



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

[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/)

### **BIOL 1306: General Biology I lecture CRN 22587 Fall 2020, 16 weeks FULLY ONLINE 3 Credit Hours, 48 hours per semester**

#### **Instructor Contact Information**

Instructor: Partha Sen PhD

Office: WLOP Rm 256, A3

Office Phone: 713-718-2059

Office Hours: Tuesdays & Thursdays  
9:00AM – 10:00AM

HCC email: [partha.sen@hccs.edu](mailto:partha.sen@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 your concerns and discuss course topics.

#### **Instructor's Preferred Method of Contact**

Please use the "Inbox" feature in Canvas to send emails to me regarding anything related to your course. 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**

Biology is an endless adventure with constant new developments. Biology is the study of life. Perhaps, the first thing that comes to mind when you think about life on earth is humans and familiar animals. In this course, you will also learn about bacteria, fungi, plants and other life forms on earth. This course introduces students to the nature of life, including the chemical foundation of life; plants, animal, humans and bacterial cell structure and function; DNA, genetics and evolution. You will learn about the various techniques used to study biology; gene cloning, gene editing and the exciting field of Genetic Engineering.

## My Personal Welcome

Welcome to General Biology—I'm delighted that you have chosen this course! One of my passions is to know as much as I can about various aspects of Biology, 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 in future.

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 office hours, by appointment, to tackle the questions. My goal is for you to walk out of the course with a better understanding of Biology. Contact me by email whenever you have a question.

## Course Modality:

**Online Anytime** – Students can take classes online at any time. These are traditional online classes and students never come to campus. Look for the code WW when reviewing the updated schedule.

## Prerequisites and/or Co-Requisites

Recommended prerequisite: MATH 1314 or 1414, successful completion of college algebra or concurrent enrollment in higher-level mathematics is recommended.

Recommended co-requisite: BIOL 1106 Biology for Science Majors I (lab)

Please carefully read the repeater policy in the [HCCS Student Handbook](#).

## Canvas Learning Management System and computer system requirements

HCC uses the Canvas learning management system (LMS), which we call Eagle Online. To access Eagle Online, you will need a PC (Windows 7 sp1 or better), or Mac (OS X 10.8 or better) with a broadband connection to the Internet. Use [FIREFOX](#) or [CHROME](#) as the internet browser.

All biology sections utilize Canvas (<https://eagleonline.hccs.edu>) to supplement in class assignments, exams, and activities. The biology department requires a computer or iPad with the ability to download the Respondus Lockdown Browser (LDB) software and a webcam for online assessments. Chromebooks and smartphones cannot be used for graded assessments for which the instructor requires LDB and webcam monitoring. **If you do not have the capabilities for LDB with webcam you are advised to take necessary actions so that you don't face any problem during the exams and submission of assignments.** Keep in mind, having a technical computer problem is **not** a valid reason for submitting late work. It is your responsibility to allocate enough time to begin and end the assignment long before the deadline. Don't wait until the last minute and have technical problems that don't allow you to complete the item.

Type Minimum Recommended

PC Users Windows Vista Windows 10 (10 S mode is not supported)

Mac Users OS X 10.5 or higher OS X 10.13 High Sierra

Webcam 640×480 resolution 1280×720 resolution

Internet Download Speed .768 Mbps 1.5 Mbps

Canvas Browser Requirements:

- Canvas recommends the use of the latest version of any web browser. It's important to update your web browser regularly.
- Pop-ups must be enabled. Disable your pop-up blockers.
- Javascript must be enabled
- Cookies must be enabled
- Install the most commonly used internet plugins and keep them updated

### **Open Lab Locations**

[HCCS Open Computer Lab locations](#) may be used to access the internet and Canvas when open.

### **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.

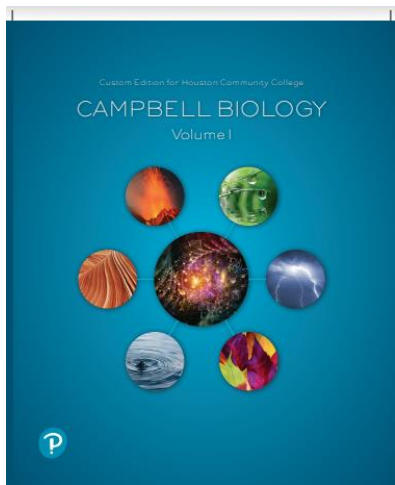
### **Instructional Materials required for the course**

#### **Inclusive Access**

**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 this Canvas site. NO other purchase is necessary. For students who wish to have a printed copy of the text, an optional low cost print copy is available for purchase at the Houston Community College Bookstore. You have the right to opt-out and purchase your own course materials if you desire, prior to the official day of record, which is September 7, 2020.** It is NOT recommended that you Opt-Out, as these materials are required to complete the course. You can choose to Opt-Out on the first day of class, but you will be responsible for purchasing your course materials at the full retail price and access to your materials may be suspended.

Student Video: How to access eBook Course Materials in Canvas 1111  
<https://vimeo.com/304674236>

The textbook listed below is required for this course and the e-text comes with your course registration. If you choose to Opt-out (not recommend as explained above), you are required to purchase the text.



Campbell Biology 12<sup>th</sup> edition with mastering: Full volume or split volume

Author	Edition	ISBN	
Campbell Biology w/ Mastering (full volume test with chapters for BIOL 1306 and BIOL 1407)	Urry	12	9780135855836
Campbell Biology vol.1 w/ Mastering (split volume text with chapters specifically for BIOL 1306)	Urry	12	9780137287567

## 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

BIOL 1306 is a course that covers fundamental principles of living organisms, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are also included.

## Core Curriculum Objectives (CCOs)

BIOL 1306 satisfies the Natural Science requirement in the HCCS core curriculum. The HCCS 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 explore the scientific research methods that are used in the study of biology. They will be able to interpret numerical data in charts, graphs, and tables that are in their textbooks and other resources. Students should be able to carry out basic mathematical operations: be able to use Hardy and Weinberg equations, calculate percentages, frequencies, complete textbook reading assignments and answer questions on quizzes and exams that pertain to Course Student Learning Outcome #7.
- **Social Responsibility:** Students will demonstrate the ability to engage effectively in class activities and discussion, complete textbook reading assignments, and answer questions on quizzes and exams that pertain to Course Student Learning Outcome #9 below.

## Program Student Learning Outcomes (PSLOs)

### Program Student Learning Outcomes (PSLOs) for the Biology Discipline:

- PSLO#1 - Students 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 - Students will demonstrate the ability to think critically and to integrate factual and conceptual information into an understanding of scientific data by written, oral and/or visual communication; this may include successful completion of a course-specific research project or a case study module.
- 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.

Additional information can be found at: <https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/biology/>

## **Course Student Learning Outcomes (CSLOs)**

Upon successful completion of BIOL 1306, the student will be able to:

1. Describe the characteristics of life.
2. Explain the methods of inquiry used by scientists.
3. Identify the basic requirements of life and the properties of the major molecules needed for life.
4. Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.
5. Describe the structure of cell membranes and the movement of molecules across a membrane.
6. Identify the substrates, products, and important chemical pathways in metabolism.
7. Identify the principles of inheritance and solve classical genetic problems.
8. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
9. Describe the unity and diversity of life and the evidence for evolution through natural selection.
10. Develop critical thinking skills and habits of active collaborative learning.

## **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 (online or in person depending on campus closures)

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 and Exams**

### **Chapter Homework Assignments**

Assignment will be done in Mastering Biology through Pearson

### **Exams**

There will be four exams and a comprehensive Departmental final. Each exam will be worth 100 points. There will be 50 questions. There will be a mixture of multiple choice, True/False and matching questions. There may be labeling questions as well. Each question is usually two points each. Each exam is worth 18.75% of the total grade. No lowest grade will be dropped. HCC does not provide students with Scantron forms. They are sold in campus bookstores.

### **Final Exam**

All students will be required to take a comprehensive departmental final exam during the week of finals. Students must supply their own Scantron for the final exam (#882-E, sold in campus bookstores). The final exam grade will count as 10% of your course grade.

## **Grading Formula**

Exams 80%

Departmental Final 10%

Homework 10%

Extra credit points, if any, will be available to all students. No extra credit assignments will be given on an individual student basis.

The grading scale will be the HCCS standard:

90-100%	A: 4 points per semester hour
80-89%	B: 3 points per semester hour
70-79%	C: 2 points per semester hour
60-69%	D: 1 points per semester hour
0-59%	F: 0 points per semester hour

Withdrawals and incompletes earn 0 points per semester hour

**HCC Grading Scale can be found on this site under Academic Information:**

**<http://www.hccs.edu/resources-for/current-students/student-handbook/>**

**Incomplete Policy:**

In this course, the purpose 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 May 17, 2020.
- ✓ In all cases, the instructor reserves the right to decline a student's request to receive a grade of Incomplete.



## Course Calendar

Week	Date	Chapter	Topic
1	8.24.20	1	Introduction, Evolution, Themes of Biology, and Scientific Inquiry
		2	The Chemical Context of Life
2	8.31.20	3	Water and Life
		4	Carbon and Molecular Diversity A tour of the cell
3	9.7.20	5	The Structure and Function of Large Biological Molecules
4	9.14.20	6	A Tour of the Cell
	<b>9.17-18.20</b>		<b>1st Lecture Exam (Chapters 1-5)</b>
5	9.21.20	7	Membrane Structure and Function
		8	Introduction to Metabolism
6	9.28.20	9	Cellular Respiration and Fermentation
7	10.5.20	10	Photosynthesis
8	10.12.20	12	The Cell Cycle
	<b>10.15-16.20</b>		<b>2nd Lecture Exam (Chapters 6-10)</b>
9	10.19.20	13	Meiosis and Sexual Life Cycles
10	10.26.20	14	Mendel and Gene Idea
11	11.2.20	15	The Chromosomal Basis of Inheritance
		16	The Molecular Basis of Inheritance
12	11.9.20	17	Gene Expression: From Gene to Protein
13	11.16.20	18	Regulation of Gene Expression
	<b>11.19-20.20</b>		<b>3rd Lecture Exam (Chapters 12-16)</b>
14	11.23.20	19	Viruses
15	11.30.20	20	DNA Tools and Biotechnology
16	<b>12.7-8.20</b>		<b>4 th Lecture examination (Chapters 17-20)</b>
	<b>12.10-11.20</b>		<b>Departmental Final (Comprehensive) DATE MAY CHANGE</b>

### 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

Points will be deducted if assignments are not submitted on time. Students have to be careful about the submission dates of homework on Mastering Biology. No extensions will be done. There will be no make-up exam unless there is an emergency that has been documented. There is no make-up for the Departmental Final.

### Electronic Devices

HCC uses the Canvas learning management system (LMS), which we call Eagle Online. To access Eagle Online, you will need a PC (Windows 7 sp1 or better), or Mac (OS X 10.8 or better) with a broadband connection to the Internet. Use [FIREFOX](#) or [CHROME](#) as the internet browser. All biology sections utilize Canvas (<https://eagleonline.hccs.edu>) to supplement in class assignments, exams, and activities. The biology department requires a computer or iPad with the ability to download the Respondus Lockdown Browser (LDB) software and a webcam for online assessments. **Chromebooks and smartphones cannot be used for graded assessments for which the instructor requires LDB and webcam monitoring. If you do**

not have the capabilities for LDB with webcam you are advised to take necessary actions so that you don't face any problem during the exams and submission of assignments. Keep in mind, having a technical computer problem is **not** a valid reason for submitting late work. It is your responsibility to allocate enough time to begin and end the assignment long before the deadline. Don't wait until the last minute and have technical problems that don't allow you to complete the item.

### **Academic Integrity**

Academic dishonesty: Academic dishonesty will result in disciplinary action, including dismissal. If cheating is discovered during assessments an "F" with zero points will be administered for the exam/quiz/homework/lab grade. If this should become a persistent problem, the student will receive an "F" for the course. Please be aware that it is VERY difficult to pass the course with a zero point exam score. Please see page 78 of the Student Handbook for more details.

<https://www.hccs.edu/resources-for/current-students/student-handbook/#d.en.293830>

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**

Students will have to take the Semester start quiz to document that they have logged on to Canvas and have gone over the content of the shell and the Syllabus.

### **Student Conduct**

Appropriate student conduct is expected at all times. Disruptive behavior will result in Security. Please see page 78 of the Student Handbook for more details.

<https://www.hccs.edu/resources-for/current-students/student-handbook/#d.en.293830>

### **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**

Below is the link to the HCC Student Handbook where you can find information on the topics listed:

<http://www.hccs.edu/resources-for/current-students/student-handbook/>

- 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/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 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](mailto: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 Information**

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