HOUSTON COMMUNITY COLLEGE

Division of Earth, Life & Natural Sciences Biology Department
https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/biology/

BIOL 2320: Microbiology for Health Science Majors
CRN# 18637

Fall 2022 16Weeks (08.22.2022- 12.11.2022)
Online/ Fri: 8am – 10.50am
3 Credit Hours | 48 hours per semester

Instructor Contact Information

Instructor: Osaretin Alexander Oni Office Phone:

Office:William W.H Building Rm 306: FRI: 8:00-10:50 a.m.

HCC Email: osaretin.oni@hccs.edu Office Location :Central Campus

Instruction Mode: In Person

Please feel free to contact me concerning any problems that you are experiencing in this course. Your performance in my class is very important to me. I am available to hear the concerns and just to discuss course topics.

Instructor's Preferred Method of Contact : osaretin.oni@hccs.edu

I will respond to emails within 24-48 hours Monday through Friday; I will reply to weekend messages during the following week.

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 microbiology, 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 microbiology. So please visit me or contact me by email whenever you have a question.

Prerequisites and/or Co-Requisites

Biology 1306/1106, or equivalent, is strongly recommended for this course!!! We require college-level reading (or take GUST 0342) and college-level writing (or take ENGL 0310/0349). **This is a NON-MAJORS level microbiology offering!! While acceptable for most nursing and allied health schools, this course may not transfer to certain healthcare related professional program schools. The student is advised to check with these schools regarding the acceptability of BIOL. 2320 before completing this course.** Please carefully read the repeater policy in the HCCS Student Handbook.

Canvas Learning Management System

This course utilizes Canvas (https://eagleonline.hccs.edu) to supplement reading materials, assignments, exams, communication and other course related activities.

Open Lab Locations

HCCS Open Computer Lab locations may be used to access the Internet and Canvas. **USE FIREFOX OR CHROME AS THE INTERNET BROWSER**.

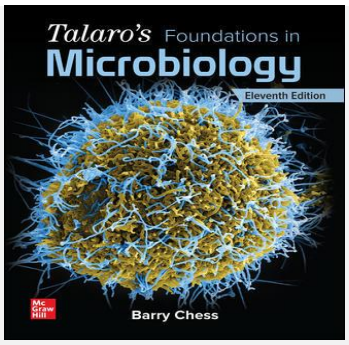
Scoring Rubrics, Sample Assignments, etc.

Although this is an online on a schedule and I do use canvas as a backup to post all course related information and announcements.
When applicable, look in Canvas for the scoring rubrics for assignments, samples of class assignments, lecture notes, power points and other information to assist you in the course.
https://eagleonline.hccs.edu/login/ldap

Instructional Materials

Required Resources

The textbook listed below is ***required*** for this course.
The book is included in a package that contains the text as well as an access code for Mastering Microbiology and is found at the HCC Bookstore. You may either use a hard copy of the book, or rent the e-book from Pearson. Order your book here: HCC Bookstore



eBook

Chess, Talaro's Foundations in Microbiology, 11e

Barry Chess, 11e

ISBN: 9781119642275

McGRAW HILL CONNECT ACCESS

This course will require use of McGraw Hill Connect for homework and Quiz assignments. You can purchase a new Textbook with the access code or if you have a used book, you can purchase the access code only-. In this course for this section, once you pay for the course, you are automatically granted access to the McGraw Hill Connect on the canvas.

Suggested Resources

Microbiology Relevancy Modules

Section web address:

If you are pairing with an LMS, do not use the section web address. Click here for further instructions for your students.

https://conn

SmartBook / LearnSmart Opens in a new window.

Microbiology.

Other Instructional 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 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 http://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 http://www.hccs.edu/resources-for/current-students/supplemental-instruction/.

Course Overview

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. Uses and techniques of biotechnology will be presented.
***** Use ACGM course description per course.**

Core Curriculum Objectives (CCOs)

BIOL 2320 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.

Program Student Learning Outcomes (PSLOs)

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 2320, the student will be able to:

1. Describe distinctive characteristics and diverse growth requirements of prokaryotic organisms compared to eukaryotic organisms.
2. Provide examples of the impact of microorganisms on agriculture, environment, ecosystem, energy, and human health, including biofilms.
3. Distinguish between mechanisms of physical and chemical agents to control microbial populations.
4. Explain the unique characteristics of bacterial metabolism and bacterial genetics.
5. Describe evidence for the evolution of cells, organelles, and major metabolic pathways from early prokaryotes and how phylogenetic trees reflect evolutionary relationships.
6. Compare characteristics and replication of acellular infectious agents (viruses and prions) with characteristics and reproduction of cellular infectious agents (prokaryotes and eukaryotes).
7. Describe functions of host defenses and the immune system in combating infectious

diseases and explain how immunizations protect against specific diseases.
8. Explain transmission and virulence mechanisms of cellular and acellular infectious agents.

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-2320/view

Student Success

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:

- Reading the textbook
- Attending class in person and/or online
- Timely completion of assignments
- Participating in class activities
- 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.

Instructor and Student Responsibilities

<u>As your Instructor, it is my responsibility to</u>**:**

- 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 as required

<u>As a student, it is your responsibility to</u>**:**

- 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

Assignments, Exams, and Activities

Written Assignment

McGraw Hill Connect Homework and QUIZ Assignments: There will be one written assignment per chapter. Assignments will be in different formats to include different learning styles.
Some will have activities related to the main concept of the chapter which will also include videos and animations followed by questions. Students are required to complete all of them before the deadline. Deadline are given in the course schedule on page 14.

These assignments can be accessed from Canvas.

Enter Your Canvas Course:

Sign in to Canvas and enter your Canvas course.

Do one of the following:

- Sign into your canvas and
- Select **the McGraw Hill Connect** in the Course Navigation, and then select Go to my connect section.. This brings you into the course Homework and the Quizzes.

Get Your Computer Ready

For the best experience, check the system requirements for your product at:

Need help?

Group Project: There will be one or two group projects assigned during the semester. Details on the topic, how to prepare and submit it, and deadline will be given in class and is also available in Module 11 in canvas.

Exams

- **Exams**: There will be a total of four lecture exams and one final exam during the semester. Each exam will contain a number (50-70) of multiple-choice, true-false, matching and fill in the blank questions. Multiple Choice questions have to be answered on the scantron. Each exam has an equal value (100 pts each). The Departmental final exam is cumulative and mandatory. Out of the four lecture exams you have a choice to drop one. Your lowest grade automatically becomes your drop grade. If you miss an exam, that becomes your drop grade. If you miss two exams, you get a zero in one exam.
- If you arrive late for an exam, you will have only the time remaining from the

official start of the exam. **THERE WILL BE NO MAKEUP EXAMS** unless you can prove you had to go to court or were seen by a doctor on the day of the exam. (see make-up policy below)

- On a test day, once someone has finished the exam, no other student may enter and start that exam. So, if you are late for class on a test day, you may be prohibited from taking the test.
- Students must provide their own Scantron forms (FORM NUMBER 882-E-LOVAS).

In-Class Activities (Other)

Group Project: There will be one group project assigned during the semester. Details on the topic, how to prepare and submit it, will be given in class and in Module 11 in canvas. Please see the rubrics in Canvas for each criteria and their percent grade.

Quizzes: In class quizzes will be given for each difficult concept of the chapter.

Group activities:

1. Using 3-D model to understand antigen presentation and development of immunity.
2. Card activity for understanding DNA structure and protein synthesis

Final Exam

All students will be **required** to take a **comprehensive** departmental final exam consisting of 50 multiple- choice questions. Students must provide their own Scantron forms (FORM NUMBER 882-E-LOVAS). However, this Spring has been internet canvas timed exams with lockdown browser and proctoring.

Students who are absent from the final exam without discussing their absence with the instructor in advance will receive a zero in final.

Written Assignment(s) Homework	100 points 10%
Exams – 3	600 points 60%
In-Class Activities Quizzes	200 points 20%
Departmental Final Exam	100 points 10%

Grade	Total Points
A	900+ (90-100%)

B	800-899 (80-89%)
C	700-799 (70-79%)
D	600-699 (60-69%)
F	<600 Below 60%

Incomplete Policy:

In this course, the purposes of the "I" (incomplete) grade is for students who are caught up and passing at the student withdrawal deadline, and then have a medical or other problem

that prevents them from completing the course. If you are not passing at the student withdrawal deadline, you should drop yourself from the course, or you will likely earn an "F." An incomplete "I" grade will be given only if all of the following conditions are met:

- ✓ You have earned at least 85% of the available points by the date that the "I" grade is requested.
- ✓ You can provide documentation showing why you should earn an incomplete, such as a doctor's note, etc.
- ✓ You must be passing with a grade of "C" or better.
- ✓ You must request the incomplete in writing BEFORE December 1, 2019.
- ✓ In all cases, the instructor reserves the right to decline a student's request to receive a grade of Incomplete.

HCC Grading Scale can be found on this site under Academic Information:
http://www.hccs.edu/resources-for/current-students/student-handbook/

Course Calendar

TENTATIVE COURSE SCHEDULE* SUMMER 2021

Week	Day	Chapter	Topics	Ch. Assignments
08/ 26	FRI	1	Orientation MAIN THEMES OF Microbiology	
09/2	FRI	2	CHEMISTRY OF MICROBIOLOGY	
09/9	FRI	3,4	TOOLS OF THE LAB. METHODS/A SURVEY OF PROKARYOTIC CELLS	
09/16	FRI	4,5	A SURVEY OF PROKARYOTIC CELLS/ A SURVEY OF EUKARYOTICS	**Examination 1**

9/23	FRI	6	VIRUSES, PRIONS AND VIROIDS	
9/30	FRI	7	NUTRITION, ECOLOGY AND GROWTH	
10/7	FRI	9	MICROBIAL GENETIC	
10/14	FRI	10	GENETIC ENGINEERING	
10/21	FRI	11	MICROBIAL CONTROL- PHYSICAL AND CHEMICAL	
10/ 28	FRI	12	MICROBIAL CONTROL- DRUGS	**EXAMINATION 2**
11/4	FRI	13	MICROBES, INFECTIOUS DISEASE AND EPID	
11/11	FRI	14/15	INNATE/ ADAPTIVE IMMUNITY	
11/18	FRI	16	DISORDERS OF IMMUNITY	
11/25	FRI		THANKSGIVING HOLIDAY	
12/2	FRI		3rd Class Examination	**Examination 3**
12/9	FRI		FINAL DEPARTMENTAL EXAM	**Departmental Examination**

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.

Instructor's Practices and Procedures

Missed Assignments

Make-Up Policy:

1. If you miss an exam for whatever reason, it will be used as the drop exam.
2. If you miss a second exam and wish to take a make-up, there are only three acceptable excuses for an individual missing an exam:

Illness. I will need official certification from you doctor, typed on medical stationary (with their license # to practice medicine on it) certifying that you are now well enough to return to class. This must be handed in within a week.

Funeral attendance. I will need proof of funeral attendance with the date of the ceremony clearly listed. This must be handed in no later than ten days after the date of the missed exam.

Mandatory courtroom appearance. I will need a copy of your official court summons with the date of your required attendance clearly listed. This must be handed no later than ten days after the date of the missed exam.

I only allow one **missed exam to be made up per semester. Any other missed exam will be assigned** 0 **points.**

Academic Integrity

A student who is academically dishonest is, by definition, not showing that the coursework has been learned, and that student is claiming an advantage not available to other students. The instructor is responsible for measuring each student's individual achievements and also for ensuring that all students compete on a level playing field. Thus, in our system, the instructor has teaching, grading, and enforcement roles. You are expected to be familiar with the HCCS's Policy on Academic Honesty, found in the catalog. What that means is: If you are charged with an offense, pleading ignorance of the rules will not help you.

Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Penalties and/or disciplinary proceedings may be initiated by College System officials against a student accused of scholastic dishonesty. "Scholastic dishonesty": includes, but is not limited to, cheating on a test, plagiarism, and collusion.

Cheating on a test includes:

Copying from another students' test paper;

- Using materials not authorized by the person giving the test;
- Collaborating with another student during a test without

authorization;

- Knowingly using, buying, selling, stealing, transporting, or soliciting in whole or part the contents of a test that has not been administered;
- Bribing another person to obtain a test that is to be administered.

Plagiarism means the appropriation of another's work and the unacknowledged incorporation of that work in one's own written work offered for credit.

Collusion means the unauthorized collaboration with another person in preparing written work offered for credit. Possible punishments for academic dishonesty may include a grade of 0 or F in the particular assignment, failure

in the course, and/or recommendation for probation or dismissal from the College System. (See the Student Handbook).

Here's the link to the HCC information about academic integrity (Scholastic Dishonesty and Violation of Academic Scholastic Dishonesty and Grievance): http://www.hccs.edu/about-hcc/procedures/student-rights-policies--procedures/student- procedures/

Attendance Procedures

This is a 16 week course, which will begin on August 22th and end on December 8th. If you have never attended the class until the official date of record, you will be marked absent in the attendance roster and will officially be dropped by registrar's office for non-attendance from the course and cannot be re- instated. I will take attendance each class meeting period at the end of class, therefore attending class for the entire period is essential. It is your responsibility to attend classes and complete course requirements in a timely manner. No extensions for any missed work will be given without a valid reason. (Please refer to the make-up policies)

Student Conduct

All students at HCC are required to follow all HCC Policies & Procedures, the Student Code of Conduct, the Student Handbook, and relevant sections of the Texas Education Code when interacting and communicating in a virtual classroom with faculty and fellow students. Students who violate these policies and guidelines will be subject to disciplinary action that could include denial of access to course-related email, discussion groups, and chat rooms or being removed from the class.

Instructor's Course-Specific Information (As Needed)

Grades will be posted in the gradebook after completion of the tests. If any grade

related discrepancy is found, it will be discussed immediately and preferably by setting up a meeting during my office hours.

Electronic Devices

During class, students are permitted to use computers/tablets to take notes or view chapter PowerPoints that are posted in canvas. However, during testing use of any type of electronic device including a cell phone, is not permitted.

Biology Program Information

The Biology area of study here at HCC covers the smallest and simplest organisms (microbiology) to the largest and most complex organisms (human anatomy and physiology, zoology, botany).

AWARD TYPES: Associate in Science
AREA OF STUDY: Science, Technology, Engineering & Math

Please visit link: https://www.hccs.edu/programs/areas-of-study/science-technology- engineering--math/biology/

HCC Policies

Here's the link to the HCC Student Handbook http://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

EGLS^3

The EGLS^3(Evaluation for Greater Learning Student Survey System) 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^3 surveys are only available for the Fall and Spring semesters. EGLS3 surveys are not offered during the Summer semester due to logistical constraints.
http://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/

Campus Carry Link Here's the link to the HCC information about Campus Carry:
http://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 and activate it now. You may also use Canvas Inbox to communicate.

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.

Office of Institutional Equity

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

disAbility 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 tohttp://www.hccs.edu/support-services/disability-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
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/

Department Chair Contact Information

Dr. Shadi Kilani

Email:shadikilani@hccs.edu

Phone: 7137187775