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**Course Outline for BIOL 20**  
**CONTEMPORARY HUMAN BIOLOGY**  
**Effective: Fall 2008**

**I. CATALOG DESCRIPTION:**

BIOL 20 — CONTEMPORARY HUMAN BIOLOGY — 3.00 units

A study of the Human organism, beginning at the cellular level, emphasizing organ systems, and also including topics of genetics and biotechnology.

3.00 Units Lecture

**Grading Methods:**

**Discipline:**

	<b>MIN</b>
<b>Lecture Hours:</b>	54.00
<b>Total Hours:</b>	54.00

**II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1**

**III. PREREQUISITE AND/OR ADVISORY SKILLS:**

**IV. MEASURABLE OBJECTIVES:**

**Upon completion of this course, the student should be able to:**

- A. Describe some of the current theories regarding the evolutionary origin of humans
- B. Identify and describe the physical structure of cells, tissue types and organ systems, and review their functions;
- C. Develop an understanding of the homeostatic mechanisms maintaining the human body and recognize common pathological conditions caused by homeostatic failure;
- D. Appreciate the integration and coordination between of the different body systems;
- E. Define organic molecules and recognize the four major groups of organic molecules found in humans;
- F. Discuss the basic principles of human reproduction, genetics, medical genetics and biotechnology;
- G. Analyze and critically evaluate the impact of human activities on the physical and biotic environment, and discuss population concerns.

**V. CONTENT:**

- A. The origin and nature of life
  1. Properties of life
  2. Chemistry of life: inorganic and organic
  3. Basic unit of life: cells
  4. Cellular functions: metabolism, growth, reproduction
- B. Structural organization, function and homeostatic mechanisms of the human body
  1. Muscle system
  2. Skeletal system
  3. Nervous and sensory systems
  4. Cardiovascular system
  5. Endocrine system
  6. Immunity
  7. Respiration system
  8. Urinary system
  9. Digestion and nutrition
  10. Reproductive system
- C. Failure of homeostasis
  1. Cancer
  2. Infectious diseases
  3. Lifestyle associated diseases
- D. DNA, genes and biotechnology
  1. History of genetics
  2. Patterns of inheritance
  3. Gene expression
  4. Application of biotechnology
- E. Principles of Evolution
  1. Primate and human evolution and migration
- F. Human ecology
  1. Biogeochemical cycles
  2. Energy flow through ecosystems

3. Human impact of populations, pollution and resources

VI. METHODS OF INSTRUCTION:

- A. Lectures (includes PowerPoint images, handouts and traditional blackboard)
- B. World Wide Web sites
- C. Video clips
- D. Discussions and group activities related to Bioethical issues

VII. TYPICAL ASSIGNMENTS:

- A. Written Assignment 1. Using written and demonstrated guidelines, find a current article on a pre-approved topic. 2. Discussion of how to determine the scientific validity of information, ranging from websites, articles and news media. 3. Three to four page research paper with standardized bibliography

VIII. EVALUATION:

A. **Methods**

- 1. Exams/Tests
- 2. Research Projects
- 3. Papers
- 4. Group Projects
- 5. Other:
  - a. Written Assignment:
    - 1. Using written and demonstrated guidelines, find a current article on a pre-approved topic.
    - 2. Discussion of how to determine the scientific validity of information, ranging from websites, articles and news media.
    - 3. Three to four page research paper with standardized bibliography
  - b. Examinations
    - 1. Midterm and final exams, mostly consisting of multiple choice questions
    - 2. All exams include 4-6 short written essays related to larger concepts and interconnections between lecture topics.

B. **Frequency**

- 1. Frequency of Evaluation
  - a. Minimum of one midterm examination
  - b. Minimum of one written assignment and/or group project
  - c. Final examination

IX. TYPICAL TEXTS:

- 1. Sylvia Mader *Human Biology*., Wm. C. Brown Publishers, 2007.

X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. For a web based course, frequent access to a computer with an Internet connection, and a CD-ROM drive