



**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
| Lecture | CRN# 15630**

Fall 2019 | 12 Weeks (9.23.2019-12.15.2019)

In-Person | JB Coleman Health Science Center | Saturday 8 a.m.- 11.50 a.m.
3 Credit Hours - Second Start

Instructor Contact Information

Instructor: Sheeba Zaidi, MD.

Office Phone: 713-718-6050

Office: Coleman Campus

Office Hours: By Appointment

Room # 365

HCC Email: sheeba.zaidi@hccs.edu

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

<< HCC Email address required including preferred method of contact (e.g., email, phone); 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 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.

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

All Biology sections utilize [Canvas\(https://eagleonline.hccs.edu\)](https://eagleonline.hccs.edu) to supplement in-class assignments, exams, and 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.**

HCC Online Information and Policies

For online/hybrid students. As an online/hybrid student, you are responsible for all information/requirements provided by the online college. Here is the link to information about HCC Online classes <http://www.hccs.edu/online/>. This includes the mandatory online course prior to start of class.

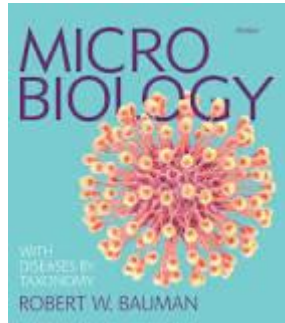
Scoring Rubrics, Sample Assignments, etc.

When applicable, 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>

Instructional Materials

1. Microbiology With Diseases by Taxonomy by Robert W. Bauman, 5th edition, Pearson Publishers, 2017



2. CANVAS online section for this course is available on the first day of the semester by going to: <http://eagleonline.hccs.edu>
3. Pearson Mastering (www.Pearsonmastering.com) where you will need to complete mandatory assignments to help review chapter information. You will need access code and course ID zaidi90857
Tech support at Pearson Ph: 1800-677-6337

Suggested Resources



HCCS Biology Lab Study Pages
[Click here to access Biology lab study pages online.](#)

OER???

Additional faculty suggested resource(s).

For example: Other text titles for reference, Professor's PPTs, handouts, etc.

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 present

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

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

Assignments, Exams, and Activities

Exams

Exams will test materials covered in the classroom and the textbook. The following guidelines will govern all exams:

1. You will have 4 lecture exams during the semester
2. If you take all 4 lecture exams, one exam with the lowest score will be dropped at the end of the semester
3. Each lecture exam based on material covered in class including your text book.
4. Each Lecture exam is worth 110 points (22%) each on your grade
5. All exams will be timed. Students arriving late will not be given extra time to complete an exam.
6. If, for whatever reason, you miss one exam, that exam will automatically become your drop exam.
7. Students will not use electronic devices, dictionaries or other aids during the exam.

Final Exam

All students will be required to take a comprehensive departmental final exam consisting of 50 multiple-choice questions. Students bring their own Scantron forms (FORM NUMBER 882-E-LOVAS).

1. Department Final is comprehensive and MANDATORY
2. Exam will be timed. Students arriving late will not be given extra time to complete an exam. There will be no make-up for final exam for any reason.
3. Students may not use electronic devices, dictionaries or other aids during the exam.
4. Department Final Exam is worth 10% (50 points) of your grade

Home Work Assignments

1. Submit all Pearson Mastering assignments before the due date and time.
2. There will be no make ups for homework assignments.
3. Late submissions will not be accepted.
4. Check Canvas for the submission dates and time in each case.
5. Do not wait for the last minute to complete the assignments.
6. You have only one chance to complete the homework assignments.
7. Homework assignments are worth 24% (120 points) of your grade

Grading Formula

4 Exams, 110 points each	= 440 points
Drop 1 Exam of Lowest Grade	= -110 points
	= 330 points (66%)
Pearson Mastering Assignments	= 120 points (24%)
Final Department Exam	= 50 points (10%)
Total	= 500 points (100%)

Grading Scale:

90 --- 100% = A

80 --- 89% = B

70 --- 79% = C

60 ---- 69% = D

Below 60% = F

FX Failure due to nonattendance.

W Withdraw.

IP is in progress.

I Incomplete.

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 **SPECIFY DATE**
- ✓ 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

Weekly Schedule and Exam Dates

WEEK IN THE SEMESTER	Dates	Topics
WEEK 1	9/28	Orientation-Syllabus Chapter 1- Brief History Of microbiology Chapter 3- Cell Structure & Function
Week 2	10/5	Chapter 4- Microscopy, Staining & Classification Chapter 6 – Microbial Nutrition & Growth
WEEK 3	10/12	Pearson Mastering Assignments Ch1,3,4 Due on10/11-11:59 Exam 1-Chapter1,3,4 Chapter 6 – Microbial Nutrition & Growth-Continue
Week 4	10/19	Chapter 7 – Microbial Genetics Chapter 8 – Recombinant DNA Technology
WEEK 5	10/26	Pearson Mastering Assignments Ch 6,7,8 Due on10/25-11:59 Exam 2 - Chapter 6,7,8 Chapter 9 – Control of Microbial Growth in the Environment
Week 6	11/2	Chapter 9 – Control of Microbial Growth in the Environment Continue Chapter 10-Controlling Microbial Growth in the Body
WEEK 7	11/9	Chapter 11-Characterizing & Classifying Prokaryotes Chapter 12- Characterizing & Classifying Eukaryotes Chapter 13 Characterizing & Classifying Viruses, Viroid, Prions
Week 8	11/16	Pearson Mastering Assignments Ch 9,10,11,12 Due on11/15-11:59 Exam 3 – Chapter 9,10,11,12 Chapter 13 Characterizing & Classifying Viruses, Viroid, Prions Continue

WEEK 9	11/23	Chapter 14 - Infection, Infectious Diseases, and Epidemiology Chapter 15 - Innate immunity
Week 10	11/30	Thanks Giving Holiday
WEEK 11	12/7	Chapter 16 – Adaptive immunity
Week 12	12/14	Pearson Mastering Assignments Ch 13,14,15,16 Due on 12/13-11:59 Exam 4 – Chapter 13,14,15,16 Department Final Comprehensive Mandatory Chapter 1 through 16

Note: Chapter 2 and 5 are optional

Important Dates

November 28	Thanks Giving Holiday
October 2 nd	Official Day of Record
November 11	Last Day of Withdraw
December 8	Last Day of Instruction
December 15	Last Day of Semester

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

There will be no retakes or make ups for any of the quizzes under any circumstances. One Lecture Exam with the lowest grade will be dropped. Make-upon exams are allowed only in case of an emergency. You must bring a proof of emergency (eg. doctor's note). Make-up exams not a retake. That is, make-up exams are allowed

only for missed exams. There will be no retake on exams under no circumstances. Lowest grade on the exam will be dropped. You are responsible for attending the make-up at the scheduled time. There will be no rescheduling of makeup exams

The Instructor DOES NOT have to announce/tell you of upcoming assignments in person. This is a college course and you have to keep yourself informed by keeping up with your canvas. All assignments and quizzes will be posted with dates and the dates will be updated as the semester goes on. It is your responsibility to keep up.

Academic Integrity

This instructor is committed to a high standard of academic integrity in the academic community. In becoming a part of the academic community, students are responsible for honesty and independent effort. Failure to uphold these standards includes, but is not limited to, the following: plagiarizing written work or projects, cheating on exams or assignments, collusion on an exam or project, and misrepresentation of credentials or prerequisites when registering for a course. Cheating includes looking at or copying from another student's exam, orally communicating or receiving answers during an exam, having another person take an exam or complete a project or assignment, using unauthorized notes, texts, or other materials for an exam, and obtaining or distributing an unauthorized copy of an exam or any part of an exam. Plagiarism means passing off as his/her own the ideas or writings of another (that is, without giving proper credit by documenting sources). Plagiarism includes submitting a paper, report, or project that someone else has prepared, in whole or in part. Collusion is inappropriately collaborating on assignments designed to be completed independently. These definitions are not exhaustive. When there is clear evidence of cheating, plagiarism, collusion, or misrepresentation, disciplinary action may include but is not limited to requiring you to retake or resubmit an exam or assignment, assigning a grade of zero or "F" for an exam or assignment; or assigning a grade of "F" for the course. Additional sanctions including being withdrawn from the course, program or expelled from school may be imposed on a students who violate the standards of academic integrity.

Scholastic Dishonesty will result in a referral to the Dean of Student Services. See the link below for details.

Cheating will not be tolerated. The first time a student is caught cheating on an exam or an assignment he/she will receive a zero (0) for that exam or assignment. For a second offense, the student will receive a grade of F for the course. A zero will be assigned to any work that is plagiarized. Cheating is defined as giving or receiving, offering or soliciting information or using prepared material without permission or proper documentation. Please review the System's policy on cheating in 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

Class attendance is mandated by the state. You must come to class in time. Attendance is taken on daily basis and will be given only if you attend full class period. Coming late to the class or leaving early for whatever reason, is considered as disruption and no attendance will be given for that day. You are responsible for everything covered or announced during your absence. Your attendance begins on the first day of the semester. More than four absences may result in an administrative withdrawal. If you stop attending the course or do not participate in the assessment, you are still responsible for withdrawing from the course before the withdrawal deadline. Failing to do so can result into an F or FX grade at the end of semester.

Student Conduct

Read and understand all elements of the Syllabus, and Student handbooks.

1. Pre-view the required chapters in the textbook prior to coming to the classes.
2. Successfully complete all requirements of this course as outlined in this document.
3. Contact your professor if you have any questions regarding any element of the course you do not understand.
4. The student web site accompanying the textbook and student web site of the publisher are excellent sources to review course content version
5. Work hard from the beginning of the semester.
6. Treat other students and faculty with respect and promote an environment of team work and collaboration

Students are expected to conduct themselves as adults. This includes courteous and respectful behavior towards instructor and classmates. Disruptive behavior or any behavior that interferes with any educational activity being performed by the instructor will not be allowed. Additionally, no student may interfere with his/her fellow students' right to pursue their academic goals to the fullest in an atmosphere appropriate to a community of scholars. Disruptive behavior may result in removal from the class.

Instructor's Course-Specific Information (As Needed)

I will teach you to the best of my ability and I will push you to get to that point where you will be more knowledgeable and able to perform at- and above par with students from other institutions. I promise to teach you in a way that you will be prepared to handle questions on your Hesi or TEAs exams and in your future medical/health programs.

Lecture tests will be reviewed immediately after the test and exam results will be returned by the next class period.

Grades will not be curved, and Grades will not be posted at any time during the semester. You will receive your final grades at the end of the semester from the Biology Department or via the Internet by logging on to <http://www.hccs.edu>. Proper identification is required to receive the final grade. The transcripts will be mailed by the HCCS office only if requested by the student. Children or anybody who is not officially enrolled in this class are not allowed in the classroom.

Electronic Devices

To avoid disruption and distraction in the class room, cell phones must be set on the silence mode. Students are allowed to use electronic devices only when instructed by the faculty. Students will not make visual/audio recordings of class presentations without the advance approval of the instructor

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

EGLS³

The EGLS³([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. EGLS³ 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/epls3-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 to <http://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. DaeJan Grigsby
 Email: daejan.grigsby@hccs.edu
 Phone: 713-718-7775