

HOUSTON COMMUNITY COLLEGE SYSTEM  
BIOL. 1406, GENERAL BIOLOGY I, CRN 18124  
SPRING 2017

Dr. Partha Sen

**TEXT BOOK:** Reece, Jane B. *et al* 2011. Biology, 9th Ed. Pearson., Inc. and Masteringbiology;  
Go to <http://www.pearsonmastering.com> for registering in mastering; use sen78894 as the course ID.

**PLEASE NOTE:** It's very important students either purchase their book/access code bundle from the HCC Bookstore OR purchase directly online via the registration process as detailed in the video below. HCC has custom courses set up with a negotiated price for HCC students – if an access code is purchased at any other retailer, it will not work.

To help students register for this course, here is a quick registration video that can help students: <http://screencast.com/t/XhhEKf12B2o>

And here is a link to our student registration handout and power point presentation:

<http://www.pearsonmylabandmastering.com/northamerica/educators/mm-support/get-started/index.html>

**LAB MANUAL:** BIOLOGY 1406 Laboratory Manual, HCCS-Southwest, Tom Loesch *et al* Third Edition

LABORATORY: Monday 11:00AM – 2:00PM; Room: 162

LECTURE: Wednesday 11:00AM – 2:00PM; Room: C222

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Office hour: By appointment

**COURSE DESCRIPTION & GOAL:** Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included.

**RULES AND REGULATIONS:**

1. Text book and Laboratory manual are required.
2. Class attendance is required. Four absences will result in administrative withdrawal.
3. You must read the lab safety rules before doing any of the lab exercises and follow them.
4. Lab reports: Although students will work in groups, individual active participation is expected. You are required to complete the lab reports.
5. No make up exams will be given. Should a student arrive after the first examinee has turned in the test materials, she/he will be considered as not having taken the examination.
6. No extra credit
7. No food or drink in the labs
8. **Cellular telephones to remain off while in the class. No text messaging. Phones should not be on the desk.**
9. **No Web browsing. Points from your test grade will be deducted if you don't obey the rules.**

## STUDENT LEARNING OUTCOMES

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
11. Apply scientific reasoning to investigate questions and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
12. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory.
13. Communicate effectively the results of scientific investigations.

**Attendance Policy:** Please go over the attendance policy of HCCS in the Fall 2013 class schedule. *“Students are expected to attend classes regularly. Students are responsible for materials covered during their absences. Class attendance is checked daily by instructors. Although it is the responsibility of the student to drop a course for non-attendance, the instructor has full authority to drop a student for excessive absences. A student may be dropped from a course for excessive absences after the student has accumulated absences in excess of 12.5% of the hours of instruction (including lecture and laboratory time).”* I realize that sometimes outside circumstances can interfere with school, and I will try to be as accommodating as possible, but please be aware of the attendance policy.

**Disability Support Services:** Any student with a documented disability (e.g. physical, learning, psychiatric, vision, hearing, etc.) who needs to arrange reasonable accommodations must contact the Disability Services Office. Faculty is authorized to provide only the accommodations requested by the Disability Support Services Office.

**Academic Honesty:** Students are responsible for conducting themselves with honor and integrity in fulfilling course requirements. Disciplinary proceedings may be initiated by the college system against a student accused of scholastic dishonesty. Penalties can include a grade of "0" or "F" on the particular assignment, failure in the course, academic probation, or even dismissal from the college. Scholastic dishonesty includes, but is not limited to, cheating on a test, plagiarism, and collusion.

**New Repeat Policy:** Students repeating a course third time or more will be charged a \$50 /credit hour fee increase at HCC and other Texas public Colleges and Universities. Please ask your instructor/counselor about opportunities for tutoring/other assistance prior to considering withdrawal or if you are not receiving passing grades.

<b>Date</b>	<b>Chapters</b>	<b>Topics to be covered</b>
1/18	1	Organization session; Introduction: Themes in the study of Life
1/23	2	The chemical context of life
	Lab: 1	Laboratory safety; Basic Chemistry
1/25	3	Water and Life
1/30	Lab: 2	Properties of Water
2/01	4	Carbon and the Molecular Diversity of Life
2/06	5	Structure and Function of Large Biological Molecules
2/08	6	A tour of the Cell
2/13	Lab: 3	Biochemistry: Detection of Biological Molecules
2/15	7	<b>1<sup>st</sup> Lecture Exam (Chapters 1-5);</b> Membrane Structure & Function
2/20		<b>Presidents' Day</b>
2/22	8	An Introduction to Metabolism
2/27	Lab: 4, 5	The care and use of the microscope, Cell Structure
3/01	9	Cellular Respiration & Fermentation
3/06	Lab: 6	Diffusion and Osmosis
3/08	10	Photosynthesis
<b>3/13-17</b>		<b>Spring Break</b>
3/20	Lab: 7	Enzymes
3/22	12, 13	The Cell Cycle; Meiosis and Sexual Life Cycles
3/27	Lab: 8	<b>1<sup>st</sup> Lab Exam (Lab 1-7);</b> Respiration and Fermentation
3/29	14	Mendel and Gene Idea
4/03	Lab: 9	<b>2<sup>nd</sup> Lecture Exam (Chapters 6-10)</b> Photosynthesis and Spectrophotometry
4/05	15	The Chromosomal Basis of Inheritance
4/10	Lab: 10	Cell Division
4/12	16	The Molecular Basis of Inheritance
4/17	Lab: 11	Genetics
4/19	17	<b>3<sup>rd</sup> Lecture Exam (Chapters 12-16);</b> From Gene to Protein
4/24	Lab: 12	DNA to Protein
4/26	18, 19	Regulation of Gene Expression, Viruses
5/01	Lab: 13	Biotechnology and DNA Extraction
5/03	20	<b>2<sup>nd</sup> Lab Exam (Lab 8-13);</b> Biotechnology
5/08		<b>Instructor's &amp; Departmental Final Examination (Comprehensive)</b>

#### **GRADE COMPUTATION:**

3 Lecture Exams-40% (20% each; Lowest grade dropped), 2 Lab practical Exams-20% (10% each)

Final-15%; Departmental Final-10%; Assignment & Quizzes-10%; Participation- 5% (90 -100% = A; 80 - 89% = B; 70 - 79% = C; 60 -69% = D; Below 60% = F)

**INSTRUCTOR RESERVES THE RIGHT TO CHANGE INFORMATION IN THIS SYLLABUS  
LAST DATE FOR ADMINISTRATIVE/STUDENT WITHDRAWAL IS APRIL 03, 2017  
INSTRUCTOR WILL NOT BE RESPONSIBLE IF YOU GET 'F' FOR NOT WITHDRAWING  
YOURSELF**