

## BIOL 1110 General Biology I

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**Instructor:**

**E-Mail:**

**Phone:**

**Office:**

**Office Hours:**

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### **I. Course description**

A comprehensive course suitable for biology majors and minors. Fulfills the science requirement for pre-medicine, pre-pharmacy, pre-medical technology, pre-veterinary medicine, and pre-dentistry programs. Topics include the unifying principles found in all organisms, their molecular and cellular basis, the mechanisms of heredity, the interrelationships of organisms, and their evolution. **The laboratory component of the course is integrated into the lectures (i.e., there is no separate lab time).**

**Credit:** 4 credits, 3 class hours, 3 lab hours

**Prerequisite:** DSPR 0800

### **II. Course Outcomes and Topics**

- Describe and apply the scientific method of investigation.
- Explain the basic mechanisms of life (including cell replication) and the molecular and cellular (pro- and eukaryotic) basis for each mechanism
- Describe atomic structure, chemical bonding and the properties of acids, bases, water, lipid, carbohydrate, protein and nucleic acid
- Differentiate between prokaryotic and eukaryotic cells at the cellular level.
- Describe energy production (photosynthesis, anaerobic and aerobic respiration) in cellular organisms
- Explain the molecular basis of genetics and patterns of inheritance and current methods of genetic engineering (for both pro- and eukaryotic cells)
- Cite some examples of influence (both positive and negative) that the human race has on the global ecosystem
- Evaluate the Theory of Evolution

### **Course Topics**

- Chemistry
- Water & PH
- Organic Chemistry
- The Cell
- Cell Membrane
- Cellular Respiration
- Metabolism (Enzymes & Energy)

- Photosynthesis
- Cell Signaling
- Cell Cycle, Mitosis
- Meiosis
- Genetics (Mendel)
- Genetic Mutations
- DNA Synthesis Transcription & Translation
- Viruses & Bacteria
- Gene Regulation & Cancer
- Biotech: Cloning Vectors & PCR
- Development: Stem Cells, etc.
- Evolution
- Ecology

### **Lab Topics**

Biological Terminology  
 Scientific Method  
 Chemistry  
 Organic Chemistry  
 Osmosis and Diffusion  
 Enzymes  
 Photosynthesis  
 Cellular Respiration  
 Microscope  
 Cell Division  
 DNA Synthesis, transcription and translation  
 DNA extract and engineering  
 Pedigree lab  
 Evolution lab  
 Ecology lab

### **III. Required Materials**

Biology, Eighth Edition by Campbell, N.A. and J. B. Reece. (Publisher: Pearson Benjamin Cummings, text ISBN: 0321543254, text packaged with study guide ISBN: 032150156X).

General Biology Lab Manual. NSCC Bookstore

Optional:

Study Guide: Biology, Campbell, N.A. and J. B. Reece. Eighth Edition, Publisher: Pearson Benjamin Cummings, 2008 (ISBN: 0-321-501-56 X).

#### **IV. Course Policies**

##### Attendance Policy

Each Instructor will provide information regarding his/her attendance policy. Failure to attend class will result in a final course grade of "FA" or "FN" (see explanation below) depending on the individual instructor's course policy.

FA= failure, attendance-related (unofficial withdrawal) Last recorded date of attendance required

FN= failure, never attended class (unofficial withdrawal)

Assessment and Grading: \*\*\*Subject to change at instructor's discretion

##### Lecture Tests

- Lecture tests will be multiple choice, short answer, matching, fill-in-the-blank, true-false or picture/diagram labeling.
- Lecture tests will account for 60% of the total course grade.
- No make-up lecture tests will be allowed.

##### Assignments

- Assignments covering a variety of topics will be given during the course of the semester.
- Assignments may include short answer, multiple choice, matching, fill-in-the-blank, true-false, labeling, or essay questions.
- Assignments will account for 20% of the total course grade.
- Late assignments will not be accepted.
- Make-ups will not be allowed.

##### Laboratory Practical Exams

- Laboratory practical exams will be given.
- Lab practical exams will be identification on lab models, photographs, drawings or preserved animal specimens.
- Laboratory practical exams will account for 20% of the total course grade.
- Laboratory practical make-up examinations will NOT be given.

Final calculation of the course grade will be based on the following percentages:

60% - Lecture tests

20% - Assignments

20% - Laboratory Practical Exams

#### **GRADING SCALE**

A = 89.5 - 100.00

B = 79.5 - 89.49

C = 69.5 - 79.49

D = 59.5 - 69.49

F = Less than 59.5

**Safety issues**

The instructor will go over new regulations regarding safety in lab classes. You must turn in a signed copy of the regulations, and you will have a copy to keep.

**V. ADA Statement**

Nashville State complies with the Americans with Disabilities Act. If you wish to request any special accommodations for any courses in which you are enrolled, contact the Students Disabilities Office. Such Services must have proof of documentation that is not over 3 years old. Contact the Disabilities Coordinator at 353-3721.

**VI. Classroom Behavior**

Nashville State Community College has a zero tolerance policy for disruptive conduct in the classroom. Students whose behavior disrupts the classroom will be subject to disciplinary sanctions.

The instructor has primary responsibility for control over classroom behavior and maintenance of academic integrity. He/she can order temporary removal or exclusion from the classroom of any student engaged in disruptive conduct or in conduct which violates the general rules and regulations of the College.

Disruptive behavior in the classroom may be defined as, but is not limited to, behavior that obstructs or disrupts the learning environment (e.g., offensive language, harassment of students and professors, repeated outbursts from a student which disrupt the flow of instruction or prevent concentration on the subject taught, failure to cooperate in maintaining classroom decorum, etc.), the continued use of any electronic or other noise or light emitting device which disturbs others (e.g., disturbing noises from beepers, cell phones, palm pilots, lap-top computers, games, etc.).

**Please be aware that children are not allowed in class or unattended on campus.**

## **Academic Dishonesty** (Honor Code)

Any form of academic dishonesty, cheating, plagiarizing, or other academic misconduct is prohibited. "Plagiarism may result from: (1) failing to cite quotations and borrowed ideas, (2) failing to enclose borrowed language in quotation marks, and (3) failing to put summaries and paraphrases in your own words" (A Writer's Reference 331). Academic dishonesty may be defined as, but is not limited to, intentionally trying to deceive by claiming credit for the work of another person, using information from a web page or source without citing the reference, fraudulently using someone else's work on an exam, paper, or assignment, recycling your own work from another course, purchasing papers or materials from another source and presenting them as your own, attempting to obtain exams/materials/assignments in advance of the date of administration by the instructor, impersonating someone else in a testing situation, providing confidential test information to someone else, submitting the same assignment in two different classes without requesting both instructor's permission, allowing someone else to copy or use your work, using someone else's work to complete your own, altering documents, transcripts or grades, and forging a faculty/staff member's signature.

In addition to other possible disciplinary sanctions that may be imposed through regular college procedures as a result of academic dishonesty the instructor has the authority to assign an "F" or a "Zero" for the exercise, paper, or examination or to assign an "F" for the course.

**NOTE: This syllabus is meant simply as a guide and overview of the course and dates of assessments, etc. are subject to change at the instructor's discretion.**