

Curriculum at a Glance

Marine Science

Level: 300

Grades 11 and 12

This one-semester course is an introduction to the world's oceans and to the inhabitants and processes contained within its vast boundaries. Topics will include oceanography, aquaculture, diversity, ecology, living components, and man's interrelationship with the marine community. The course will place an emphasis on the ecology of our local waters. Interrelationships among animals, plants, and physical and chemical aspects of the environment will be studied, with stress on adaptations for survival unique to the marine environment. This course involves a wide variety of lab work, including animal dissections and field studies.

Unit Name	Essential Content
Oceanography	<ul style="list-style-type: none">● Introduction to geology of the oceans● Abiotic factors in the marine world/salinity, dissolved oxygen, turbidity, pH & temperature● Physical factors/waves, tides
Marine Producers	<ul style="list-style-type: none">● Role of marine producers in ecosystems● Phytoplankton & Zooplankton● Macroalgae
Marine Invertebrate Zoology	<ul style="list-style-type: none">● Sponges, Cnidarians & Ctenophores● Annelids & Mollusks● Echinoderms & Arthropods
Marine Vertebrate Zoology	<ul style="list-style-type: none">● Biology of jawless fish/Agnatha● Biology of cartilaginous fish/sharks & rays● Biology of bony fish● Marine reptiles, birds & mammals
Marine Ecology	<ul style="list-style-type: none">● Introduction to ecological concepts● Trophic levels in marine ecosystems● Coral Reef ecosystems● Long Island sound ecosystems

Environmental
concerns in Marine
Science

- Marine pollution
- Ocean acidification
- Global warming & bleaching
- Coastal development
- Aquaculture & the future of marine resources