

Human Biology
TCSU BIOL 110

A. Description

Fundamental principles of human biology: development, major organ systems, heredity, evolution, health and disease processes in populations, and aspects of modern biology impacting the well-being and behavior of humans. Designed for non-science majors.

B. Recommended Preparation

Not specified

C. Prerequisites

Not specified

D. Minimum Unit Requirement

4 semester units – 3 units lecture, 1 unit lab

E. Course Topics

1. Atoms and molecules important for life
2. Cell structure and function
3. The cell cycle and mitosis
4. Meiosis, gametogenesis
5. Mendel and the gene
6. DNA synthesis
7. How genes work, including transcription and translation
8. Analyzing and engineering genes; biotechnology
9. Fertilization and development
10. Human form, function and reproduction
11. Human nutrition and health
12. The human immune system and disease processes
13. Human behavior
14. Evolutionary processes
15. Interactions of humans with their environment and other organisms

F. Student Learning Outcomes

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

1. Describe the basis of heredity in biological systems;
2. Describe the basic principles of human health and nutrition;
3. Demonstrate knowledge of human disease processes within diverse populations;
4. Identify the interactions occurring between humans and environment, including the health and disease processes in diverse groups;
5. Identify basic anatomical features and physiological functions of major organ systems of the human body;

6. Describe key events in the life span of humans, from fertilization and development through senescence and death;
7. Demonstrate knowledge of evolutionary processes;
8. Explain the interactions of humans with their environment and other organisms;
9. Examine problems and issues in modern biology, such as genetic engineering, biotechnology, artificial reproduction, and cloning; and
10. Demonstrate an understanding of the scientific method, experimental design and the philosophy of science.