SUSTAINABLE WATER INTERDISCIPLINARY MINOR

Office in Engineering Building, Room E102
watercenter.colostate.edu (http://watercenter.colostate.edu)

Coordinated by the Colorado Water Center (https://watercenter.colostate.edu/) in partnership with the School of Global Environmental Sustainability (https://sustainability.colostate.edu/).

Water is a complex, interdisciplinary topic that is critical to our economic, societal, and environmental well-being. Issues surrounding water supply, water quality, and ecological relationships have become increasingly important in Colorado, the American West, and internationally as water demands increase. The complexity of these issues and competition among various water users demands that students interested in pursuing careers in water gain a broad introduction to the issues while specializing in a particular discipline.

CSU has developed considerable water resources expertise in many academic fields over the past century. The Sustainable Water Interdisciplinary Minor (SWIM) requires 21 credits and a minimum of 12 upper-division (300- 400-level) courses which allow undergraduates to take advantage of this expertise and broaden their background in water resources to prepare for employment or graduate-level work.

Learning Objectives

Upon successful completion, students will be able to:

1. Describe the physical and biological basis for sustainable water resources.
2. Explain basic concepts in watershed function.
3. Analyze and discuss important issues in the economics and policies of water resources.
4. Apply knowledge and skills from their major discipline to water-related issues.

Requirements Effective Fall 2025

Students must satisfactorily complete the total credits required for the minor. Minors and interdisciplinary minors require 12 or more upper-division (300- to 400-level) credits.

Additional coursework may be required due to prerequisites.

Code	Title	Credits
Core Courses (9 credits)		
Select one of the following courses:		3
AREC 240/ ECON 240	Economics of Environmental Sustainability (GT-SS1)	
AREC 340/ ECON 340	Introduction-Economics of Natural Resources	
AREC 341	Environmental Economics	
AREC 342	Water Law, Policy, and Institutions	3
GES 120	Water Sustainability in the Western US	3
Foundations of Water (3 credits)		
Select a minimum of 3 credits from the following Foundation course groups:		3
Select no more than one course from the following:		
BZ 110	Principles of Animal Biology (GT-SC2)	
BZ 120	Principles of Plant Biology (GT-SC1)	
FW 204	Introduction to Fishery Biology	
LIFE 103	Biology of Organisms-Animals and Plants (GT-SC1)	
Select no more than one course from the following:		
CHEM 103	Chemistry in Context (GT-SC2)	
CHEM 107	Fundamentals of Chemistry (GT-SC2)	
CHEM 113	General Chemistry II	
Select no more than one course from the following:		
ESS 210/GR 210	Physical Geography	
GR 100	Introduction to Geography (GT-SS2)	
Select no more than one course from the following:		
ESS 211	Foundations in Ecosystem Science	
ESS 311	Ecosystem Ecology	
LAND 220/ LIFE 220	Fundamentals of Ecology (GT-SC2)	
LIFE 320	Ecology	
Select no more than one course from the following:		
GEOL 120	Geology and Society (GT-SC2)	
GEOL 122	Geoscience--Climate and Environmental Change (GT-SC2)	
GEOL 124	Earth Resources and Sustainability (GT-SC2)	
GEOL 150	Dynamic Earth (GT-SC2)	
Select no more than one course from the following:		
PH 110	Physics of Everyday Phenomena (GT-SC2)	
PH 121	General Physics I (GT-SC1)	
PH 141	Physics for Scientists and Engineers I (GT-SC1)	
Contexts of Water (9 credits)		
Select a minimum of 9 credits from the following courses. At least 3 credits must be taken in each Context category.		9
Sociological-Economic Context		
AGRI 270/IE 270	World Interdependence-Population and Food (GT-SS3)	
AREC 340/ ECON 340	Introduction-Economics of Natural Resources [1]	
AREC 341	Environmental Economics [1]	
CON 476	Sustainable Practice-Design and Construction	
E 339	Literature of the Earth	
GES 101	Foundations of Environmental Sustainability	
JTC 461	Writing About Science, Health and Environment	
MGT 360	Social and Sustainable Venturing	
NR 320	Natural Resources History and Policy	
PHIL 320	Ethics of Sustainability	
PHIL 345	Environmental Ethics	
POLS 361	U.S. Environmental Politics and Policy	

SOC 323	Soc. of Environmental Cooperation & Conflict
SOC 461	Water and Social Justice
Biological and Physical Context	
ATS 150	Science of Global Climate Change (GT-SC2)
BZ 415	Marine Biology
BZ 471	Stream Biology and Ecology
CIVE 322	Basic Hydrology
CIVE 330	Ecological Engineering
CIVE 423	Groundwater Engineering
CIVE 440	Nonpoint Source Pollution
ERHS 320	Environmental Health--Water Quality
ESS 474	Limnology
FW 300	Biology and Diversity of Fishes
FW 301	Ichthyology Laboratory
FW 400	Conservation of Fish in Aquatic Ecosystems
GEOL 452	Hydrogeology
HORT 368/ LAND 368	Landscape Irrigation and Water Conservation
SOCR 370	Climate-Smart Irrigation Principles
SOCR 371	Climate-Smart Irrigation Management
WR 204/GR 204	Sustainable Watersheds (GT-SC2)
WR 406	Seasonal Snow Environments
WR 416	Land Use Hydrology
WR 418	Land Use and Water Quality
WR 474	Snow Hydrology
Program Total Credits:	**21**

[1] AREC 340/ECON 340 and AREC 341 cannot be used to satisfy both a Core and a Content requirement