

# All Fields Report

## Course Cover

Page Last Saved on Tuesday, Oct 22, 2019 at 4:18 PM  
By Barbara Zingg

<b>Course Prefix</b>	BIO-Biological Sciences - LPC
<b>Course Number</b>	50
<b>Full Course Title</b>	Anatomy and Physiology
<b>TOP Code</b>	0410.00 - Anatomy and Physiology
<b>Basic Skills Status</b>	2N = The Course is Not a Basic Skills Course
<b>SAM Priority Code</b>	Non-Occupational
<b>Prior Transfer Level</b>	Y = Not Applicable
<b>Cross Listed Course</b>	
<b>Discipline</b>	Biological Sciences
<b>Catalog Course Description</b>	Structure and function of the human body is studied. Emphasis on human anatomy and physiological principles at the cellular and systemic level. Designed primarily for majors in paramedic and medical assisting programs and pre-medical students who wish to explore the realm of anatomy and physiology.
<b>Distance Education</b>	Yes
<b>DE Already Approved</b>	No

## Proposal Information

<b>Proposed Start</b>	Year: 2020 Semester: Summer
<b>Is this course part of a Family?</b>	No
<b>Shared with Chabot</b>	No
<b>Is an equivalent course at Chabot?</b>	Yes
<b>If yes, which course</b>	BIOL 50
<b>May material fees apply to this course? Official approval process required</b>	No

## Course Modifications

Page Last Saved on Tuesday, Oct 29, 2019 at 4:52 PM  
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### Course Modifications:

Catalog Description  
Top Code  
Assignments  
Methods of Evaluation  
Typical Texts

## Course Units/Hours

Page Last Saved on Friday, Nov 22, 2019 at 10:34 PM

By Craig Kutil

Units/Hours						
Variable Units	No					
Type	Min			Max		
	Units	Inside of Class Hours	Expected Outside of Class Hours	Units	Inside of Class Hours	Expected Outside of Class Hours
Lecture						
Lab						
T: Tutoring Hours						
Total Noncredit Hours						
Work Exp						
Work Exp Pay Type	Non-Paid			Non-Paid		
No Unit Value Lab	No					
Total						
Noncredit Category						
Course has both lecture and lab units	Yes					
Repeatability	May be taken 1 time					
If Repeatable, Rationale:						
Grading Methods	Letter Grade					

### Requisites

*You have no defined requisites.*

### Proposed General Education/ Degree/ Transfer

Page Last Saved on Monday, Nov 11, 2019 at 10:59 PM

By Craig Kutil

#### CSU Transfer Course

Transfers to CSU

Already Approved

#### IGETC Area 5: Physical and Biological Sciences

5B/5C: Biological Science with Lab

Already Approved - Nonsubstantial Change

#### CSU GE Area B: Scientific Inquiry and Quantitative Reasoning

B2/B3 - Life Science with Lab

Already Approved - Nonsubstantial Change

#### LPC GE: AA Degree

Natural Sciences

Already Approved

#### LPC GE: AS Degree

Natural Sciences

Already Approved

**UC Transfer Course**

Transfers to UC

Already Approved - Nonsubstantial Change

**Distance Education Proposal**

Page Last Saved on Tuesday, Oct 29, 2019 at 4:56 PM

By Barbara Zingg

<b>Delivery Methods</b>	Web-Based (Instruction will be delivered completely online)
<b>If Other, describe here</b>	
<b>Rationale for DE</b>	The Biology program has grown tremendously in the past few years. One of the biggest obstacles as stated in our Program Review, is the urgent need for more facilities to add more classes. Adding the BIO 50 course to our DE offerings frees up much sought after laboratory space, and provides another avenue for our students -- most of whom work full- or part-time-- to access our courses. In consultation with our dean, the discipline faculty identified the BIO 50 course as an ideal candidate to develop a first complete online laboratory course in Biology at LPC.
<b>Accessibility</b> <b>All materials must be accessible to students with disabilities</b>	Close captions for videos Transcription for Audio Alt text for images Formatting and coding for tables Accessible Word/PPT/PDFs Explanatory links Proper color contrast Styles for text formatting
	<b>If there are any actions you did not choose, use the text box below to explain why.</b>
<b>Syllabus</b>	Instructor response time Grade turnaround time Student participation Instructor participation
	<b>If there are any topics you did not choose, use the text box below to explain why.</b>

**Distance Ed - Course Interaction**

Select all planned types of regular Instructor-Student contacts.

**Instructor-Student Interaction**

**Email** - The instructor will initiate interaction with students to determine that they are accessing and comprehending course material and are participating regularly in course activities. Students will be encouraged to email the instructor with questions about the content, structure, grading, etc., of the course. Replies will be made as soon as possible

**Class Discussion Board** - The instructor will regularly participate in discussions that deal with academic content, will constantly provide substantive feedback, and will facilitate all of the discussions. For example, the instructor will monitor all the discussions and give 5-10 individual responses to discussion posts per week.

**Feedback on Assignments** - The instructor will provide regular substantive, academic feedback to students on assignments and other assessments. Students will know why they deserved the grade they received and what they can do to improve. For writing assignments and assessments, the instructor will utilize grading rubrics.

**Announcements** - Regular announcements that are academic in nature will be posted to the class. For example, the instructor will post at least one academic announcement per week. To a lesser extent, the instructor will post announcements include information on when assignments are due, changes in the syllabus, exam schedules, etc.

**Chat** - The instructor will use chat to interact with students, textually and/or graphically, in real-time. The instructor will use a chatroom to conduct virtual office hours.

**Student-Student Interaction**

**Email** - Students will be encouraged to email each other to ask questions about the course, including assignments.

**Class Discussion Board** - Students will post to the discussion board in each module, answering questions posed by the instructor. They will also reply to each others' postings. An example assignment is "Explain the properties of fetal tissue

and discuss its use in research."

**Group Work** - Students will work in teams to complete a group project. This project will then be shared with the rest of the class in the discussion board. An example assignment is to have students work in groups of 4 or 5, each choosing to research and discuss one disease from a list of diseases associated with either depressed or overactive Immunity.

**Chat** - As an adjunct to the group discussion board, students will use the class chatroom to discuss their group project in real-time.

**Peer-editing/Critiquing** - Students will complete a peer-editing assignment. An example assignment is that each student will be assigned another student's term paper to review and give feedback directly on the document. The author of the paper will then decide what to do with the comments, accordingly update the paper before submitting it to me. Both, the author and the reviewer will be assessed.

**Webconferencing** - Students will interact in real time with each other to discuss course work.

### **Student-Content Interaction**

**Class Discussion Board** - Each module will contain at least one class discussion relating to the topic(s) of the module. Students will be required not only to post their opinions, ideas, and experiences, but they will also be required to reply to their classmates' posts. The instructor will pose questions relating to the textbook, online presentations, web sites, etc. An example discussion assignment would be: "Explain the role of individual organs of the cardiovascular system in maintaining homeostasis and predict the major effects of upsetting the function of each organ."

**Group Work** - There will be at least one group project during the semester. Students will collaborate in groups of 4 or 5 to solve laboratory problems, become experts on certain topics, etc. They will then present their findings to the class in the class discussion board. These presentations will be in the form of writing, online presentations, or web sites. An example assignment is "1) Follow a drop of blood from the right heart to your fingertip and back to the right heart. 2) Follow a drop of blood from the right heart to your toe and back to the right heart. Split the work between the 4 group members as to blood drops 1 vs. 2 and arteries vs. veins. Check each other's work before posting it on the Discussion Board."

**Written Papers** - Papers will be written on various topics. Prior to students submitting their work, papers will be checked by an anti-plagiarism service to ensure that no plagiarism is involved. There will be short papers on various anatomical and physiological topic. With the help of the instructor, each student will chose a human disease (excluding most infectious diseases). The student will then research this disease using valid scientific sources ranging from websites to news reports, to scientific journals and will then write a term paper on the anatomy and physiology of this disease.

**Internet research** - Students will use the Internet to research various topics, questions and problems. Prior to students submit all write-ups to an anti-plagiarism service to ensure that no plagiarism is involved. An example research assignment is is described under Written Papers above.

**Quizzes, tests/exams** - Quizzes will be used in each module to make sure students completed the assigned reading and understood it. These quizzes will be "openbook", but the questions will be randomized so different students get different questions. Tests and exams will include multiple choice, short answer, and essay questions that will require higher-order thinking, along with supporting factual knowledge. The questions will be randomized so different students get different questions. Time limits will be set and Proctorio will be enabled.. A typical exam question is: "You measure a patient's blood pressure at 130/85. Calculate the patient's pulse pressure and mean arterial pressure. Determine whether each pressure is low, normal, or high."

**Projects** - Students will complete various virtual laboratory projects and exercises designed to help them master the anatomy and physiology objectives and outcomes of the course. Results, summaries, or lab reports from these virtual laboratories will be submitted online. An example project is: "View the following animations. Then be able to identify everything on the given list using the interactive images provided."

**Case Studies** - Working in groups, students will evaluate real-world medical situations. They will then present their cases to the class in the Discussion Board for analysis. An example case study is: "Review the following EKG, determining the heart rate, evaluating the rhythm, and deciding on a basic interpretation."

## **Measurable Objectives**

Page Last Saved on Thursday, Nov 14, 2019 at 11:06 AM

By Craig Kutil

Upon completion of this course, the student should be able to:

A. Explain basic structural organization and function of the major tissues, organs, and organ systems of the human body

B. Relate structure to function in the organs and tissues

C. Explain the role of individual organs in maintaining homeostasis and predict the major effects of upsetting the function of each organ

D. Use anatomical and physiological terminology

E. Make a cursory evaluation of pathological states

F. Solve conceptual and practical anatomy and physiology problems

G. Develop necessary background for further health and medical science coursework

## Course Content

Page Last Saved on Tuesday, Oct 22, 2019 at 4:19 PM

By Barbara Zingg

1. General introduction to Chemistry and Physics
  1. Atoms, molecules, and ions
  2. Organic/inorganic compounds
  3. Osmosis and diffusion
2. Introduction to the Human Body
  1. Terminology
  2. Body regions
  3. Anatomical position and planes of section
  4. Survey of systems
  5. Homeostasis
3. Cell structure and function
  1. Organelles
  2. Cell division
  3. Cellular respiration
  4. Gene expression
4. Tissue types
  1. Epithelia
  2. Connective tissue
  3. Muscle
  4. Nerve
5. Integumentary system
  1. Epidermis
  2. Dermis
  3. Hypodermis
  4. Body membranes
6. Skeletal system
  1. Axial
  2. Appendicular
  3. Microscopic anatomy of bone
  4. Bone growth, development and repair
7. Muscular system
  1. Key muscles by region
  2. Physiology of muscle contraction
8. Cardiovascular system
  1. Heart anatomy and conducting system
  2. Arterial, venous and capillary circulation
9. Pulmonary system
  1. Trachea-bronchial tree
  2. Lung organization
  3. Ventilation
  4. Gas exchange

10. Blood
  1. RBC morphology, gas exchange
  2. WBC morphology and physiological differences
11. Nervous system
  1. CNS: Brain, spinal cord anatomy and function
  2. PNS: Organization, reflexes, autonomic nervous system
12. Special senses
  1. Eye and ear anatomy and physiology
  2. Function and structure of olfactory and taste senses
  3. Balance
13. Endocrine system
  1. Classification of hormones and their general effects
  2. Survey of endocrine glands and their respective hormones
  3. Roles of hormones in maintaining homeostasis of organ systems.
14. Urinary system
  1. Basic concept of excretion as a function of filtration, secretion, and absorption
  2. Functional anatomy of the nephron
  3. Endocrine considerations of the kidney
  4. Urinary bladder and urethra anatomy
15. Reproductive system
  1. Male functional anatomy
  2. Female functional anatomy and changes in pregnancy
16. Digestive system
  1. Anatomy and physiology of digestive organs
  2. Enzymes and hormones involved in digestive process

## Lab Content

Page Last Saved on Tuesday, Oct 22, 2019 at 4:18 PM

By Barbara Zingg

1. Planes of section
2. Body cavities and membranes
3. Organization of the human body
4. Osmosis and diffusion
5. Use of the Microscope
6. Identifying tissue types
7. Integumentary system
8. Skeletal system
9. Muscular system
10. Neuroanatomy and reflexes
11. General and special senses
12. Endocrine system
13. Cardiovascular system
14. Formed elements of the blood and blood typing
15. Respiratory system
16. Anatomy of the digestive system
17. Anatomy of the urinary system and urinalysis
18. Reproductive system

## Methods of Instruction

Select and add applicable methods.

**Other** - Laboratory exercises (experiments, organ dissections, histological studies)

**Discussion** -

**Lecture -**

**Other - Video**

**Other - Models, slides, PowerPoint images**

**Other - Case studies**

## Typical Assignments

**SUGGESTION: To avoid intermittent formatting problems do not paste into assignment field.**

### 1. Research/Written Assignment

1. Gather and synthesize information on a pre-approved topic from valid scientific sources, ranging from websites to news reports and scientific journals. Example: "Properly use anatomical and physiological terminology to describe and discuss a human (non-infectious) disease of your interest." Present the information in written format with standardized bibliography

### 2. Discussion Assignment

1. Explain the properties of fetal tissue and discuss its use in research. Post a one-page write-up in the Discussion area to share with other students. Respond to two of your classmates postings.

## Methods of Evaluation

Page Last Saved on Tuesday, Oct 29, 2019 at 4:55 PM

By Barbara Zingg

**This section defines the ways students will demonstrate that they have met the student learning outcomes.**

**Student grades will be based on multiple measures of student performance. Instructors will develop appropriate classroom assessment methods and procedures for calculating student grades, including the final semester grade. The following list displays typical assessment methods appropriate for this course. The actual assessment methods used in a particular classroom and section will be listed in the instructor's syllabus.**

**Multiple measures may include, but are not limited to, the following:**

### Methods

**Typical classroom assessment techniques include the following. Please address frequency in the drop down boxes once method is selected.**

#### Exams/Tests

3-4 per semester. Multiple choice, short answers, and essays.

#### Quizzes

One at the conclusion of each module. Approximately 8.

#### Papers

At least one research paper investigating a relevant physiology related topic.

#### Group Projects

At least one group assignment with 4 or 5 students.

#### Class Participation

4-8 Discussion board assignments

#### Lab Activities

Laboratory reports and associated quizzes.

## Typical Texts

Page Last Saved on Tuesday, Oct 29, 2019 at 4:27 PM  
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To create a textbook or instructional resources listing, click the Add button in the appropriate section of this screen. Textbooks such as the following are appropriate:

<b>Specify Formatting Style</b>	MLA
<b>Textbooks</b>	
	1. Betts, J. , and many others . <i>Anatomy and Physiology</i> . 1st ed., OpenStax, 2017.
	2. Marieb, Elaine, and Pamela Jackson. <i>Essentials of Human Anatomy and Physiology</i> . 12th ed., Pearson, 2018.
	3. Saladin, Kenneth, and Robin McFarland. <i>Essentials of Anatomy and Physiology</i> . 2nd ed., McGraw-Hill, 2017.
<b>Manuals</b>	
	1. Marieb, E., & Jackson, P. <u>Essentials of Human Anatomy and Physiology Laboratory Manual</u> , Pearson, 01-01-2018
	2. Amerman, Erin <u>Exploring Anatomy &amp; Physiology in the Laboratory: Core Concepts</u> , Morton Publishing, 01-01-2018
<b>Periodicals</b>	
<i>You have no periodicals defined.</i>	
<b>Software</b>	
<i>You have no software defined.</i>	
<b>Other</b>	
<i>You have no other defined.</i>	

### Other Materials Required of Students

Page Last Saved on Monday, Mar 4, 2019 at 3:31 PM  
By Madeline Wiest

#### Description

A. Colored pencils

### Library/Learning Resources Review

Page Last Saved on Tuesday, Oct 22, 2019 at 4:19 PM  
By Barbara Zingg

Please schedule an appointment to meet with a LPC Librarian to discuss Library/Learning Resources to support your course and student success

<b>Sufficient Resources</b>	Yes
<b>Additional Resources Needed</b>	
<b>New Databases Needed</b>	

### Needed College Resources

**Computer Lab**

**Specialized Hardware**

**Specialized Software**

**Other**