El Camino College

COURSE OUTLINE OF RECORD - Official

I. GENERAL COURSE INFORMATION

Subject and Number: Anatomy 30
Descriptive Title: Essentials of Anatomy and Physiology

Course Disciplines: Biological Sciences

Division: Natural Sciences

Catalog Description: This course is the study of anatomy coupled with physiology. Students compare the structure and function of human organ systems to those of other vertebrates. The laboratory includes dissection of sheep brains and hearts, cow eyes and other vertebrates. Laboratory experiments reinforce principles of anatomy and the basic principles of chemistry, cell biology, histology, embryology, and genetics.
Note: This course may satisfy the anatomy requirements for other health-related programs. It does not satisfy the requirements for the Bachelor of Science in Nursing.

Conditions of Enrollment: **Recommended Preparation**
English 84

Course Length: [X] Full Term [ ] Other (Specify number of weeks):
Hours Lecture: 2.00 hours per week [ ] TBA
Hours Laboratory: 6.00 hours per week [ ] TBA
Course Units: 4.00

Grading Method: Letter
Credit Status Associate Degree Credit

Transfer CSU: [X] Effective Date: Prior to July 1992
Transfer UC: [X] Effective Date: Prior to July 1992

General Education:

El Camino College: **1 – Natural Sciences**
Term: Other: Approved

CSU GE:

B2 - Life Science
Term: Other: Approved

B3 - Laboratory Sciences
Term: Other: Approved

IGETC: **5B - Biological Science with a Lab**

Term: Fall 1991 Other:

II. OUTCOMES AND OBJECTIVES

A. COURSE STUDENT LEARNING OUTCOMES (The course student learning outcomes are listed below, along with a representative assessment method for each. Student learning outcomes are not subject to review, revision or approval by the College Curriculum Committee)

1. Students will be able to use language appropriate to anatomy and physiology and the health sciences.
2. Students will demonstrate the use of instruments for dissection, histology, and to gather data.
3. Students will be able to identify higher vertebrate body structures, and explain the functions of body systems.

The above SLOs were the most recent available SLOs at the time of course review. For the most current SLO statements, visit the El Camino College SLO webpage at http://www.elcamino.edu/academics/slo/.

B. Course Student Learning Objectives (The major learning objective for students enrolled in this course are listed below, along with a representative assessment method for each)

1. Demonstrate proper use of the microscope.

   Other (specify)

   Laboratory Practicum
2. Identify cellular structures, organelles and tissue types for all human systems.

   Other (specify)

   Multiple Choice, Identification, and Matching Items
3. Use appropriate terminology to describe anatomical and physiological concepts.

   Other (specify)

   Multiple Choice, Matching Items, True and False
4. Identify all major anatomical structures for each major system, including integumentary, skeletal, muscular, nervous, special senses, endocrine, digestive, cardiovascular, respiratory, urinary and reproductive systems.

   Other (specify)

   Multiple Choice, Matching Items, Short Answers
5. Compare and contrast all major human anatomical structures with those of non-human vertebrate species.

   Other (specify)

   Short Answers, Multiple Choice, and Matching Items
6. Demonstrate an understanding of the physiology of each system and how each system interacts to maintain homeostasis.

   Other (specify)

   Essay Questions, Multiple Choice
7. Identify clinical disorders and methods of treatment when given case studies that describe signs and symptoms.

Other (specify)

Multiple Choice, Essay Questions

III. OUTLINE OF SUBJECT MATTER (Topics are detailed enough to enable a qualified instructor to determine the major areas that should be covered as well as ensure consistency from instructor to instructor and semester to semester.)

Lecture or Lab	Approximate Hours	Topic Number	Major Topic
Lecture	2	I	Introduction to Anatomy and Physiology A. Principles of Anatomy and Physiology B. Chemistry 1. Basic Principles of Chemistry C. Chemical Basis of Life 1. Basic Principles of Biochemistry
Lab	6	II	Introduction A. Lab Check-in B. Use of Light Microscope C. Body Organizations D. Anatomical Terms
Lecture	2	III	Chemical Principles and Biochemical Molecules A. Atoms, Elements, Molecules B. Types and Classification of Chemical Bonds 1. Ionic Bonds 2. Covalent Bonds C. Hydrogen Bonds D. Fundamental Elements of Life E. Concepts of pH and pH Scale
Lab	6	IV	Cell Division (Mitosis) A. Cell Transport Mechanisms
Lecture	2	V	Cell Anatomy A. Structures, Organelles and Functions B. Cell Division (Mitosis and Meiosis) C. Cell Transport Mechanisms
Lab	9	VI	The Cell A. Cell Anatomy and Physiology B. Cell Structures, Organelles and Their Functions
Lecture	2	VII	Tissues A. Structure and Function of Tissues
Lab	6	VIII	Tissue Slides A. Epithelial Tissues B. Connective Tissue C. Muscle Tissue D. Nervous Tissue
Lecture	1	IX	Skin and Integumentary System
Lab	5	X	Integumentary System A. Skin Models and Slides
Lecture	3	XI	Skeletal System A. Macroscopic and Microscopic Anatomy B. Axial Skeleton C. Appendicular Skeleton D. Joint Types

Lab	14	XII	Overview of Skeletal System A. Axial Skeleton B. Appendicular Skeleton C. Synovial Joint D. Bone Tissue
Lecture	4	XIII	Muscular System A. Skeletal, Smooth and Cardiac B. Muscle Cell Anatomy and Physiology C. Muscles and Function
Lab	8	XIV	Muscular System A. Muscle Tissues B. Muscular System C. Pre-dissected Cats - Muscle Demonstrations
Lecture	3	XV	Nervous System A. Nervous Tissue B. Action Potential - Neurophysiology C. Central Nervous System D. Peripheral Nervous System E. Autonomic Nervous System
Lab	8	XVI	Nervous System A. Nervous Tissue B. Nervous System Models C. Sheep Brain Dissection
Lecture	1	XVII	Special Senses - Anatomy and Physiology of Eye and Ear A. Eye B. Ear
Lab	8	XVIII	Special Senses A. Eye and Ear B. Cow Eye Dissection
Lecture	3	XIX	Endocrine System A. General Function of Endocrine System B. Hormones 1. Functions 2. Control Mechanisms C. Endocrine Glands 1. Functions 2. Control Mechanisms
Lecture	3	XX	Digestive System A. Anatomy and Physiology B. True Digestive Organs 1. Functions 2. Regulation C. Accessory Digestive Organs 1. Functions 2. Regulation
Lab	8	XXI	Digestive System A. Tissues B. Digestive System Models C. Dissection of Fetal Pig
Lecture	4	XXII	Cardiovascular System A. Cardiac Tissue B. Heart 1. Anatomy 2. Blood Flow

			3. Physiology C. Conductive System D. Cardiac Cycle E. Blood Vessels F. Lymphatic System 1. Functions 2. Anatomy 3. Physiology G. Blood 1. Types 2. Rh Factor H. Blood Agglutination I. Fetal Heart and Circulation
Lab	9	XXIII	Dissection of Sheep Heart
Lecture	2	XXIV	Respiratory System A. Respiratory Process B. Organs of Respiratory System C. Respiratory Diseases D. Respiratory Volumes and Capacities
Lab	9	XXV	Respiratory System A. Respiratory System Models B. Respiratory Volumes and Capacities C. Fetal Pig Dissection
Lecture	2	XXVI	Urinary System A. Urinary System Overview and Functions B. Stages of Urine Production C. Kidney Anatomy D. Nephron Anatomy E. Regulation of Glomerular Filtration Rate
Lab	6	XXVII	Urinary System A. Urinary System Models B. Fetal Pig Dissection
Lecture	2	XXVIII	Reproductive System A. Gross Anatomy of Male and Female Reproductive Systems B. Reproductive Hormones 1. Functions 2. Control C. Pregnancy 1. Development of Embryo Fetus
Lab	6	XXIX	Reproductive System A. General Functions of Male and Female Reproductive Systems B. Gross and Microscopic Anatomy of Female and Male Systems C. Fetal Pig Dissection
Total Lecture Hours		36	
Total Laboratory Hours		108	
Total Hours		144	

IV. PRIMARY METHOD OF EVALUATION AND SAMPLE ASSIGNMENTS

A. **PRIMARY METHOD OF EVALUATION:**

Problem solving demonstrations (computational or non-computational)

B. **TYPICAL ASSIGNMENT USING PRIMARY METHOD OF EVALUATION:**

In the laboratory, perform a proper fetal pig dissection and identify with pins and labels all organs of the gastrointestinal and respiratory systems.

C. **COLLEGE-LEVEL CRITICAL THINKING ASSIGNMENTS:**

1. A seven-year-old boy was admitted to the hospital with a diagnosis of a spiral fracture of the radius. What laboratory tests would you order? In a one-paragraph essay, explain why you would order these tests. What might be the cause of this specific type of fracture?
2. An adult female patient with a severe blow to the head following a traffic accident was admitted to the hospital. In a one-paragraph essay, describe the most severe neurological problem of concern to the physician.

D. **OTHER TYPICAL ASSESSMENT AND EVALUATION METHODS:**

Other exams
Quizzes
Written homework
Laboratory reports
Class Performance
Homework Problems
Multiple Choice
Completion
Matching Items
True/False

V. INSTRUCTIONAL METHODS

Discussion
Group Activities
Laboratory
Lecture
Multimedia presentations

Note: In compliance with Board Policies 1600 and 3410, Title 5 California Code of Regulations, the Rehabilitation Act of 1973, and Sections 504 and 508 of the Americans with Disabilities Act, instruction delivery shall provide access, full inclusion, and effective communication for students with disabilities.

VI. WORK OUTSIDE OF CLASS

Study
Answer questions
Skill practice
Required reading
Problem solving activities

Estimated Independent Study Hours per Week: 4

VII. TEXTS AND MATERIALS

A. **UP-TO-DATE REPRESENTATIVE TEXTBOOKS**
Elaine N. Marieb. Human Anatomy and Physiology. 9th ed. Benjamin Cummings, 2013.
Elaine N. Marieb. Human Anatomy and Physiology Laboratory Manual. 11th ed. Benjamin Cummings, 2014.

B. **ALTERNATIVE TEXTBOOKS**

C. **REQUIRED SUPPLEMENTARY READINGS**

D. **OTHER REQUIRED MATERIALS**
Colored pencils
2. Gloves

VIII. CONDITIONS OF ENROLLMENT

A. Requisites (Course and Non-Course Prerequisites and Corequisites)

Requisites	Category and Justification

B. Requisite Skills

Requisite Skills

C. Recommended Preparations (Course and Non-Course)

Recommended Preparation	Category and Justification
Course Recommended Preparation English-84	

D. Recommended Skills

Recommended Skills
Students have higher chances of success in this course if the students can read at a college level. ENGL 84 - Select and employ reading strategies to interpret the content of a college-level textbook, with special focus on constructing a thesis statement and providing valid support.

E. Enrollment Limitations

Enrollment Limitations and Category	Enrollment Limitations Impact

Course created by Charles Lockhart and Robert Stephens on 03/01/1989.

BOARD APPROVAL DATE:

LAST BOARD APPROVAL DATE: 12/15/2014

Last Reviewed and/or Revised by Thanh-Thuy Bui on 09/19/2014

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