of Course</b>
<b>LECTURE PORTION</b>	<b>650</b>	<b>65.0%</b>
Lecture Quizzes (8)	160	16.0%
Pearson Homework (10)	140	14.0%
In-class activities (5 activities)	40	4.0%
First Exam	50	5%
Mid-term Exam	130	13%
Final Exam	130	13%
<b>LABORATORY PORTION</b>	<b>350</b>	<b>35.0%</b>
Pre-Lab Quizzes (10)	60	6.0%
Lab Assignments (6)	60	5.0%
Pearson labs assignments and other dry labs	70	7%
Control of microorganisms (10)		
Counting microorganisms (10 points)		
Acid fast stain (10 points)		
Aerotolerant exercise (10)		
Immunology lab (10)		
Unknown lab (20 points)		
Lab Practical # 1	80	8%
Lab Practical # 2	80	8%
<b>TOTAL POINTS</b>	<b>1000</b>	<b>100%</b>

**Grading Scale**

- A** A Sum of the points earned for course assessments that equals between 900 and 1000 points
- B** A Sum of the points earned for course assessments that equals between 800 and 899 points
- C** A Sum of the points earned for course assessments that equals between 700 and 799 points
- D** A Sum of the points earned for course assessments that equals between 600 and 699 points
- F** A Sum of the points earned for course assessments that equals below 600 points.
- I** An incomplete may be assigned at the discretion of the instructor in accordance with college policy.
- W** A withdrawal may be assigned in accordance with college policy.

### Lab Science Policy

**This course consists of both a lecture and laboratory grade component. Students must earn a 70% or better in the laboratory component to successfully pass the course. Earning less than 70% in the laboratory component will result in an F for the course regardless of the lecture grade. Passing the laboratory component and failing the lecture component will not guarantee a passing grade for the course. Deviations from this policy will be at the sole discretion of the instructor.**

### **Late Work, Make-Up, and Extra-Credit Policy:**

#### **Attendance Policy:**

1. Being called in at work is not a valid excuse in this course.
2. **A student is required to come to lab to complete the face-to-face laboratory exercises required in the laboratory component of this course. Absences in two required lab meetings will result in a "F" for the course grade unless there is a documented excuse approved by the instructor (e.g. illness or death in the family).**
3. **A student can only miss one lab**

**Communicating with your instructor:** ALL electronic communication with the instructor must be through your COM email. Due to FERPA restrictions, faculty cannot share any information about performance in the class through other electronic means.

<b>Student Learner Outcome</b>	<b>Maps to Core Objective</b>	<b>Assessed via this Assignment</b>
1.		
2.		
3.		
4.		
5.		

**Academic Dishonesty:** Disciplinary actions will be taken for students who exhibit disorderly conduct, cheat on exams, submit plagiarized work (see below), or are involved in collusion (helping others cheat or plagiarize) as defined in the Student Handbook under the heading, "Discipline and Penalties." The maximum penalty imposed for violations will be an F in the course. The student will also be referred to the Associate Vice President of Student Success and Conduct for further disciplinary action. Please read through the "Standards of Student Conduct" in the Student Handbook for a more complete discussion of these issues and your rights and responsibilities.

**Plagiarism:** The practice of taking someone else's work or ideas and passing them off as one's own. Plagiarism is a very serious offense. Plagiarism includes paraphrasing someone else's words without giving proper citation, copying directly from a website and pasting it into your paper, using someone else's words without quotation marks. Any assignment containing any plagiarized material will receive a grade of zero and the student will be referred to the Office of Student Conduct for the appropriate discipline action. In addition, I am providing you with an internet link to a video on Plagiarism. I would strongly urge you to look this over early in the course.

**Student Concerns:** If you have any questions or concerns about any aspect of this course, please contact me using the contact information previously provided. If, after discussing your concern with me, you continue to have questions, please contact Sheena Abernathy, Chair of the Science Department, at 409-933-8330 or by email: [sabernathy@com.edu](mailto:sabernathy@com.edu)

**Course Outline: (Tentative Schedule)**

Wk	Date	Daily Schedule	Assigned Reading	Labs
W1	Tues 1/19	Introduction and The Microbial World & You Observing Microorganisms Functional Anatomy of Prokaryotic & Eukaryotic Cells	<ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 3</li> <li>• Chapter 4</li> </ul>	<b>FACE TO FACE LAB (Group A)</b> 1. Lab Safety 2. Exercise 3 (Introduction to Microscope) 3. Exercise 5 (Advanced microscopy) 4. Protist lab to practice the wet mount procedure 5. Prelab quiz 1C due on 1/21 (Lab Assignment 1 DUE upon completion of labs above)
	Thurs 1/21	LABORATORY SCHEDULE		<b>DRY LAB (Group A)</b> 1. Pre-lab quiz 2C due 1/28 2. Control of microorganisms' growth (Heat, UV, Disinfectants, antibiotics, Exercise 19, 20, 21, and 22) 3. <b>Blackboard Lab Assignment</b>
W2	Tues 1/26	Introduction and The Microbial World & You Observing Microorganisms Functional Anatomy of Prokaryotic & Eukaryotic Cells	<ul style="list-style-type: none"> <li>• Chapter 1</li> <li>• Chapter 3</li> <li>• Chapter 4</li> </ul>	<b>FACE TO FACE LAB (Group B)</b> 1. Lab Safety 2. Exercise 3 (Introduction to Microscope) 3. Exercise 5 (Advanced microscopy) 4. Protist lab to practice the wet mount procedure 5. Prelab quiz 1C due on 1/21 (Lab Assignment 1 DUE upon completion of labs above)
	Thurs 1/28	LABORATORY SCHEDULE		<b>DRY LAB (Group B)</b> 1. Pre-lab quiz 2C due 1/28 2. Control of microorganisms' growth (Heat, UV, Disinfectants, antibiotics, Exercise 19, 20, 21, and 22) 3. <b>Blackboard Lab Assignment</b>
	Sun 1/31	<b>LECTURE QUIZ 1 in BLACKBOARD DUE! (CHAPTERS 1,3,4)</b> <b>ASSIGNMENT 1 in MASTERING DUE</b>		
3	Tues 2/2	Microbial Metabolism Environmental Microbiology Applied & Industrial Microbiology	<ul style="list-style-type: none"> <li>• Chapter 5</li> <li>• Chapter 27</li> <li>• Chapter 28</li> </ul>	<b>FACE TO FACE LAB Group A)</b> 1. Exercise 6, Transfer Technique 2. Exercise 7, Streak Plate Technique 3. Prelab 3C due 2/4 (Lab Assignment 3 DUE upon completion of labs above)
	Thurs 2/4	LABORATORY SCHEDULE Make sure you complete your pre-lab quiz on 2/4.		<b>DRY LAB (Group A)</b> 1. Counting Microbial Populations 2. Prelab 4C due 2/4 Counting microorganisms Pearson Assignment
	Sun 2/7	<b>ASSIGNMENT 2 in MASTERING DUE</b>		

W4	Tues 2/9	Microbial Growth Control of Microbial Growth	<ul style="list-style-type: none"> <li>• Chapter 6</li> <li>• Chapter 7</li> </ul>	<b>FACE TO FACE LAB (Group B)</b> 4. Exercise 6, Transfer Technique 5. Exercise 7, Streak Plate Technique 6. Prelab 3C due 2/4 (Lab Assignment 3 DUE upon completion of labs above)
	Thurs 2/11	<b>LABORATORY SCHEDULE</b> Make sure you complete your pre-lab quiz on 2/4.		<b>DRY LAB (Group B)</b> 3. Counting Microbial Populations 4. Simple Stain & Bacterial Morphology 5. Prelab 4C due 2/4 Counting microorganisms Pearson Assignment
	Sun 2/14	<b>ASSIGNMENT 3 in MASTERING DUE</b> <b>LECTURE QUIZ 2 in BLACKBOARD DUE! (CHAPTERS 5,27,28 )</b> <b>ASSIGNMENT 2 in MASTERING DUE</b> <b>FIRST EXAM (COVERS CHAPTERS 1, 3, 4, 5, 27, 28)</b>		
W5	Tues 2/16	Microbial Genetics Biotechnology & DNA Tech.	<ul style="list-style-type: none"> <li>• Chapter 8</li> <li>• Chapter 9</li> </ul>	<b>FACE TO FACE LAB (Group A)</b> Exercise 9, Simple stain and bacteria morphology Students will look at their plates from the previous lab Prelab 5C due 2/18
	Thurs 2/18	<b>LABORATORY SCHEDULE</b>		<b>DRY LAB (Group A)</b> Exercise 12, Spore stain Exercise 13, Acid fast stain Prelab 6C due 2/18 Acid fast stain Pearson Mastering Assignment
2/21	<b>ASSIGNMENT 4 in MASTERING DUE</b>			
W6	Tues 2/23	Classify Microorganisms The Eukaryotes	<ul style="list-style-type: none"> <li>• Chapter 10</li> <li>• Chapter 12</li> </ul>	<b>FACE TO FACE LAB (Group B)</b> Exercise 9, Simple stain and bacteria morphology Students will look at their plates from the previous lab Prelab 5C due 2/18
	Thurs 2/25	<b>LABORATORY SCHEDULE</b> Make sure you complete your pre-lab quiz on due 2/18.		<b>DRY LAB (Group B)</b> Exercise 12, Spore stain Exercise 13, Acid fast stain Prelab 6C due 2/18 Acid fast stain Pearson Mastering Assignment
	Sun 2/28	<b>LECTURE QUIZ 3 in BLACKBOARD DUE! (CHAPTERS 6,7,8)</b> <b>ASSIGNMENT 4 in MASTERING DUE</b>		
W7	Tues 3/2	Viruses, Viroids, & Prions	<ul style="list-style-type: none"> <li>• Chapter 13</li> </ul>	<b>FACE TO FACE LAB (Group A)</b> Exercise 10, Gram stain with unknowns
	Thurs 3/4	<b>LABORATORY SCHEDULE</b> Make sure you complete your pre-lab quiz on due 2/18.		<b>DRY LAB (Group A)</b> Aerotolerance Pearson Mastering exercise
	Sun 3/7	<b>LECTURE QUIZ 4 in BLACKBOARD DUE! (CHAPTERS 10,12,13)</b> <b>ASSIGNMENT 5 in MASTERING DUE</b>		
W8	Tues 3/9	<b>MIDTERM EXAM</b>		
	Tues 3/9	Principles-Disease & Epidemiology Microbial Mechanisms of Pathogenicity	<ul style="list-style-type: none"> <li>• Chapter 14</li> <li>• Chapter 15</li> </ul>	<b>FACE TO FACE LAB (Group B)</b> Exercise 10, Gram stain with unknowns <b>DRY LAB (Group B)</b> Aerotolerance Pearson Mastering exercise
	Thurs 3/11	<b>LABORATORY SCHEDULE</b>		
<b>3/14-3/20 Spring Break</b>				

W9	Tues 3/23	Principles-Disease & Epidemiology Microbial Mechanisms of Pathogenicity	<ul style="list-style-type: none"> <li>• Chapter 14</li> <li>• Chapter 15</li> </ul>	
	<b>Lab Practical Online</b>			
	Sun 3/28	<b>LECTURE QUIZ 5 in BLACKBOARD DUE! (CHAPTERS 14,15)</b>		
W10	Tues 3/30	Innate Immunity	<ul style="list-style-type: none"> <li>• Chapter 16</li> </ul>	<b>FACE TO FACE LAB (Group A)</b> Exercise 14 (bacterial conjugation) Exercise 33 (Epidemiology)
	Thurs 4/1	LABORATORY SCHEDULE		<b>DRY LAB (Group A)</b> <a href="#">Immunology Pearson Mastering online exercise</a>
	Sun 4/4	<b>ASSIGNMENT 6 in MASTERING DUE</b>		
W11	Tues 4/6	Adaptive Immunity	<ul style="list-style-type: none"> <li>• Chapter 17</li> </ul>	
	Thurs 4/8	LABORATORY SCHEDULE		<b>FACE TO FACE LAB (Group B)</b> Exercise 14 (bacterial conjugation) Exercise 33 (Epidemiology) <b>DRY LAB (Group B)</b> <a href="#">Immunology Pearson Mastering online exercise</a>
	Sun 4/11	<b>ASSIGNMENT 7 in MASTERING DUE</b>		
W12	Tues 4/13	Practical Application of Immunology Disorders of Immune System Antimicrobial Drugs	<ul style="list-style-type: none"> <li>• Chapter 18</li> <li>• Chapter 19</li> <li>• Chapter 20</li> </ul>	<b>FACE TO FACE LAB (Group A)</b> Exercise 30 Enteric Bacteria Exercise 27 Pathogenic cocci Prelab 10C Prelab 11C
	Thurs 4/15	LABORATORY SCHEDULE		<b>DRY LAB (Group A)</b> Prelab12C Parasitology
	Sun 4/18	<b>LECTURE QUIZ 6 in BLACKBOARD DUE! (CHAPTERS 16,17,18)</b>		
W13	Mon 4/20	Microbial Diseases of the Skin and Eyes Microbial Diseases of the Nervous System	<ul style="list-style-type: none"> <li>• Chapter 21</li> <li>• Chapter 22</li> </ul>	<b>FACE TO FACE LAB (Group B)</b> Exercise 30 Enteric Bacteria Exercise 27 Pathogenic cocci Prelab 10C Prelab 11C
	Thurs 4/22	LABORATORY SCHEDULE		<b>DRY LAB (Group B)</b> Prelab12C Parasitology
	Sun 4/25	<b>LECTURE QUIZ 7 in BLACKBOARD DUE! (CHAPTERS 19,21,22)</b> <b>ASSIGNMENT 8 in MASTERING DUE</b>		
W14	Tues 4/27	Microbial Diseases of the Cardiovascular and Lymphatic System Microbial Diseases of the Respiratory System	<ul style="list-style-type: none"> <li>• Chapter 23</li> <li>• Chapter 24</li> </ul>	<a href="#">Pearson Mastering Microbiology unknown Lab</a>
	Thurs 4/29	LABORATORY SCHEDULE		
	Sun 5/2	<b>ASSIGNMENT 9 in MASTERING is DUE</b>		
W15	Tues 5/4	Microbial Diseases of the Digestive System	<ul style="list-style-type: none"> <li>• Chapter 25</li> <li>• Chapter 26</li> </ul>	

		Microbial Diseases - Urinary and Reproductive System		
	Thurs 5/6	<b>LAB PRACTICAL 2</b>		
	Sun 5/9	<b>LECTURE QUIZ 8 in BLACKBOARD DUE! (CHAPTERS 23,24,25,26) ASSIGNMENT 10 in MASTERING is DUE</b>		
W16	Tues 5/11	<b>FINAL EXAM</b>		

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## Institutional Policies and Guidelines

**Grade Appeal Process:** Concerns about the accuracy of grades should first be discussed with the instructor. A request for a change of grade is a formal request and must be made within six months of the grade assignment. Directions for filing an appeal can be found in the student handbook. <[https://build.com.edu/uploads/sitecontent/files/student-services/Student\\_Handbook\\_2019-2020v5.pdf](https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf). *An appeal will not be considered because of general dissatisfaction with a grade, penalty, or outcome of a course. Disagreement with the instructor's professional judgment of the quality of the student's work and performance is also not an admissible basis for a grade appeal.* [https://build.com.edu/uploads/sitecontent/files/student-services/Student\\_Handbook\\_2019-2020v5.pdf](https://build.com.edu/uploads/sitecontent/files/student-services/Student_Handbook_2019-2020v5.pdf)

**Academic Success & Support Services:** College of the Mainland is committed to providing students the necessary support and tools for success in their college careers. Support is offered through our Tutoring Services, Library, Counseling, and through Student Services. Please discuss any concerns with your faculty or an advisor.

**ADA Statement:** Any student with a documented disability needing academic accommodations is requested to contact Holly Bankston at 409-933-8520 or [hbankston@com.edu](mailto:hbankston@com.edu). The Office of Services for Students with Disabilities is located in the Student Success Center.

**Counseling Statement:** Any student needing counseling services is requested to please contact Holly Bankston in the student success center at 409-933-8520 or [hbankston@com.edu](mailto:hbankston@com.edu). Counseling services are available on campus in the student center for free and students can also email [counseling@com.edu](mailto:counseling@com.edu) to set up their appointment. Appointments are strongly encouraged; however, some concerns may be addressed on a walk-in basis.

**Textbook Purchasing Statement:** A student attending College of the Mainland is not under any obligation to purchase a textbook from the college-affiliated bookstore. The same textbook may also be available from an independent retailer, including an online retailer.

**Withdrawal Policy:** Students may withdraw from this course for any reason prior to the last eligible day for a "W" grade. Before withdrawing students should speak with the instructor and consult an advisor. Students are permitted to withdraw only six times during their college career



by state law. The last date to withdraw is March 3rd for the 1st 8-week session, April 26 for the 16-week session, and May 5<sup>th</sup> for the 2<sup>nd</sup> 8-week session.

**F<sub>N</sub> Grading:** The F<sub>N</sub> grade is issued in cases of *failure due to a lack of attendance*, as determined by the instructor. The F<sub>N</sub> grade may be issued for cases in which the student ceases or fails to attend class, submit assignments, or participate in required capacities, and for which the student has failed to withdraw. The issuing of the F<sub>N</sub> grade is at the discretion of the instructor. The last date of attendance should be documented for submission of an F<sub>N</sub> grade.

**Early Alert Program:** The Student Success Center at College of the Mainland has implemented an Early Alert Program because student success and retention are very important to us. I have been asked to refer students to the program throughout the semester if they are having difficulty completing assignments or have poor attendance. If you are referred to the Early Alert Program you will be contacted by someone in the Student Success Center who will schedule a meeting with you to see what assistance they can offer in order for you to meet your academic goals.

**COVID-19 Statement:** All students, faculty, and staff are expected to familiarize themselves with materials and information contained on the College of the Mainland's Coronavirus Information site at [www.com.edu/coronavirus](http://www.com.edu/coronavirus). Students are required to watch a training [video](#), complete the [self-screening](#), and acknowledge the safety guidance at: [www.com.edu/selfscreen](http://www.com.edu/selfscreen). In addition, students, faculty, and staff must perform a [self-screening](#) prior to each campus visit. Finally, students, faculty, or staff who have had symptoms of COVID-19, received a positive test for COVID-19, or have had close contact with an individual infected with COVID-19 must complete the [self-report tool](#).