

Bergen Community College
Division of Mathematics, Science and Technology
Department of Biology and Horticulture

Anatomy & Physiology I (BIO-109)

General Course Syllabus

Course Title:	Anatomy and Physiology I (BIO-109)
Course Description:	This course is an introduction to the basic principles of human anatomy and physiology that emphasizes some common diseases in relation to the various body systems. Among the topics considered are the basic plan of the body, cells, tissues, the skeletal system, the muscular system, articulations, cardiovascular system, and the respiratory system. Lectures are supplemented by writing assignments, discussion, and laboratory sessions that include dissection, and elementary physiology experiments.
Prerequisites:	None
General Education:	Yes
Course Credits:	4.0
Hours per week:	6.0: 3 hours lecture and 3 hours lab
Course Coordinator:	Gerard J. Tortora
Required Lecture Textbook:	<p>PRINCIPLES OF ANATOMY & PHYSIOLOGY , 15th edition, Gerard J. Tortora and Bryan Derrickson, John Wiley and Sons, Hoboken, N.J. 2017 Volume I</p> <p>You can save a substantial amount of the cost of the textbook if you purchase it at the Bergen Community College bookstore. For BIO 109 you will need Volume 1, which contains all the chapters needed for the course (1-11, 19-23). In addition, you will also be given an Atlas of Human Anatomy and a registration card for WileyPLUS. The ISBN is 9781119463023. This can be purchased ONLY at the BCC bookstore.</p>
Required Laboratory Manual:	<p>LABORATORY EXERCISES IN ANATOMY & PHYSIOLOGY WITH CAT DISSECTIONS, 8TH edition, Robert Amitrano and Gerard J. Tortora, Thomson Brooks/Cole, Belmont, CA *</p> <p>You can save a substantial amount of the cost of the BIO 109 laboratory manual if you purchase it at the Bergen Community College bookstore. The ISBN number is 9781337904384. This can ONLY be purchased at the BCC bookstore. There is a separate laboratory manual for BIO 209.</p> <p>DO NOT, UNDER ANY CIRCUMSTANCES, PURCHASE A USED LABORATORY MANUAL</p>

Student Learning Objectives

The students will be able to:

1. Describe the differences between the anatomy and physiology of the human body. Students will be evaluated by lecture exams, laboratory exams, laboratory reports, and laboratory practical exams.
2. Explain the different levels of structural organization that make up the human body. Students will be evaluated by lecture exams and laboratory reports.
3. Describe the anatomical position of the human body. Students will be evaluated by lecture, laboratory exams, and laboratory reports.
4. Explain the directional terms and planes of the human body. Students will be evaluated by lecture, laboratory exams, and laboratory reports.
5. Describe the body cavities and regional quadrants. Students will be evaluated by lecture, laboratory exams, and laboratory reports.
6. Describe the nature of atoms, chemical compounds, including organic and inorganic compounds. Students will be evaluated by lecture exams.
7. Investigate cell parts and functions, including the plasma membrane, cytosol, and organelles. Students will learn and practice the proper use of a microscope. Students will be evaluated by lecture, laboratory exams, laboratory practical exams, and lab reports.
8. Classify the types of tissues found in the human body. Students will be evaluated by lecture, laboratory exams, and laboratory reports.
9. Describe the structure and analyze the function of the Integumentary System. Students will be evaluated by lecture exams, laboratory exams, and laboratory reports.
10. Describe the structure and analyze the function of the Skeletal System. This will include bone histology, the types of bone, and parts of bones. Students will be evaluated by lecture exams, laboratory lab practical exams, and laboratory reports.
11. Explain the different articulations of the body, including the different classifications. Students will be evaluated by lecture exams, laboratory reports, and laboratory exams.

12. Describe the Muscular System including the names and analyze the functions of skeletal muscles. Students will be evaluated by lecture exams, laboratory reports, and laboratory practical exams.

13. Explain the Cardiovascular System including the Blood, Heart, and Blood Vessels. Students will be evaluated by lecture exams, laboratory reports, and laboratory exams.

14. Describe the structure of the Lymphatic System and analyze the functions and resistance to disease. Students will be evaluated by lecture exams, laboratory reports, and laboratory exams.

15. Explain the structure of the Respiratory System and analyze the functions. Students will be evaluated by lecture exams, laboratory reports and laboratory exams.

16. Use the scientific method of inquiry, through the acquisition of scientific knowledge.

Student Assessment Tools:

The aforementioned student learning objectives will be generally assessed or evaluated by instructors using a variety of assessment instruments including **lecture exams, laboratory exams, quizzes, laboratory reports, written reports, presentations, projects, etc.** The decisions concerning the type or types and number of instruments that are used in a specific section of the course will be left to the instructor of that section. This information, when given by the instructor should be recorded by the student in the **Student Assessment Section** of this document.

Course Content:

Lecture Topics:

<u>TOPICS</u>	<u>CHAPTER IN TEXTBOOK</u>
<u>Introduction to the Human Body</u> Anatomy and physiology defined, Levels of structural organization, Homeostasis, Anatomical position, Regional names, Directional terms, Planes and sections, Body cavities, Abdominopelvic regions and quadrants	1
<u>Introductory Chemistry</u> Chemical elements, Ions, Concept of pH	2
<u>Cells</u> Plasma membrane, Cytosol, Organelles, Somatic cell division	3
<u>Tissues</u> Types of tissues, Epithelial tissue, Connective tissue, Membranes	4

<u>Integumentary System</u> Skin, Epidermal derivatives, Homeostasis of body temperature	5
<u>Bone Tissue</u> Structure and functions of bone tissue, Histology of bone tissue, Ossification, Bone growth, Bone homeostasis, Fractures, Exercise and bone tissue	6
<u>Axial and Appendicular Skeletons</u> Types of bones, Divisions of the skeleton, Sutures, Fontanelles, Vertebral column, Sternum, Ribs, Pectoral girdle, Pelvic girdle, Arches	7,8
<u>Articulations</u> Classification of joints, Types of joints, Movements at joints	9
<u>Muscular Tissue</u> Types of muscular tissue, Functions of muscular tissue, Characteristics of muscular tissue	10
<u>Muscular System</u> How skeletal muscles produce movements, Naming skeletal muscles	11
<u>Cardiovascular System: Blood</u> Functions of blood, Physical characteristics of blood, Components of blood, Formation of blood cells, Erythrocytes, Leukocytes, Platelets, Hemostasis, Grouping of blood	19
<u>Cardiovascular System: Heart</u> Location, Pericardium, Heart wall, Chambers of the heart Blood flow through heart, Heart valves, Heart blood supply, Conduction system, Cardiac cycle, Cardiac output, Regulation of heart rate	20
<u>Cardiovascular System: Blood Vessels</u> Anatomy of blood vessels, Blood pressure, Venous return, Control of blood pressure, Pulse, Circulatory routes	21
<u>Lymphatic System and Immunity</u> Functions, Anatomy, Lymphatic tissue, Lymph circulation, Immunity and immune functions	22
<u>Respiratory System</u> Organs, Physiology of respiration, Control of respiration	23

Laboratory Schedule:

- Laboratory 1 Microscopy, Exercise 1
- Laboratory 2 Introduction to the human body, Exercise 2
- Laboratory 3 Cells, Exercise 3
- Laboratory 4 Epithelial tissue, Exercise 4
- Laboratory 5 Connective tissue, Exercise 4
- Laboratory 6 Integumentary system, Bone tissue, Exercises 5,6
- Laboratory 7 Bones, Exercise 7
- Laboratory 8 Bones (continued) and Articulations, Exercises 7 and 8
- Laboratory 9 Muscular tissue, Physiology of muscle, Exercise 9
- Laboratory 10 Skeletal muscles and dissection of frog muscular system, Exercise 10
- Laboratory 11 Surface Anatomy and Blood, Exercises 11 and 16
- Laboratory 12 Heart, Dissection of sheep heart, Exercise 17
- Laboratory 13 Blood vessels, Cardiovascular physiology, Exercise 18, 19
- Laboratory 14 Cardiovascular physiology (continued) & lymphatic system Exercises, 19,20
- Laboratory 15 Respiratory System, Dissection of Sheep pluck, Exercise 21

Student Assessment:	A. Unit Examinations.	_____%
	B. Laboratory Tests.	_____%
	C. Laboratory Reports.	_____%
	D. Class Participation	_____%
	E. Research paper and project.	_____%
	F. Other	_____%
	TOTAL	100%

If you have a medical condition or develop a medical condition during this semester, which prevents you from fulfilling the requirements of this course, you must notify your physician. You and your physician must decide whether or not it is appropriate for you to remain in this course. If the decision is to remain in this course, please obtain a letter from your physician indicating that your continued participation in this course is appropriate and present it to the Department Chair.

Faculty Addenda: As per individual faculty member

Lecture Attendance: As per instructor;

Lab Attendances: As per instructor;

Policy Concerning Late Assignments: As per instructor;

Policy Concerning Make-Up Testing: As per instructor;

Safety Information: As per instructor and assigned exercise;

College Policies:

Student Responsibility

Students will be held responsible for reading all pertinent information in college publications regarding withdrawals, course drops, college deadlines, and tuition refunds. Students are responsible for compliance with the rules and regulations as stated in college publications.

Absence of Instructor

Students are expected to wait twenty minutes for a faculty member to come to class. If at the end of twenty minutes, the faculty member does not come, the students should sign an attendance sheet, which indicates the course, date, and time. A student should deliver the attendance sheet to the divisional office (A304) if between 9:00 a.m. and 5:00 p.m. or to the Evening Office (C107) if before 9:00 a.m. or after 5:00 p.m. Students cannot be penalized by faculty for not waiting longer than twenty minutes.

Academic Dishonesty and Plagiarism

Bergen Community College is committed to academic integrity – the honest, fair and continuing pursuit of knowledge, free from fraud or deception. Students are responsible for their own work. Faculty and academic support services staff will take appropriate measures to discourage academic dishonesty. **Plagiarism** is a form of academic dishonesty and may be a violation of U.S. Copyright laws. Plagiarism is defined as the act of taking someone else's words, opinions, or ideas and claiming them as one's own.

Consequences of Violations Academic Integrity

A. Instructor's Sanctions for a Violation

The faculty member will determine the course of action to be followed. This may include:

- Assigning a failing grade on the assignment;
- Assigning a lower final course grade;
- Failing the student in the course
- Other penalties appropriate to the violation;

In all cases, the instructor shall notify the Vice President of Student Services of the violation and the penalty imposed. The student has the right to appeal the decision of the instructor to the appropriate department head.

B. Institutional Sanctions for Violations

When a violation of academic integrity has been reported regarding a student, the Vice President of Student Services may impose disciplinary penalties beyond those imposed by the course instructor, which may include suspension or dismissal from the College. The student shall have the right to a hearing before the Vice President of Student Services or a designated judicial affairs committee. Judicial procedures governing violations of academic integrity are contained in the student handbook.

Class Attendance

All students are expected to attend punctually every scheduled meeting of each course in which they are registered. Attendance and lateness policies and sanctions are to be determined by the instructor for each section of each course. These will be established in writing on the individual course outline. Attendance will be kept by the instructor for administrative and counseling purposes.

Eating and Drinking

Eating or drinking in classrooms, lecture rooms, laboratories, gymnasium, swimming pool, or passageways is forbidden. Covered beverages only are permitted in the library. Eating and drinking are permitted in cafeteria and vending areas only.

Learning Assistance

Henry and Edith Cerullo Learning Assistance Center

The Tutoring Center, English Language Resource Center, Math Walk-In Center and Writing Center are collectively known as the Henry and Edith Cerullo Learning Assistance Center. The Cerullo Learning Assistance Center is located in the Pitkin Education Building, in Room L-125. The telephone number is (201) 447-7489. The Learning Assistance Center, staffed with peer and professional tutors, offers free individual and group tutoring, supplemental instruction, and online tutoring for subjects offered at the College. The Center provides alternative approaches to problem solving and organizational skills. Tutors help clarify classroom lectures and textbooks and help students prepare for exams. These services build student self-confidence and reduce fear of failure. The Center is equipped with the latest technology and software, including tapes, books, review sheets, exercises and software.

Services for Students with Disabilities

Bergen Community College aims to create inclusive learning environments where all students have maximum opportunities for success. Any student who feels he or she may need an accommodation based on the impact of a disability should contact the Office of Specialized Services at 201-612-5269 or via email at ossinfo@bergen.edu for assistance.

Sidney Silverman Library

Main Building, Pitkin Education Center, L-wing, 2nd Floor.

Paramus Library Hours: (201) 447-7131 or visit <http://www.bergen.edu/library/calendar/gcal.htm>

Paramus Service Desk: (201) 447-7970

Meadowlands Location: 1280 Wall Street, Lyndhurst 2nd Floor

Meadowlands Library Hours: <http://www.bergen.edu/library/calendar/gcal.htm>

Meadowlands Service Desk: (201) 301-9692

www.bergen.edu/library

Testing Services

The Bergen Community College Office of Testing Services (OTS) is located in Room S-127. OTS serves the college community by identifying, developing, procuring, administering, processing, and/or evaluating examinations, which meet a variety of administrative and instructional needs. To contact the OTS, please call (201) 447-7203. The Office of Testing Services administers makeup tests as a service for students who, for compelling and exceptional reasons, have missed a scheduled classroom examination. Students must receive prior permission from and make arrangements with their course instructors to take these examinations, under specific conditions, in the Office of Testing Services, Room S-127.

WebAdvisor

WebAdvisor is a web interface that allows students to access information contained in Datatel's Colleague, the administrative database used by Bergen Community College. Students may use WebAdvisor to register for classes, to pay tuition and fees, to view their class schedules, to check grades, to check on progress toward degree requirements, etc. WebAdvisor accounts are available for all students enrolled in credit programs. New students are strongly encouraged to attend an in-person registration or advisement session before using a WebAdvisor account. Eligible students without WebAdvisor user names and passwords may access their WebAdvisor account by going to go.bergen.edu and selecting "I'm new to WebAdvisor." Then, follow the on-screen directions. Check the WebAdvisor FAQ for answers to common questions, such as how to reset your password. Students must have a valid e-mail address on file with the College to use WebAdvisor