JAMESTOWN COMMUNITY COLLEGE
State University of New York

INSTITUTIONAL COURSE SYLLABUS

Course Title: Anatomy & Physiology II

Course Abbreviation and Number: BIO 2520 **Credit Hours:** 4 **Course Type:** Lecture/Lab

Course Description: In this second of two sequential human anatomy and physiology courses, students will study water, electrolyte, and acid-base balance, and the following organ systems: urinary, digestive, endocrine, nervous, and reproductive. In the accompanying laboratory students will perform animal dissection, organ dissection, and will implement experimental process and protocols.

Prerequisite: BIO 1570 or BIO 1575 or BIO 2510.

General Education Requirements Met

SUNY	JCC
Natural Sciences	Scientific Reasoning

Student Learning Outcomes:

Students who demonstrate understanding can:

1. Demonstrate an understanding of the application of scientific data, concepts, and models in one of the natrual sciences.
2. Recognize the importance of ethical behavior in fostering a community of mutual respect and integrity.

A pre-requisite for this course is approved for the SUNY General Education category listed. This course will reinforce the student learning outcomes for this category.

Topics Covered:

Nervous System I: Basic Structure and Function
- General Functions of the Nervous System
- Description of Cells of the Nervous System
- Classification of Cells of the Nervous System
- The Synapse
- Cell Membrane Potential
- Synaptic Transmission
- Impulse Processing

Nervous System II: Divisions of the Nervous System
- Meninges
- Ventricles and Cerebrospinal Fluid
- Spinal Cord
- Brain
- Peripheral Nervous System
- Autonomic Nervous System
- Life-Span Changes

Nervous System III: Senses
- Receptors, Sensation, and Perception
- General Senses
- Special Senses
- Life-Span Changes

Endocrine System
- General Characteristics of the Endocrine System
- Hormone Action
- Control of Hormonal Secretions
- Pituitary Gland
- Thyroid Gland
- Parathyroid Glands
- Adrenal Glands
- Pancreas
- Other Endocrine Glands
- Stress and Its Effects
- Life-Span Changes

Digestive System
- General Characteristics of the Alimentary Canal
- Mouth
- Salivary Glands
- Pharynx and Esophagus
- Stomach
- Pancreas
- Liver
- Small Intestine
- Large Intestine
- Life-Span Changes

Nutrition and Metabolism
- Carbohydrates
- Lipids

Proteins
- Energy Expenditures
- Vitamins
- Minerals
- Healthy Eating
- Life-Span Changes

Urinary System
- Kidneys Urine Formation
- Elimination of Urine
- Life-Span Changes

Water, Electrolyte, and Acid-Base Balance
- Distribution of Body Fluids
- Water Balance
- Electrolyte Balance
- Acid-Base Balance
- Acid-Base Imbalances

Reproductive Systems
- Organs of the male Reproductive System
- Hormonal Control of Male Reproductive System

- Organs of the Female Reproductive System
- Hormonal Control of Female Reproductive Systems
- Mammary Glands

Pregnancy, Growth, and Development

- Pregnancy
- Prenatal Period
- Postnatal Period
- Aging

Genetics and Genomics

- Modes of Inheritance
- Factors That Affect Expression of Single Genes
- Multifactorial Traits
- Matters of Sex
- Chromosome Disorders
- Gene Expression Explains Aspects of Anatomy and Physiology

Information for Students

- Expectations of Students
  - Civility Statement
  - Student Responsibility Statement
  - Academic Integrity Statement
- Accessibility Services
  Students who require accommodations to complete the requirements and expectations of this course because of a disability must make their accommodation requests to the Accessibility Services Coordinator.
- Get Help: JCC & Community Resources
- Emergency Closing Procedures
- Course grade is determined by the instructor based on a combination of factors, including but not limited to, homework, quizzes, exams, projects, and participation. Final course grade can be translated into a grade point value according to the following:

A=4.0	B+=3.5	B=3	C+=2.5	C=2	D+=1.5	D=1	F=0

- Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, VA appointments) are welcome and encouraged to communicate these to the instructor.

Effective Date: Fall 2021