MAJOR IN WATERSHED SCIENCE AND SUSTAINABILITY, WATERSHED SUSTAINABILITY CONCENTRATION

Requirements
Effective Fall 2024

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	Geology and Society (GT-SC2)	3A	
GEOL 122	Geoscience--Climate and Environmental Change (GT-SC2)	3A	
GEOL 124	Earth Resources and Sustainability (GT-SC2)	3A	
GEOL 150	Dynamic Earth (GT-SC2)	3A	
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)		1C	3
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		3D	3
	Total Credits		**27-28**

Sophomore

AREC 342	Water Law, Policy, and Institutions		3
ATS 150	Science of Global Climate Change (GT-SC2)	3A	3
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 (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3
Electives			3
	Total Credits		**31-32**
Summer			
NR 220	Natural Resource Ecology and Measurements		5
	Total Credits		**5**
Junior			
ESS 312	Sustainability Science		3
NR 319	Introduction to Geospatial Science		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:		2	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 (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	3
Watershed Science Department List (see list below)			3
Electives			3
	Total Credits		**30**
Senior			
WR 440	Watershed Problem Analysis	4A,4B,4C	3
Watershed Science Department List (see list below)			12
Electives[1]			10-12
	Total Credits		**25-27**
	Program Total Credits:		**120**

Watershed Science Department List

Select a minimum of 15 credits from courses not taken elsewhere in the program. Additional coursework may be required due to prerequisites.

Code	Title	Credits
AREC 330	Data-Driven Ag and Res Econ Decision Making	3
AREC 335/ECON 335	Introduction to Econometrics	3
AREC 340/ECON 340	Introduction-Economics of Natural Resources	3
AREC 341	Environmental Economics	3
AREC 375	Agricultural Law	3
AREC 442	Water Resource Economics	3
ATS 350	Introduction to Weather and Climate	2
ATS 351	Introduction to Weather and Climate Lab	1
BZ 440	Plant Physiology	3
BZ 441	Plant Physiology Laboratory	2
BZ 450	Plant Ecology	4
BZ 471	Stream Biology and Ecology	3
BZ 472	Stream Biology and Ecology Laboratory	1
CHEM 334	Quantitative Analysis Laboratory	1
CHEM 335	Introduction to Analytical Chemistry	3
CHEM 338	Environmental Chemistry	3
CIVE 322	Basic Hydrology	3
CIVE 330	Ecological Engineering	3
CIVE 421	Global Water Challenges	3
CIVE 423	Groundwater Engineering	3
CIVE 440	Nonpoint Source Pollution	3

CIVE 515	River Mechanics	3
CS 345	Machine Learning Foundations and Practice	3
DSCI 320	Optimization Methods in Data Science	3
DSCI 335	Inferential Reasoning in Data Analysis	3
DSCI 336	Data Graphics and Visualization	1
DSCI 445	Statistical Machine Learning	3
ERHS 320	Environmental Health--Water Quality	3
ERHS 448	Environmental Contaminants	3
ESS 311	Ecosystem Ecology	3
ESS 312	Sustainability Science	3
ESS 353	Global Change Impacts, Adaptation, Mitigation	3
ESS 365	Global Climate Justice	3
ESS 400	Global Perspectives on Sustainability	3
ESS 474	Limnology	3
ESS 523A	Environmental Data Science Applications: Introduction	5
ESS 523C/WR 523C	Environmental Data Science Applications: Water Resources	2
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
GES 440/ATS 440	Sea Level Rise and a Sustainable Future	3
GES 450	Global Sustainability and Health	3
GES 460	Law and Sustainability	3
GES 470	Applications of Environmental Sustainability	3
GR 320	Cultural Geography	3
GR 330	Urban Geography	3
GR 331	Geography of Farming Systems	3
GR 333	Glaciers and Climate Change	3
GR 348	Biogeography	3
GR 410	Climate Change: Science, Policy, Implications	3
GRAD 592	Water Resources Seminar	1
HIST 355	American Environmental History	3
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 375	Environment and Natural Resources Leadership	1
NR 400	Public Communication in Natural Resources	3
NR 422	GIS Applications in Natural Resource Management	4
NR 425	Natural Resource Policy and Sustainability	3
NR 450	Geospatial Project Design and Analysis	4
NR 453	Geospatial Field Methods in Natural Resources	2
NRRT 330	Social Aspects of Natural Resource Management	3
NRRT 362	Environmental Conflict Management	3
RS 378	Disturbance Ecology	2
RS 432	Rangeland Measurements and Monitoring	2
RS 478	Ecological Restoration	3
SOC 322	Environmental Justice	3
SOC 323	Soc. of Environmental Cooperation & Conflict	3
SOC 362	Social Change	3
SOC 461	Water and Social Justice	3
SOCR 370	Climate-Smart Irrigation Principles	2
SOCR 371	Climate-Smart Irrigation Management	1
SOCR 375	Soil Biogeochemistry	3
SOCR 425	Internet of Ag Things--Sensors and Data Lab	2
SOCR 440	Pedology	4
SOCR 442	Forest and Range Soils	3
STAT 305	Sampling Techniques	3
STAT 342	Statistical Data Analysis II	3
WR 406	Seasonal Snow Environments	3
WR 575	Snow Hydrology Field Methods	1

[1] 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).