

# FRESHWATER STUDIES, ASSOCIATE IN SCIENCE & ARTS DEGREE

NMC Code 590

The Freshwater Studies program is offered by NMC's Great Lakes Water Studies Institute. This program includes Introduction to Water Quality, Watershed Science, Geographic Information Systems (GIS), Oceanography, Meteorology and Climatology, and Water Policy and Sustainability. The degree is intended for students who plan to further their studies and complete a bachelor's degree with university partners located in Traverse City and offsite.

## Requirements

### Major Requirements

Course	Title	Credits
<b>General Education Requirements</b>		
ENG 111	English Composition	4
Select one of the following:		3-4
BUS 231	Professional Communications	
ENG 112	English Composition	
ENG 220	Technical Writing	
Select one of the following:		3
PHL 105	Critical Thinking	
PHL 202	Contemporary Ethical Dilemmas	
PHL 203	Environmental Ethics	
Math Competency <sup>1</sup>		
ENV 131	Oceanography	4
GEO 115	Introduction to GIS	3
<b>Core Requirements</b>		
ENV 117	Meteorology & Climatology	4
ENV 140	Watershed Science	4
WSI 105	Intro to Freshwater Studies	3
WSI 230	Water Policy & Sustainability	3
<b>Approved Elective Courses by Concentrations</b>		<b>28</b>
<b>Total Credits</b>		<b>59-60</b>

<sup>1</sup>

Placement into MTH 111 Intermediate Algebra **or** higher, **or** completion of MTH 100 Quantitative Literacy with a 2.0 minimum GPA

### Approved Elective Courses by Concentrations

You must take 28 credits of approved electives below.

Course	Title	Credits
HUM 116	World Cultures	4
MTH 122	Trigonometry	3
PLS 211	International Relations	3
WSI 200	GL Research Technologies	3
WSI 210	Underwater Acoustics and Sonar	3

WSI 215	Marine GIS & Data Processing	3
WSI 240	ROV Systems and Operations	3
WSI 150	Introduction to Site Assessment and Remediation	3
WSI 250	Groundwater Monitoring and Aquifer Sampling	4
WSI 110	OSHA HAZWOPER 40 hour	3
SVR 111	Intro to Field Surveying	2
SVR 112	Intro to Surveying Data Use	3
UAS 121	UAS Applications in Surveying	3
BIO 115	Cell, Plant & Ecosystem Biology	4
BIO 115L	Cell, Plant, Ecosystem Bio Lab	0
BIO 116	Genetic, Evolution, Animal Bio	4
BIO 116L	Genetic, Evolu, Animal Bio Lab	0
ENV 111	Physical Geology	4
ENV 111L	Physical Geology Lab	0

Please consult an NMC Freshwater Studies program advisor for scheduling guidelines.

### Minimum Program Requirements 60

### Course Sequence Guide

Course	Title	Credits
<b>Year 1</b>		
<b>Fall</b>		
ENG 111	English Composition	4
WSI 105	Intro to Freshwater Studies	3
ENV 140	Watershed Science	4
Approved Elective		3
Math Competency <sup>1</sup>		
<b>Credits</b>		<b>14</b>
<b>Spring</b>		
Select one of the following:		3-4
BUS 231	Professional Communications	
ENG 112	English Composition	
ENG 220	Technical Writing	
ENV 131	Oceanography	4
GEO 115	Introduction to GIS	3
Approved Elective		3
<b>Credits</b>		<b>13-14</b>
<b>Year 2</b>		
<b>Fall</b>		
ENV 117	Meteorology & Climatology	4
WSI 230	Water Policy & Sustainability	3
Approved Elective		9
<b>Credits</b>		<b>16</b>
<b>Spring</b>		
Select one of the following:		3
PHL 105	Critical Thinking	
PHL 202	Contemporary Ethical Dilemmas	
PHL 203	Environmental Ethics (Fall only)	

Approved Elective	13
<b>Credits</b>	<b>16</b>
<b>Total Credits</b>	<b>59-60</b>

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Placement into MTH 111 Intermediate Algebra *or* higher, *or* completion of MTH 100 Quantitative Literacy with a 2.0 minimum GPA