**CREDIT COURSE OUTLINE**

1. **CATALOG INFORMATION**

**Course ID / Title Effective Term: Fall 2013**

**BIOL 20 Human Anatomy**

**Discipline: Biology**

**Catalog Description**

This is a course providing a basic understanding and working knowledge of the human body with emphasis on the structure of each major system. The interrelationship between human systems and the relationships between the structure and functions of each system will be studied at several levels: cellular, tissue, organ, system, and organismal.

**Pedagogical Course Cap: 30**

**Unit(s): 4**

**Weekly Lecture Hours**: **3**

**Weekly Lab Hours:** **3**

**Total Contact Hours:** **108**

**Grading Basis:**  Graded only (A-F)  Pass/No Pass option  Pass/No Pass only

**Advisories:** Eligibility for English 125, 126, and Mathematics 101

**Prerequisites:** Biology 1 or 5 or 11A

**Corequisites:**

**Open entry/exit:**  **Yes**  **No**

**Repeatable Course**  **Yes**  **No**

**Meets RC GE, Graduation, or Competency requirements:**  **Yes**  **No**

Area A Area B1  Area B2  Area C  Area D1  Area D2

Writing Competency Reading Competency  Oral Communication

Mathematics Competency  Computer Familiarity

Lifetime physical/mental wellness

**Included in a degree or certificate program:**  **Yes**  **No**

1. **COURSE CONTENT**
2. **Student Learning Outcomes**

***Upon completion of this course, students will be able to:***

1. Identify the major body systems macroscopically.
2. Identify the major body tissue and cell types microscopically.
3. Use a microscope to identify tissues and cells.
4. Describe the functions of the body systems.
5. Describe functions of the cells and tissues.
6. **Objectives**

***In the process of completing this course, students will:***

1. Identify the basic structure and function of each human system at the macroscopic and microscopic levels.

2. Develop important critical thinking skills as they evaluate lecture topics and the results of laboratory demonstrations and experiments.

3. Learn how to use scientific methods.

4. Develop important manual dexterity skills associated with dissections, free-hand drawings, completion of anatomical color plates, and the operation of microscopes, computers, and other laboratory equipment.

1. **Lecture Content:**

1. Section I: Lecture and Lab Exam 1 at the end of the 5 week section:

a. Introduction: Anatomical Terminology, Homeostasis, Feedback, and Biochemistry

1) The Cell: Cytosol, Intracellular Organelles, DNA

2) Mitosis and Meiosis

3) The Microscope: Light, SEM and TEM

4) Four types of human tissues: Histology – Epithelial, Connective, Muscle, & Nervous

5) Gastrointestinal Tract:

a) Structure and Function

b) GI Tract Lining

b. The Urinary System:

1. All Components: Kidneys, Ureters, Bladder, and Urethra

2. Microscopic and macroscopic study of the urinary system

3 Disorders

2. Section II: Lecture and Lab Exam 2 at the end of the 5 week section (or 11th week):

a. Body Systems

1. Muscular System:

a) Identification of muscles: origin, insertion, and major action

b) Muscle Histology

2. Muscular Contraction: Neuro muscular junction

a) Structure

b) Chemistry of membranes

b. Bones: Axial and Appendicular Systems

c. Articulations

1. Classification

2. Examples: knee, shoulder, and elbow

c. Endocrine System

1. Glands and Location

2. Hormones and Control

d. Reproductive Systems: Human male and female

1. Male and Female Reproductive Structures

2. Spermatogenesis and Oogenesis

3. Pregnant vs Non-pregnant Condition

a) Embryology

b) Disorders

3. Section III: Lecture and Lab Exam 3 at the end last 5 week section (or the 17th week)

a. Body Systems II

1. Nervous System

a) Histology

b) The Brain and Cranial Nerves

c) The Spinal Cord and Spinal Nerves

d) Disorders

b. Cardiovascular System

1. The Blood (functions, components, disorders)

2. The heart (anatomy and disorders)

3. Vessels: arteries, capillaries, and veins

4. Circulatory Routes: systemic, pulmonary, cardiac, hepatic portal, & fetal

c. Special Senses

1. Hearing and Balance

2. Smelling

3. Taste

a) Touch

b) Eyesight

d. Respiratory System

1. Anatomy and Functions

2. Disorders

e. Lymphatic System

1. Anatomy and Functions

2. Disorders

1. **Lab Content:**

Week 1: anatomical terminology, quadrants, regions

Week 2: the cell, mitosis and meiosis

Week 3: Histology and the integument

Week 4: Digestive System

Week 5: Urinary System

Week 6: Laboratory Exam

Week 7: keletal System

Week 8: Muscular System

Week 9: Articulations

Week 10: Endocrine System

Week 11: Reproductive System

Week 12: Laboratory Exam

Week 13: Nervous System

Week 14: Cardiovascular System

Week 15: Special Senses

Week 16: Respiratory and Lymphatic Systems'

Week 17: Laboratory Exam

**III. METHODS OF DELIVERY:**

Lecture

Laboratory

1. **METHODS OF INSTRUCTION:**

***May include but not limited to:***

Discussion  Guided Practice  Demonstrations

Guest Presenters  Guided Research  Media/Audiovisual

Role Playing  Small Group  Guided Writing

Other

1. **SPECIAL FACILITIES:**

Human Anatomy requires the use of microscopes, dissection tools, and areas for working with body parts (i.e. cow eyes, hearts, and brains). This course requires biohazard disposal.

1. **SAMPLE HOMEWORK/OUT OF CLASS ASSIGNMENTS:**

Reading Assignments  Lab Reports

Writing Assignments Problem Solving

Essays  Computational

Other: online exercises

1. **METHODS OF EVALUATION/GRADING:**

*Indicate percentage*

20% Quizzes

30% Laboratory Exams

20% Laboratory Reports

30% Exams

1. **RECOMMENDED MATERIALS OF INSTRUCTION**

*Credit, degree applicable course, textbooks are college level*

*Credit, non-degree applicable course*

1. Textbooks:
2. Martini and Timmons *Human Anatomy,* ed. 6th Pearson/ Benjamin Cummings, 2009
3. Materials Other than textbooks: