Instructor: Dr. Nada Sinno Saoud
            Biology Dept. Rm. 205- Ext.3901.
Email: ns02@aub.edu.lb
Lectures: Section 1, M, W & F from 8:00-9:00 a.m. Biol.004.
          Section 2, T & Th. 12:30-1:45 Bechtal 407.
Office hours: Mon. & Wed. from 1:00-2:00 p.m or by appointment.

1. CATALOG DESCRIPTION:

   This course covers the fundamental principles of cell biology, genetics and human biology with emphasis on the morphology, physiology and disorder of body systems. Not open to Biology Majors. Students cannot receive credit for BIOL 201, BIOL 202 and BIOL 210. Each semester.

2. COURSE GOALS

   The goals of this course are for the student to:
   
   • develop a basic knowledge and understanding of the major integrating concepts of the biological sciences (chemical basis for life, cell theory, inheritance, anatomy and physiology);
   • develop knowledge of the structure and function of the human body

3. COURSE LEARNING OUTCOMES

   At the completion of this course a student will be able to:
   
   1- Integrate themes of biology: cell biology and inheritance;
   2- Understand the chemical architecture of living things and the functions of the major groups of biological molecules;
   3- Identify the structure and functions, of animal cells, how eukaryotic cells differ from prokaryotic cells, cell metabolism including anabolic and catabolic processes, and cell division processes (mitosis and meiosis);
   4- Understand human genetics, especially the relationship between genetics and human health;
   5- Learn human nutritional requirements and the role of nutrition and fitness in human health;
   6- Classify the hierarchical architecture of the human body: molecules, cells, tissues, organs, organ systems, and whole organism; and
   7- Understand the anatomy and physiology of the systems that make up the human body, including integumentary, muscular, circulatory, digestive, respiratory, excretory, nervous, endocrine, and immune.

4. RESOURCES AVAILABLE TO STUDENTS

   Internet: The following are interesting websites
5. GRADING CRITERIA

The assignment of percentages will be according to the following protocol:

- Quizzes/Attendance/participation: 5% of grade
- Exam I: 25% of grade, Sat. Oct. 5 at 8:00 a.m.
- Exam II: 25% of grade, Sat. Nov. 2 at 8:00 a.m.
- Final Exam: 45% of grade

Topics included on Exam I:

- I- Chemistry of Life
- II- Cell Structure & Function
- III- Patterns of Chromosome Inheritance.
- IV- Patterns of Genetic Inheritance
- V- DNA Biology & Technology

Topics included on Exam II:

- VI- Organization & Regulation of Body Systems.
- VII- Digestive System & Nutrition.
- VIII- Cardiovascular System: Heart & Blood Vessels
- IX- Cardiovascular System: Blood

Topics included on the Final Exam in addition to the above chapters are:

- X- Lymphatic System & Immunity.
- XI- Respiratory System
- XII- The Urinary System & Excretion.
- XIII- The Nervous System

QUIZZES. The student will take a minimum of two quizzes administered during regular class hour. These quizzes will address the content and concepts presented in the lectures and text readings. No make-up for missed quizzes will be administered (the student will receive no score for missed quizzes).

EXAMINATIONS. The student will take two examinations and a comprehensive final examination (45% of grade) to demonstrate understanding of information presented primarily during lectures. These proctored exams will be closed-book exams and students will not be allowed to refer to texts, notes, nor other materials while taking the exam. The student must take the exam during the scheduled time period. A student missing an exam because of an illness or legitimate emergency may take a make-up exam as soon as possible after the student returns from the illness and as determined by the instructor. In such a circumstance, the student should make every reasonable attempt to contact the instructor before the exam period is over (or as soon as
possible). While make-up exams will cover the same content area as a missed exam, the exam format and specific questions may be different.

6. **SCHEDULE:**

<table>
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<tr>
<th>Week</th>
<th>Topic</th>
<th>Assignments</th>
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| 1    | (I). Chemistry of Life | - Carbohydrates  
  - Lipids  
  - Proteins  
  - Nucleic Acids | - Chapter 2 |
| 2    | (II). Cell Structure & Function | - What is a cell?  
  - How cells are organized  
  - PM, how substances cross the cell  
  - Nucleus & production of proteins  
  - Cytoskeleton & cell movement  
  - Mitochondria & cellular metabolism | - Chapter 3 |
| 3    | (III). Patterns of Chromosome Inheritance | - Chromosomes & cell cycle.  
  - Mitosis.  
  - Meiosis  
  - Comparison of mitosis & Meiosis.  
  - Chromosome inheritance | - Chapter 18 |
  - One- & Two- trait inheritance  
  - Beyond simple Inheritance patterns  
  - Sex-Linked inheritance | - Chapter 20 |
| 5    | (V). DNA Biology & Technology | - DNA and RNA structure & function  
  - Gene expression | - Chapter 21 |
| 6    | (VI). Organization & Regulation of Body Systems | - Types of tissues  
  - Connective tissues connects & supports  
  - Muscular tissues moves the body  
  - Nervous tissue communication  
  - Epithelial tissue protects  
  - Cell junction  
  - Integumentary System  
  - Organ system  
  - Homeostasis | - Chapter 4 |
| 7    | (VII). Digestive System & Nutrition | - Overview of digestion  
  - First part of the digestive tract  
  - Stomach & small intestine  
  - Three accessory organs & regulation of secretions  
  - Large intestine & defecation | - Chapter 8 |
### 8 (VIII). Cardiovascular System: Heart & Blood Vessels
- Overview of the cardiovascular system
- The types of blood vessels
- Heart is a double pump.
- Features of the cardiovascular system
- Two Cardiovascular pathways.
- Exchange of the capillaries.
- Cardiovascular disorders

- Chapter 5

### 9 (IX). Cardiovascular System: Blood
- Blood: An overview
- RBC & transport.
- WBC & defense
- Platelets & blood clotting
- Blood typing & transfusion.
- Homeostasis

- Chapter 6

### 10 (X). Lymphatic System & Immunity
- Microbes, pathogens & you
- The lymphatic system.
- Innate defenses.
- Acquired defenses
- Hypersensitivity reactions

- Chapter 7

### 11 (XI). Respiratory System
- The respiratory system
- The upper respiratory tract.
- The lower respiratory tract.
- Mechanism of breathing
- Control of ventilation
- Gas exchanges in the body.
- Respiration & health

- Chapter 9

### 12 (XI). The Urinary System & Excretion
- The urinary System
- Kidney structure.
- Urine formation
- Regulatory functions of the kidneys
- Disorders with kidney function.
- Homeostasis

- Chapter 10

### 13 (XIII). The Nervous System
- An Overview of the Nervous System
- The central NS.
- The limbic system & higher mental functions.
- The peripheral NS.
- Drug therapy & drug abuse.

- Chapter 13
7. COURSE POLICY

Students are expected to adhere to norms of academic integrity. Offences involving academic misconduct (cheating, plagiarism, dishonesty, in-class disruption) will be taken very seriously. Please refer to AUB policies, section 1 on the definitions of misconduct (158010081). The student is expected to attend and actively participate in all course lectures and activities, and complete all quizzes, and examinations. Be punctual and respect the starting time of the class by quiet, attentive behavior. Attendance at lectures will be monitored periodically since I have found that there is a strong correlation between attendance and the amount of material learned, test scores and appreciation of the course. According to AUB regulations, students who miss more than one fifth of the sessions in the first 10 weeks of the semester will be dropped from the course. Attendance will be used to decide grades for borderline students. If sickness or other serious problems cause an extended absence of several class periods, an explanatory note should be submitted to the professor.