BUTTE COLLEGE
COURSE OUTLINE

I. **CATALOG DESCRIPTION**

BIOL 2 - Introduction to Human Biology **3 Unit(s)**

Prerequisite(s): NONE
Recommended Prep: Reading Level IV; English Level IV; Math Level IV
Transfer Status: CSU/UC
51 hours Lecture

This course is an introduction to the basic principles of biology focusing on humans as biological organisms. Topics include chemistry; cell and tissue structure; human body structure and function; human reproduction and development; human genetics, heredity and evolution; and human ecology. An emphasis is placed on the application of principles to current issues, including common human diseases, genetic engineering, and the impact of humans on the world's ecosystems.

II. **OBJECTIVES**

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

A. Identify the relationship between humans and all other living organisms.
B. Describe the steps of the scientific method, and illustrate how the scientific method is used to gather scientific information.
C. Analyze the chemical and cellular organization associated with human tissues.
D. Evaluate the basic anatomy and primary function of human organ systems.
E. Explain organ system integration and relate how this is used to maintain a relatively constant internal environment.
F. Differentiate how human disease results from the interruption of normal organ system function.
G. Discuss the process of human reproduction and development.
H. Analyze the relationship between the genetic makeup and physical characteristics of the human body.
I. Differentiate how biotechnology plays a role in health and disease.
J. Compare the processes of microevolution and macroevolution and discuss the transitions in human lineages.
K. Illustrate the relationships between humans and other organisms within varying ecosystems and describe the impact of human activity on ecosystems.

III. **COURSE CONTENT**

A. **Unit Titles/Suggested Time Schedule**

Lecture

Topics	Hours
1. Introduction to the Scientific Method	2.00
2. The Human Position In the Tree of Life	1.00
3. Basic Inorganic and Organic Chemistry	3.00
4. Cellular and Tissue Organization	7.00
5. Introduction to the Cardiovascular System	2.00
6. Introduction to the Respiratory System	2.00
7. Introduction to the Immune System	2.00
8. Introduction to the Digestive System	2.00
9. Introduction to the Urinary System	2.00
10. Introduction to the Muscular System	2.00

11.	Introduction to the Nervous System	2.00
12.	Human Reproduction and Development	3.00
13.	Basic Genetics and Inheritance	6.00
14.	Introduction to the Biology of Cancer	3.00
15.	Introduction to DNA and Biotechnology	4.00
16.	Human Evolution	4.00
17.	Humans and the Ecosystem	4.00
Total Hours		51.00

IV. METHODS OF INSTRUCTION

A. Lecture
B. Instructor Demonstrations
C. Class Activities
D. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
E. Reading Assignments
F. Multimedia Presentations

V. METHODS OF EVALUATION

A. Exams/Tests
B. Quizzes
C. Class participation
D. Written Assignments
E. Essays and research papers

VI. EXAMPLES OF ASSIGNMENTS

A. Reading Assignments
1. Read the textbook section discussing the basic processes of the digestive system. In a 2-page essay describe the basic processes performed by the digestive system. Include in your discussion where each of these processes occurs within the digestive system. Be prepared to present your findings in class.
2. Read the textbook section describing the cell cycle and discuss the implications of a failure in the regulatory mechanisms of the cell cycle. Be prepared to discuss your findings in class.

B. Writing Assignments
1. Write a 2-page essay describing the role of the kidney in the maintenance of homeostasis in the body. Submit your essay to the instructor.
2. Write a 2-page essay that explains the proper design of an experiment needed to show the effectiveness of a medication in alleviating a physical symptom. The essay will include the identification of the parts of an experiment and a critical analysis of the design. Submit your essay to the instructor.

C. Out-of-Class Assignments
1. Research and properly use ecological concepts to scientifically solve a problem related to altered agricultural ecosystems. Write a 5-page paper that addresses the principles required to adequately explain the solution. Submit your research paper to the instructor.
2. Watch the videos on mitosis and meiosis posted on the course website. Describe the steps of each process in the worksheet posted on the course website. Write a paragraph comparing and contrasting mitosis and meiosis. Submit your completed worksheet to the instructor.

VII. **RECOMMENDED MATERIALS OF INSTRUCTION**

Textbooks:

A. Judith Goodenough. Biology of Humans. 5th Edition. Pearson, 2013.

Materials Other Than Textbooks:

A. Handouts at instructors discretion.

B. Supplementary material from current journals at instructors discretion.

Created/Revised by: Jill Terra
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