

PH.D. IN WATERSHED SCIENCE

Requirements Effective Fall 2024

Code	Title	Credits
Required Foundation Courses		
GRAD 544	Ethical Conduct of Research	1
Discussion Courses		
Select at least 3 credits from the following:		3
WR 574	Advanced Snow Hydrology	
WR 616	Hillslope Hydrology and Runoff Processes	
Quantitative Courses		
Select at least 3 credits from the following:		3
ESS 523A	Environmental Data Science Applications: Introduction	
NR 512	Spatial Statistical Modeling-Natural Resources	
NR 523/STAT 523	Quantitative Spatial Analysis	
STAR 511	Design and Data Analysis for Researchers I	
STAR 512	Design and Data Analysis for Researchers II	
WR 523C/ESS 523C	Environmental Data Science Applications: Water Resources	
WR 674	Data Issues in Hydrology	
Skill Courses		
Select at least 3 credits from the following:		3
GEOL 551	Groundwater Modeling	
GEOL 554	Remote Sensing of the Earth System	
NR 503/GR 503	Remote Sensing and Image Analysis	
NR 505	Concepts in GIS	
WR 417	Watershed Measurements	
WR 419	Water Quality Analyses	
WR 524/CIVE 524	Modeling Watershed Hydrology	
WR 575	Snow Hydrology Field Methods	
Depth and Breadth Courses		
Select at least 6 credits from the following:		6
AREC 542	Applied Advanced Water Resource Economics	
CIVE 515	River Mechanics	
CIVE 520	Physical Hydrology	
CIVE 544	Water Resources Planning and Management	
CIVE 613	River Restoration Design	
CIVE 622	Risk Analysis of Water/Environmental Systems	
CIVE 625	Quantitative Eco-Hydrology	
CIVE 626	Integrated Analysis of Coupled Water Issues	
ESS 501	Principles of Ecosystem Sustainability	
ESS 543/ATS 543	Global Climate Change	

ESS 660	Biogeochemical Cycling in Ecosystems	
GEOL 452	Hydrogeology	
GEOL 552	Advanced Topics in Hydrogeology	
GEOL 652	Fluvial Geomorphology	
NR 510	Ecosystem Services--Theory and Practice	
NR 577	Wetland Ecology and Restoration	
SOC 461	Water and Social Justice	
SOC 664	Sociology of Water Resources	
SOCR 522	Micrometeorology	
SOCR 540	Soil-Plant-Nutrient Relationships	
SOCR 670	Terrestrial Ecosystems Isotope Ecology	
WR 416	Land Use Hydrology	
WR 418	Land Use and Water Quality	
WR 510	Watershed Management in Developing Countries	
WR 511	Water Resource Development	
WR 512	Water Law for Non-Lawyers	
Research and Dissertation		
WR 798	Research	2
WR 799	Dissertation	2
Additional Credits (A maximum of 30 credits may be accepted from a master's degree toward the Ph.D.)		52
Program Total Credits:		72

A minimum of 72 credits are required to complete this program.