



Water Quality

Imagine a career examining the water quality of lakes, rivers, streams, and groundwater! You can detect toxic algal blooms using remote sensing instruments, protect a town from arsenic contaminated wells or clean up a contaminated stream. Realize your career goals through our water quality option.

Make an appointment with one of our faculty advisors to learn more about the Water Science degree program.

WATER SCIENCE
DEGREE PROGRAM

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School of Natural Resources



Career Path

Water Quality Specialist, Research Scientist, Laboratory or Field Technician, Environmental Chemist, Consultant or work for a non-profit organization.

Special Emphasis Courses

Chemistry of Natural Waters, Water Quality Strategy, Lake and Reservoir Restoration, Groundwater Geology, Limnology, Natural Resources Policy, Soils, Environment and Water Quality, Microbiology

Internships Available

Students have enjoyed internships with Nebraska's natural resource districts, the Nebraska Department of Environmental Quality, consulting firms, the U.S. Geological Survey, and other state and federal agencies.



University of Nebraska-Lincoln

Water Science

Coordinator: Dr. Aris Holz, 502 Hardin Hall, 472-8182, aholz2@unl.edu

Water Science Curriculum Committee: Eisenhauer, J.Holz, Lenters, Lubben

The major in water science is designed to educate students in basic and applied sciences related to water resources. The goal is to teach individuals to gather and synthesize information from several disciplines, to formulate ecologically and economically rational alternatives, and to effectively implement various water-based programs.

The curriculum is designed to meet the needs of students who intend to pursue careers in agencies that form or implement policy at all levels of government, in public and private organizations that manage water and land resources, in private consulting companies that offer water management services and in a broad range of nonprofit institutions that are interested in water resources. The program also provides students the opportunity to prepare for advanced education in several areas of graduate studies.

A minimum of 128 credit hours is required for the bachelor of science degree. Of these requirements, 25-29 credits are in an integrated water science curriculum designed to provide both breadth and depth in water resources. The water science major also requires 25 credit hours of science and mathematics. In addition, the student must select an option area consisting of 18-26 credit hours. To complete the major the student must take 24 credit hours of communication, humanities and social science courses.

Application for UNL freshman scholarships automatically makes you eligible for SNR scholarships. Many scholarships are available, including the Warren Viessman Scholarship for Water Science majors. For more information, visit <http://snr.unl.edu>.

Major Requirements

Natural Resources

Core	24-25
NRES/AGRI 103 Intro to Agricultural & Natural Resource Systems.....	3
NRES 220 Principles of Ecology + Lab.....	4
NRES 312 Intro to Geospatial Information Sciences (3) or 412 Intro to GIS Systems (4).....	3-4
NRES 323 Natural Resources Policy	3
SOILS 153.....	4
WATS 465 Resource & Environ. Econ II ...	3
NRES 499 Thesis Research or WATS 498A & 498B Senior Project I & II.....	4

**** The senior project or senior thesis fulfils the capstone requirement for water science majors. These courses consist of two credit hours in each of the last two semesters before the student**

graduates. The senior project is usually provided by private industry, government agencies, or nonprofit organizations. The senior thesis consists of research designed by the student along with the aid of faculty.

Natural Science	17
BIOS 101 & 101L General Biology and Lab 4	
BIOS 109 Gen Botany or BIOS 112 & 112L	
Intro to Zoology.....	4
CHEM 109 Gen Chem I	4
MSYM 109 & MYSYM 109 Lab,	
PHYS 141, PHYS 151 & PHYS 153,	
or PHYS 211 & PHYS 221	5

Mathematics	8
Math 106 Analytical Geometry and Calculus I or Math 106B Calculus I for Biology and Medicine.....	5
STATS 218.....	3

Communications	9
Written Communications	
ENGL 150, 151, 254; GJEN 120, 200, or 300	
Oral Communications	
COMM 109, 209, 212, or 311	3
Communication and Interpersonal Skills	
JOUR 444 Science Writing	3

Economics	3
ECON 211, 212, or AECN 141	3

Humanities & Social Sciences	12
Students should choose one course each in ACE areas 5, 7, 8, and 9 as Humanities and Social Science electives.	

Water Science

Core	25-29
CIVE 353 Hydrology.....	3
GEOL 100 (Intro) (3), GEOL 101 (Physical) (4), GEOL 106 (Environmental) (3); NRES 108 (Earth's Natural Resource Systems Laboratory) (3)	3-4
METR 200 (Weather & Climate) (4), NRES 208 Applied Climate Science (3), or NRES 408 (Microclimate) (3)....	3-4
NRES 415 Water Resources Seminar.....	1
WATS 281 Intro to Water Science.....	3
WATS 354 Soil Conservation and Watershed Mgmt	3
<i>Law, Policy, and Management</i> (select one of the following).....	3
AECN 357 Nat. Res. Environ. Law, CRPL 470 Environ. Planning & Policy, NRES 423 Integrated Resource Mgmt., or WATS 475 Water Quality Strategy	3
<i>Science and Technology</i> (select two of the following)	6-8
NRES 463 Fisheries Science	4
NRES 488 Groundwater Geology.....	3
WATS 361 Soils, Environment, and Water Quality.....	3
WATS 418 Chemistry of Natural Waters	3

WATS 452 Irrigation Systems Management.....	3
WATS 459 Limnology or WATS 468 Wetlands (or students may substitute NRES 496 River and Stream Ecology)	4

****Courses taken in the Water Science Core do not count toward the Water Science Options.**

Major Subtotal	98-103
Option Requirements & Electives.....	18-26
Free Electives.....	0-12
Total Credit Hours to Graduate.....	128

OPTIONS

Students must consult with an advisor to select an option prior to the beginning of their junior year.

****Courses taken in the Water Science Options do not count toward the Water Science Core.**

Water Quality.....22-26

This option trains students with a desire to pursue a career examining water quality within lakes, streams, rivers, and groundwater. This option is designed for students considering careers as water quality specialists, research scientists, laboratory and field technicians, environmental chemists, and many more.

<i>Requirements</i>	16
CHEM 110 General Chemistry II.....	4
CHEM 251 Organic Chemistry (3) or CHEM 221 Elementary Quantitative Analysis (4).....	3-4
GEOL 418 Chemistry of Natural Waters.....	3
NRES 475 Water Quality Strategy.....	3
SOIL 361 Soils, Environment, and Water Quality.....	3
<i>Select two of the following electives</i>	6-9
BIOS 312 Fundamentals of Microbiology.....	3
CIVE 456 Surface Water Hydrology.....	3
GEOL 424 Biogeochemical Cycles.....	3
GEOL 472 Water in Geosciences.....	3
NRES 470 Lake and Reservoir Restoration.....	3
NRES 488 Groundwater Geology.....	3
MATH 107 Analytical Geometry and Calculus II.....	5
PHYS 212 General Physics II.....	4
STATS 318 Data Analysis Techniques.....	3
WATS 459 Limnology (or students may substitute NRES 496 River and Stream Ecology)	4
Free electives.....	0-8