

Dallas High School

Home of the Dragons



Marine Biology 2022-2023

Instructor: Emily Schmelling

Telephone: (503) 623-8336

Email: emily.schmelling@dsd2.org

Office Hours: Wednesday and Thursday during ALIE time. Before and after school by appointment

Course Description:

Marine biology is a course designed to give students an overall view of the marine environment. Many dissections and other labs will be conducted as part of the course. Dissections could include: clams, squid, sea stars, and perch. Video presentations will be made to show the beauty of the marine environment, and give students an appreciation of the interrelatedness of terrestrial and marine ecosystems. Finally, we will discuss how Humans rely on the ocean and how we affect it.

Topics: The topics below are a range of possible topics that this course could cover. Not all topics will be covered, the class will help decide what topics are the most interesting to them and we will go from there.

Principles of ocean science/physical features of the ocean/motions of the oceans	Chemical and physical properties of seawater
Taxonomy of marine life	Water quality (through monitoring saltwater aquariums)
Marine ecosystems and communities	Marine plants and photosynthesis of the ocean
Taxonomy of marine life	Human impacts on marine ecosystems

Marine invertebrates	Ocean conservation
Fish identification	Human impact on the world's ocean (plastic, overfishing, ocean acidification)
Marine evolution	Careers in marine sciences

Standards to Be Assessed:

Core Idea 1: Biological Evolution: Unity and Diversity- *How can there be so many similarities among organisms yet so many different kinds of plants, animals, and microorganisms? How does biodiversity affect humans?*

- ❖ Evidence of Common Ancestry and Diversity- What evidence shows that different species are related?
- ❖ Natural Selection- How does genetic variation among organisms affect survival and reproduction?
- ❖ Adaptation- How does the environment influence populations of organisms over multiple generations?
- ❖ Biodiversity and Humans- What is biodiversity, how do humans affect it, and how does it affect humans?

Core Idea 2: Ecosystems: Interactions, Energy, and Dynamics- *How and why do organisms interact with their environment and what are the effects of these interactions?*

- ❖ Interdependent Relationships in Ecosystems- How do organisms interact with the living and nonliving environments to obtain matter and energy?
- ❖ Cycles of Matter and Energy Transfer in Ecosystems- How do matter and energy move through an ecosystem?
- ❖ Ecosystem Dynamics, Functioning, and Resilience- What happens to ecosystems when the environment changes?
- ❖ Social Interactions and Group Behavior- How do organisms interact in groups so as to benefit individuals?

Core Idea 3: Scientific Inquiry- *How does the process of science actually work?*

- ❖ Can you create a sound scientific hypothesis using observations?
- ❖ Can you design and conduct a controlled experiment, field study, or other investigation to make systematic observations about the natural world, including the collection of sufficient and appropriate data?
- ❖ Can you analyze data and identify uncertainties in order to draw a valid conclusion that is supported by evidence?

- ❖ Do you understand that science is built upon the work of other scientists and is always changing based on new observations, questions, and technological advances?

Core Idea 4: Engineering and Design- *Can you design a valid scientific experiment?*

- ❖ Can you design an experiment that answers your questions while incorporating various trade-offs in time, money, ethics, public opinion, and other resources?
- ❖ Can you analyze data and determine the best conclusion or alternate scenarios?
- ❖ Can you refine your experiment to better answer your question and address future research needs?

Grading and Assessment:

Grades will be based on in class assignments, participation, homeworks, projects, labs, quizzes, and tests. At the end of the semester the points from all of these areas will come together and determine a student's final grade. Grades are not weighted, meaning that all aspects of a student's learning process will be reflected in their grade.

The following grading scales will be used to calculate a student's course grades and grade point average:

Course Grades will be calculated using the following scale:	Grade Point Averages (GPAs) will be calculated using the following scale:
A 90-100%	A (4.0)
B 80-89%	B (3.0)
C 70-79%	C (2.0)
D 60-69%	D (1.0)
F 0-59%	F (0)

Late Work and Test Retakes:

Late work is only accepted until the test retake deadline for that particular unit. Test retake deadlines will be announced to the student during class, posted to our class calendar located in my classroom, and also posted on Canvas. The retake deadline is typically **2 weeks after the initial testing day**, but due to holidays or “no school” days, the deadline might be up to 3 weeks after the initial testing date. Additional conversations about late work turned in after the retake deadline will be had individually.

Labs/ Dissections

Animal dissections are a big part of this course. By dissecting and inspecting animals from various taxonomic groups students will be able to gain a more in-depth understanding of the animal’s key characteristics and how it differs from other animals.

Students not wishing to participate in dissections will still be responsible for the labs. Please see me for an alternative assignment.

***Make up labs must be done with 2-3 other students and must be arranged with me prior to the make-up lab.**

Academic Integrity:

The faculty and administration of Dallas High School believe that honesty and integrity are personal attributes worth nurturing in our students. Because we value the educational and skill development opportunities provided by classroom assignments, research projects, tests, and credit recovery, we expect students to express academic integrity by doing their own work and properly documenting information gathered from other sources. Congruous with this belief is our resolve to handle those who violate the principles of academic integrity with stringent consequences as outlined in the [K-12 Code of Conduct](#).

Student Behavior and Expectations:

Students are expected to demonstrate appropriate behavior in the classroom and contribute to a safe, positive, caring learning environment by cooperating; doing their best to achieve academic excellence; respecting themselves, others, and the environment; and conducting themselves in a safe manner at all times. Clearly defined behavioral expectations are consistent school-wide through the Dragon **PRIDE** acronym. We strive to teach our students to take **PRIDE** in themselves and the school by demonstrating: **Purpose**, **Respect**, **Integrity**, **Determination**, and **Empathy** at all times. For more information, please see the [Student/Parent Handbook](#).

Student Electronic Devices at Dallas High School:

Students are allowed to possess personal electronic devices at school and at school-sponsored activities provided such devices are not used in any manner that may disrupt the learning

environment, school-sponsored activities or violate Board policies, administrative regulations, school or classroom rules, or state and federal laws. Cell phone usage is **only** permitted during scheduled passing periods and lunch times. Students are not allowed to be on their phones in the hallways and other common areas during class time and cell phone usage in the bathrooms and locker rooms is prohibited **at all times**. Students must use a Chromebook or laptop to complete and submit coursework. Cell phones cannot be used for this purpose and can only be used during class time with express advance permission from the teacher.

Diversity:

Dallas School District #2 recognizes the diversity and worth of all individuals and groups and their roles in society. It is the policy for the Dallas School District #2 Board of Education that there will be no discrimination or harassment of individuals or groups on the grounds of age, color, creed, disability, marital status, national origin, race, religion, sex or sexual orientation in any educational programs, activities or employment.

Gender:

Dallas High School will be proactive in creating a school culture that respects and values all students and fosters understanding of gender identity within the school community. Such guidelines are intended to ensure a safe learning environment free of discrimination and harassment, and to promote the educational and social integration of transgender students. They do not anticipate every situation that may occur and the needs of each student will be assessed on a case-by-case basis.

Parents: Please keep the rest of the syllabus. By signing this form, you acknowledge that you have read and fully understood the expectations, rules, and standards associated with this course. If you have questions, please call 503-623-8336 or email using the email address provided in this document. This page is due back by Friday, September 17th to your student's teacher.

Parent Name:

Parent Signature:

Parent email Address:

Parent Phone:

Student Name:

Student Signature: