Course Syllabus

BIOL 1408 – General Biology 1

Catalog Description: Provides a survey of biological principles with an emphasis on humans, including chemistry of life, cells, structure, function, and reproduction. Laboratory activities will reinforce the study of these concepts. (Lecture + Lab) (Lab Fee) (26.0101.51 03)

Prerequisites:

Semester Credit Hours: 4

Lecture Hours per Week: 3
Lab Hours per Week: 3
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) 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. 5-8)

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… 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 for the lecture portion: ***[from the ACGM catalog]***
After studying all materials and resources presented in the course, the student will be able to:

1. Distinguish between prokaryotic, eukaryotic, plant and animal cells, and identify major cell structures.
2. Identify stages of the cell cycle, mitosis (plant and animal), and meiosis.
3. Interpret results from cell physiology experiments involving movement across membranes,

enzymes, photosynthesis, and cellular respiration.
4. Apply genetic principles to predict the outcome of genetic crosses and statistically analyze results.
5. Describe karyotyping, pedigrees, and biotechnology and provide an example of the uses of each.
6. Identify parts of a DNA molecule, and describe replication, transcription, and translation.
7. Analyze evidence for evolution and 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. Distinguish between prokaryotic, eukaryotic, plant and animal cells, and identify major cell structures.
5. Identify stages of the cell cycle, mitosis (plant and animal), and meiosis.
6. Interpret results from cell physiology experiments involving movement across membranes, enzymes,
photosynthesis, and cellular respiration.
7. Apply genetic principles to predict the outcome of genetic crosses and statistically analyze results.
8. Identify the importance of karyotypes, pedigrees, and biotechnology.
9. Identify parts of a DNA molecule, and describe replication, transcription, and translation.
10. Analyze evidence for evolution and natural selection.

Course 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 format with frequent use of online resources. Both the lecture and lab portions of this course may include but not be limited to presentations by the instructor, videos, presentations by students, class discussions. 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.

<u>Assignments</u>

1. The lecture portion may include but not be limited to objective and essay type written assignments, presentations by students, observation by the teacher of student participation and interaction, class discussions. Some of these activities may come from the required texts and online support as well as other ancillary online resources.
2. The lab portion may include but not be limited to objective and essay type items in lab reports, the gathering, presenting and analysis of data, the creation of experiments, presentations by students, observation by the teacher of student participation and interaction, class discussions. Some of these activities may come from the required texts and virtual labs.

Assessment(s):

1. Lecture: Quizzes, Unit Tests, Observations
2. Lab: Observation of lab activities, lab reports, lab quizzes

Course Grade:
The grading scale for this course is as follows:

40% from average of Unit Exams (5 or 6 exams)
20% from assignments
20% from the Laboratory Average
20% from the Final Exam (comprehensive over all but the last unit)

Required Texts, Materials, and Supplies:

- Text: Campbell Biology Concepts and Connections 10th Edition; Martha R. Taylor; et al; 2021; Pearson (E-Text available only, comes with Modified Mastering Biology in Panola Store) ISBN# 9780136538820
- Lab Manual: Exploring Biology in the Laboratory Core Concepts,2e; Pendarvis & Crawley; 2018; Morton Publishing (Lab book only required for face to face labs) ISBN# 978-161731-9006

- Lab Kit: (For online lab only) Purchased only through 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.

Recommended 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*

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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:

For online lecture, you need to follow the modules in canvas, read your book, read the power points in canvas**.** Also, you should view any videos in the canvas modules. There could possibly be a few Zoom review meetings. The lecture portion of this online 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. Engaging Homework assignments will also be assigned for a grade. **(You will not receive a grade if you do not complete the Dynamic Study Modules by their assigned due dates.)** **(Extra Credit assignments must be submitted by the due date or no credit will be received for it.)** To receive full credit for Engaging homework assignments, you must turn them in by the assigned due date. **(Note: If the engaging homework assignments are turned in past the due date, 10% will be taken off from the engaging homework assignment grade each day it is late.)**

Lecture assignments count **20% of the semester average**.

Lecture Exams:

There will be a total of 6 Exams. All exams are open book accept Exam #3 and the Final Exam which are proctored 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 2 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.**

Final Exams:

The Final Exam is proctored and is comprehensive over Chapters 1-15. **(Note: There will be a Final Exam Review Sheet and you will be able to create notes to use for this exam)**

The **Final Exam** will count **20%** of the **semester average**.

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

Exam 1:	Ch 1,2,3	Fri. 09/06 Unproctored
Exam 2:	Ch 4,5	Fri. 09/20 Unproctored
Exam 3:	Ch 6,7	Mon. 10/07- Wed. 10/09 **PROCTORED**
Exam 4:	Ch 8,9	Fri. 10/25 Unproctored
Exam 5:	Ch 10,11,12	Fri. 11/08 Unproctored
Exam 6:	Ch 13,14,15	Fri. 11/22 Unproctored
FINAL Exam	Chs. 1-15	Thu. 12/05 **PROCTORED**

FINAL Exam Testing Window of (Thu. 12/05, Fri. 12/06, Mon. 12/09, Tuesday 12/10) **PROCTORED** Online with Respondus

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. **(To receive credit for the virtual labs you must complete them by the assigned due date. Late labs will not be accepted.)**

Labs count **20% 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.

Biology 1408: General Biology I Tentative Fall 2024 Online Lecture Schedule (Note: Schedule may change)

Weeks (1-16) (M – F)	Topic(s) (Note: Every Chapter has a Dynamic Study Module that must be completed for a grade)	Chapter(s) covered	Mastering Biology Dynamic Study Modules	Mastering Biology Homework Assignments	Unit Exams (P) Proctored
1 Aug. 20-23	Class Orientation / Biology Exploring Life	1	1	Intro to Mastering Biology	
2 Aug. 26-30	Biology Exploring Life / The Chemical Basis of Life	1, 2	2	Enzymes	
3 **Sept. 2nd Labor Day** Sept. 3-6	The Molecules of Cells	3	3	Tour of Prokaryotic Cells	Exam 1 (Chs. 1-3)
4 Sept. 9-13	Tour of the Cell	4	4	Tour of Animal Cell / Tour of Plant Cell	
5 Sept. 16-20	The Working Cell	5	5	Membrane Transport	Exam# 2 (Chs. 4-5)
6 Sept. 23-27	How Cells Harvest Chemical Energy	6	6	Cellular Respiration	
7 Sept. 30-Oct. 4th	Photosynthesis	7	7	Photosynthesis	
8 Oct. 7-11	Review / Mid-Term	6,7			(P) Exam# 3 (Chs. 6-7}
9 Oct. 14-18	The Cellular Basis of Reproduction and Inheritance	8	8	Cell Cycle Mitosis vs Meiosis Mitosis Extra Credit	Oct. 15th Mid-Term Grades Posted
10 Oct. 21-25	Patterns of Inheritance	9	9	DNA DNA Replication Genetic Cross Pedigree Extra Credit	Exam# 4 (Chs. 8-9)
11 Oct. 28 –Nov. 1	Molecular Biology of a Gene How Genes Are Controlled	10,11	10, 11	Karyotypes Extra Credit Central Dogma DNA-RNA-Protein	
12 Nov. 4- Nov. 8	How Genes Are Controlled DNA Technology and Genomics	11,12	12	Exploring Biotechnology	Nov. 8th Last Day to Withdraw Exam# 5 (Chs. 10-12)
13 Nov. 11-15	How Population Evolve The Origin of Species	13, 14	13, 14	Evolution	
Nov. 18-22	The Origin of Species Tracing Evolutionary History	14, 15	15	Natural Selection	Exam #6 (Chs. 13-15)
14 Nov. 25-29	Thanksgiving Break				
15 Dec. 2-4 **(Dec. 5, 6 Exams)**	Review for Final Exam/Final Exams				
16 Dec. 9-11 **(Exams)**	(P) Final Exam (Chs. 1-15)				

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