

Course Title:	Aquaculture I
Grade(s):	11th/12th

Course Description
This course is designed to give students an overview of the aquaculture industry, possible career opportunities within the industry, and common practices utilized. Aquariums and commercial aquaculture equipment in the Aquaculture laboratory will be utilized to study the design and operation of aquaculture systems and aquaculture water quality maintenance. Identification of fresh and saltwater fish and their biology will be studied, as well as production methods practiced within the industry specific to commonly farmed species.
Approved Curricular Materials/Textbook(s)

Unit Title	Unit Description (Include Unit Objectives)	Unit Pacing
Unit 1: Introduction to the Aquaculture Industry	The purpose of this unit is to review the aquaculture industry as a whole. Students will get a glimpse at what areas make up the industry and the common products produced. Students will also look at state, national, and world statistics related to aquaculture production. Additionally, students will explore possible career paths related to this area of agriculture.	2 weeks
Unit 2: Safety Procedures and Protocols	This unit will be dedicated to stressing to students the importance of safety within the aquaculture industry and the aquaculture program at Suffield High School. This unit will start off by going over the major hazards within the aquaculture industry as a whole and then end with an overview of the safety precautions and common practice procedures within the SHS Aquaculture Lab. Students will learn how to maintain the lab area and take care of all the marine species.	3 weeks
Unit 3: Water Quality and Testing	The purpose of this unit is to expose students to the water quality factors that impact the aquaculture industry. Students will examine the common water quality	3 weeks

	factors that can affect the production of aquatic species, including: temperature, pH, ammonia, nitrite/nitrate, dissolved oxygen & salinity. Students will explore the normal ranges of these factors and how to correct abnormal levels. Students will also learn to identify and use common pieces of equipment that are used to measure these factors.	
Unit 4: Aquatic Systems Used in Production	The purpose of this unit is to teach students about the 4 types of systems that are used to house and produce common aquatic species: ponds, raceways, cages & recirculating systems. Students will explore what these systems are, how they are used, and which species are commonly grown in each.	2 weeks
Unit 5: The Ornamental Industry	The purpose of this unit is to teach students about the ornamental fish industry. Students will learn about the production methods, management practices, reproduction, popular species, and harvest methods for this industry. In this unit, students will learn about the proper procedure for setting up a new aquarium tank. Students will learn what questions to ask/answer BEFORE, DURING, and AFTER setting up a tank. The unit will cover specific tank equipment that is needed when setting up a tank and the buying procedures.	3 weeks
Unit 6: External and Internal Fish Anatomy	The purpose of this unit is to teach students about the unique anatomy of fin fish, both external and internal. Students will explore the outer anatomy, such as types and functions of fins, lateral line, and operculum. Students will also learn about the anatomy and physiology of a fish's organ systems. Additionally, students will explore the different mouth, tail, and body shapes of different fish species and the purpose of those adaptations.	3 weeks
Unit 7: The Salmon and Trout Industries	The purpose of this unit is to teach students about the salmon and trout industries. Students will learn about the production methods, management practices, reproduction, anatomy, popular species, and harvest methods for this industry. The goal is for students to understand this industry from start to finish.	2 weeks
Unit 8: The Tilapia and Catfish Industries	The purpose of this unit is to teach students about the tilapia and catfish industries. Students will learn about the production methods, management practices, reproduction, anatomy, popular species, and harvest methods for this industry. The goal is for students to understand this industry from start to finish.	2 weeks