



**EL CAMINO COLLEGE**  
**COURSE OUTLINE OF RECORD – Approved**

**I. Course Information**

**Subject:** ANAT  
**Course Number:** 32  
**Descriptive Title:** General Human Anatomy  
**Division:** Natural Sciences  
**Department:** Anatomy/Physiology  
**Course Disciplines:** Biological Sciences

**Catalog Description:**

This in-depth course covers all eleven systems of the human body including related histology and pathology. The systems covered are skeletal, muscular, nervous, integument, respiratory, digestive, reproductive, urinary, endocrine, immune, and lymphatic. Models of the human body and dissection of higher vertebrates are emphasized in laboratory. The course is designed for science, health-related, pre-nursing (Bachelor of Science in nursing), and pre-professional majors.

**Conditions of Enrollment:**

**Recommended Preparation:** Anatomy 30 or Biology 10 AND English 1 or eligibility for English 1A or qualification by appropriate assessment

**Course Length: Full Term**

**Hours Lecture (per week):** 2  
**Hours Laboratory (per week):** 6  
**Outside Study Hours:** 4  
**Total Course Hours:** 144

**Course Units:** 4

**Grading Method:** Letter Grade only  
**Credit Status:** Credit, degree applicable

**Transfer CSU:** Yes Effective Date: Prior to 7/1992  
**Transfer UC:** Yes Effective Date:

**General Education:**

ECC

**Area 1 - Natural Sciences**

**Term:** Other:

**CSU GE:**

**Area B2 - Physical Universe and its Life Forms: Life Science, Area B3 - Physical Universe and its Life Forms:**

**Laboratory Activity**

**Term:** Other:

**IGETC:**

**Area 5B - Biological Science, Area 5C - course that incorporate a laboratory**

**Term:** Other:

## **II. Outcomes and Objectives**

### **A. Student Learning Outcomes (SLOs) (The course student learning outcomes are listed below.)**

**SLO revisions are completed via the SLO Change Form available on the College Curriculum Committee website.**

#### SLO #1 Language

Students will be able to use language appropriate to anatomy and the health sciences.

#### SLO #2 Instruments

Students will demonstrate the use of instruments for dissection, histology, and to gather data.

#### SLO #3 Structures

Students will be able to identify higher vertebrate body structures of all body systems.

### **B. Course Objectives (The major learning objective for in this course are listed below.)**

1. Demonstrate the proper use of the microscope and identify specimens.
2. Identify cellular structures, organelles, and tissue types for all human organ systems.
3. Apply appropriate terminology such as directional terms and regional terms to various anatomical features.
4. Identify the major anatomical structures for the major organ systems of the human body including integumentary, musculoskeletal, nervous, endocrine, digestive, circulatory, respiratory, urinary, and reproductive systems.
5. Analyze clinical case studies with signs and symptoms to arrive at a differential diagnosis.

## **III. Outline of Subject Matter**

**(Topics should be detailed enough to enable an instructor to determine the major areas that should be covered to ensure consistency from instructor to instructor and semester to semester.)**

### **Major Topics:**

**In this course, 80% of the lab activities are hands-on activities.**

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#### **I. Cellular Component (3 hours, Lecture)**

1. Common organelles and their functions in the cell
2. Phases of meiosis, mitosis, and gametogenesis

#### **II. Laboratory Exercise (6 hours, Lab)**

1. Models of cells
2. Models of mitosis

#### **III. Embryology, Surface Anatomy, and Phylogeny (3 hours, Lecture)**

1. Embryonic germ layers and their derivatives
2. Taxonomy and developmental derivatives of the phylum Chordata
3. Directional terms and surface anatomy given a case study

#### **IV. Laboratory Exercise (6 hours, Lab)**

1. Models of human torso

## **V. Tissues and Integument (5 hours, Lecture)**

1. Histological tissues with their characteristics and functions
  1. Epithelium
  2. Connective Tissue
  3. Muscular Tissue
  4. Nervous Tissue
2. Skin, blood vessel walls, digestive system walls, and respiratory walls
3. Integument and its functions
4. Light microscope

## **VI. Laboratory Exercise (8.5 hours, Lab)**

1. Models of the integument
2. Use of microscope to see tissue specimens

## **VII. Skeletal System (5 hours, Lecture)**

1. Bone features and functions
2. Joint features and functions
3. Endochondrial and intramembranous ossification
4. Microscopic bone structures

## **VIII. Laboratory Exercise (17.5 hours, Lab)**

1. Models of joint
2. Models of osteon
3. Bones

## **IX. Muscular System (5 hours, Lecture)**

1. Major skeletal muscles of the human body including the neck, thorax, hip, knee, ankle, shoulder, elbow, and wrist
  1. Flexors and extensors
  2. Adductors and Abductors
2. Muscle action based on origin and insertion of the pectoral, abdominal, upper limb, hip, and lower limb
3. Microscopic structure of muscle cells
4. Process of muscle contraction

## **X. Laboratory Exercise (17.5 hours, Lab)**

1. Muscle dissections\*\*
2. Models of human muscles
3. Cadaver observations when applicable

\*\* Dissection may be performed on a preserved cat or through a virtual program.

## **XI. Nervous System and Endocrine System (5 hours, Lecture)**

1. Adult derivatives of the nervous system with respective embryonal region of origin
2. Function and Structure
  1. Central nervous system
  2. Peripheral Nervous system
  3. Autonomic Nervous system
  4. Enteric Nervous system
3. Major peripheral nerve plexi
4. Reflex arc
5. Classification of neurons in the nervous system
6. Role of neurotransmitters
7. Mechanisms of signal transduction
8. Endocrine glands, hormones produced, and hormonal functions

**XII. Laboratory Exercise (17.5 hours, Lab)**

1. Sheep brain dissection
2. Sheep eye dissection
3. Models of human torso
4. Models of nervous system

**XIII. Circulatory System (5 hours, Lecture)**

1. Blood tests (blood differentials)
2. Classification of blood cells and their characteristics
3. Cardiovascular system
  1. Heart
  2. Arteries
  3. Veins
  4. Capillaries
4. Lymphatic system by structure and function
5. Path of blood
  - Pulmonary circuit
  - Systemic circuit
6. Common pathologies of the cardiovascular system
7. Structural differences between blood vessels and lymphatic vessels
8. Basic immune response

**XIV. Laboratory Exercise (17.5 hours, Lab)**

1. Sheep heart dissection
2. Models of the cardiovascular system
3. Models of lymphatic system
4. Cadaver observations when applicable

**XV. Respiratory, Digestive, Urinary, and Reproductive Systems (5 hours, Lecture)**

1. Respiratory system
  1. Structures
  2. Histology
  3. Path of air
  4. Pathology
2. Digestive system
  - Structures
  - Histology
  - Accessory digestive glands
  - Path of food
  - Pathology
3. Urinary system
  - Structures
  - Functions
  - Nephron
4. Reproductive system
  - Structures
  - Functions
  - Path of Gamete
  - Fertilization

## **XVI. Laboratory Exercise (17.5 hours, Lab)**

1. Systemic dissection\*\*
2. Preserved kidney dissection
3. Models of the internal organs
4. Cadaver Observations when applicable

\*\* Dissection may be performed on a preserved cat or through a virtual program.

<b>Total Lecture Hours:</b>	36
<b>Total Laboratory Hours:</b>	108
<b>Total Hours:</b>	144

## **IV. Primary Method of Evaluation and Sample Assignments**

### **A. Primary Method of Evaluation**

- 2) Problem solving demonstrations (computational or non-computational)

### **B. Typical Assignment Using Primary Method of Evaluation**

The seventh grade of a middle school has just completed its annual eye examination. The examiner determines that there are only two abnormal cases. One child has myopia and the other hypermetropia. Write the answers to the following questions: What is myopia? Why does it occur and how should it be corrected? What is hypermetropia? Why does it occur and how should it be corrected?

### **C. College-level Critical Thinking Assignments**

#### **Critical Thinking Assignment 1:**

Jeremy who is 14 years old, notices that his face is developing many pimples and blackheads. Explain to him three things:

- what is the difference between pimples and blackheads,
- what caused the change in his face, and
- what are the three types of glands in the integumentary system?

#### **Critical Thinking Assignment 2:**

Jenny's father loved to hold her by the hands and swing her around in great circles. One day, Jenny's joy turned to tears as she screamed that her elbow hurt. When examined, the little girl was seen to hold her elbow semiflexed and her forearm pronated. What is your diagnosis and how did you reach it?

### **D. Other Typical Assessment and Evaluation Methods**

Completion, Laboratory Reports, Matching Items, Multiple Choice, Other Exams, Quizzes, True/False

## **V. Instructional Methods**

Lab, Lecture, Multimedia presentations

If other:

References to related websites and use of interactive computer programs

***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**

Answer questions, Problem solving activity, Required reading, Skill practice, Study

If Other:

## **VII. Texts and Materials**

### **A. Up-to-date Representative Textbooks:**

Tortora and Nielsen. PRINCIPLES OF HUMAN ANATOMY. 15th ed. Wiley, 2020.

Marieb. HUMAN ANATOMY AND PHYSIOLOGY LABORATORY MANUAL WITH CAT DISSECTION. 13th. Pearson, 2019.

### **B. Alternative Textbooks: Please use the following format(s): if applicable**

### **C. Required Supplementary Readings**

### **D. Other Required Materials**

Gloves

Dissection kits

Scantron forms

Lab Coats (highly recommended)

## **VIII. Conditions of Enrollment**

**A. Requisites (Course Prerequisites and Corequisites) Skills needed without which a student would be highly unlikely to succeed.**

**Requisite:**

**Category:**

**Requisite course(s): List both prerequisites and corequisites in this box.**

**Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).**

**B. Requisite Skills: (Non-Course Prerequisite and Corequisites) Skills needed without which a student would be highly unlikely to succeed.**

**Requisite Skill:**

**Requisite Skill and Matching Skill(s): Bold the requisite skill(s). If applicable**

**C. Recommended Preparations (Course) (Skills with which a student's ability to succeed will be strongly enhanced.)**

**Requisite course:** Anatomy-30 AND Biology-10 English 1

**Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). Prior knowledge of scientific terms will increase the success rate for this course.**

BIOL 10 - Define basic chemical terms and describe the molecules that make up living things.

ANAT 30 - Use appropriate terminology to describe anatomical and physiological concepts.

**Students need well-developed reading skills in order to understand and interpret information in their textbooks and writing skills to develop essays and projects.**

ENGL 1- Summarize, analyze, evaluate, and synthesize college-level texts.

ENGL 1 -Write a well-reasoned, well-supported expository essay that demonstrates application of the academic writing process.

**D. Recommended Preparation (Non-Course) (Skills with which a student's ability to succeed will be strongly enhanced.)**

**Requisite Skill:** Eligibility for English 1A or qualification by appropriate assessment

**Requisite Skill and Matching skill(s):** Bold the requisite skill. List the corresponding course objective under each skill(s). If applicable

**This course involves reading college level textbooks, developing projects, and answering essay questions. A student's success in this class will be enhanced if they have these skills.**

**Summarize, analyze, evaluate, and synthesize college-level texts.**

**Write a well-reasoned, well-supported expository essay that demonstrates application of the academic writing process.**

**E. Enrollment Limitations**

Enrollment Limitations and Category:

Enrollment Limitations Impact:

Course Created by: Gerry Thompson on 05/01/1957

Original Board Approval Date:

Last Reviewed and/or Revised by: Thanh-Thuy Bui

Date: 09/20/2021

Last Board Approval Date: 07/19/2021