Aqua Experience

Aqua Experience is an aquaculture class designed to enhance student understanding of the aquaculture industry. This course gives students an overview of the scientific research associated with the aquaculture industry and the economic significance aquaculture plays at the local, state, and national levels, including entrepreneurship and related business functions. Additional areas of instruction include career opportunities, safety, water quality management, and system design and maintenance.

Content standards for this course are not intended to serve as the entire curriculum. Teachers are encouraged to expand the curriculum beyond the limits of these content standards to accommodate specific community interests and utilize local resources. This course encourages critical thinking, use of the scientific method, integration of technology, development of student leadership skills, and application of knowledge and skills related to practical questions and problems. Safety concepts are integrated into instruction to the maximum extent possible.

This course may be taught as a one-credit or half-credit course. For a half-credit course, content standards 1, 2, 3, 5, 6, 7, and 11 must be included.

Career and technical student organizations are integral, cocurricular components of each career and technical education course. These organizations serve as a means to enhance classroom instruction while helping students develop leadership abilities, expand workplace-readiness skills, and broaden opportunities for personal and professional growth.

**Career Opportunities**

Students will:

1. Identify career opportunities in aquaculture.

**Safety**

2. Identify safety precautions associated with producing fish.

**Introduction**

3. Trace the history of aquaculture.
4. Explain extensive, semi-intensive, and intensive aquaculture production.
   Examples: extensive—low animal density, low economic risk, little or no
   environmental manipulation, including aeration, feeding, and fertilization
   semi-intensive—moderate animal density, moderate economic risk, moderate
   environmental manipulation, including supplemental aeration and
   supplemental feeding
   intensive—high animal density, high economic risk, complete environmental
   manipulation, including continuous aeration, nutritionally complete feeding,
   and biological waste management

5. Describe the role of scientific research relative to the aquaculture industry.
   • Identifying vaccines, antibiotics, and breeding techniques used in the aquaculture
     industry
   • Identifying sources of nutrients and feed components used in the aquaculture industry
   • Identifying aquaculture production methods and management strategies for
     recirculating systems, cages, raceways, ponds, partitioned aquaculture systems, and
     super-intensive aquaculture systems

6. Explain the economic impact of aquaculture at the local, state, and national levels.

**Water Quality Management**

7. Differentiate among water quality parameters relative to the culture of aquatic organisms,
   including ammonia and nitrate toxicity and pH, oxygen, and temperature tolerances.

**Business and Economics**

8. Explain entrepreneurship opportunities available in the aquaculture industry.

9. Explain results of an aquaculture market survey.
   • Comparing various aquaculture market outlets
     Examples: local, regional, national, international
   • Identifying market promotions for the aquaculture industry

10. Construct a budget for an aquaculture operation.

**System Design and Maintenance**

11. Compare aqua system designs for various aquatic species.
    • Designing a maintenance plan for an aqua system
    • Identifying site specifications, components, and operations for aqua systems