BOSTON COLLEGE

SUMMER SESSION

BIOL 130001: Anatomy and Physiology 1, 3 credits
Boston College Summer Session 2019
Summer Session 1, 5/14/19 – 5/30/19
Monday, Tuesday, Wednesday, Thursday 11:00am-2:00pm

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Office Hours: Monday-Thursday 10:30am-11:00am, 2:00pm-2:45pm

Boston College Mission Statement

Strengthened by more than a century and a half of dedication to academic excellence, Boston College commits itself to the highest standards of teaching and research in undergraduate, graduate and professional programs and to the pursuit of a just society through its own accomplishments, the work of its faculty and staff, and the achievements of its graduates. It seeks both to advance its place among the nation's finest universities and to bring to the company of its distinguished peers and to contemporary society the richness of the Catholic intellectual ideal of a mutually illuminating relationship between religious faith and free intellectual inquiry.

Boston College draws inspiration for its academic societal mission from its distinctive religious tradition. As a Catholic and Jesuit university, it is rooted in a world view that encounters God in all creation and through all human activity, especially in the search for truth in every discipline, in the desire to learn, and in the call to live justly together. In this spirit, the University regards the contribution of different religious traditions and value systems as essential to the fullness of its intellectual life and to the continuous development of its distinctive intellectual heritage.

Course Description

Does not satisfy the Natural Sciences Core requirement. This course lays the foundation for the understanding of human anatomy and physiology. The first portion of the course covers cellular and molecular aspects of eukaryotic cell function: basic chemistry, macromolecules, cell structure, membrane transport, metabolism, gene expression, cell cycle control, and genetics. The course continues with the study of several organ systems. Beginning with the Integument, which is followed by the Skeletal and Muscular Systems, and ending this first semester with the Nervous System. The cellular and molecular basis for the functions of these systems is an integral element of this portion of the course.

Textbooks & Readings

Marieb, Elaine N and Katja Hoehn. Human Anatomy and Physiology. Eleventh edition, Pearson, 2019. Mastering A&P code which provides online access to the text (as an eText).

Canvas
Canvas is the Learning Management System (LMS) at Boston College, designed to help faculty and students share ideas, collaborate on assignments, discuss course readings and materials, submit assignments, and much more - all online. As a Boston College student, you should familiarize yourself with this important tool. For more information and training resources for using Canvas, click here.

Course Objectives

Upon successful completion of this course, students should be able to:

- Speak the language of Anatomy
- Understand the structure of atoms that form molecules and how they are involved in chemical reactions
- Describe the basic unit of life, the cell, as well as its many components and how cells from tissues which form organs that ultimately form the 11 organ systems in the human body
- Comprehend the structure of both DNA and RNA
- Explain DNA replication
- List and understand the phases of mitosis and meiosis
- Recognize and comprehend histology, the study of tissues
- Explain why the skin is an organ, and its importance in protecting the body
- Describe the macro and microscopic structure of bone and how it becomes the skeletal system
- Recognize the many components of body movement from the complicated joints/articulations to the muscle system itself
- Study the micro and macroscopic structures of the muscle and muscle contractions
- Understand and explain the structure and function of the nervous system including both the Central and Peripheral Nervous System
- Describe the functions of neurons, synapses and neurotransmitters
- Demonstrate knowledge across cultural settings and the impact of culture, gender, and age as it relates to anatomy and physiology, as well as to how medicine is practiced
- Demonstrate ethical knowledge pertaining to human and animal use the study of anatomy and physiology

Grading
Exams:

There will be **3 Exams**, dates can be found on the syllabus and will always be held on **Thursday**. I will also give ample reminders of upcoming exams during lecture. Each exam will be worth **1/3 of your final grade!**

The exam format will consist of the use choice, matching, true/false, fill in the blank, as well as some short answer and will be designed to take half the Thursday lecture period.

Grade Determination:

Range	Letter Grade
90-100	A-/A
80-89	B-/B+
70-79	C-/C+
60-69	D-/D+
Below 60	F

Deadlines and Late Work

In general, make up exams **WILL NOT** be given, however, in the event of an emergency, please contact me **PRIOR** the exam, preferably not the day of the exam. If I do not hear from you regarding a missed exam, you will receive a zero for that exam.

Course Schedule

Date/Week	Topic	Reading/Assignments
5/14	Welcome: The Language of Anatomy Basic Chemistry: Atoms, Molecules, Carbohydrates, Lipids, Water, pH, Buffers	Chapter 1 Chapter 2
5/15	Basic Chemistry: Proteins, Enzymes Metabolism	Chapter 2 Chapter 24, pp: 921-932
5/16	**EXAM 1** The Cell: Cell Membrane and Transport	 Chapter 3
5/20	**NO CLASS: COMMENCEMENT**	
5/21	The Cell: Organelles, Cell Aging, DNA, RNA, Transcription, Translation	Chapter 3
5/22	Cell Division: Mitosis and Meiosis Introduction to Histology	Chapter 3 Chapter 4
5/23	**EXAM 2** Introduction to Heredity and Genetics The Integumentary System	 Chapter 29 Chapter 5
5/27	**NO CLASS: MEMORIAL DAY**	
5/28	The Skeletal System and Joints The Muscular System	Chapters 6-9
5/29	The Nervous System: CNS, PNS, Neurons, APs, Synapses, and Neural Transmission	Chapters 11-13
5/30	**CUMULATIVE FINAL EXAM**	

Attendance

Class attendance is highly encouraged. It is to your benefit to be present for all lectures. The exams will be based on what is covered in class. That will include information from the text as well as any outside, relevant information discussed to help in aiding with the understand of a given topic. There will also be time allotted for questions, to clear up any confusion you may have on a given topic. Do your best to make each lecture.

Consistent with BC's commitment to creating a learning environment that is respectful of persons of differing backgrounds, we believe that every reasonable effort should be made to allow members of the university community to observe their religious holidays without jeopardizing their academic status. Students are responsible for reviewing course syllabi as soon as possible, and for communicating with the instructor promptly regarding any possible conflicts with observed religious holidays. Students are responsible for completing all class requirements for days missed due to conflicts with religious holidays.

Accommodation and Accessibility

Boston College is committed to providing accommodations to students, faculty, staff and visitors with disabilities. Specific documentation from the appropriate office is required for students seeking accommodation in Summer Session courses. Advanced notice and formal registration with the appropriate office is required to facilitate this process. There are two separate offices at BC that coordinate services for students with disabilities:

- The Connors Family Learning Center (CFLC) coordinates services for students with LD and ADHD.
- The Disabilities Services Office (DSO) coordinates services for all other disabilities.

Find out more about BC's commitment to accessibility at www.bc.edu/sites/accessibility.

Scholarship and Academic Integrity

Students in Summer Session courses must produce original work and cite references appropriately. Failure to cite references is plagiarism. Academic dishonesty includes, but is not necessarily limited to, plagiarism, fabrication, facilitating academic dishonesty, cheating on exams or assignments, or submitting the same material or substantially similar material to meet the requirements of more than one course without seeking permission of all instructors concerned. Scholastic misconduct may also involve, but is not necessarily limited to, acts that violate the rights of other students, such as depriving another student of course materials or interfering with another student's work. Please see the Boston College policy on academic integrity for more information.