

AQS 173: Water Chemistry in Aquatic Systems

This course covers water chemistry dynamics in aquatic systems and covers topics including lab safety, occupational safety, the Nitrogen cycle salinity, dissolved oxygen, acid/base chemistry, pH and pH buffering, ozone chemistry, coliform bacteria testing, working knowledge of spectrophotometers and other lab techniques, proper handling and disposal of water quality (WQ) reagents, management of conservative and nonconservative salts, dilutions, molarity, stoichiometry, and basic calcifying invertebrate chemistry and husbandry. The class will focus on the chemistry of human managed aquatic systems like aquarium and aquaculture facilities but will relate the issues to the ecosystems that aquatic animals inhabit. The Aquatic Animal Life Support Operators (AALSO) Water Quality Technician Level 1 test will be incorporated into the final exam for this course.

Addendum to Course Description

A Working knowledge of water chemistry and how different chemical compounds interact to promote or degrade the health of a living aquatic system and the animals living in it is essential to the success of a professional aquatic animal keeper. The lectures and labs in this course provide hands-on training in different aspects of water chemistry and how to properly and safely maintain or manipulate water chemistry parameters.

Course Student Learning Outcomes

Upon completion of the course students should be able to:

- Express orally or in writing, the basic elements of water chemistry in aquatic systems and the ideal ranges for WQ parameters in different types of aquatic systems.
- Have working knowledge of how WQ parameters outside recommended ranges affect the health of the system and the animals living in it and be able to express it orally, graphically, and in writing.
- Interpret water chemistry parameters and be able to develop a plan to safely manipulate and proactively manage these values in order to maintain system and animal health.
- Understand how WQ impacts natural aquatic ecosystems.
- Prepare students to take the AALSO Water Quality Technician Level 1 test.

Credits: 4

Prerequisites:

[AQS 100](#)

[BI 101](#)

[MTH 65](#)

Program: [Aquarium Science](#)