



## Course Syllabus

### **BIOL 1407 – Biology II**

**Catalog Description:** The diversity and classification of life will be studied, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals. Laboratory activities will reinforce study of the diversity and classification of life, including animals, plants, protists, fungi, and prokaryotes. Special emphasis will be given to anatomy, physiology, ecology, and evolution of plants and animals.

**Prerequisites:** BIOL 1406 & MATH 1314 College Algebra (3 SCH version) recommended or concurrent enrollment in higher-level mathematics recommended

**Semester Credit Hours:** 4

**Lecture Hours per Week:** 3

**Lab Hours per Week:** 3

**Extended hours:** 0

**Contact Hours per Semester:** 96

**State Approval Code** 26.0101.51 03

**Alternate Operations During Campus Closure:** In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Panola College to move to altered operations. During this time, Panola College may opt to continue delivery of instruction through methods that include, but are not limited to: online learning management system (CANVAS), online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor Panola College's website ([www.panola.edu](http://www.panola.edu)) for instructions about continuing courses remotely, CANVAS for each class for course-specific communication, and Panola College email for important general information.

### **Core Components and Related College Student Learning Outcomes**

This course counts as part of the academic requirements of the Panola College Core Curriculum and an Associate of Arts or Associate of Science degree.  Yes  No: If no, skip to Instructional Goals.

The items below marked with an X reflect the state-mandated outcomes for this course IF this is a CORE course:

- Critical Thinking Skills – to include creative thinking, innovation, inquiry and analysis, evaluation and syntheses of information
  - CT1: Generate and communicate ideas by combining, changing, or reapplying existing information
  - CT2: Gather and assess information relevant to a question
  - CT3: Analyze, evaluate, and synthesize information
- Communication Skills – to include effective development, interpretation, and expression of ideas through written, oral, and visual communication
  - CS1: Develop, interpret, and express ideas through written communication
  - CS2: Develop, interpret, and express ideas through oral communication
  - CS3: Develop, interpret, and express ideas through visual communication
- Empirical and Quantitative Skills – to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions
  - EQS1: Manipulate and analyze numerical data and arrive at an informed conclusion
  - EQS2: Manipulate and analyze observable facts and arrive at an informed conclusion
- Teamwork – to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal
  - TW1: Integrate different viewpoints as a member of a team
  - TW2: Work with others to support and accomplish a shared goal
- Personal Responsibility – to include the ability to connect choices, actions, and consequences to ethical decision-making
  - PR1: Evaluate choices and actions and relate the consequences to decision-making
- Social Responsibility – to include intercultural competence, knowledge of civic responsibility, and the ability to engage effectively in regional, national, and global communities
  - SR1: Demonstrate intercultural competence
  - SR2: Identify civic responsibility
  - SR3: Engage in regional, national, and global communities

**Instructional Goals and Purposes:**

The purposes of this course are to provide instruction in an atmosphere of mutual respect where students may develop their intellect and skills; to contribute to the development of students as responsible and informed members of society; to provide courses for students wishing to complete certificate programs, associate degree programs or wishing to transfer to a baccalaureate program.

### General Course Objectives:

1. To help students become better informed citizens by providing opportunities to learn the differences between science as a way of knowing and other disciplines such as art, philosophy and religion
2. To provide students an opportunity to understand and appreciate the complexity and relationships of living systems.
3. To help students become better informed regarding their own health and better informed as health services consumers by coming to a better understanding of the complexities of the human body
4. To make students aware of changing technologies in science and the responsibilities and ethical decisions that come with the use of various technologies.
5. To help students become better informed regarding environmental issues.
6. Gather and assess information relevant to a question.
7. Analyze, evaluate, and synthesize information.
8. Develop, interpret, and express ideas through written communication.
9. Manipulate and analyze observable facts and arrive at an informed conclusion.
10. Integrate different viewpoints as a member of a laboratory team.
11. Work with others to accomplish a shared goal.

### Learning Outcomes: *[from the ACGM catalog]*

After successfully studying all materials and resources presented in the course, the student will be able to:

1. Describe modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution and speciation.
2. Describe phylogenetic relationships and classification schemes.
3. Identify the major phyla of life with an emphasis on plants and animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance.
4. Describe the basic animal physiology and homeostasis as maintained by organ systems.
5. Compare different sexual and asexual life cycles noting their adaptive advantages.
6. Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.

### Learning Outcomes for lab portion: (from ACGM)

After successfully studying all materials and resources presented in the course, the student will be able to:

1. Apply scientific reasoning to investigate questions, and utilize scientific tools such as microscopes and laboratory equipment to collect and analyze data.
2. Use critical thinking and scientific problem-solving to make informed decisions in the laboratory
3. Communicate effectively the results of scientific investigations
4. Demonstrate knowledge of modern evolutionary synthesis, natural selection, population genetics, micro and macroevolution, and speciation
5. Distinguish between phylogenetic relationships and classification schemes. 2

6. Identify the major phyla of life with an emphasis on plants and animals, including the basis for classification, structural and physiological adaptations, evolutionary history, and ecological significance
7. Describe basic animal physiology and homeostasis as maintained by organ systems
8. Compare different sexual and asexual life cycles noting their adaptive advantages.
9. Illustrate the relationship between major geologic change, extinctions, and evolutionary trends.

**Course Content:**

A general description of lecture/discussion topics included in this course are listed in the Learning Outcomes section of this syllabus.

Students in all sections of this course will learn the following content:

A general description of lecture/discussion topics included in this course are listed in the Learning Objectives section of this syllabus. Students in all sections of this course will learn the following content: Course content (see course description) will be taken from the adopted text and lab manual, scientific journals, current popular periodicals, appropriate online sources and pertinent reference literature.

**Methods of Instruction/Course Format/Delivery:**

This course is offered in face-to-face and online format with frequent use of online resources. Both the lecture and lab portions of this course may include but not be limited to the following methods of instruction: 1. Lecture 2. Discussion 3. Internet 4. Video 5. Television 6. Demonstrations 7. Field trips 8. Collaboration 9. Readings

While the lab portion of the class will be heavily hands-on with students expected to work individually and in teams, the lecture portion of the course may also include some “hands-on” active learning type activities. Some activities will demand that students come prepared to initiate and follow through on the activity independently with the instructor available for guidance and to answer questions.

**Major Assignments / Assessments:**

The following items will be assigned and assessed during the semester and used to calculate the student’s final grade.

Faculty may assign both in- and out-of-class activities to evaluate students' knowledge and abilities. Faculty may choose from – but are not limited to -- the following methods attendance, class preparedness and participation. Collaborative learning projects, exams/tests/quizzes, homework, internet, library assignments, readings, research papers, scientific observations, student-teacher conferences, bonus and written assignments.

No late work is accepted.

### **Course Grade:**

The grading scale for this course is as follows:

- Lecture – 70% consisting of:
  - Lecture Exams - 40% minimum of five a semester with a minimum of 50 multiple choice questions with at least one essay per exam making up 20% of the exam grade
  - Lecture Quizzes/Mastering Biology Exercises/Dynamic Study Modules -15%
  - Final Comprehensive Lecture exam - 15% Comprehensive Final Exam over all of the chapters covered during the semester minimum of 100 multiple choice questions.
- Lab - 30% consisting of:
  - Lab Quizzes: 10%
  - Lab Exercises: 50%
  - Lab Reports: 15% minimum of two per semester in proper format
  - Lab Practicals: 25% minimum of two fill in the blank lab practicals they shall be given covering the lab review sheet with a minimum of 50 questions taken from models, specimens, pictures, slides, chemical processes, experiments and critical thinking exercises
- Final scores in the class shall not be curved
- A bonus project may be assigned at the instructor's discretion

### **Required Texts, Materials and Supplies:**

- Textbook: Campbell Biology in Focus 3<sup>rd</sup> Edition; Lisa A. Urry, et al; 2019; Pearson (E-text available only, comes with Modified Mastering Biology in the Panola store.) ISBN# 9780135191811
- Lab Manual: Exploring Biology in the Laboratory,3e; Pendarvis & Crawley; 2018; Morton Publishing (Lab book only required for face to face labs) ISBN# 978-161731-7552
- Lab Kit (For online lab only) Purchased only through the Panola Store.

### Required supplements:

- Access Code to Modified Mastering Biology
- Access to Khan Academy (free)
- Access to Howard Hughes Medical Institute BioInteractive and other ancillaries (free)
- Access to other free online resources as necessary

### Required Readings:

- May include but not be limited to news publications, professional journals, agency publications.

### Other:

- For current texts and materials, use the following link to access bookstore listings: <http://www.panolacollegestore.com>
- For testing services, use the following link: <http://www.panola.edu/elearning/testing.html>
- If any student in this class has special classroom or testing needs because of a physical learning or emotional condition, please contact the ADA Student Coordinator in Support Services located in the Charles C. Matthews Student Center or go to <http://www.panola.edu/student-success/disability-support-services/> for more information.
- Withdrawing from a course is the student's responsibility. Students who do not attend class and who do not withdraw will receive the grade earned for the course.
- Student Handbook, *The Pathfinder*: <http://www.panola.edu/student-success/documents/pathfinder.pdf>
- Courses conducted via video conferencing may be recorded and shared for instructional purposes by the instructor.