Passaic County Community College
ACADEMIC YEAR: 2024 - 2025
Standard Syllabus
Department Chair: Professor Joshua Sabatini

Course Code: BS 100 **Course Title:** Human Biology

Department: Biological & Physical Sciences **Semester Offered**: Fall, Spring, Summer, Winter

Course Description: A one semester lecture and laboratory course designed for non-science majors for the study of the structure and function of all the body systems. This course covers current issues such as genetic engineering and biotechnology and health concerns such as AIDS and cancer. Laboratory experiments include light microscopy, human anatomy and physiology and representative dissections.

Co- requisite: N/A **Prerequisites:** College level math and college level English

Credits: 4 Lecture **Hours:** 3 **Lab/Studio Hours:** 3 **Clinical/Fieldwork Hours:** 0

Required Textbook/Materials:
Lecture Text: Human Biology: Concepts and Current Issues by Michael D. Johnson
Laboratory Manual: Lab Manual for Human Biology by Bert Atsma, et al.

Additional Time and Supplemental Requirements: Based on a 15-week semester, students are expected to perform 8 hours of homework per week.

Course Learning Outcomes: Upon successful completion of this course, students will be able to:

1. Demonstrate a thorough understanding of the structure and function of the human body.
2. Use vocabulary pertaining to the human body in proper context.
3. Recognize the interactions of organ systems in maintaining homeostasis.

General Education Outcomes: Upon successful completion of this course, students will be able to:
3.1 Use critical thinking skills appropriate for the nature and level of a given Gen Ed course to solve problems involving, but not limited to, data analysis and interpretation, and experimental design.
3.2 Demonstrate understanding of basic terminology, major concepts, and fundamental theories in human biology.

Grading Standard:

Exam I	11%	Lab Midterm	10%
Exam II	11%	Lab Final	10%
Exam III	11%	Lab Reports	6%
Exam IV	11%	Lab Quizzes	5%
Final Exam	20%	Participation	5%

Course Content:
Schedule and suggested topics, readings, and assignments subject to change based on instructor and instructional resources.

Lecture topics will include but are not limited to the topics outlined below. Selected sections within specific chapters will be assigned and select chapters will be covered in depth while others will be given a general overview. Underlying scientific principles, homeostasis, and organ system integration will be emphasized course themes.

Week	Lecture Topic	Chapter	Comments
1	Human Biology, Science, and Society	1	Evaluation of defining human features and levels of biological organization Separating facts from conclusions Limitations of the scientific enterprise
2	The Chemistry of Living Things	2	Survey of the chemical components of biological organisms Inorganic to organic "Big history" theme
3	Structure and Function of Cells	3	Evaluation of connection between cell structure and cell function Cellular abnormalities and connection to disease
4	From Cells to Organ Systems	4	Exploration of histological human components Distinguishing cell function and tissue function Epiphenomena
5	The Skeletal System	5	Bones are living components of the human body Diversity of joints and common injuries
6	The Muscular System	6	Differentiation between skeletal, smooth, and cardiac muscle types The function of muscle tissue
7	Blood	7	Analysis of blood components and component functions Blood types in evolutionary context Survey of blood disorders
8	The Heart and Blood Vessels	8	Evaluation of blood pressure dynamics and participating structures Cardiovascular disorders and evidence for the impact of diet and exercise
9	The Immune and Lymphatic Systems	9	Survey of pathogens and mechanisms of defense Malfunctions in immune system function Immunological adaptation
10	The Respiratory System	10	The role of the nervous system in regulating respiration Respiratory illnesses and the impact of smoking cigarettes
11	The Nervous System and Sensory Mechanisms	11, 12	Divisions of the nervous system and major organs Neurons and neuroglial cell functions Biological bases for consciousness The human body's capacity for interacting with the environment
12	The Endocrine System	13	Steroidal versus nonsteroidal hormones Survey of major glands and respective functions Survey of endocrine system disorders

13	The Digestive System	14	Survey of major digestive organs and their functions The influence of nutrition Survey of digestive system disorders The impact of obesity on human health and societal well-being
14	The Urinary and Reproductive Systems	15, 16	Formation of urine by way of filtration, reabsorption, and secretion The role of the kidneys on human homeostasis
15	Genetics, Cancer, and Evolution	18, 19, 22	Exploration of the links between genetics and the environment Conditions facilitating cancer Human function explained in the context of the theory of evolution by natural selection The modern synthesis and influences of molecular biology
16	Final Comprehensive Exam		

Laboratory topics are designed to correspond with and reinforce the material presented in the lecture portion of the course. While the laboratory manual exercises contain specific experiments and activities, faculty members are encouraged to build upon the assigned topics in order to draw on their personal areas of expertise.

Lab	Laboratory Topic	Exercise	Comments
1	Introduction to scientific methodology	1	Evaluation of scientific knowledge gathering Observation and collection of data Students will design and conduct an experiment
2	Microscopy	2	Microscope handling, care, and use Microscope part and function identification Magnification and resolution issues Wet mount slide preparation
3	Cell Structure and function	3, 4	Evaluation of prepared cell slides Observation of blood cell osmotic dynamics
4	Tissues and human body orientation	5, 6	Survey of major tissue types Survey of major body organs and organ systems Introduction to anatomical terminology Use of directional terms and anatomical planes
5	The skeletal system	8	Bone identification Evaluation of joint movements
6	The muscular system	9	Muscle identification Testing muscle endurance and strength Fetal pig dissection: bones and muscles of the leg
7	Laboratory Midterm		50 % practical and 50 % written components
8	The cardiovascular system I: blood	14	Blood typing determination using kits Evaluation of antigen-antibody complex Differentiation of white blood cells Blood cell counts
9	The cardiovascular system II: heart and blood vessels	15	Evaluation of blood flow in the heart Identification of major veins and arteries Identification of heart components Blood pressure measurement and heart sounds Sheep Heart Dissection

10	Human respiration	16	Identification of respiratory organs Measurement of chest and lung volume changes Spirometer use and calculation of respiratory volumes
11	The digestive system	17	Identification of digestive system organs Demonstration of salivary reflex Evaluation of nutritional components Fetal pig dissection: digestive and respiratory systems
12	The nervous system I: organization, neurons, nervous tissue, and spinal reflexes	10	Evaluation of reflexology and reflex arcs
13	The nervous system II: Spinal cord, brain, and autonomic nervous system	11	Identification of central nervous system components Sheep brain dissection Fetal pig dissection: brain, spinal cord, and spinal nerves
14	The structure and function of sense organs	12	Anatomy of the eye and ear organs Visual acuity and hearing conduction tests Exploration of touch receptors Eye Dissection
15	Human Evolution	22	Evaluation of fossil evidence for the theory of evolution by natural selection Survey of homologous, analogous, and vestigial traits Forelimb comparison of human, monkey, pig, and rodent
16	Laboratory Final		

College Policies:

For Information regarding:

- PCCC's Academic Integrity Code
- Student Conduct Code
- Student Grade Appeal Process

Please refer to the PCCC Student Handbook and PCCC Catalog

Inclement Weather:

In the event of inclement weather and the College is closed, all classes will switch to remote (Zoom) learning. The Zoom link for this course section is has been added here in this document by your instructor. Please also see BlackBoard for further instructions.

Panther Alert:

The College will announce delayed openings, closings, and other emergency situations through the Panther Alert System. Students are encouraged to sign up for Panther Alert Notifications by logging into their student accounts through the PCCC website at www.pccc.edu and following Panther Alert System instructions.

Requesting Reasonable Accommodations at Passaic County Community College: Passaic County Community College Office of Accessibility Services, in accordance with Section 504 of the Rehabilitation Act of 1973, Americans with Disabilities Act (ADA) of 1990, and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008 is committed to providing reasonable accommodations to students with documented disabilities. If you have a disability and believe you need accommodations, please contact the Office of

Accessibility Services (OAS) at (973) 684-6395 or email ods@pccc.edu. Students should request accommodations as early as possible, since they may take time to implement.