

Cañada College
Official Course Outline

1. **COURSE ID:** BIOL 132 **TITLE:** Human Biology Laboratory
Semester Units/Hours: 1.0 units; a minimum of 48.0 lab hours/semester
Method of Grading: Letter Grade Only
Prerequisite: BIOL 130, or concurrent enrollment
Recommended Preparation:
Eligibility for READ 836 and ENGL 836; or ENGL 847 or ESL 400.
2. **COURSE DESIGNATION:**
Degree Credit
Transfer credit: CSU; UC
AA/AS Degree Requirements:
Cañada GE Area B: SCIENTIFIC INQUIRY AND QUANTITATIVE REASONING: B3: Lab
CSU GE:
CSU GE Area B: SCIENTIFIC INQUIRY AND QUANTITATIVE REASONING: B3 - Laboratory Activity
IGETC:
IGETC Area 5: PHYSICAL AND BIOLOGICAL SCIENCES: C: Science Laboratory
3. **COURSE DESCRIPTIONS:**
Catalog Description:
Laboratory exercises concerning mammalian anatomy and physiology and utilizing the scientific method, analysis of data, and drawing appropriate conclusions. This course is a supplement to BIOL 130 Human Biology.
Schedule of Classes Description
Introductory laboratory exercises in mammalian anatomy and physiology. This course is a supplement to BIOL 130 Human Biology.
4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**
Upon successful completion of this course, a student will meet the following outcomes:
 - A. correctly operate common lab instruments, such as pH meter, microscopes, pipettes, and use the metric system of measurement
 - B. analyze inheritance of traits using genetic data
 - C. identify gross anatomical features of human organ systems and cells of each tissue type.
 - D. create and interpret graphs and tables with data
 - E. apply all steps of the scientific method to answer questions and solve problems.
5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**
Upon successful completion of this course, a student will be able to:
 - A. apply all steps of the scientific method to answer questions and solve problems.
 - B. correctly operate common lab instruments, such as pH meter, microscopes, pipettes, using the metric system of measurement.
 - C. create and interpret graphs and tables with data.
 - D. identify gross anatomical features of human organ systems and cells of each tissue type.
 - E. explain how features of each organ system help maintain homeostasis.
 - F. analyze problems of genetic inheritance with data from pedigrees or from biotechnological methods.
6. **COURSE CONTENT:**
Lecture Content:
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Lab Content:
 1. Application of the scientific method
 2. Cell structure and function; use of microscopes
 3. Biological molecules and nutritional roles in humans.
 4. Enzymes and factors affecting their function
 5. Diffusion and osmosis; consequences for cells
 6. Skeletal system and allometric growth

7. Muscular system and fatigue
8. Respiratory system
9. Cardiovascular system
10. Nervous system and special senses
11. Disease and body defenses
12. Digestion and metabolism
13. Gamete formation, genetic inheritance
14. Biotechnology techniques and applications
15. Analysis of human impact on ecosystems

TBA Hours Content:

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7. REPRESENTATIVE METHODS OF INSTRUCTION:

Typical methods of instruction may include:

8. REPRESENTATIVE ASSIGNMENTS

Representative assignments in this course may include, but are not limited to the following:

Writing Assignments:

- A. In preparation for performing lab observations and experiments students will summarize, in writing, the background and expectations of the upcoming lab activities.
- B. Students will record observations, analyze data and communicate their findings in written report format.

Reading Assignments:

Students must read the background and instructions for each lab. Reading comprehension is assessed through short answers to questions in the lab report.

Other Outside Assignments:

Most in-class lab assignments will involve hands-on lab activities using standard lab equipment, such as pipettes, microscopes, pH meters, and balances. The genetic lab will include techniques of DNA isolation, PCR, and gel electrophoresis.

To be Arranged Assignments (if applicable):

Not applicable

9. REPRESENTATIVE METHODS OF EVALUATION

Representative methods of evaluation may include:

- A. Regular quizzes will assess understanding of lab concepts. Written pre-lab summaries will encourage adequate student preparation. Completion of problem-sets will apply students' knowledge and understanding. Written lab reports will evaluate students' comprehension and ensure completion of tasks.

10. REPRESENTATIVE TEXT(S):

Possible textbooks include:

- A. Atsma & Hsu. *Laboratory Manual for Human Biology*, ed. San Francisco, California: Benjamin Cummings Publishing, 2008

Origination Date: July 2008

Curriculum Committee Approval Date: September 2008

Effective Term: Fall 2009

Course Originator: Douglas Hirzel