

Human Biology – BI 107

Professor: Dr. Robert L. Cole

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OFFICE HOURS

Monday – Friday 10:00 – 11:00

REQUIRED TEXTBOOK

HUMAN BIOLOGY by Sylvia Mader, William C. Brown Publishers, 3rd. edition

COURSE DESCRIPTION

A science elective for the non-science major who has little science or math background. Topics will include nutrition, nervous system, sense organs, drugs, heredity, reproduction, and selected diseases. This course does not satisfy the science requirement for the Liberal Arts Science Majors.

COURSE OBJECTIVES

At the completion of the course, the student should be able to:

A. NUTRITION AND DIGESTION

(Pages 19-24, 68-92)

1. Describe and distinguish each of the six nutrient classes based on structure, function, and food sources.
2. Explain how each of the six nutrient classes relate to a balanced diet and explain deficiency symptoms associated with the lack of a nutrient.
3. Explain the principle of energy balance and solve problems related to weight loss or gain.
4. Locate and describe the structures of the digestive systems.
5. Associate each structure with its digestive function, contrasting mechanical with chemical digestion where appropriate.

B. NERVOUS SYSTEM AND SENSE ORGANS

(Pages 188-206, 236-253)

1. Describe the basic structure of neurons and the mechanism of the nerve impulse transmission.
2. Identify and characterize the subdivisions of the nervous system.

3. Locate and describe the functions of the major regions of the brain.
4. Compare and contrast the effects of the subdivisions of the autonomic nervous system; explain the stress response.
5. Describe the structures and functions of the selected organs.

C. PSYCHOACTIVE DRUGS

(Pages 206-212)

1. Identify the routes of administration of drugs and effectiveness of each route in drug dispersal.
2. Distinguish between stimulants and depressants based on their effect on the nervous system
3. Distinguish between narcotics and hallucinogens based on their effect on the nervous system.
4. Describe the physiologic and psycho logic effects of the selected drugs.

D. GENETICS

(Pages 336-340, 343, 347-384)

1. Describe the relationship of the DNA, chromosomes, and genes; relate this to protein synthesis.
2. Define basic terminology of Mendelian genetics; apply these concepts to problem solving situations.
3. Explain selected genetic disorders in terms of chromosomal abnormalities.

E. REPRODUCTIVE SYSTEM

(Pages 274-296, 311-334)

1. Describe the anatomy and physiology of the male and female reproductive systems.
2. Compare and contrast the male and female sexual response.
3. Describe fertilization, implantation, development, and the birth process.
4. Explain various methods of birth control.

F. DISEASES

(Pages 94-115, 135-146, A1-A7, 297-310, 401-412)

1. Discuss the structure and function of the blood and cardiovascular system.
2. Describe selected communicable and non-communicable diseases.
3. Identify the major groups of infectious agents and associate each group with selected diseases.
4. Recognize the symptoms of sexually transmissible diseases; their treatments and prevention.
5. Describe the body's defense mechanisms including non-specific and specific defenses.

COMPETENCIES

- A. To read critically (Objectives 1, 4, 6, 7, 8, 10-26).
- B. To write correctly and effectively (Objectives 14 and 23).
- C. To identify and logically analyze problems and issues and to propose and evaluate solutions.
- D. To form reasoned value judgments (Objectives 2, 14, 17, 21, and 25).
- E. To exhibit the research skills necessary for lifelong learning (Objectives 2 and 25).
- F. To demonstrate a knowledge of the process of science and its products or outcomes (Objectives 1-26).
- G. To explain the process of technological change and the impact of that change on the individual, the culture, and the environment (Objective 15).

TESTING/MEANS OF EVALUATION

Final grades will be calculated according to the following approximate percentages:

Exam I (Part A)	50 pts
Exam II (Parts B & C)	50 pts
Exam III (Parts D & E)	50 pts
Library Assignments	10 pts
Cooperative Assignments	60 pts
Class Participation	20 pts

GRADING DETERMINATION

A	=	90 – 100
B	=	80 - 89
C	=	70 – 79
D	=	60 – 69
F	=	< 60

ATTENDANCE

Class attendance is not directly used to compute grades. However, some class sessions will include assignments that are graded and must be made-up. The make-up assignments will be different from the in-class assignments.

Attendance at all examinations is required and any absence from an exam must be accompanied by documentation.

Class participation means:

- A. contributing to cooperative learning groups
- B. contributing to whole-class discussion
- C. limiting participation so others have a chance

The above schedule and procedures in this course are subject to change in the event of extenuating circumstances.