

Water Resources Minor (Non-Teaching)

The Water Resources Minor is designed to encourage a student from any discipline to explore water resources beyond course work in their major. As a result, the minor includes courses from the College of Agriculture, the College of Engineering, and the College of Letters and Science. The minor is administered by the Water Resources Committee (WRM) and the Department of Land Resources and Environmental Sciences. Any committee member may serve as an advisor for the minor (see the web page for current information about the committee <https://www.montana.edu/water-resources-minor> (<https://www.montana.edu/water-resources-minor/>)).

The chair of the WRM committee serves as the certifying officer and approves the minor for graduation after approval by the departmental advisor.

This minor requires a minimum of 21 credits, which must include at least one course from each of the categories of basic science, applied science, and social science. Students are expected to create a diverse program, with the guidance of their faculty advisor. **No more than 12 credits may be used to simultaneously fulfill Water Resources Minor requirements and the student's major. At least 9 credits must be unique to the minor.** The student's minor advisor must certify that the 12-credit restriction is not exceeded. Course substitutions are allowed only with approval by the WRM advisor and certification by the committee chair. The written appeal for a substitution should present a brief rationale.

For more information, please visit the Water Resources Minor website (<http://www.montana.edu/water-resources-minor/>).

Required Courses

ENSC 272CS	Water Resources (classroom in Fall, online in Spring and Summer)	3
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Restricted Electives

Take 18 credits, at least one from each subject area; Internship courses are optional

Basic Science Courses

BIOE 427RN	Research in Freshwater Ecology	3
BIOE 428	Freshwater Ecology	3
BIOM 360	General Microbiology	5
BIOM 415	Microbial Diversity, Ecology, and Evolution	3
BIOM 452	Soil & Environmental Microbiology	3
BIOO 418	Ecological Physiology of Aquatic Organisms	3
EENV 434	Groundwater Supply/Remediation	3
CHMY 311	Fundamental Analytical Chem	4
ENSC 444	Watershed Hydrology	3
ENSC 445	Watershed Analysis	3
ENSC 454	Landscape Pedology	3
ENSC 468	Ecosystem Biogeochem and Global Change	3
ERTH 303	Weather and Climate	3
ERTH 307	Principles of Geomorphology	4
ERTH 450R	Snow Dynamics and Accumulation	4

Applied Science Courses

ECIV 333	Water Resources Engineering	4
EENV 340	Principles of Environmental Engineering	3

EENV 432	Advanced Engineering Hydrology	3
EENV 441	Natural Treatment Systems	3
ENSC 353	Environmental Biogeochemistry	3
ENSC 407	Environmental Risk Assessment	3
ENSC 448	Stream Restoration Ecology	3
ENSC 461	Restoration Ecology	3
GPHY 384	Adv GIS and Spatial Analysis	3
GPHY 426	Remote Sensing	3
GPHY 429R	Applied Remote Sensing	3
GPHY 484R	Applied GIS & Spatial Analysis	3
GPHY 491	Special Topics	1-4
NRSM 455	Riparian Ecology & Management	3
WILD 301	Princ of Fish & Wildlife Mgmt	3
WILD 401RN	Fish and Wildlife Capstone	4

Social Science Courses

ECNS 332	Econ of Natural Resources	3
ECNS 432R	Economic Policy Evaluation	3
GPHY 402	Water and Society	3
HSTA 470	American Environmental History	3
NRSM 421	Holistic Thought/Mgmt	4
NRSM 430	Natural Resource Law	3
PSCI 362	Natural Resource Policy	3
SOCI 470	Environmental Sociology	3

Any 290, 490, 291, 491, 292 or 492 course(s) related to water may be used in the minor.

Internship Courses

BIOE 498	Internship	1-4
ENSC 498	Internship	2-4
ECIV 498	Internship	3
GPHY 498	Internship	2-12
PSCI 498	Internship	2-12
WILD 498	Internship	1-4

Note: A C- minimum is required in all curriculum courses to graduate by Regents' policy. This includes electives in the curriculum. All students are responsible for meeting prerequisites for upper division courses.