BIOLOGY 110: Introduction to Biology

Course Information

Instructor: Professor Wendy St. John
Email: wstjohn@marin.edu
Office: SMN TBD
Office Hours: Wednesday and Thursday, 4 to 6 p.m.; please contact me for an appointment outside of these hours, or if you would like to meet over Zoom.

Course Meeting Times: Monday and Wednesday, 11:10 a.m. – 12:30 p.m. Academic Center 255

Course Description

An introduction to the science of biology for nonmajors and the most basic course for biology majors, this course gives a broad overview of modern biology. It is designed for students pursuing biology, health sciences, environmental sciences, or those seeking to better understand biological concepts in society. Topics include ecology, evolution, genetics, anatomy, physiology, cell biology, and molecular biology. (CSU/UC transferable. AA/AS Area A, CSU Area B-2, IGETC Area 5B)

Student Learning Outcomes (SLOs)

A. Explain the process of scientific analysis and discovery
B. Explain evolutionary connections between organisms and describe major groups of organisms, including their unique structures and functions
C. Describe basic cell biology concepts such as chemical origin, cellular structures, and functions
D. Describe basic molecular biology concepts including nucleic acid structure/function and protein synthesis
E. Explain the concept of energy flow in life and ecosystems
F. Compare and contrast major systems in organisms

Course Materials

The required textbook for this course is the OpenStax "Biology 2e." An online version can be accessed here: https://openstax.org/books/biology-2e/pages/1-introduction. A PDF version is also uploaded to our Canvas page. Weekly reading assignments are posted to the schedule below.

I will also provide you with an outline for each of my lecture slide presentations. These are intended to help you take notes in class and can be used as a study guide to prepare for exams. You are not required to use them, but you may find them helpful.

TENTATIVE Lecture Schedule

Week	Topics	Suggested Reading Assignment
1: Aug 25 Aug 27	Introduction/What is Life? Scientific Method	1.2 Themes and Concepts of Biology 1.1 The Science of Biology
2: Sept 1 Sept 3	Campus closed 9/1: Labor Day Holiday Chemistry of Water	2. The Chemical Foundation of Life
3: Sept 8 Sept 10	Chemistry of Food Structure and Function of Cells	3. Biological Macromolecules 4. Cell Structure (not 4/1 or 4.6) 5.1 Components and Structure (Plasma Membranes)
4: Sept 15 Sept 17	Energy for Life: Photosynthesis and Cellular Respiration	6. Metabolism 34.2. Nutrition and Energy Production 8. Photosynthesis 7. Cellular Respiration (not 7.3, 7.4, 7.7)
5: Sept 22 Sept 24	Structure and Function of DNA Exam #1	14. DNA Structure and Function 15. Genes and Proteins
6: Sept 29 Oct 1	Cell Division I: Mitosis Cell Division II: Meiosis	10. Cell Reproduction 11. Meiosis and Sexual Reproduction
7: Oct 6 Oct 8	Mendelian Inheritance and Pedigree	12. Mendel's Experiments and Heredity 13. Modern Understanding of Inheritance
8: Oct 13 Oct 15	Human Physiology/Organ Systems Infectious Disease and Immune System	33.3 Homeostasis Skim chapters 34 – 41 43. Animal Reproduction & Development 42: The Immune System 21. Viruses
9: Oct 20 Oct 22	Charles Darwin and Natural Selection Evidence for Evolution	18 Evolution and the Origin of Species
10: Oct 27 Oct 29	Macroevolution and Speciation Exam #2	
11: Nov 3 Nov 5	Diversity: Prokaryotes and Protists Diversity: Plants and Fungi	22. Prokaryotes: Bacteria and Archaea 23. Protists 25. Seedless Plants 26. Seed Plants 24. Fungi
12: Nov 10 Nov 12	Diversity of Animals	33 The Animal Body (not 33.3) 27 Introduction to Animal Diversity 28 Invertebrates
13: Nov 17 Nov 19	Diversity of Animals (cont.) Human Evolution	29 Vertebrates
14: Nov 24 Nov 26	Population and Community Ecology Ecosytems	44. Ecology and the Biosphere 45. Population and Community Ecology
15: Dec 1 Dec 3	Conservation Biology Climate Change Solutions	47. Conservation Biology and Biodiversity
16: Dec 8 Dec 10	Review for Final Exam	
Final Exam: Monday, December 15; 11:10 a.m. to 2 p.m.		

Assignments and Deliverables

There are 850 points available for you to earn, and grading will be based on the traditional scale (A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, and F = below 60%).

Graded Item	Points	Total points
2 Midterm Exams	100 points each	200
Cumulative Final Exam	200 points	200
6 Museum Observations	20 points each	120
Homework Assignments	various	80
Participation Assignments	various	150
Semester Research Project	100 points	100
	Course Total =	**850 points**

Exams: There will be two lecture exams during the semester, and a cumulative final during Finals Week, all of which will be delivered via Canvas during the time our class is regularly scheduled. Exams will contain material from lecture, homework assignments, and textbook reading assignments. Exams are mandatory and no makeups are permitted. If you must miss an exam for an excusable reason (family emergency, illness, etc), contact me via email before the exam date to discuss options. Our final exam will consist of a third midterm (100 points) along with a cumulative exam (100 points). I will provide a study guide of topics to focus on for the cumulative portion.

Museum Observations: Throughout the semester, there will be 7 observation assignments, with one being offered roughly every 2 weeks. These provide the opportunity to get a closer, hands-on look at specimens related to course topics, and are to be done outside of class time. You are only required to complete 6 of the 7; the 7^{th} can be completed for extra credit. More details will be available on Canvas.

Homework: Throughout the semester, you will have a variety of short homework assignments that relate to the topics being studied. There will not be homework every week. Generally, I will accept late work within 1 week of the original due date, with a 10% grade deduction.

Participation: Participation points will be earned by a variety of in-class activities throughout the semester. I do expect all students to attend class regularly, so you must be in attendance on the day of a participation activity in order to earn those points. No makeups will be allowed under any circumstances. However, I realize that we are all busy people and from time to time a conflict may arise. For this reason, as long as you earn 80% of the total points possible for participation, you will receive 100% of these points.

Semester Assignment: As a way of digging deeper into a topic that interests you, this semester, you will research and develop a tri-fold informational brochure. Detailed instructions will be provided in the Signature Assignment module on our Canvas page.

Canvas Learning Management System

Canvas is COM's Learning Management System (LMS), and the Canvas page for this course will act as our home base. As such, anytime you have a question about something, our Canvas page is a great first place to look for answers. Canvas is where you will find the course syllabus, class announcements, additional course files, and online class discussions. You will also use Canvas for in-class participation activities, and to submit all assignments for this course. For every class meeting, please plan to bring a device that can access Canvas with you to class (tablet, smartphone, laptop, etc). If you don't have access to a portable device, please let me know, and we can discuss options. If you are unfamiliar with using Canvas, you can find good information here: https://ol.marin.edu/canvas-overview.

Student Accessibility Services

If you need accommodations, please contact the College of Marin students Student Accessibility Services (SAS) Office, (415) 485-9406; http://ss.marin.edu/sas. Students granted accommodations should provide me with written specific accommodations provided by SAS, and I will work with you to make sure you have what you need to be successful in my class.

Undocumented Student Services

Undocumented and DACAmented students and students from mixed-status families are welcome at College of Main (COM), and in my classrooms. COM provides students with the guidance, services, and resources needed to be successful here. For resources and support, please contact:

Undocumented Student Services: (415) 485-9616 undocu@marin.edu

Standards of Student Conduct and Behavior Expectations

As a student in this class and of the College of Marin, you are expected to adhere to the Standards of Student Conduct. Failure to abide by these policies in class will result in being removed from class for up to two class periods (per AP 5520) and a referral through the student conduct process.

Please familiarize yourself with these polices here:

Board Policy 5500 — Standards of Student Conduct

Administrative Procedure 5520 — Student Discipline and Due Process

I would like to particularly draw attention to parts of item 14:

- Cheating, plagiarism (including plagiarism in a student publication), or knowingly engaging in other forms of academic dishonesty, including, but not limited to:
    - Copying, in part or whole, from someone else's quiz, examination, or work. For purpose of this item, "examination" includes quizzes, tests, and other graded or evaluated exercise.
    - Incorporating sentences, paragraphs, or parts of another person's writing, without giving appropriate credit, and representing the product as one's own work.
    - Submitting an academic assignment purchased from a research/term paper service, or written by another individual; or work obtained electronically (e.g. via the internet or Artificial Intelligence) and representing it as one's own work.
    - Purposefully allowing another student to copy from your paper during an examination.
    - Giving your homework, term paper, or other academic work to another student to plagiarize.
    - Misrepresenting circumstances in an effort to improve a grade.

The use of generative artificial intelligence (AI) tools (e.g., ChatGPT, Notebook LM) is an emerging skill, and throughout the semester, I will provide basic tutorials about how to leverage it for our work. In this course, the use of AI is permitted under the following guidelines*:

- Studying and Learning Support: You may use AI tools to study and enhance your understanding of course material.
- Idea Generation: AI may be used to help generate project ideas and explore potential topics.
- Research and Citation: When using AI to research topics, you must cite any information obtained from AI sources, just as you would with books, articles, or websites. Note: AI can sometimes produce factual errors. You are responsible for verifying the accuracy of all information you submit.

- Assignments, Quizzes, and Exams: You may not use AI to generate direct answers to any written assignments, quizzes, or exams.
- Summarizing and Synthesizing Information: You may use AI to help you summarize and synthesize information. In such cases, you must include a brief description of how you used the AI tool in your process. (Guidelines for how to document and submit this verification will be provided during the semester).

*These guidelines were written by me and formatted using Chat GPT.

Basic Needs Security

Any student who has difficulty affording groceries, accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the COM CARE Team for support. The COM CARE Team can be reached by calling (415) 485-9376 or by emailing studentactivities@marin.edu.

You are also welcome to reach out to me if you are comfortable doing so, and I can provide you with any other resources that I may possess.