College of San Mateo
Official Course Outline

1. **COURSE ID:** BIOL 132 **TITLE:** Human Biology Laboratory
   Units: 1.0 units **Hours/Semester:** 48.0-54.0 Lab hours
   Method of Grading: Letter Grade Only
   Prerequisite: Completion of or concurrent enrollment in BIOL 130.
   Recommended Preparation:
   Any READ 400 level course.

2. **COURSE DESIGNATION:**
   Degree Credit
   Transfer credit: CSU; UC
   AA/AS Degree Requirements:
   CSM - GENERAL EDUCATION REQUIREMENTS: E5a. Natural Science
   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:
   Introductory laboratory exercises concerning human 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. Recommended especially for students interested in the Allied Health Fields.

4. **STUDENT LEARNING OUTCOME(S) (SLO'S):**
   Upon successful completion of this course, a student will meet the following outcomes:
   1. Apply the scientific method to human biology in a laboratory setting.
   2. Describe the relationship between structure and function at various levels of biological organization.
   3. Identify the major impacts that humans have on the environment.
   4. Explain how genetics and the environment interact to affect human development, health, and evolution.

5. **SPECIFIC INSTRUCTIONAL OBJECTIVES:**
   Upon successful completion of this course, a student will be able to:
   1. Apply the scientific method to answer questions and solve problems.
   2. Operate common lab instruments, such as pH meter, microscopes, pipettes.
   3. Apply the metric system of measurement.
   4. Create and interpret graphs and tables with data.
   5. Identify various tissue types as well as gross anatomical features of human organ systems.
   6. Explain how features of each organ system help maintain homeostasis.
   7. Analyze problems of genetic inheritance with data from pedigrees or from biotechnological methods.
   8. Describe the major impacts of humans on the environment.
   9. Discuss scientific principles as they pertain to the evolution of humans.

6. **COURSE CONTENT:**
   Lab Content:
   1. Application of the scientific method
   2. Cell structure and function; use of microscopes
   3. Biological molecules and metabolic roles in humans.
   4. Diffusion and osmosis concepts
   5. Covering, support and movement of the body
   6. Flow dynamics related to human systems
   7. Regulation and integration mechanisms of the body
   8. Disease and body defenses
   9. Gamete formation, genetic inheritance & continuity
   10. Scientific principles of evolution as they pertain to humans
   11. Analysis of human impact on ecosystems

7. **REPRESENTATIVE METHODS OF INSTRUCTION:**
   Typical methods of instruction may include:
   A. Lab
   B. Activity
   C. Discussion
   D. Experiments
   E. Field Trips
   F. Guest Speakers
   G. Other (Specify): Wet lab activities Computerized lab simulations Review and discussions of case studies

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.

9. **REPRESENTATIVE METHODS OF EVALUATION**
   Representative methods of evaluation may include:
   A. Exams/Tests
   B. Group Projects
   C. Lab Activities
   D. Quizzes
   E. Written examination
   F. 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. Astma, B., M. Johnson. *Laboratory Manual for Human Biology*, 8th Edition ed. Pearson Publishing, 2016
    B. Mader. Sylvia. *Lab Manual for Human Biology*, 15th Edition ed. McGraw Hill Publisher, 2018

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Course Originator: Christopher Smith