



## Course Syllabus

### **BIOL 1406 – Biology I**

**Catalog Description:** Fundamental principles of living organisms will be studied, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Concepts of cytology, reproduction, genetics, and scientific reasoning are included. Laboratory activities will reinforce the fundamental principles of living organisms, including physical and chemical properties of life, organization, function, evolutionary adaptation, and classification. Study and examination of the concepts of cytology, reproduction, genetics, and scientific reasoning are included.

**Prerequisites:** 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.

### **Class Section Meeting Time:**

#### **Online**

**Note:** "Online—students are expected to spend 6-9 hours per week reading and reviewing course materials and completing assignments."

**Note:** (Specific Course Information for this class section is located in this document pgs. 5-7)

#### **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 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 scientific literate, 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 science 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 the characteristics of life.
2. Explain the methods of inquiry used by scientists.
3. Identify the basic requirements of life and the properties of the major molecules needed for life.
4. Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.

5. Describe the structure of cell membranes and the movement of molecules across a membrane.
6. Identify the substrates, products, and important chemical pathways in metabolism.
7. Identify the principles of inheritance and solve classical genetic problems.
8. Identify the chemical structures, synthesis, and regulation of nucleic acids and proteins.
9. Describe the unity and diversity of life and the evidence for evolution through natural selection.

**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. Describe the characteristics of life.
5. Explain the methods of inquiry used by scientist
6. Identify the basic properties of substances needed for life.
7. Compare and contrast the structures, reproduction, and characteristics of viruses, prokaryotic cells, and eukaryotic cells.

**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 four 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

**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:**

- Courses conducted via video conferencing may be recorded and shared for instructional purposes by the instructor.
- For current texts and materials, use the following link to access bookstore listings: <https://www.panola.edu/student-services/panola-college-store>
- For testing services, use the following link: <https://www.panola.edu/student-services/student-support/academic-testing-center>
- 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 Administration Building or go to <https://www.panola.edu/student-services/student-support/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*: [https://www.panola.edu/sites/default/files/2022-04/2020springpathfinderupdated2-%204-7-2022.word\\_.pdf1\\_.pdf](https://www.panola.edu/sites/default/files/2022-04/2020springpathfinderupdated2-%204-7-2022.word_.pdf1_.pdf)

## BIOL 1406 Online Biology I Course Information Fall 2024

**Instructor:** Brian P. Jones

**Office:** Health and Natural Sciences Bldg. **Office#** 2305

**Office Phone number:** 903-693-2074

**Email:** [bjones@panola.edu](mailto:bjones@panola.edu) Please E-mail me in canvas only (Email usually checked three times per day)

**Office Hours:** MW 9:30-11:30a.m.

TTh 1:15-3:15p.m.

**(OFFICE HOURS SUBJECT TO CHANGE)**

### Special Note:

**The instructor reserves the right to change any portion of the stated requirements for the course with timely notice given to students.**

### Tutorials:

Your first, best and most frequently offered opportunities for “tutorial” assistance are to meet with the instructor during office hours. Those hours are listed near the top of this document and on the office door. If the designated “Office Hours” do not work with your schedule, you should make an appointment with your instructor for another time. For Distance Learning students, phone calls, email, discussion postings and study groups are also good options.

Group tutorial opportunities may be offered during the semester. At least one will focus on study skills.

Do not come to the instructor’s office empty handed or empty headed. If you are preparing for class by reading and taking notes AND you are listening in lecture, you should be able to give the instructor a fair idea of what concepts confuse you the most.

### Lecture Assignments:

The lecture assignments in this class will consist of activities to help you understand the information from each chapter covered. Dynamic Study Modules will be assigned for each Chapter and will be for grade. Mastering Homework assignments will also be assigned for a grade. You may also have some lecture quizzes that will be taken in Mastering Biology. Note: (Late work is not accepted.)

### Lecture Exams:

There will be a total of 4 Lecture Exams and 1 Final Exam. Exams 1, 2, 3 and the Final Exam are Proctored Online using Respondus with Monitor. **(Note: If you are a dual credit student, your Proctored Exams will be given at the Testing facility at your High school.) (Note: There will be a review sheet and you will be able to create notes to use for these exams)** You will be given a 3 day window to take all exams. **(Note: Exams must be completed by the assigned due date. If the exam is not completed by the assigned due date you will receive a zero for an exam grade. There are no missed exam make-ups)**

**Lecture Exams count 40% of the semester average.**

**Tentative Lecture Test Schedule: (Testing schedule is subject to change)**

Exam 1: Chs. 1-5	<u>Thur. Sept. 19<sup>th</sup> Proctored (Testing Center)</u>
Exam 2: Chs. 6-10	<u>Thur. Oct. 10<sup>th</sup> Proctored (Testing Center)</u>
Exam 3: Chs. 11-15	<u>Thur. Nov. 7<sup>th</sup> Proctored (Testing Center)</u>
Exam 4: Chs. 19-23	<u>Thur. Nov. 21<sup>st</sup> Unproctored</u>

**FINAL Exam** Testing Window of (Thu. 12/05, Fri. 12/06, Mon. 12/09, Tuesday 12/10) PROCTORED Online Proctorio in Panola College Testing Center (Marshall, Carthage, Center)

**Laboratory:**

The lab activities in this course are designed to reinforce the lecture material. You will be completing engaging virtual labs from (HOL) Hands on Labs. You will receive a grade for all of the Virtual lab activities. HOL Labs must be completed by the due dates in canvas to receive credit. Note: (Late work is not accepted)

**Labs count 30% of the semester average.**

**Communication:**

Students in both the Face to Face and Online classes should use the email tool within Canvas to communicate with the instructor. E-mail is preferable to telephone calls except in emergency situations.

<b>Weeks (1-16) (M – F)</b>	<b>Topic(s) (Note: Every Chapter has a Dynamic Study Module that must be completed for a grade)</b>	<b>Chapter(s) covered</b>	<b>Mastering Biology Dynamic Study Modules</b>	<b>Mastering Biology Homework Assignme nts</b>	<b>Unit Exams (P) Proctored</b>
1 Aug. 20-23	Class Orientation / Introduction: Evolution and Foundations of Biology	1	1	Intro to Mastering Biology	
2 Aug. 26-30	Introduction: Evolution and Foundations of Biology / The Chemical Context of Life	1, 2	2	Chap. 1 Chap. 2	
3 <b>Sept. 2<sup>nd</sup> Labor Day</b> Sept. 3-6	Carbon and Molecular Diversity of Life	3	3	Chap. 3	
4 Sept. 9-13	Tour of the Cell / Membrane Transport and Cell Signaling	4,5	4, 5	Chap. 4 Chap. 5	
5 Sept. 16-20	An Introduction to Metabolism	6	6	Chap. 6	(P) Exam# 1 (Chs. 1-5)
6 Sept. 23-27	Cellular Respiration and Fermentation / Photosynthesis	7,8	7, 8	Chap. 7 Chap. 8	
7 Sept. 30-Oct. 4 <sup>th</sup>	The Cell Cycle / Meiosis and Sexual Life Cycles	9, 10	9, 10	Chap. 9 Chap. 10	
8 Oct. 7-11	Meiosis and Sexual Life Cycles	10			(P) Exam# 2 (Chs. 6-10)
9 Oct. 14-18	Mendel and the Gene Idea / The Chromosomal Basis of Inheritance	11, 12	11, 12	Chap. 11 Chap. 12	<b>Oct. 15<sup>th</sup> Mid-Term Grades Posted</b>
10 Oct. 21-25	The Molecular Basis of Inheritance / Gene Expression From Gene to Protein	13, 14	13, 14	Chap. 13 Chap. 14	
11 Oct. 28 –Nov. 1	Gene Expression From Gene to Protein / Regulation of Gene Expression	14, 15	14, 15	Chap. 15	
12 Nov. 4- Nov. 8	Descent with Modification	19	19	Chap. 19	<b>Nov. 8<sup>th</sup> Last Day to Withdraw</b> (P) (Exam# 3 (Chs. 11- 15))
13 Nov. 11-15	Phylogeny / The Evolution of Populations	20, 21	20, 21	Chap. 20 Chap. 21	
Nov. 18-22	The Origin of Species / Broad Patterns of Evolution	22, 23	22, 23	Chap. 22 Chap. 23	Exam# 4 (Chs. 19-23)
14 Nov. 25-29	<b>Thanksgiving Break</b>				
15 Dec. 2-4 ( <b>Dec. 5, 6 Exams</b> )	Review for Final Exam / Highlight Keypoints from Chs. 16-18 / Final Exam (Chs. 1-23)				
16 Dec. 9-11 ( <b>Exams</b> )	(P) Final Exam (Chs. 1-15/ 19-23)				

The lecture professor will set the specific due dates for the Mastering Biology Assignments. Other lecture assignments may include in class pop quizzes, student presentations, or group discussions which will be announced and determined by the professor.