CAPITAL COMMUNITY COLLEGE
COURSE OUTLINE
Anatomy and Physiology I

SECTION I

SUBJECT AREA & COURSE NUMBER: BIO* G-211
COURSE TITLE: *Anatomy and Physiology I*
COURSE CATALOGUE DESCRIPTION: Basic course in human biology stressing chemical and physical principles governing body structure and function. Study includes organization and function of the cell, development, histology, support and movement, neural control and integration. Formerly listed as BIO 208, not open to students who have successfully completed BIO 208.

LECTURE HOURS PER WEEK: 3 **CREDIT HOURS: 4**
LABORATORY HOURS PER WEEK: 3
PREREQUISITES: Bio 105 or Bio 121 and Chem 111 or Chem 121 or a proficiency exam in General Biology and Chemistry.

SECTION II

A. SCOPE:

The objective of this course is to equip the student with fundamental knowledge on the structure and function of the human body. This is accomplished through study of normal human anatomy and of physiological processes. Basic information on molecules and cells is presented as a necessary prelude to the study of tissues and of organ systems. The organ systems that are studied include the integumentary, skeletal, muscular and nervous systems.

B. REQUIRED WORK: Determined by the instructor as described in the course syllabus. Work may include written in-class quizzes and/or examinations, presentations to the class, in-class and out-of-class projects, written reports, portfolios, and homework assignments.

C. ATTENDANCE AND PARTICIPATION: Students are expected to attend all lectures and one laboratory section per week, arrive on time, take exams and submit assignments on the scheduled dates, participate in the in-class learning process and complete all assignments. Specific policies of the instructor are included on the course syllabus.

D. METHODS OF INSTRUCTION: The methods of instruction are determined by each faculty member and may include lectures, demonstrations, audio-visual aids, laboratory exercises, computer assignments, and student presentations.

E. OBJECTIVES, OUTCOMES, ASSESSMENT

The following objectives and outcomes represent the Department's core requirements for student achievement.

LEARNING OBJECTIVES	LEARNING OUTCOMES	ASSESSMENT METHODS
To demonstrate an understanding of:	**Student will:**	**As measured by:**
The Scope of Anatomy and Physiology	a) Define and describe the fields of anatomy and physiology b) Name the levels of organization of the body c) Use anatomical positional and directional terms including terms for body planes, sections and regions, name the body cavities and selected major organs within them, and review thoracic and abdominopelvic membranes. d) Name the organ systems and their basic functions e) Discuss the concept of homeostasis	Written in-class examinations and/or quizzes; presentations to the class; out-of-class projects; written reports; portfolios; class participation; homework assignments; laboratory projects.
Review of Chemistry	a) Review atoms, elements, isotopes, chemical bonds b) Study the Law of Conservation of Matter c) Explore synthesis, decomposition, exchange and reversible reactions d) Describe important chemical compounds and their functions, especially inorganic and organic compounds in the cell	
Tissues	a) Explore the criteria used in tissue classification b) Name the types of epithelial tissues and their functions, and the classification of glands and	

	membranes c) Investigate the types and functions of connective tissues d) Examine the types and functions of muscle tissues e) Survey the types of nervous tissue cells, including neurons and neuroglia, and their functions	
Integumentary System	a) Survey the layers of the skin, their compositions and functions b) Examine the structure and function of the epidermal derivatives c) Discuss the functions of the skin as an organ	
Skeletal System	a) Describe basic bone structure and classification b) Identify major bones of the body and their principle landmarks c) Explain processes of bone development and growth d) List bone functions e) Examine the organization of the skeleton f) Describe basic structure and function of joints g) Enumerate types of movements permitted at joints	
Muscular System	a) Describe the gross and microscopic structure of skeletal muscle b) Compare the physiology of skeletal, smooth and cardiac muscle c) Explain the physiology of muscle contraction, including	

	the Sliding Filament Model, types of contraction, and the role of the nervous system d) Examine the nomenclature, location, and function of major skeletal muscles	
Nervous System	a) Describe the gross and microscopic anatomy of the nervous system, including the CNS and PNS b) Examine general control functions of the system, as well specific functions of brain and spinal cord (CNS) c) Explore cellular and tissue structure and function d) Examine membrane potential and impulse conduction. e) Discuss neurotransmitters and the synapse f) List types of neurons and their processes g) Explain nerve pathways and the structure and function of reflex arcs h) Describe the structure and function of meninges and cerebrospinal fluid i) Survey the structure and function of the ANS	
Special and General Senses	a) Describe the anatomy of the eye and aspects of the physiology of vision b) Examine the anatomy of the ear and aspects of the physiology of hearing and balance c) Explore olfactory receptors and their role in smell d) Describe gustatory receptors and their role in	

	taste e) Enumerate general sensory receptors and their functions f) Characterize selected aspects of pain	

F. TEXTS AND MATERIALS: Text and laboratory manual selected by the Biology faculty of the Department of Science and Mathematics with content and presentation that support the Objectives and Outcomes given in Part E above.