

# AQUACULTURE & AQUATIC SCIENCE, A.A.S.

**Major Code:** 1020

This major provides fundamental training in aquaculture, fisheries biology, limnology, marine biology and aquatic biology. Students receive a broad-based education by exploring diverse subject matter in aquaculture and aquatic sciences. Practical, hands-on experience is emphasized, using an operational aquaculture complex and a wide assortment of laboratory and field equipment.

The Aquaculture and Aquatic Science curriculum prepares students for fish culture and management technology, aquatic ecology, limnology, and marine biology, working as federal, state and private hatchery technicians, aquatic biologists, fisheries technicians and environmental science technicians.

## Program Learning Outcomes

Upon successful completion of this program, students will be able to:

- Describe the state of the aquaculture and aquatic science profession and potential career opportunities.
- Utilize the developed expertise in concepts, theories, and emerging methodologies to succeed in tackling real-world issues in aquaculture and aquatic science.
- Conduct himself/herself in a manner consistent with an embodied sense of environmental stewardship.
- Assess, analyze, synthesize, and evaluate information objectively and deal professionally and ethically with clients, the public, and agency personnel.
- Utilize oral and computer communication skills necessary to interact in the profession.
- Demonstrate advanced knowledge and competency in taxonomy and natural history of aquatic flora and fauna of the northeast.
- Demonstrate hands-on experience in aquatic sampling inventory and measurement techniques.
- Become an independent, self-motivated professional with the ability to recognize problems in their field of aquaculture and aquatic science and apply critical thinking and problem-solving skills.
- Utilize existing technology, products, and services to maximize work efficiency and success.
- Practice a collaborative spirit in team-efforts and project coordination.

SUNY General Education Requirements: (<https://system.suny.edu/academic-affairs/acaproplan/general-education/suny-ge/>) All SUNY Morrisville AAS degree programs require completion of at least 20 credits of SUNY GE, a minimum of four (out of ten) knowledge and skills areas (including the four required knowledge and skills areas as indicated below), and completion of the two core competencies. The specific courses required within each knowledge and skills area/core competency for this degree program are outlined below.

**Knowledge and Skills Areas:**

- Communication Written & Oral (required) as advised
- Diversity: Equity, Inclusion, and Social Justice\* (required) as advised

- Mathematics (and Quantitative Reasoning) (required) as advised
- Natural Sciences (and Scientific Reasoning) (required) NATR 101, NATR 152, NATR 158, NATR 250, NATR 252, and NATR 254
- Humanities as advised
- Social Sciences as advised
- The Arts as advised
- US History and Civic Engagement as advised
- World History and Global Awareness as advised
- World Languages as advised

**Core Competencies:**

- Information Literacy\* (required) as advised
- Critical Thinking and Reasoning\* (required) as advised

## Curriculum Requirements

A minimum of 60 credits is required for degree completion.

Code	Title	Credits
<b>Major Requirements</b>		
NATR 101	General Ecology	3
NATR 144	Seminar/Environmental Resc I	1
NATR 150	Aquaculture	3
NATR 152	Fish Reproduction	2
NATR 158	Fish Nutrition	2
NATR 250	Aquatic Ecology	3
NATR 252	Fish Ecology and Management	3
NATR 254	Fish Health Management	3
NATR 156	Aquaculture Practicum I	1
NATR 256	Aquaculture Practicum II	1
NATR 280	Herpetology	3
Practicum/Research Elective		
Select two of the following:		2
NATR 257	Aquaculture Practicum III	
NATR 258	Aquaculture Practicum IV	
NATR 288	Research in Aquatic Science I	
NATR 289	Research Aquatic Science II	
Select one of the following:		2-3
AGEN 110	Small Power Equipment	
NATR 103	Natural Resources Equipment Op	
AGEN 151	Applied Hydraulics Hydropower	
AGEN 120	Water Supply & Sanitation	3
or ENRM 345	Surface & Groundwater Mgt.	
NATR 113	Intro toGlobal Positioning Sys	1
BSAD - Business Elective as Advised		3

Select one of the following:	4
BIOL 120 General Biology I	
BIOL 285 General Microbiology or NATR 153 Marine Biology	
CHEM 101 Basic Chemistry	
CHEM 121 General College Chemistry I	
NATR 110 Natural Resources Measurements (as Advised)	
Technical Electives as Advised	6-7
Technical Electives from subject areas: AGBS, AGEN, AGSC, BIOL, BSAD, CHEM, CJUS, ENSC, ENRM, HORT, NATR, RENG, HIST, CITA, SOCI or SPAN as Advised	
<b>Required SUNY General Education &amp; Liberal Arts and Sciences Coursework</b>	
SUNY General Education Communication Written and Oral as Advised	3-6
SUNY General Education Diversity: Equity, Inclusion, and Social Justice as Advised	3
SUNY General Education Mathematics (and Quantitative Reasoning) as Advised	3
<b>Total Credits</b>	<b>55-60</b>

## Sample Course Sequence

Course	Title	Credits
<b>Year 1</b>		
<b>Fall</b>		
NATR 101	General Ecology	3
NATR 113	Intro to Global Positioning Sys	1
NATR 144	Seminar/Environmental Resc I	1
NATR 150	Aquaculture	3
NATR 156	Aquaculture Practicum I	1
SUNY General Education Communication Written and Oral as Advised		3
SUNY General Education Mathematics (and Quantitative Reasoning) as Advised		3
<b>Credits</b>		<b>15</b>
<b>Spring</b>		
NATR 158	Fish Nutrition	2
NATR 252	Fish Ecology and Management	3
NATR 256	Aquaculture Practicum II	1
NATR 280 or NATR 153	Herpetology or Marine Biology	3
Technical Elective as Advised in AGBS, AGEN, AGSC, BIOL, BSAD, CHEM, CJUS, ENSC, ENRM, HORT, NATR, RENG, HIST, CITA, SOCI, or SPAN		3
SUNY General Education Basic Communication as Advised		3
<b>Credits</b>		<b>15</b>
<b>Year 2</b>		
<b>Fall</b>		
Select one of the following:		2-3
AGEN 110	Small Power Equipment	
AGEN 151	Applied Hydraulics Hydropower	
NATR 103	Natural Resources Equipment Op	
Select one of the following:		4
BIOL 120	General Biology I	
BIOL 285 or NATR 153	General Microbiology or Marine Biology	
CHEM 101	Basic Chemistry	
CHEM 121	General College Chemistry I	
NATR 152	Fish Reproduction	2
NATR 250	Aquatic Ecology	3
NATR 257 or NATR 288	Aquaculture Practicum III (Elective as Advised) or Research in Aquatic Science I	1

Technical Elective as Advised AGBS, AGEN, AGSC, BIOL, BSAD, CHEM, CJUS, ENSC, ENRM, HORT, NATR, RENG, HIST, CITA, SOCI, or SPAN		3
<b>Credits</b>		<b>15-16</b>
<b>Spring</b>		
AGEN 120 or ENRM 345	Water Supply & Sanitation or Surface & Groundwater Mgt.	2-3
NATR 254	Fish Health Management	3
NATR 258 or NATR 289	Aquaculture Practicum IV (Elective as Advised) or Research Aquatic Science II	1
BSAD - Business Elective as Advised		3
Technical Elective as Advised in AGBS, AGEN, AGSC, BIOL, BSAD, CHEM, CJUS, ENSC, ENRM, HORT, NATR, RENG, HIST, CITA, SOCI, or SPAN		3
SUNY General Education Diversity, Equity, Inclusion and Social Justice as Advised		3
<b>Credits</b>		<b>15-16</b>
<b>Total Credits</b>		<b>60-62</b>