

Division of Earth, Life & Natural Sciences

Biology Department

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

# Biology 2301: Anatomy & Physiology I | Lecture | #10438

Fall 2019 | 16 Weeks (8.26.2019-12.15.2019)

In-Person | Central LHSB 315 | T/R 8 a.m.-9:20 a.m.

3 Credit Hours | 48 hours per semester

## Instructor Contact Information

Instructor: Brian C. Mahon, Ph.D. Office Phone: 713-718-6423

Office: Central LHSB , Room 313 Office Hours: T/R 11-12 p.m.

HCC Email: [brian.mahon@hccs.edu](mailto:brian.mahon@hccs.edu) Office Location: LHSB 313

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 or Canvas messages are preferred.** 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

**Welcome to Anatomy and Physiology!** We are so glad that you chose to give Houston Community College the benefit of your expertise. This is a two-course series. Anatomy and Physiology I and Anatomy and Physiology II. Biology 2301 and2302 are 3 credit hour lecture courses while Biology 2101 and 2102 are 1 credit hour lab courses, both intended for students entering health care professions.

Anatomy and Physiology I is the first part of a two course sequence. It is a study of the structure and function of the human body including cells, tissues and organs of the following systems: integumentary, skeletal, muscular, nervous and special senses. The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis.

## My Personal Welcome

Welcome to Anatomy and Physiology—I’m delighted that you have chosen this course! One of my passions is to learn as much as I can about the relationship of structure and function, 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 structure and function. So please visit me or contact me by email whenever you have a question.

## Prerequisites and/or Co-Requisites

**Prerequisites:**

Math 0106 or higher placement by testing, must be placed in college level reading.

**Co-requisites:** General Biology I (Biology 1306 and 1106) are highly recommended as a prerequisite for this course, and AP1 Lab (2101) is highly recommended to be taken concurrently. This course requires a basic understanding of biology, math, and chemistry. Over 60% of the students who have not had 1406 (1306/1106), FAIL to complete this course successfully. This course will require about 150 hours of Study. Take 1406 (BIOL 1306/1106) first!!!!! PLEASE SEE VIDEO- https://www.youtube.com/watch?v=x9TxKLmBdX8

Please carefully read the repeater policy in the HCCS Student Handbook.

## Canvas Learning Management System

All Biology sections utilize [Canvas](file:///C:\Users\Matt%20Webster\AppData\Local\Temp\Canvas) (<https://eagleonline.hccs.edu>) to supplement in-class assignments, exams, and activities.

## Open Lab Locations

[HCCS Open Computer Lab locations](https://www.hccs.edu/departments/division-of-instructional-services/institute-for-instructional-engagement--development/open-lab-schedule/) may be used to access the Internet and Canvas. **USE** [**FIREFOX**](https://www.mozilla.org/en-US/firefox/new/) **OR** [**CHROME**](https://www.google.com/chrome/browser/desktop/index.html) **AS THE INTERNET BROWSER**.

## Scoring Rubrics, Sample Assignments, etc.

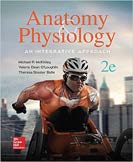
When applicable, look in Canvas for the scoring rubrics for assignments, samples of class assignments, and other information to assist you in the course.

<https://eagleonline.hccs.edu/login/ldap>

# Instructional Materials

## Required Resources

**Textbook: Anatomy and Physiology, An Integrative Approach 2e**, 2nd Edition, by McKinley/O’Loughlin/Bidle, publisher: McGraw Hill, 2016,

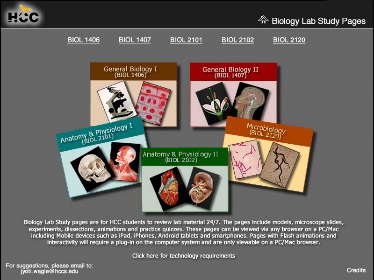


ISBN 978-0-07-802428-3. (includes “Connect” online resources)

Link to view book: <https://www.mheducation.com/highered/product/M0078024285.html>

The book is included in a package that contains the text as well as an access code and are found at the [HCC Bookstore](https://hccs.bncollege.com/webapp/wcs/stores/servlet/BNCBHomePage?storeId=19561&catalogId=10001&langId=-1). You may either use a hard copy of the book, or rent the e-book from Pearson. Order your book here: [HCC Bookstore](https://hccs.bncollege.com/webapp/wcs/stores/servlet/BNCBHomePage?storeId=19561&catalogId=10001&langId=-1)

## Suggested Resources



### HCCS Biology Lab Study Pages

[Click here to access Biology lab study pages online.](https://iied21.hccs.edu/JyotiW/BiologyLabs/index.html)

**Additional faculty suggested resource(s). (from Dr. Parker)**

1. Bozeman Science: http://www.bozemanscience.com/anatomy-and-physiology

2. Crash Course: https://thecrashcourse.com/courses/anatomy

3. AP Chute web site: http://apchute.com

4. Mike Clark web site: http://williammclarkmd.com

5. OpenStax (Free eText): https://openstax.org/details/books/anatomy-and-physiology

## 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](http://www.hccs.edu/resources-for/current-students/tutoring/) 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](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

Anatomy and Physiology I is the first part of a two course sequence. It is a study of the structure and function of the human body including cells, tissues and organs of the following systems: integumentary, skeletal, muscular, nervous and special senses. The lab provides a hands-on learning experience for exploration of human system components and basic physiology. Emphasis is on interrelationships among systems and regulation of physiological functions involved in maintaining homeostasis.

## [Core Curriculum Objectives (CCOs)](https://www.hccs.edu/programs/catalog/academic-information/)

Biology 2301 satisfies one of the science requirements in the HCCS core curriculum. The HCCS Physiology 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.
* **Teamwork**– ability to consider different points of view and to work effectively with others to support a shared purpose or goal
* **Social Responsibility** – intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities
* **Personal Responsibility** – ability to connect choices, actions and consequences to ethical decision-making

## Program Student Learning Outcomes (PSLOs)

**Program Student Learning Outcomes (PSLOs) for the Biology Discipline**

1. Will display an understanding of biological systems and evolutionary processes spanning all ranges of biological complexity, including atoms, molecules, genes, cells, and organisms.
2. Will 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).
3. Will demonstrate proficiency and safe practices in the use of laboratory equipment and basic laboratory techniques.
4. Will apply principles of the scientific method to problems in biology in the collection, recording, quantitative measurement, analysis and reporting of scientific data.

## Course Student Learning Outcomes (CSLOs)

Completion of the specific course Student Learning Outcomes listed below does NOT and will NOT guarantee the student any specific final course grade at the end of the semester!

1. Use anatomical terminology to identify and describe locations of major organs of each system covered.
2. Explain interrelationships among molecular, cellular, tissue, and organ functions in each system.
3. Describe the interdependency and interactions of the systems.
4. Explain contributions of organs and systems to the maintenance of homeostasis.
5. Identify causes and effects of homeostatic imbalances.
6. Describe modern technology and tools used to study anatomy and physiology.

**In our efforts to prepare students for a changing world, students may be expected to utilize computer technology while enrolled in classes, certificate, and/or degree programs. The specific requirements are listed below:**

**GETTING READY**

**Prerequisites:** Math 0106 or higher placement by testing, must be placed in college level reading.

**Co-requisites:** None

## Learning Objectives

1. Use anatomical terminology to identify and describe locations of major organs of each system covered.
2. Explain interrelationships among molecular, cellular, tissue, and organ functions in each system. Describe the interdependency and interactions of the systems.
3. Explain contributions of organs and systems to the maintenance of homeostasis. Identify causes and effects of homeostatic imbalances.
4. Describe modern technology and tools used to study anatomy and physiology.

# 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
* Be aware of and comply with academic honesty policies in the [HCCS Student Handbook](http://www.hccs.edu/resources-for/current-students/student-handbook/)

# Assignments, Exams, and Activities

## Assignments

Students are required to read assigned chapters and to complete chapter and Quizzes on schedule.

Additional announced and unannounced quizzes during lecture may be conducted throughout the semester. Additional assignments may be assigned as specified by the instructor.

## Exams

Students will be assessed via lecture examinations, chapter quizzes, comprehensive final lecture. These will mainly be multiple choice exams, however I reserve the right to use additional types of written or other formats as I deem needed. I will drop one lowest or missed exam. You can not make up exams with out proper documentation and advanced notice.

## In-Class Activities

We will be having in class activities from time to time and it is important that you come to class with the material studied so we can have meaningful discussions.

## Final Exam

All students will be required to take a comprehensive departmental final exam consisting of 50 multiple- choice questions. Students must provide their own Scantron forms (FORM NUMBER 882-E-LOVAS). All the information students need to prepare for the exam is in the course required materials. This exam counts for 10% of your final grade.

## Grading Formula

Grades are calculated using the breakdown scale below with 1,000 total points possible.

Connect Assignments 200 points

Exams 700 points

Departmental Final Exam 100 points

Total Points 1000

| **Grade** | **Total Points** |
| --- | --- |
| A | 900+ |
| B | 800-899 |
| C | 700-799 |
| D | 600-699 |
| F | <600 |

### 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 the Date of the Final
* 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/**](http://www.hccs.edu/resources-for/current-students/student-handbook/)

# Course Calendar

| **Week** | **Dates** | **Topic / Assignments Due** |
| --- | --- | --- |
| 1 |  | Syllabus: Introduction to Anatomy and Physiology I   1. Science of Anatomy and Physiology |
| 2 |  | 1. Atoms, Ions, and Molecules 2. Energy, Chemical Reactions, and Cellular Respiration |
| 3 |  | 1. Biology of the Cell |
| 4 |  | 1. Tissue Organization |
| 5 |  | Exam 1 (1-5)   1. Integumentary System |
| 6 |  | Integumentary System   1. Skeletal System: Bone Structure and Function |
| 7 |  | Skeletal System: Bone Structure and Function   1. Skeletal System: Axial Skeleton |
| 8 |  | Skeletal System: Axial Skeleton  Skeletal System: Appendicular Skeleton |
| 9 |  | 1. Articulations   Exam 2 (6-9) |
| 10 |  | 1. Muscular Tissue |
| 11 |  | Muscular Tissue   1. Muscular System: Axial and Appendicular Muscles |
| 12 |  | 1. Nervous Tissue 2. Brain and Cranial Nerves |
| 13 |  | EXAM 3 (10-13)   1. Spinal Cord and Spinal Nerves |
| 14 |  | 1. Autonomic Nervous System   Thanksgiving |
| 15 |  | 1. Senses |
| 16 |  | Final Lecture Examination (comprehensive) |

## 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 are “no makeups” for missed exams as I drop the lowest exam. I require documentation of an emergency to allow a make-up. Complete all online work prior to the due date.

## Academic Integrity

Students are responsible for academic 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. Cheating includes merely looking at or copying from another student's exam, orally communicating or receiving answers during an exam, having another person complete a project or assignment, using unauthorized notes, texts, smart watches, 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. Beware cell phones and smart watches are NOT allowed on or near your person during

proctored exams, nor may you take a bathroom break during an exam. Please remember to

keep your eyes on your own test or on the ceiling. Scholastic Dishonesty will result in a referral to the Dean of Student Services. See the link below for details.

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

You MUST come to class and actively participate, or you will not do well. Roll will be taken

but attendance does not count towards your grade. Missed assignments may not be possible to make up.

## Student Conduct

All official HCC policies, student services and student responsibilities are clearly stated in the

HCC Student Handbook, including academic honesty, support, withdrawal, repeating courses,

grade of FX and international students, FERPA and privacy, the HCC grading scale, campus

carry and safety, transfer planning, complaints, student services, rights and responsibilities

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

Those engaged in disruptive behavior will be warned. If the behavior persists, the student

will be asked to leave the class session and the incident will be reported in Maxient.

Recurring disruptive behavior will be referred to the Chair and/or Dean for disciplinary action.

## Instructor’s Course-Specific Information (As Needed)

Exam/Assignment Grades will be entered into the Canvas Gradebook. They will not be given by email or phone.

## Electronic Devices

No electronic devices (smartphones, tables, computers, smartwatches etc.) are allowed in

use during class, unless requested by the instructor. If you wish to use an electronic device

during class, you may step outside to do so. All personal electronic devices must be turned

off and placed in closed bags for exams.

# [Biology Program Information](https://www.hccs.edu/programs/areas-of-study/science-technology-engineering--math/biology/)

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](http://www.hccs.edu/resources-for/current-students/egls3-evaluate-your-professors/)) 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](http://www.hccs.edu/resources-for/current-students/student-e-maileagle-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 Contact Information

Dr. DaeJan Grigsby

Email: daejan.grigsby@hccs.edu

Phone: 713-718-7775