



**Division of Earth, Life & Natural Sciences
Biology Department**

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

BIOL 2120: Microbiology for Health Science Majors | # 10230

Fall 2022 | 16 Weeks (8.22.2022 - 12.11.2022)

In-Person | WWH Building Rm 307 | FRIDAY 11:00 a.m. - 1:50 p.m.

3 Contact Hours | 48 hours per semester

INSTRUCTOR CONTACT INFORMATION

Professor: Osaretin Oni

Office: William W. Harmon Building Rm 307

e-mail: Osaretin.oni@hccs.edu (*preferred*)

Credit Hours: 1 SCH

Office Phone:

Office Hours: by appointment

Days & Times: FRI. 11:00 a.m. - 1:50 p.m.

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.

Preferred Method of Contact

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

What is exiting 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.

Personal Welcome

Welcome to Microbiology: I am 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. 2120 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>

Requirements

Textbook/Laboratory manual:

Microbiology 2120 LM – Second Edition - Bluedoor Publishing

Do not purchase a book or access code for this course.

You have already paid for your course materials through the registration process. The cost of digital course materials for this class were included in your student bill and are guaranteed to be the lowest cost available to purchase your required materials.

Your course materials for this class will be accessed digitally through the Canvas site. NO other purchase is necessary. For students who wish to have a printed copy of the text an optional print copy is available for purchase at the Houston Community College Bookstore after the official day of record.

Optional resources:

1. Lab study page: hccs.edu/biologylabs
2. My Learning Web resources (links and videos)
3. CANVAS: <https://eagleonline.hccs.edu/>
4. OpenStax (free download): <https://openstax.org/details/books/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 laboratory course covers basics of culture and identification of bacteria and microbial ecology. This course is primarily directed at pre-nursing and other pre-allied health majors and covers basics of microbiology. Emphasis is on medical microbiology, infectious diseases, and public health.

[Core Curriculum Objectives \(CCOs\)](#)

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.

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](#)

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 10/30/2020
- ✓ 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/>

- ✓ **HCC Grading Scale**

A = 100 – 90:	4 points per semester hour
B = 89 – 80:	3 points per semester hour
C = 79 – 70:	2 points per semester hour
D = 69 – 60:	1 point per semester hour
F = 59 and below	0 points per semester hour
IP (In Progress)	0 points per semester hour
W(Withdrawn)	0 points per semester hour
I (Incomplete)	0 points per semester hour
AUD (Audit)	0 points per semester hour
IP (In Progress)	IP is given only in certain developmental courses. The student must re-enroll to receive credit.
COM (Completed)	is given in non-credit and continuing education courses.

To compute grade point average (GPA), divide the total grade points by the total number of semester hours attempted. The grades “IP,” “COM” and “I” do not affect GPA.

- ✓
- ✓ **nextLearning**
- ✓ **Lab-Based Courses (HL)** – We will continue to offer our skills-based, hands-on lab courses but with smaller section sizes to enable social distancing. We have added additional lab sections to the schedule to make up for the smaller sizes.
- ✓
- ✓ **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/>
- ✓
- ✓ **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/egls3-evaluate-your-professors/>

CAMPUS CARRY Statement and Website:

“At HCC the safety of our students, staff, and faculty is our first priority. As of August 1, 2017, Houston Community College is subject to the Campus Carry Law (SB11 2015). For more information, visit the HCC Campus Carry web page at <http://www.hccs.edu/district/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/>)

HCC Policies

Here is 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

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/>

Course Student Learning Outcomes (CSLO):

PSLO#1 - Will display an understanding of biological systems and evolutionary processes spanning all ranges of biological complexity, including atoms, molecules, genes, cells, and organisms.

PSLO#2 - Will integrate factual and conceptual information into an understanding of scientific data by written, oral and/or visual communication. (may include successful completion of a course-specific research project or a case study).

PSLO#3 - Will demonstrate proficiency and safe practices in the use of laboratory equipment and basic laboratory techniques.

PSLO#4 - Will apply principles of the scientific method to problems in biology in the collection, recording, quantitative measurement, analysis and reporting of scientific data.

INSTRUCTOR GUIDELINES AND POLICIES

INSTRUCTORS' ASSURANCE

Instructor will return all email correspondence (if you email me, please include your name and what class you are in) within a 48-hour period Monday through Friday. Instructor will provide students with opportunity to review and discuss their exams.

QUESTIONS/PROBLEMS: Please make sure that if you have any questions or problems at any time, that you first contact me as soon as possible. The worst thing you can do is wait to contact me or to not take advantage of the resources available to you. By taking an active part in your education, you will make your academic experience much more rewarding.

COURSE WITHDRAWALS (6-Drop Rule): Students must withdraw by the withdrawal deadline in order to receive a "W" on a transcript. Final withdrawal deadlines vary each semester and/or depending on class length, please visit the online Academic Calendar, any HCC Registration Office, or any HCC advisor to determine class withdrawal deadlines. Be certain you understand HCC policies about dropping a course and consult with a counselor/advisor to determine if withdrawing is in your best interest. It is your responsibility to withdraw officially from a class and prevent an "F" from appearing on your transcript. Senate Bill 1231 limits the number of W's a student can have to 6 classes over the course of their entire academic career. This policy is effective for students entering higher education for the first time in fall 2007 and subsequent terms. Withdrawals accumulated at any other Texas public higher education institution count toward the 6 course total. Withdrawals for certain circumstances beyond the students control may not be counted toward the 6-drop limit.

In addition, withdrawing from a course may impact your financial aid award or eligibility. Contact the Financial Aid Office or website to learn more about the impact of withdrawing on financial aid.

HOW TO DROP

* If a student decides to drop or withdraw from a class upon careful review of other options, the student can drop online prior to the deadline through their HCC Student Center.

* HCC and/or instructors may drop students for excessive absences without notification (see Class Attendance below).

* Students should check HCC's Academic Calendar by Term for drop/withdrawal dates and deadlines. Classes of other duration (mini-term, flex-entry, 8-weeks, etc.) may have different final withdrawal deadlines. Please contact the HCC Registrar's Office at 713.718.8500 for any further question. Students are responsible for ensuring they have been dropped from the course; otherwise, they will receive a grade of "F."

EARLY ALERT

HCC has instituted an Early Alert process by which your professor may "alert" you and DE counselors that you might fail a class because of excessive absences and/or poor academic performance.

INTERNATIONAL STUDENTS

Contact the International Student Office at 713-718-8520 if you have questions about your visa status.

ADDITIONAL INSTRUCTOR AND INSTITUTIONAL POLICIES

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.

STUDENT BEHAVIOR EXPECTATIONS: Students are expected to conduct themselves appropriately while on College property or in an online environment. The instructor would institute established HCCS disciplinary action. Students who pose a threat to the safety of others will be subject to immediate withdrawal from the classroom. Please refer to the HCC Student Handbook.

AMERICANS WITH DISABILITIES ACT STATEMENT: HCC strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including 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/district/students/disability-services>

COMPUTER VIRUS PROTECTION: Computer viruses are, unfortunately, a fact of life. Using removable devices on more than one computer creates the possibility of infecting computers and diskettes with a computer virus. This exposes the computers of the college, your personal computer, and any others you may be using to potentially damaging viruses. The college has aggressive antivirus procedures in place to protect its computers, but cannot guarantee that a virus might not temporarily infect one of its machines. It is your responsibility to protect all computers under your control and use and ensure that each diskette you use, whenever or wherever you use it, has been scanned with anti-virus software. Since new viruses arise continually, your anti-virus software must be kept current. And, since no anti-virus software will find every virus, keeping backup copies is extremely important.

EQUAL OPPORTUNITY STATEMENT: It is the policy of the HCCS to provide equal employment, admission and educational opportunities without regard to race, color, creed, national origin, gender, age, veteran's status, sexual orientation, or disability.

FERPA

The academic, financial and non-directory information on your student account is confidential and protected by the Family Educational Rights & Privacy Act (FERPA). We cannot release certain information to another person without your written authorization. Further information regarding Student Records and FERPA can be found at;

<http://www.hccs.edu/district/aboutus/procedures/student-rights- policies--procedures/>

Assessments

Assessments	Description	Total Points Possible
Canvas	Canvas Lab Exercises	100 points
Participation	Participation and Exercises Tests	100 points
Practical Exams (3)	Exams (100 points each)	600 points
Lab Quizzes	Quizzes (100 points each)	200 points
	<u>Total Points</u>	<u>1000 points</u>

Grade Computation:

A = 750-800

B = 700-749

C = 650-699

D = 600-649

F = below 600

** Exams and Quizzes will be done in CANVAS

* For a final grade computation, add up all the points you have received in the course and divide it by 800, and then multiply it by 100. That is your **final average** in the class.

Exam policy:

* Exams and quizzes will be given at the assigned time on Canvas. NO EXTRA TIME WILL BE ALLOWED AFTER THE DUE DATE.

Essential Needs Statement

Any student who may be facing challenges in affording or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is encouraged to contact the Dean of Students Services for support. Additionally, please notify your professor (me) if you are comfortable in doing so. This will enable me to provide you with guidance on resources that I am aware of relating to essential needs.

HCC-BookStore Phone Numbers:

Alief.....713-718-6656
Central.....713-528-0872
Eastside.....713-640-1441
Northline.....713-692-1472

Spring Branch.....713-468-5300
Westloop.....713-218-0391
Katy.....713-718-5982
Stafford.....281-499-6413

IMPORTANT DATES:

September 5 (Monday) – Labour day

November 21-25 - Thanksgiving Break

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: shadi.kilani@hccs.edu

Phone: 713-718-7775

TENTATIVE INSTRUCTIONAL OUTLINE:

This is a suggested study schedule. For exam dates, check the calendar! The Instructor reserves the right to change the instructional outline, if needed. Students will be informed in a timely manner of any changes.

CRN 10 - Spring 2022

Week Number	Lab Exercises
1: 8/26	Introduction/Syllabus/Learning Web/CANVAS/ Lab Safety/ Connect (1) Brightfield Microscopy, pp. 1-11
2: 9/2	(5) Microbiology of Pond Water-Protozoa, Algae and Cyanobacteria, pp. 31-47 (6) Ubiquity of Bacteria – inoculate cultures, pp. 49-52
3: 9/9	(6) Ubiquity of Bacteria – read results (7) The Fungi: Molds and Yeasts, pp. 53-62
4: 9/16	(8) Aseptic Technique, pp. 63-74 (9) Pure Culture Techniques – inoculate cultures, pp. 75-85
5: 9/23	(9) Pure Culture Techniques – read results
6: 9/30	Lab Exam 1 – 2/16/2022 – 11:00am (10) Smear Preparation, pp. 87-93 (11) Simple Staining, pp. 87-93 (12) Negative Staining, pp. 101-106
7: 10/7	(13) Capsular Staining, pp. 107 – 110 (14) Gram Staining, pp. 111-117
8:10/14	(15) Endospore Staining, pp. 119 – 124(16) Acid-Fast Staining, pp. 125-128
9. 10/21	Lab Exam 2 – 3/23/2022 – 11:00am (17) Motility Determination – inoculate cultures, pp. 129-134 (47) Temperature: Lethal Effects – inoculate cultures, pp. 345-350 (23) Phage Typing – inoculate cultures, pp. 175-177
10: 10/28	(17) Motility Determination – read results (23) Phage Typing – read results (24) Effects of Oxygen on Growth- inoculate cultures, pp. 179 – 186
11: 11/4	(31) Antimicrobial Sensitivity Testing: The Kirby-Bauer Method – inoculate cultures, pp. 221-233 (32) Evaluation of Antiseptics and Disinfectants: Filter Paper Disk – inoculate cultures, pp. 235 – 240
12: 11/11	(36) Physiological Characteristics: Oxidation and Fermentation Tests – inoculate cultures, pp. 261-272 (38) Physiological Characteristics: Multiple Test Media
13: 11/18	(53) The Staphylococci: Isolation and Identification (MSA and Blood Agar) – inoculate cultures, pp. 385-391, 393 – 395 (54) The Streptococci and Enterococci: Isolation and Identification – inoculate cultures, pp. 397-401

(55) Gram-Negative Intestinal Pathogens (MAC) – inoculate cultures, pp. 411 – 413

14: 11/21-25:
(Thanksgiving
Holiday week

15: 12/2 **Lab Exam 3 – 11/am**

******Have a GREAT SEMESTER and please remember to inform me if any questions arise**