**Mohawk Valley Community College**

**Utica, New York**

**Course Number BI217**

**Human Anatomy and Physiology 2**

**(4 Credit Hours)**

**Revised Summer 2023**

**Course Name: Human Anatomy and Physiology 2 – BI 217**

**Course Credit Hours: C-3, P-3, CR-4**

I. **Course Description**

This course continues the study of structure, function, and regulation in the human organism that was begun in BI216, Human Anatomy & Physiology 1. Topics include the endocrine system, the reproductive system, the digestive system and metabolism, the cardiovascular system, blood, the lymphatic system, the respiratory system, and the excretory system. Laboratories involve vertebrate dissection, human skeletal materials, non-invasive human experimentation, and possibly animal experimentation. In addition, lab exercises will involve the use of a variety of human body representations which could include reference to cadavers, models, histology, plastinated specimens, and videos.

Prerequisite: BI216 Human Anatomy & Physiology1.

**II. Student Learning Outcomes**

A. The student will be able to demonstrate knowledge of the anatomy and

physiology of the male and female reproductive systems and their roles in the

perpetuation of the human and nonhuman species through the completion of a

variety of assessments. This outcome will be addressed in lab using human and

animal specimens, or anatomical models while completing hands on inquiry based

lab exercises.

 B. The student will be able to demonstrate knowledge of the endocrine system with emphasis being placed on its role in the regulation of bodily processes through the completion of a variety of assessments. This outcome will be addressed in lab using human and animal specimens, or anatomical models while completing hands on inquiry based lab exercises.

 C. The student will be able to demonstrate knowledge of the digestive system and its role in the procurement and processing of ingested organic matter through the completion of a variety of assessments. This outcome will be addressed in lab using human and animal specimens, or anatomical models while completing hands on inquiry based lab exercises.

 D. The student will be able to demonstrate knowledge of the basic structure of biomolecules and apply this knowledge in the study of cellular metabolism through the completion of a variety of assessments.

 E. The student will be able to demonstrate knowledge of the components of blood and lymphatic fluid and the role of these substances in the maintenance of homeostasis through the completion of a variety of assessments.

 F. The student will be able to demonstrate knowledge of the structural and functional interrelationships between the circulatory and respiratory systems and their importance in the procurement and movement of gases to and from the body’s tissues by completing a variety of assessments. This outcome will be addressed in lab using human and animal specimens, or anatomical models while completing hands on inquiry based lab exercises.

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 G. The student will be able to demonstrate knowledge of the anatomy and physiology of the cardiovascular system and its role in delivering nutrients, regulatory chemicals and heat to all regions of the body by completing a variety of assessments. This outcome will be addressed in lab using human and animal specimens, or anatomical models while completing hands on inquiry based lab exercises.

 H. The student will be able to demonstrate knowledge of the anatomy and physiology of the urinary system and its importance in the regulation of the body’s internal fluid, electrolyte, and acid-base balance by completing a variety of assessments. This outcome will be addressed in lab using human and animal specimens, or anatomical models while completing hands on inquiry based lab exercises.

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 I. The student will collect and analyze data and evaluate quantitative information relating to physiological processes. This outcome will be addressed in lab using hands on inquiry based lab exercises.

 J. The student will participate in the processes of anatomical observation, anatomical exploration, and anatomical discovery through the completion of a variety of assessments. This outcome will be addressed in lab using human and animal specimens, or anatomical models while completing hands on inquiry based lab exercises.

 K. The student will observe and recognize the significance of the structural

 changes associated with aging and various selected pathologies. This outcome will be addressed in lab using human and animal specimens, or anatomical models while completing hands on inquiry based lab exercises.

 L. The student will observe and verify the anatomical bases for selected

 clinical procedures. This outcome will be addressed in lab using human specimens or

 anatomical models while completing hands on inquiry-based lab exercises.

 M. The student will compare human morphology between same sex and opposite sex individuals. This outcome will be addressed in lab using human specimens, or anatomical models while completing hands on inquiry based lab exercises.

**Lecture Outline – BI217**

**Week Topic**

 1 Anatomy and Physiology of the Reproductive System

 Reproductive System (continued)

 2 Reproductive System (continued)

 Reproductive System (continued)

 3 Pregnancy & Development

 Pregnancy & Development (continued)

 4 Anatomy and Physiology of the Endocrine System

 Endocrine System (continued)

 5 First Hour Exam (subject to change)

 Anatomy and Physiology of the Digestive System

 6 Digestive System (continued)

 Digestive System (continued)

 7 Digestive System (continued)

 Metabolism

 8 Metabolism (continued)

 Second Hour Exam (subject to change)

 9 Anatomy and Physiology of the Heart

 The Heart (continued)

 10 The Heart (continued)

 Anatomy and Physiology of Circulation

 11 Anatomy and Physiology of Circulation (cont’d)

 Third Hourly Exam Circulation

 12 Blood, Lymphatic System & Immunity

 Anatomy and Physiology of the Respiratory System

 13 Anatomy and Physiology of the Respiratory System

 Respiratory System (continued)

 Anatomy and Physiology of the Urinary System

 Urinary System (continued)

 14 Urinary System (continued)

 Fourth Hourly Exam

 15 Comprehensive Final Exam

*Note: The preceding topic outline provides a general roadmap of what will be covered in lecture during the semester. The actual time devoted to specific topics and the grouping of various chapters for hourly exams will be determined by individual instructors.*

 Laboratory Outline – BI217

 Week Topic

1. Anatomy of human reproductive system
2. Anatomy & histology of human reproductive

 system

1. Anatomy and histology of endocrine system

 Physiology of endocrine system

1. Anatomy of digestive system
2. Anatomy & histology of digestive system
3. Digestive physiology
4. Anatomy of systemic circulation
5. Anatomy of systemic circulation
6. A study of blood

 10 Anatomy of the heart

 11 Cardiac cycles and blood flow

 12 Anatomy & histology of respiratory system

 Anatomy & histology of urinary system

 13 Respiratory physiology

 14 Graded aerobic exercise