



# Microbiology Lab for HS-22207

## BIOL-2120

SS 2021 Section 0104 1 Credits 09/20/2021 to 12/12/2021 Modified 09/30/2021

## Course Meetings

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### Course Modality

WS: 09/21 - 28/2021

P: 10/04/2021

### Meeting Days

Tuesdays

### Meeting Times

6:00 PM - 9:50 PM

### Meeting Location

Online on Webex: 09/20 - 28/2021

In-person: JB Coleman Science Center, RM 276

### Laboratory

09/21/2021

Webex and JB Coleman HSDC, Rm 276

P

The course modality of this class is *In-Person*.

**Faculty will hold class on-campus as per the assigned schedule.**

Attendance will be taken each class period.

WS

The course modality of this class is *online on A Schedule*.

**Faculty will hold class as per the assigned schedule, and students will attend online each class period utilizing Canvas Eagle Online.**

Attendance will be taken each class period.

## Welcome and Instructor Information

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Welcome to class!

I'm Dr. Enrico A. Duru. I will be your microbiology laboratory professor for this Fall 2021 Semester.

This Course is intended to provide hands-on lab experience in basic microbiology. The curriculum includes handling live bacterial samples, sterile techniques, culture and isolation of bacteria, their identification using morphological features, simple staining, gram staining, acid-fast staining, metabolism, biochemical assays, immunology, and virology. Along the way, a connection will be made between the lab techniques and how they help in identification of bacteria and diagnosis of diseases.

Remember to go over the syllabus and begin participating in the discussion forums the first day of the course. Posting your introductions early will allow your class to know more about you.

The Course is divided into modules. Each module is a unit and it includes the labs and accompanying lab reports. Daily participation is essential throughout the Course to be successful in the class.

I will endeavor to be available for office hours:

**Class meets on Tuesdays from 6:00 PM – 9:50 PM.**

**Online: Via WebEx (09/20 - 10/03/2021)**

**In-Person: Beginning on 10/04/2021 in JB Coleman HSC Rm. 276**

You can also request for virtual one-on-one meeting by clicking Cisco Webex on the Navigation Pane.

Good luck in your endeavors.

## Instructor: Dr. Enrico A Duru

Email: [enrico.duru@hccs.edu](mailto:enrico.duru@hccs.edu)

Office: FM 210-D

Phone: 713-718-7059

Website: <https://learning.hccs.edu/faculty/enrico.duru> (<https://learning.hccs.edu/faculty/enrico.duru>)

## What's Exciting About This Course

In this course you will gain an understanding of the major historical events in microbiology and their impact on medical science. You will learn basic cell structure, biochemistry, metabolism, nutrition, reproduction, and genetics of microorganisms, with an emphasis on bacteria and their medical significance.

We will compare and contrast the various types of pathogenic microorganisms, including bacteria, fungi, viruses, protists, and helminths, with an emphasis on their medical significance, describe various means of microbial control, both in vivo and in vitro. You will demonstrate knowledge of the basic principles of epidemiology and the basic principles of immunology. You will discover the basics of biotechnology and genetic engineering, providing you with an understanding of the importance of molecular methods in the construction of microbial products for scientific, medical and industrial uses. Finally, we will compare and contrast the mechanisms of transmission, entry, pathogenesis and prophylaxis of selected human pathogens.

The information in this course will enable you to understand microorganisms as well as helping you develop new habits to increase your personal success.

## My Personal Welcome

Welcome to Microbiology—I'm delighted that you have chosen this course! One of my passions is to know as much as I can about human behavior, and I can hardly wait to pass that on. I will present the information in the most exciting way I know, so that you can grasp the concepts and apply them now and hopefully throughout your life.

As you read and wrestle with new ideas and facts that may challenge you, I am available to support you. The fastest way to reach me is by my HCC email. The best way to really discuss issues is in person and I'm available during posted office hours to tackle the questions. My goal is for you to walk out of the course with a better understanding of yourself and of human behavior. So please visit me or contact me by email whenever you have a question.

## Preferred Method of Contact

All email correspondence will be through your official HCC Email Account or via Eagle Online (Canvas). It is therefore strongly encouraged that you check your HCC email account often for my responses to your Emails. I will reply to emails within a 48-hour period, Monday through Friday. Emails received late Friday or over the weekend or holidays, will be replied to Monday morning or the next workday whichever comes first. Students will be provided the opportunity to review and discuss their exams with the instructor. If you are unable to get hold of me, you may contact the Biology office @ 713/718-7775

## Office Hours

Monday, Tuesday, Wednesday, Thursday, 9:30 AM to 10:45 AM

## Course Overview

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### Course Description

Credits: 1 (3 lab). Study of microorganisms including morphology, metabolism, taxonomy, culture techniques, microbial genetics, immunology, bacteriology, virology, mycology, parasitology, and diseases.

### Requisites

Prerequisite: BIOL 1406, or BIOL 1306 + 1106; must be placed into college-level reading (or take GUST 0342 as a corequisite) and be placed into college-level writing (or take ENGL 0310/0349 as a corequisite).

### Department Website

<https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/biology/>

## Core Curriculum Objectives (CCOs)

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BIOL 2120 satisfies the Life and Physical Sciences requirement in the HCCS core curriculum. The HCC Biology Discipline Committee has specified that the course address the following core objectives:

- **Critical Thinking:** Students will demonstrate the ability to engage in inquiry and analysis, evaluation and synthesis of information, and creative thinking by completing a written assignment such as a book report, research paper, or essay.
- **Communication Skills:** Students will demonstrate effective development, interpretation and expression of ideas through written, oral, and visual communication by completing a written assignment such as a book report, research paper, or essay.
- **Quantitative and Empirical Literacy:** Students will demonstrate the ability to draw conclusions based on the systematic analysis of topics using observation, experiment, and/or numerical skills by completing textbook reading assignments, completing assignments, and answering questions on quizzes and exams that pertain to Course Student Learning Outcomes #2, #3, and #4 below.
- **Teamwork:** Students will demonstrate the ability to consider different points of view and to work effectively with others to support a shared purpose or goal by working together in study groups on and off campus to fulfill Course Student Learning Outcomes #3 and #4 below.

## Student Learning Outcomes and Objectives

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Program Student Learning Outcomes (PSLOs) for the Biology Discipline can be found at <https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/biology/>

### Course Student Learning Outcomes (CSLOs)

Upon completion of BIOL 2120, the student will be able to:

1. Use and comply with laboratory safety rules, procedures, and universal precautions.
2. Demonstrate proficient use of a compound light microscope.
3. Describe and prepare widely used stains and wet mounts, and discuss their significance in identification of microorganisms.
4. Perform basic microbiology procedures using aseptic techniques for transfer, isolation and observation of commonly encountered, clinically significant bacteria.
5. Use different types of bacterial culture media to grow, isolate, and identify microorganisms.

6. Perform basic bacterial identification procedures using biochemical tests.
7. Estimate the number of microorganisms in a sample using methods such as direct counts, viable plate counts, or spectrophotometric measurements.
8. Demonstrate basic identification protocols based on microscopic morphology of some common fungi and parasites.

### Learning Objectives

Learning Objectives for each CSLO can be found at: <http://learning.hccs.edu/programs/biology/faculty-information/microbiology-instructor-information-non-majors-health-science-majors/program-instructional-plan-2120/view>

## Departmental Practices and Procedures

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### Instructor and Student Responsibilities

As your Instructor, it is my responsibility to:

- Provide the grading scale and detailed grading formula explaining how student grades are to be derived
- Facilitate an effective learning environment through learner-centered instructional techniques
- Provide a description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and making up assignments
- Provide the course outline and class calendar that will include a description of any special projects or assignments
- Arrange to meet with individual students before and after class as required.

As a student, it is your responsibility to:

- Attend class in person and/or online
  - Participate actively by reviewing course material, interacting with classmates, and responding promptly in your communication with me
  - Read and comprehend the textbook
  - Complete the required assignments and exams
  - Ask for help when there is a question or problem
  - Keep copies of all paperwork, including this syllabus, handouts, and all assignments
  - Attain a raw score of at least 50% on the departmental final exam
- Be aware of and comply with academic honesty policies in the [HCCS Student Handbook](#)

### Student Success Information

Academic standards require a minimum of 3 study hours for every contact hour; meaning for a class that meets 3 hours per week, you need to budget and set aside a minimum of 9 hours each week to study and prep for your course success. Expect to spend at least twice as many hours per week outside of class as you do in class studying the course content. Additional time will be required for written assignments. The assignments provided will help you use your study hours wisely.

Successful completion of this course requires a combination of the following:

1. Reading the textbook
2. Attending class in person and/or online
3. Timely completion of assignments
4. Participating in class activities
5. Successful exam performance, including the mandatory final.

There is no short cut for success in this course; it requires reading and studying the material using the course objectives as a guide.

## Instructional Materials and Resources

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### Instructional Materials

Inclusive Access:

This course participates in the Houston Community College First Day Program. A discount has been applied to the required digital course materials. The discounted charge has been added to students' tuition and fee bills.

Students will access course materials through a link in Canvas. Instructions for opting out of the HCC First Day Program are also posted in Canvas. Students who opt out will still be responsible for obtaining required course materials.

#### Instructional Materials:

The textbook listed below is *required* for this course.

'BIOLOGY 2120 – Benson's Microbiological Applications (15<sup>th</sup> edition).

## HCCS Biology Lab Study Pages

[Click here to access Biology lab study pages online.](#)

## Temporary Free Access to E-Book

Here is the link to get temporary free access to a digital version of the text for fourteen days:

N/A due to First Day Inclusive Access

## Other Instructional Resources

### Courseware

All assignments will be accessed, completed as per instructions and submitted through the McGraw Hill Connect portal. some of your assignment exercises will be automatically created while your uploaded lab reports/assessments will be graded manually.

## HCCS Biology Lab Study Pages

[Click here to access Biology lab study pages online.](#)

## ✓ Course Requirements

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### Assignments, Exams, and Activities

Type	Weight	Topic	Notes
Written Assignment			Describe the assignment here.
Exams/Quizzes			Describe the assignment here.
In-Class Activities			Describe the assignment here.
Final Exam			Describe the assignment here.
Extra Credit			Describe the assignment here.

### Grading Formula

Grade	Range	Notes
A		
B		
C		
D		

Grade	Range	Notes
F		

## \* Instructor's Practices and Procedures

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### Incomplete Policy

Add Content Here

### Missed Assignments/Make-Up Policy

Add Content Here

### Academic Integrity

Here's the link to the HCC information about academic integrity (Scholastic Dishonesty and Violation of Academic Scholastic Dishonesty and Grievance):

<https://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-procedures/>  
(<https://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-procedures/>)

### Attendance Procedures

Add Content Here

### Student Conduct

Add Content Here

### Instructor's Course-Specific Information

Add Content Here

### Devices

Add Content Here

### Faculty Statement about Student Success

Add Content Here

### Faculty-Specific Information Regarding Canvas

This course section will use Canvas (<https://eagleonline.hccs.edu> (<https://eagleonline.hccs.edu>)) to supplement in-class assignments, exams, and activities.

HCCS Open Lab locations may be used to access the Internet and Canvas. For best performance, Canvas should be used on the current or first previous major release of Chrome, Firefox, Edge, or Safari. Because it's built using web standards, Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser.

Canvas only requires an operating system that can run the latest compatible web browsers. Your computer operating system should be kept up to date with the latest recommended security updates and upgrades.

### Social Justice Statement

Add Content Here

## HCC Policies and Information

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# HCC Grading System

HCC uses the following standard grading system:

Grade	Grade Interpretation	Grade Points
A	Excellent (90-100)	4
B	Good (80-89)	3
C	Fair (70-79)	2
D	Passing (60-69), except in developmental courses.	1
F	Failing (59 and below)	0
FX	Failing due to non-attendance	0
W	Withdrawn	0
I	Incomplete	0
AUD	Audit	0
IP	In Progress. Given only in certain developmental courses. A student must re-enroll to receive credit.	0
COM	Completed. Given in non-credit and continuing education courses.	0

## Link to Policies in Student Handbook

Here's the link to the HCC Student Handbook <https://www.hccs.edu/resources-for/current-students/student-handbook/> (<https://www.hccs.edu/resources-for/current-students/student-handbook/>) In it you will find information about the following:

- Academic Information
- Academic Support
- Attendance, Repeating Courses, and Withdrawal
- Career Planning and Job Search
- Childcare
- disAbility Support Services
- Electronic Devices
- Equal Educational Opportunity
- Financial Aid TV (FATV)
- General Student Complaints
- Grade of FX
- Incomplete Grades
- International Student Services
- Health Awareness
- Libraries/Bookstore
- Police Services & Campus Safety
- Student Life at HCC

- Student Rights and Responsibilities
- Student Services
- Testing
- Transfer Planning
- Veteran Services

## Link to HCC Academic Integrity Statement

<https://www.hccs.edu/resources-for/faculty/student-conduct-resources-for-faculty/> (<https://www.hccs.edu/resources-for/faculty/student-conduct-resources-for-faculty/>)

## Campus Carry Link

Here's the link to the HCC information about Campus Carry:

<https://www.hccs.edu/departments/police/campus-carry/> (<https://www.hccs.edu/departments/police/campus-carry/>)

## HCC Email Policy

When communicating via email, HCC requires students to communicate only through the HCC email system to protect your privacy. If you have not activated your HCC student email account, you can go to [HCC Eagle ID](https://www.hccs.edu/resources-for/current-students/student-e-maileagle-id/) (<https://www.hccs.edu/resources-for/current-students/student-e-maileagle-id/>) and activate it now. You may also use Canvas Inbox to communicate.

## Office of Institutional Equity

Use the link below to access the HCC Office of Institutional Equity, Inclusion, and Engagement (<https://www.hccs.edu/departments/institutional-equity/>) (<https://www.hccs.edu/departments/institutional-equity/>)

### Ability Services

HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including long and short term conditions, mental health, chronic or temporary medical conditions), please meet with a campus Abilities Counselor as soon as possible in order to establish reasonable accommodations. Reasonable accommodations are established through an interactive process between you, your instructor(s) and Ability Services. It is the policy and practice of HCC to create inclusive and accessible learning environments consistent with federal and state law. For more information, please go to <https://www.hccs.edu/support-services/ability-services/> (<https://www.hccs.edu/support-services/ability-services/>)

### Title IX

Houston Community College is committed to cultivating an environment free from inappropriate conduct of a sexual or gender-based nature including sex discrimination, sexual assault, sexual harassment, and sexual violence. Sex discrimination includes all forms of sexual and gender-based misconduct and violates an individual's fundamental rights and personal dignity. Title IX prohibits discrimination on the basis of sex-including pregnancy and parental status in educational programs and activities. If you require an accommodation due to pregnancy please contact an Abilities Services Counselor. The Director of EEO/Compliance is designated as the Title IX Coordinator and Section 504 Coordinator. All inquiries concerning HCC policies, compliance with applicable laws, statutes, and regulations (such as Title VI, Title IX, and Section 504), and complaints may be directed to:

David Cross  
 Director EEO/Compliance  
 Office of Institutional Equity & Diversity  
 3100 Main  
 (713) 718-8271  
 Houston, TX 77266-7517 or [Institutional.Equity@hccs.edu](mailto:Institutional.Equity@hccs.edu) (<mailto:Institutional.Equity@hccs.edu>)

<http://www.hccs.edu/departments/institutional-equity/title-ix-know-your-rights/> (<http://www.hccs.edu/departments/institutional-equity/title-ix-know-your-rights/>)

## Office of the Dean of Students



Contact the office of the Dean of Students to seek assistance in determining the correct complaint procedure to follow or to identify the appropriate academic dean or supervisor for informal resolution of complaints.

<https://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-complaints/speak-with-the-dean-of-students/> (<https://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student-complaints/speak-with-the-dean-of-students/>)

## Student Success

Expect to spend at least twice as many hours per week outside of class as you do in class studying the course content. Additional time will be required for written assignments. The assignments provided will help you use your study hours wisely. Successful completion of this course requires a combination of the following:

- Reading the textbook
- Attending class in person and/or online
- Completing assignments
- Participating in class activities

There is no short cut for success in this course; it requires reading (and probably re-reading) and studying the material using the course objectives as a guide.

## Canvas Learning Management System

Canvas is HCC's Learning Management System (LMS), and can be accessed at the following URL:

<https://eagleonline.hccs.edu> (<https://eagleonline.hccs.edu>)

HCCS Open Lab locations may be used to access the Internet and Canvas. For best performance, Canvas should be used on the current or first previous major release of Chrome, Firefox, Edge, or Safari. Because it's built using web standards, Canvas runs on Windows, Mac, Linux, iOS, Android, or any other device with a modern web browser.

Canvas only requires an operating system that can run the latest compatible web browsers. Your computer operating system should be kept up to date with the latest recommended security updates and upgrades.

## HCC Online Information and Policies

Here is the link to information about HCC Online classes, which includes access to the required Online Information Class Preview for all fully online classes: <https://www.hccs.edu/online/> (<https://www.hccs.edu/online/>)

## Scoring Rubrics, Sample Assignments, etc.

Look in Canvas for the scoring rubrics for assignments, samples of class assignments, and other information to assist you in the course. <https://eagleonline.hccs.edu/login/ldap> (<https://eagleonline.hccs.edu/login/ldap>)

## Instructor and Student Responsibilities

As your Instructor, it is my responsibility to:

- Provide the grading scale and detailed grading formula explaining how student grades are to be derived
- Facilitate an effective learning environment through learner-centered instructional techniques
- Provide a description of any special projects or assignments
- Inform students of policies such as attendance, withdrawal, tardiness, and making up assignments
- Provide the course outline and class calendar that will include a description of any special projects or assignments
- Arrange to meet with individual students during office hours, and before and after class as required

As a student, it is your responsibility to:

- Attend class in person and/or online
- Participate actively by reviewing course material, interacting with classmates, and responding promptly in your communication with me
- Read and comprehend the textbook

- Complete the required assignments and exams
- Ask for help when there is a question or problem
- Keep copies of all paperwork, including this syllabus, handouts, and all assignments
- Be aware of and comply with academic honesty policies in the [HCCS Student Handbook \(https://www.hccs.edu/resources-for/current-students/student-handbook/\)](https://www.hccs.edu/resources-for/current-students/student-handbook/)

## EGLS3

The EGLS<sup>3</sup> ([Evaluation for Greater Learning Student Survey System \(https://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/\)](https://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/)) will be available for most courses near the end of the term until finals start. This brief survey will give invaluable information to your faculty about their teaching. Results are anonymous and will be available to faculty and division chairs after the end of the term. EGLS<sup>3</sup> surveys are only available for the Fall and Spring semesters. -EGLS3 surveys are not offered during the Summer semester due to logistical constraints.

<https://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/> (<https://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/>)

## Housing and Food Assistance for Students

Any student who faces challenges securing their foods or housing and believes this may affect their performance in the course is urged to contact the Dean of Students at their college for support. Furthermore, please notify the professor if you are comfortable in doing so.

This will enable HCC to provide any resources that HCC may possess.

## Student Resources

### Tutoring

HCC provides free, confidential, and convenient academic support, including writing critiques, to HCC students in an online environment and on campus. Tutoring is provided by HCC personnel in order to ensure that it is contextual and appropriate. Visit the [HCC Tutoring Services \(https://www.hccs.edu/resources-for/current-students/tutoring/\)](https://www.hccs.edu/resources-for/current-students/tutoring/) website for services provided.

### Libraries

The HCC Library System consists of 9 libraries and 6 Electronic Resource Centers (ERCs) that are inviting places to study and collaborate on projects. Librarians are available both at the libraries and online to show you how to locate and use the resources you need. The libraries maintain a large selection of electronic resources as well as collections of books, magazines, newspapers, and audiovisual materials. The portal to all libraries' resources and services is the HCCS library web page at [https://library.hccs.edu \(https://library.hccs.edu/\)](https://library.hccs.edu).

### Supplementary Instruction

Supplemental Instruction is an academic enrichment and support program that uses peer-assisted study sessions to improve student retention and success in historically difficult courses. Peer Support is provided by students who have already succeeded in completion of the specified course, and who earned a grade of A or B. Find details at [https://www.hccs.edu/resources-for/current-students/supplemental-instruction/ \(https://www.hccs.edu/resources-for/current-students/supplemental-instruction/\)](https://www.hccs.edu/resources-for/current-students/supplemental-instruction/).

### Resources for Students:

<https://www.hccs.edu/resources-for/current-students/communicable-diseases/resources-for-students/>  
(<https://www.hccs.edu/resources-for/current-students/communicable-diseases/resources-for-students/>)

### Basic Needs Resources:

<https://www.hccs.edu/support-services/counseling/hcc-cares/basic-needs-resources/> (<https://www.hccs.edu/support-services/counseling/hcc-cares/basic-needs-resources/>)

### Student Basic Needs Application:

[https://hccs.co1.qualtrics.com/jfe/form/SV\\_25WyNx7NwMRz1FH](https://hccs.co1.qualtrics.com/jfe/form/SV_25WyNx7NwMRz1FH)  
[https://hccs.co1.qualtrics.com/jfe/form/SV\\_25WyNx7NwMRz1FH](https://hccs.co1.qualtrics.com/jfe/form/SV_25WyNx7NwMRz1FH)

## COVID-19

Here's the link to the HCC information about COVID-19:

<https://www.hccs.edu/resources-for/current-students/communicable-diseases/> (<https://www.hccs.edu/resources-for/current-students/communicable-diseases/>)

## Sensitive or Mature Course Content

In this college-level course, we may occasionally discuss sensitive or mature content. All members of the classroom environment, from your instructor to your fellow students, are expected to handle potentially controversial subjects with respect and consideration for one another's varied experiences and values.

## Instructional Modalities

### In-Person (P)

Safe, face-to-face course with scheduled dates and times

### Online on a Schedule (WS)

Fully online course with virtual meetings at scheduled dates and times

### Online Anytime (WW)

Traditional online course without scheduled meetings

### Hybrid (H)

Course that meets safely 50% face-to-face and 50% virtually

### Hybrid Lab (HL)

Lab class that meets safely 50% face-to-face and 50% virtually

## Course Calendar

Week/Date	Laboratory Exercises (Benson's, 15e)	Due
1/09.21.21	Ex. 1: Brightfield Microscopy, pp. 1-11	09/26/21
	Ex. 5: Microbiology of Pond Water-Protozoa, Algae, and Cyanobacteria, pp. 31-47	
2/09.28.21	Ex. 6: Ubiquity of Bacteria, pp. 49-52	10/03/21
	EX. 7: The Fungi: Molds and Yeasts, pp. 53-62	
3/10.05.21	Ex. 8: Aseptic Technique, 63-74 [ <i>note</i> : There are three (3) different procedures, we just need to do at least one.]	10/10/21
	Ex. 9: Pure Culture Techniques – Streak Plate Method only, pp. 75 – 77, pp. 83-85	
4/10.12.21	Ex. 10: Smear Preparation, pp. 87-93 [ <i>note</i> : The smear that is prepared in this lab can be used for Ex. 11 Simple Stain]	10.15.21

	Ex. 11: Simple Staining (Observing Bacterial Cell Morphology), pp. 95-100			
5/10.18.21	Lab Practical Exam #1			
5/10.19.21	Ex. 12: Negative Stain, pp. 101-106		10/24/21	
	Ex. 13: Capsular Staining [ <i>note</i> : 2120 will use prepared slides, 2421 will perform the stain.], pp. 107-110			
6/10.26.21	Ex. 14: Gram Stain, pp. 111-117		10/30/21	
	Ex. 15: Endospore Stain, pp. 119-124			
7/11.02.21	Ex. 16: Acid-Fast Stain, Kinyoun Method, pp. 125-128		11/07/21	
	Ex. 17: Motility Determination, TTC method only, pp. 129 - 134			
8/11.09.21	Ex. 47: Temperature: Lethal Effects, pp. 345-350		11/14/21	
	Ex. 23: Phage Typing, pp. 175-177			
9/11.16.21	Ex. 24: Effects of Oxygen on Growth, FTM method only, pp. 179- 186		11/21/21	
	Ex. 31: Antimicrobial Sensitivity Testing: The Kirby-Bauer Method, pp. 221-233			
10/11/22/21	Lab Practical Exam #2			
10/11.23.21	Ex. 32: Evaluation of Antiseptics and Disinfectants: The Filter Paper Disk Method, pp. 235- 240		11/28/21	
	Ex. 36: Physiological Characteristics: Oxidation and Fermentation Tests, 261-272 [ <i>note</i> : We are not doing this as an Unknown. We will use known bacteria. We will use the carbohydrate broths with Durham tubes, pp. 264-265.]			
11/11.30.21	Ex. 38: Physiological Characteristics: Multiple Test Media, 279-286, [ <i>note</i> : We are not doing this as an Unknown. We will use TSI and the IMViC tests].		12/05/21	
	Ex. 53: The Staphylococci: Isolation and Identification (Mannitol Salt Agar Plate and Blood Agar Plate), pp. 385-395 [ <i>note</i> : MSA on pg. 390 and Blood Agar on pp. 390 – 391]			
12/12.07.21	Ex. 54: The Streptococci and Enterococci: Isolation and Identification (Blood Agar Plate), pp. 397 – 400 [ <i>note</i> : Blood Agar on pg. 400]		12/08/21	
	Ex. 55: Gram Negative Intestinal Pathogens (MacConkey's Agar), pp. 411-413 [ <i>note</i> : We will only do the MAC plate.]			
12/12.10.21	Lab Practical Exam #3			

**Syllabus Modifications:** The Instructor reserves the right to modify this Syllabus as is necessary during the Semester. Students will be notified, in writing, of any changes made to your Course Syllabus

# Syllabus Modifications

The instructor reserves the right to modify the syllabus at any time during the semester and will promptly notify students in writing, typically by e-mail, of any such changes.

## Additional Information

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### Biology Departmental/Program Information

Visit the [Biology Program Page \(https://learning.hccs.edu/programs/biology\)](https://learning.hccs.edu/programs/biology) on the HCC Learning Web for information about our faculty and courses. You will also find information about majoring in Biology.

The [Field of Study \(FOS\) Curriculum for Biology \(https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/biology/\)](https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/biology/) here at HCC covers the smallest and simplest organisms (microbiology) to the largest and most complex organisms (human anatomy and physiology, zoology, botany).

The [Associate of Science in Biology - Biology Majors & Premedical Programs \(https://www.hccs.edu/finder/programs/associate-of-science-in-biology---biology-majors--premedical-programs---field-of-study-curriculum/\)](https://www.hccs.edu/finder/programs/associate-of-science-in-biology---biology-majors--premedical-programs---field-of-study-curriculum/) FOS is intended primarily for students planning on transferring to a senior college or university to receive a baccalaureate degree in the following areas: computer science, engineering, health and natural sciences, or mathematics.

The [Associate of Science in Biology - Health Sciences Professions \(https://www.hccs.edu/finder/programs/associate-of-science-in-biology---health-sciences-professions---field-of-study-curriculum/\)](https://www.hccs.edu/finder/programs/associate-of-science-in-biology---health-sciences-professions---field-of-study-curriculum/) FOS is intended primarily for students planning on transferring to a senior college or university to receive a baccalaureate degree in the following areas: computer science, engineering, health and natural sciences, or mathematics. (Pre-Nursing, Pre-Radiologic Sciences, Pre-Clinical Laboratory Services)

Visit the [STEM Resources Page at HCC \(https://www.hccs.edu/resources-for/current-students/stem--science-technology-engineering--mathematics/\)](https://www.hccs.edu/resources-for/current-students/stem--science-technology-engineering--mathematics/): HCC has developed this site to provide information on STEM related programs and resources at HCC and other institution – to include scholarship information.

### Process for Expressing Concerns about the Course

If you have concerns about any aspect of this course, please reach out to your instructor for assistance first. You can always request a meeting (virtual/ in person) to go over your concerns. If your instructor is not able to assist you, then you may wish to contact the Biology Department using this form.

[Biology Department Reporting Form \(https://forms.office.com/r/8BwrMbgCYB\)](https://forms.office.com/r/8BwrMbgCYB)

Email: [hcc.biology@hccs.edu](mailto:hcc.biology@hccs.edu)

If your instructor is not able to assist you, then you may also wish to contact the Department Chair:

Dr. Shadi Kilani

[shadi.kilani@hccs.edu](mailto:shadi.kilani@hccs.edu); 713.718.7035