Cerro Coso College

Course Outline of Record Report

10/11/2021

BIOLC251 : Human Anatomy

General Information

Author:	• Guck Ooi • Sellers, Claudia • Burch, Andrew
Course Code (CB01) :	BIOLC251
Course Title (CB02) :	Human Anatomy
Department:	Science
Proposal Start:	Spring 2022
TOP Code (CB03) :	(0410.00) Anatomy and Physiology
SAM Code (CB09) :	Non-occupational
Distance Education Approved:	Yes
Course Control Number (CB00) :	CCC000326972
Curriculum Committee Approval Date:	04/20/2012
Board of Trustees Approval Date:	06/14/2012
External Review Approval Date:	06/14/2012
Course Description:	This course covers the structural organization of the human body and includes the study of microscopic and gross anatomy of body organs and systems, including skeletal, muscular, nervous, circulatory, lymphatic, respiratory, digestive, urinary, endocrine, reproductive, and integumentary systems.
Submission Type:	Mandatory Revision Cyclical revision. Revised catalog description, streamlined SLOs, updated textbook, added co-contributors, and revised course outlines. Changed ENGL C070 to ENGL C101 as prerequisite. Last assessed in Fall 2019, SLOs met, and no actions necessary.
Author:	No value

Faculty Minimum Qualifications

Master Discipline Preferred:	• Biological Sciences
Alternate Master Discipline Preferred:	• Biological Sciences
Bachelors or Associates Discipline Preferred:	No value
Additional Bachelors or Associates Discipline Preferred:	No value

Course Formerly Known As

Course Formerly Known As

No Value

Course Development Options

Basic Skills Status (CB08)

Course is not a basic skills course.

Course Special Class Status (CB13)

Course is not a special class.

Grade Options

- Letter Grade Methods
- Pass/No Pass

☐ Allow Students to Gain Credit by Exam/Challenge

Allowed Number of Retakes

0

Course Prior To College Level (CB21)

Not applicable.

Rationale For Credit By Exam/Challenge

No value

Retake Policy Description

Type:|Non-Repeatable Credit

☑ Allow Students To Audit Course

Course Support Course Status (CB26)

Course is not a support course

Associated Programs

☑ Course is part of a program (CB24)

Associated Program	Award Type	Active
No value	No value	

Transferability & Gen. Ed. Options

Course General Education Status (CB25)

Y

Transferability

Transferable to both UC and CSU

Transferability Status

Approved

Cerro Coso General Education Requirements	Categories	Status	Approval Date	Comparable Course
Area 1.1	Natural Science Life Sciences	Approved	No value	BIOL 110 B

CSU General Education Certification	Categories	Status	Approval Date	Comparable Course
Area B.2	Scientific Inquiry & Quantitative Reasoning Life Science	Approved	No value	BIOL 110 B

Area B.3	Scientific Inquiry & Quantitative Reasoning Laboratory	Approved	No value

Intersegmental General Education Transfer Curriculum	Categories	Status	Approval Date	Comparable Course
Area 5.B	Physical & Biological Sciences Biological Science	Approved	No value	Biol 110 B
Area 5.C	Physical & Biological Sciences Laboratory/Activity	Approved	No value	

C-ID	Categories	Status	Approval Date	Comparable Course
Biology	C-ID discipline	Pending	No value	BIOL 110 B

Units and Hours

Summary

Minimum Credit Units (CB07)	4
Maximum Credit Units (CB06)	4
Total Course In-Class (Contact) Hours	108
Total Course Out-of-Class Hours	108
Total Student Learning Hours	216
Faculty Load	0

Credit / Non-Credit Options

Course Credit Status (CB04)

Credit - Degree Applicable

Course Non Credit Category (CB22)

Credit Course.

Non-Credit Characteristic

No Value

Course Classification Status (CB11)

Credit Course.

Funding Agency Category (CB23)

Not Applicable.

☐ Cooperative Work Experience Education Status (CB10)

☐ Variable Credit Course

Weekly Student Hours

	In Class	Out of Classs
Lecture Hours	3	6
Laboratory Hours	3	0
Activity Hours	0	0

Course Student Hours

Course Duration (Weeks)	18
Hours per unit divisor	54
Course In-Class (Contact) Hours	
Lecture	54

Laboratory	54
Activity	0
Total	108

Course Out-of-Class Hours

Lecture	108
Laboratory	0
Activity	0
Total	108

Time Commitment Notes for Students

No value

Faculty Load

Extra Duties: 0 **Faculty Load:** 0

Units and Hours - Weekly Specialty Hours

Activity Name	Type	In Class	Out of Class
No Value	No Value	No Value	No Value

Pre-requisites, Co-requisites, Anti-requisites and Advisories

Prerequisite

ENGLC101 - Freshman Composition

Students in BIOL C251 must be able to read and comprehend a college-level Biology textbook which are usually written at a Gunning Fog Index of 13 to 14. They are expected to identify central points, both explicit and implied, outline and summarize complex and technical scientific readings, and interpret difficult and figurative language in academic discourse and scientific terminology. Students must also be able to write summaries of assigned readings from the course textbook, answer homework questions using paragraph-length responses, and answer essay questions in clear and error-free prose based on readings from various scientific texts. ENGL C101 provides the student with the requisite skills to meet these expectations. Relevant outcomes from ENGL C101 are:

- Read, analyze, and evaluate a variety of university-level texts for content, context, and rhetorical merit with consideration of tone, audience, and purpose.
- Develop varied and flexible strategies for generating, drafting, and revising essays.
- Evaluate the style of one's own writing and the writing of others and self-correct for greater clarity and directness.
- Write timed essays in class exhibiting acceptable college-level control of mechanics, organization, development, and coherence.
- Integrate the ideas of others through paraphrasing, summarizing, and quoting without plagiarism.
- Proofread and edit essays for presentation so they exhibit no disruptive errors in English grammar, usage, or punctuation.

Entrance Skills

Entrance Skills	Description
No value	No value

Limitations on Enrollment

Limitations on Enrollment	Description
No value	No value

Specifications

Methods of Instruction

Methods of Instruction	Lecture
Rationale	Classroom lectures using Powerpoint presentations and board-work to explain information and concepts from the assigned textbook. Example: Integumentary System - What are the component parts of the integumentary system, and what are their functions?
Methods of Instruction	Written work
Rationale	Assignments on materials presented during lecture. Example: Using the toy skeleton provided, write a short report describing the anatomical inaccuracies of the model, highlighting at least 5 obvious anatomical errors such as missing structures, wrong number of parts, or inaccurate regional location.
Methods of Instruction	Laboratory
Rationale	Hands-on practical work to further explore important ideas. Individual reading of assigned materials to prepare for and conduct dissection experiments. Examine and study anatomical models. Example: In the heart specimen provided, locate, dissect, and identify the following structures - tricuspid and mitral valves, aorta, pulmonary artery, chordae tendinae, left ventricle, etc.
Methods of Instruction	Demonstration
Rationale	Proper laboratory techniques are demonstrated to ensure safe and correct lab procedures are followed. Example: Students are shown the proper use of each dissecting instruments, safety precautions, appropriate disposal methods, and care and storage of models and specimens.
Methods of Instruction	Group Work
Rationale	Peer learning through collaborative work. Example: Working in groups of two or three, dissect, locate and identify the component structures of the digestive system, and describe the function of each organ identified.

Assignments

Out of class assignments may include but are not limited to:

Readings from the assigned textbook.
Example: The student is expected to read the weekly reading assignments from the text which relate to the lecture topic prior to the lecture.

Outlining the chapters and incorporating lecture notes with chapter outlines.
Example: Students are expected to outline the assigned text reading and to relate and integrate the outlines with the lecture notes.

Homework assignments.
Example: The student is expected to answer the instructor assigned questions from the relevant text chapters and additional instructional materials other than the text.

Methods of Evaluation	Rationale
Tests	Practical exams covering lab topics evaluate the students' ability to explain and apply the concepts that are derived from laboratory exercises. Example: In the histology slide shown under the microscope, identify the tissue indicated.
Tests	Exams and quizzes evaluate the students ability to apply concepts taught in the course. Example: Quizzes are given on assigned readings. An exam question asks students to identify components of the skeletal system. Typically, there are three to four exams a semester and quizzes are given for all assigned readings. Exams and quizzes are typically a combination of short answer and multiple choice questions.
Homework	Written assignments to evaluate whether students can relate anatomical structures and their functions. Example: Pick 10 specific diseases/disorders. For each disease, briefly explain the homeostatic imbalances that lead to the pathology, what body organs systems are involved, and how are they affected.
Final Exam	Summative cumulative exam to evaluate student learning, knowledge application, and academic achievement at the end of the course. Example: Final cumulative exam at the end of semester on the functioning of all organ systems in the human body.

Equipment

No Value

Textbooks

Author	Title	Publisher	Date	ISBN
Marieb E.N., Brady, P.M., Mallatt, J.B.	Human Anatomy, 9th Edition	Pearson	2019	Currently the latest edition

Other Instructional Materials

Description	Human Anatomy Laboratory Manual with Cat Dissections, 9th Edition (2019), Pearson
Author	Marieb, E.N., Smith, L.
Citation	No value

Description	Visible Body 3D virtual human anatomy courseware

Author	No value
Citation	No value

Materials Fee

No

Learning Outcomes and Objectives

Course Objectives

Describe key structural features of different human cell and major tissue types.

Identify and describe the anatomy of organ systems of the human body.

Relate structure and function of body systems at different levels of organization, from cellular to organ systems.

Describe structural changes that occur in disease, injury or aging of human body systems.

CSLOs

Develop, recognize, and use correct terminology to describe cell structure and function, histology, gross anatomy, and physiology of all organ systems. Expected SLO Performance: 70.0

Locate and identify anatomical structures that are associated with each major organ system. Expected SLO Performance: 70.0

Describe and analyze the complementarity between structure and function of tissues, organs, and organ systems. Expected SLO Performance: 70.0

Analyze how anatomical changes that occur in injury and during aging can lead to physiological dysfunction. Expected SLO Performance: 70.0

Apply the knowledge and concepts of anatomy to the comprehension of disease and health disorders. Expected SLO Performance: 70.0

Social Science Anthropology AA Degree for Transfer	Use the scientific method to analyze aspects of the human condition.
	Use the scientific method to analyze aspects of the human condition.
	Analyze the place of humanity in nature and describe the methods used to study humans as biological organisms.
	Analyze the place of humanity in nature and describe the methods used to study humans as biological organisms.
Social Science IGETC PLOs	Communicate scientific results by applying the appropriate scientific method, including experimental and empirical methodologies characteristic of science and modern methods and tools used in scientific inquiry through the use of graphs, oral communications, and writings.

Social Science PLOs for CSU GE COA	Communicate scientific results by applying the appropriate scientific method, including experimental and empirical methodologies characteristic of science and modern methods and tools used in scientific inquiry through the use of graphs, oral communications, and writings.
Science Liberal Arts: Mathematics & Science AA Degree	Apply algebraic, graphical, numerical, and other methods to solve applied problems in the areas of mathematics, natural sciences, computer graphics, and computer animation.

Outline

Course Outline

A. Human Body: An Orientation
- 1. Anatomical Terminology
- 2. Regional and Directional Terms
- 3. Body Planes and Sections
- 4. Human Body Plan
- 5. Body Cavities and Membranes

B. Cells: The Living Units
- 1. Cell Structure
- 2. Plasma Membrane
- 3. Cytoplasm, Nucleus, and other organelles
- 4. Cell Division
- 5. Cell Differentiation
- 6. Cell Life Cycle

C. Tissues
- 1. Epithelia Tissue
  - a. Special Characteristics of Epithelia
  - b. Types of Epithelial Tissues
- 2. Connective Tissue
  - a. Special Characteristics of Connective Tissues
  - b. Structural Elements of Connective Tissues
  - c. Types of Connective Tissues
- 3. Muscle Tissue
  - a. Special Characteristics of Muscular Tissues
  - b. Types of Muscular Tissues
- 4. Nervous Tissue
  - a. Special Characteristics of Nervous Tissues
  - b. Types of Nervous Tissues

D. Integumentary System
- 1. Skin and Hypodermis
  - a. Cells and Layers of the Epidermis
  - b. Dermis
  - c. Hypodermis
- 2. Appendages of the Skin
- 3. The Integumentary System Throughout Life
- 4. Disorders of the Integumentary System

E. Skeletal System
- 1. Components of the Skeletal System
  - a. Bones
  - b. Cartilages
  - c. Joints
  - d. Ligaments and other Connective Tissue
- 2. Bones Development and Growth
  - a. Intramembranous Ossification
  - b. Endochondral Ossification
- 3. Axial Skeleton
- 4. Appendicular Skeleton
- 5. Joints
  - a. Classification of Joints
  - b. Structure and Types of Synovial Joints
  - c. Movements Allowed by Synovial Joints
  - d. Selected Synovial Joints
  - e. Disorders of Joints
- 6. The Skeletal System Throughout Life
- 7. Disorders of the Skeletal System

F. Muscular System
    1. Muscle Tissue
        a. Skeletal, Cardiac and Smooth Muscle Tissues
        b. Gross Anatomy and Microscopic Structure of Skeletal Muscle
        c. Mechanics of Muscle Function
    2. Major Skeletal Muscles of the Body
        a. Muscles of the Head and Neck
        b. Muscles of the Thorax and Vertebral Column
        c. Deep Muscles of the Thorax: Breathing
        d. Abdominal Muscles
        e. Muscles of the Pelvic Floor and Perineum
        f. Muscles of the Upper and Lower Limbs
    3. Surface Anatomy
    4. The Skeletal System Throughout Life
    5. Disorders of the Muscular System
G. Nervous System
    1. Nervous Tissues and System Organization
    2. Divisions of The Nervous System
    3. Central Nervous System
    4. Peripheral Nervous System
    5. Autonomic and Visceral Sensory Nervous Systems
    6. The Special Senses
    7. The Nervous System Throughout Life
    8. Disorders of the Nervous System
H. Endocrine System
    1. Hormones
        a. Classes of Hormones
        b. Basic Hormone Action
        c. Control of Hormone Secretions
    2. Major Endocrine Organs
    3. Hypothalamus and Pituitary Interactions
    4. The Endocrine System Throughout Life
    5. Disorders of the Endocrine System
I. Cardiovascular System
    1. Blood
        a. Composition of Blood
        b. Blood Plasma and Formed Elements
        c. Blood Cell Formation
    2. Heart
        a. Structure of the Heart
        b. Pathway of Blood Through the Heart
        c. Conduction System of the Heart
    3. Blood Vessels
        a. General Characteristics of Heart Vessels
        b. Types of Blood Vessels
        c. Major Blood Vessels of the Body
    4. Cardiovascular System Throughout Life
    5. Disorders of the Cardiovascular System
J. Lymphatic and Immune Systems
    1. Lymphatic System
        a. Lymph Transport and Lymphatic Vessels
        b. Lymphoid Organs
    2. Immune System and Immunity
        a. Innate Immunity
        b. Acquired Immunity
    3. The Lymphatic and Immune Systems Throughout Life
K. Respiratory System
    1. Respiratory Structures
    2. Mechanics and Neural Control of Ventilation

3. The Respiratory System Throughout Life
4. Disorders of the Respiratory System

L. Digestive System
1. Peritoneum, Mesenteries and Digestive System Organs
2. Alimentary Canal and Accessory Organs
3. Anatomy and Histology of Digestive System Structures
4. The Digestive System Throughout Life
5. Disorders of the Digestive System

M. Urinary System
1. Urinary System Structures
2. Microscopic Anatomy of the Kidney, Ureter, Urethra and Bladder
3. Mechanisms of Urine production
4. The Urinary System Throughout Life
5. Disorders of the Urinary System

N. Reproductive System
1. Male Reproductive Structures
2. Female Reproductive Structures
3. Ovarian and Uterine Cycles
4. Pregnancy and Childbirth
5. The Reproductive System Throughout Life
6. Disorders of the Reproductive System

O. Endocrine System
1. Hormones
    a. Classes of Hormones
    b. Basic Hormone Action
    c. Control of Hormone Secretions
2. Major Endocrine Organs
3. Hypothalamus and Pituitary Interactions
4. The Endocrine System Throughout Life
5. Disorders of the Endocrine System

P. Embryology
1. Stages of Prenatal Development
2. Basic Body Plan
3. Embryonic Period
4. Fetal Period

Lab Outline

Gross Anatomy, Microanatomy, Simulations and Dissections on the following:

A. Orientation and Organ Systems
B. Microscope and The Cell
C. Tissue Histology
D. Integumentary System and Membranes
E. Skeleton Overview
F. Axial, Appendicular and Fetal Skeletons
G. Articulations and Movements
H. Muscle Histology
I. Skeletal Muscle and begin
J. Nervous Tissue
K. Brain and Spinal Nerves
L. Spinal Nerves, Cranial Nerves, and Autonomic Nervous System
M. General and Special Sensory Organs
N. Endocrine System
O. Blood
P. Heart
Q. Blood Vessels
R. Lymphatic Vessels and Lymphoid Organs
S. Respiratory System Organs
T. Digestive System Organs

U. Urinary System Organs
V. Reproductive System Organs

Delivery Methods

Delivery Method: Please list all that apply -Face to face -Online (purely online no face-to-face contact) -Online with some required face-to-face meetings ("Hybrid") -Online course with on ground testing -iTV – Interactive video = Face to face course with significant required activities in a distance modality -Other

- Face to face
- iTV – Interactive video = Face to face course with significant required activities in a distance modality

Rigor Statement: Assignments and evaluations should be of the same rigor as those used in the on-ground course. If they are not the same as those noted in the COR on the Methods of Evaluation and out-of-class assignments pages, indicate what the differences are and why they are being used. For instance, if labs, field trips, or site visits are required in the face to face section of this course, how will these requirements be met with the same rigor in the Distance Education section? Describe the ways in which instructor-student contact and student-student contact will be facilitated in the distance ed environments.

Distance education students will participate in class instruction activities (reading or viewing lecture materials, participating in discussions with fellow students and the instructor, and taking quizzes, exams, or other assessments) by spending an equivalent amount of hours per week similar to that in the traditional face-to-face classroom.
In the hybrid class, face-to-face interaction for difficult lecture concepts is possible, as are assessments. In iTV class, instruction will take place via the iTV system using similar or adapted lectures and demonstrations, and students will participate in class activities from their location using the iTV system.
Any hands-on exercises required for labs take the same amount of time and are of equal rigor online or onsite. All students, irrespective of teaching modalities, complete equivalent amount of work.

Good practice requires both asynchronous and synchronous contact for effective contact. List the methods expected of all instructors teaching the course. -Learning Management System -Discussion Forums -Message -Other Contact -Chat/Instant Messaging -E-mail -Face-to-face meeting(s) -Newsgroup/Discussion Board -Proctored Exam -Telephone -iTV - Interactive Video -Other

- Discussion Forums
- Message
- Chat/Instant Messaging
- E-mail
- Face-to-face meeting(s)
- Newsgroup/Discussion Board
- Proctored Exam

Software and Equipment: What additional software or hardware, if any, is required for this course purely because of its delivery mode? How is technical support to be provided?

N/A

Accessibility: Section 508 of the Rehabilitation Act requires access to the Federal government's electronic and information technology. The law covers all types of electronic and information technology in the Federal sector and is not limited to assistive technologies used by people with disabilities. It applies to all Federal agencies when they develop, procure, maintain, or use such technology. Federal agencies must ensure that this technology is accessible to employees and the public to the extent it does not pose an "undue burden". I am using -iTV—Interactive Video only -Learning management system -Publisher course with learning management system interface.

- Learning management system

Class Size: Good practice is that section size should be no greater in distance ed modes than in regular face-to-face versions of the course. Will the recommended section size be lower than in on-ground sections? If so, explain why.

No. 25 class size

Emergency Distance Education Options The course will operate in remote delivery mode when all or part of the college service area is under an officially declared city, county, state, or federal state of emergency, including (check all that apply) - Online including all labs/activity hours - Hybrid with online lecture and onsite lab/activity hours - Correspondence education in high school and prison facilities - None. This course will be cancelled or paused if it cannot be held fully onsite.

- Online including all labs/activity hours