

# MAJOR IN WATERSHED SCIENCE AND SUSTAINABILITY, WATERSHED SUSTAINABILITY CONCENTRATION

## Requirements Effective Fall 2022

### Freshman

		AUCC	Credits
CHEM 103	Chemistry in Context (GT-SC2)	3A	3
CO 150	College Composition (GT-CO2)	1A	3
ESS 120	Intro to Ecosystem and Watershed Sciences		1
ESS 129	Information Management for Sustainability		1
GES 120	Water Sustainability in the Western US		3
GR 204/WR 204	Sustainable Watersheds (GT-SC2)	3A	3
Select 4 credits from the following:			4
BZ 110 & BZ 111	Principles of Animal Biology (GT-SC2)	3A	
BZ 120	Principles of Plant Biology (GT-SC1)	3A	
Select one course from the following:			3-4
ESS 210/GR 210	Physical Geography		
GEOL 110	Introduction to Geology-Parks and Monuments (GT-SC2)	3A	
GEOL 120	Exploring Earth - Physical Geology (GT-SC2)	3A	
GEOL 122	The Blue Planet - Geology of Our Environment (GT-SC2)	3A	
GEOL 124	Geology of Natural Resources (GT-SC2)	3A	
GEOL 150	Physical Geology for Scientists and Engineers	3A	
Diversity, Equity, and Inclusion ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion</a> )		1C	3
Historical Perspectives ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives</a> )		3D	3

### Total Credits

**27-28**

### Sophomore

AREC 342	Water Law, Policy, and Institutions		3
ATS 150	Science of Global Climate Change		3
BUS 100	Introduction to Business		1
BUS 201	Foundations of Sustainable Enterprise		1
LIFE 320	Ecology		3
PH 110	Physics of Everyday Phenomena (GT-SC2)	3A	3
STAT 158	Introduction to R Programming		1
Select one course from the following:			3
AREC 202	Agricultural and Resource Economics (GT-SS1)	3C	
ECON 202	Principles of Microeconomics (GT-SS1)	3C	
Select one course from the following:			3-4
MATH 141	Calculus in Management Sciences (GT-MA1)	1B	
MATH 155	Calculus for Biological Scientists I (GT-MA1)	1B	

MATH 160	Calculus for Physical Scientists I (GT-MA1)	1B	
Select one course from the following:			3
SOC 100	Introduction to Sociology (GT-SS3)	3C	
SOC 105	Social Problems (GT-SS3)	3C	
Select one course from the following:			3
STAT 301	Introduction to Applied Statistical Methods		
STAT 315	Intro to Theory and Practice of Statistics		
Arts and Humanities ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )			3B 3
<b>Total Credits</b>			<b>30-31</b>
<b>Summer</b>			
NR 220	Natural Resource Ecology and Measurements		5
<b>Total Credits</b>			<b>5</b>
<b>Junior</b>			
ESS 312	Sustainability Science		3
NR 322	Intro. to Geographic Information Systems		4
WR 416	Land Use Hydrology	4B	3
WR 418	Land Use and Water Quality		3
WR 486	Watershed Field Practicum		2
Select one course from the following:			3
CO 301B	Writing in the Disciplines: Sciences (GT-CO3)	2	
JTC 300	Strategic Writing and Communication (GT-CO3)	2	
LB 300	Specialized Professional Writing	2	
Select one course from the following:			3
NR 310	Ecosystem Services and Human Well-Being		
NR 320	Natural Resources History and Policy		
Arts and Humanities ( <a href="http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities">http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities</a> )			3B 3
Watershed Science Department List (see list below)			3
Electives			3
<b>Total Credits</b>			<b>30</b>
<b>Senior</b>			
WR 440	Watershed Problem Analysis	4A,4B,4C	3
Watershed Science Department List (see list below)			3
Sustainability Elective List (see list below)			9
Electives <sup>1</sup>			11-13
<b>Total Credits</b>			<b>26-28</b>
<b>Program Total Credits:</b>			<b>120</b>

### Sustainability Elective List

Select a minimum of 9 credits from courses not taken elsewhere in the program. Additional coursework may be required due to prerequisites.

Code	Title	Credits
AREC 341	Environmental Economics	3
AREC 442	Water Resource Economics	3
ECON 340/AREC 340	Introduction-Economics of Natural Resources	3
ESS 353	Global Change Impacts, Adaptation, Mitigation	3
ESS 365	Global Climate Justice	3

ESS 400	Global Perspectives on Sustainability	3
GES 460	Law and Sustainability	3
GR 331	Geography of Farming Systems	3
NR 425	Natural Resource Policy and Sustainability	3
SOC 322	Environmental Justice	3
SOC 362	Social Change	3
SOC 461	Water and Social Justice	3

### Watershed Science Elective List

Select a minimum of 6 credits from courses not taken elsewhere in the program. Additional coursework may be required due to prerequisites.

Code	Title	Credits			
AREC 305	Agricultural and Resource Enterprise Analysis	3	NR 375	Environment and Natural Resources Leadership	1
AREC 310	Agricultural Marketing	3	NR 400	Public Communication in Natural Resources	3
AREC 375	Agricultural Law	3	NR 422	GIS Applications in Natural Resource Management	4
ATS 350	Introduction to Weather and Climate	2	NR 450	Geospatial Project Design and Analysis	4
ATS 351	Introduction to Weather and Climate Lab	1	NRRT 330	Social Aspects of Natural Resource Management	3
BSPM 445	Aquatic Insects	4	NRRT 362	Environmental Conflict Management	3
BZ 440	Plant Physiology	3	RS 478	Ecological Restoration	3
BZ 441	Plant Physiology Laboratory	2	SOC 323	Soc. of Environmental Cooperation & Conflict	3
BZ 471	Stream Biology and Ecology	3	SOC 324	Food Justice	3
BZ 472	Stream Biology and Ecology Laboratory	1	SOC 463	Sociology of Disaster	3
CHEM 334	Quantitative Analysis Laboratory	1	SOCR 322	Principles of Microclimatology	3
CHEM 335	Introduction to Analytical Chemistry	3	SOCR 370	Irrigation Principles	2
CHEM 338	Environmental Chemistry	3	SOCR 371	Irrigation of Field Crops	1
CIVE 322	Basic Hydrology	3	SOCR 375	Soil Biogeochemistry	3
CIVE 330	Ecological Engineering	3	SOCR 440	Pedology	4
CIVE 413	Environmental River Mechanics	3	SOCR 500	Environmental Measurement Laboratory	1
CIVE 423	Groundwater Engineering	3	WR 406	Seasonal Snow Environments	3
CIVE 425	Soil and Water Engineering	3	WR 492	Seminar	3
CIVE 440	Nonpoint Source Pollution	3	WR 575	Snow Hydrology Field Methods	1
ERHS 448	Environmental Contaminants	3			
ESS 311	Ecosystem Ecology	3			
ESS 471	Special Topics in Ecosystem Sustainability	1-6			
ESS 474	Limnology	3			
F 311	Forest Ecology	3			
F 324	Fire Effects and Adaptations	3			
FW 300	Biology and Diversity of Fishes	2			
FW 301	Ichthyology Laboratory	1			
GEOL 446	Environmental Geology	3			
GEOL 452	Hydrogeology	4			
GEOL 454	Geomorphology	4			
GEOL 551	Groundwater Modeling	3			
GEOL 552	Advanced Topics in Hydrogeology	2-3			
GEOL 553	Use of Tracers in Hydrogeology	3			
GES 440	Sea Level Rise and a Sustainable Future	3			
GES 470	Applications of Environmental Sustainability	3			
GR 320	Cultural Geography	3			
GR 330	Urban Geography	3			
GR 333	Glaciers and Climate Change	3			
GR 345	Geography of Hazards	3			
GR 348	Biogeography	3			
GR 410	Climate Change: Science, Policy, Implications	3			
GRAD 592	Water Resources Seminar	1			
NR 310	Ecosystem Services and Human Well-Being	3			
NR 320	Natural Resources History and Policy	3			
NR 323/GR 323	Remote Sensing and Image Interpretation	3			
NR 330	Human Dimensions in Natural Resources	3			
NR 365	Environmental Education	3			
NR 370	Coastal Environmental Ecology	3			

<sup>1</sup> Select enough elective credits to bring the program total to a minimum of 120 credits, of which at least 42 must be upper-division (300- to 400-level).