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 for BIOL 1010 and BIOL 1110 may not be used together to satisfy the general education natural science requirement.

Credit: 4 Credits, 3 Class Hours, 3 Lab Hours
Prerequisite: Level 2 placement in English, Math and Reading.

II. Course Outcomes and Topics

Course Outcomes

- Describe and apply the scientific method of investigation.
- Explain the basic mechanisms of life (including cell replication) and the molecular and cellular (prokaryotic 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 prokaryotic and eukaryotic cells).
- Explain interactions between organisms and their environment as energy and matter flows through ecosystems and discuss environmental problems and their solutions.
- Describe the evidence for evolution and illustrate the basic tenets of population and species 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
• Natural Selection
• Ecological Succession

III. Required Material

Campbell Biology, 11th Edition by Lisa A. Urry, Michael L. Cain, Steven A. Wasserman, Peter V. Minorsky, and Jane B. Reece. (Publisher: Pearson, 2017);
ISBN: 9780134093413
IV.  **Course Policies**

**Attendance Policy**

Each Instructor will provide information regarding his/her attendance policy.

**Assessment and Grading**

**NOTE:** 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
• FA (see below)
• FN (see below)

Per TBR policy, a student who does not officially drop or withdraw from a course, but receives a failing grade, will receive an “FA” if the last day of attendance was earlier than two-thirds into the part-of-term. That date equates to the last day to withdraw from the course. An FN is awarded to students who never attended class.

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.

Student Communication Channels

It is the student’s responsibility to check NS Online and MyNSCC email on a regular basis. These are the official communication channels between the college and students. Students are responsible for the information communicated through those channels. NS Online contains specific course information and MyNSCC contains information important for other purposes.

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 Access Center at 615-353-3721 or 615-353-3741.

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 is subject to change at the instructor’s discretion.