



Interdisciplinary
Water Resources
Graduate Program

graduate student and faculty advisor

HANDBOOK

2020



University of Idaho

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Table of Contents

I. Program Overview	3
II. Water Resources Curriculum and Requirements	4
Engineering & Science Option Area	4
Science & Management Option Area	7
Law, Management & Policy Option Area	10
Concurrent J.D. Degree	13
III. Student and Major Professor Expectations.....	15
IV. Interdisciplinary Requirements and Opportunities	16
V. Materials, Equipment, and Services	18
VI. Steps to the Degree.....	19
M.S. Program	19
Ph.D. Program	20
VII. Professional Conduct and Ethics	22
Online Resources	24

I. Program Overview

The Water Resources Graduate Program (WRGP) is an interdisciplinary graduate program. The term "Water Resources" is used here in the broadest sense: the study of how water moves through and interacts with natural systems, its chemical and biological components, and the physical, social, economic, and legal aspects of human interaction with the water cycle.

The WRGP is a University-wide program that integrates over 50 faculty in 15 departments in 7 colleges who share a common interest in research, education, and/or outreach in water resources. The program is housed in the College of Agricultural and Life Sciences which provides administrative support, but students are academically supported by faculty members across the University of Idaho campus. The program trains students to address complex water resources issues by building disciplinary depth in concert with interdisciplinary breadth to understand focused problems and communicate across disciplines. The program also allows students to develop a highly interdisciplinary academic program and/or thesis/dissertation with the approval of their academic committee. We strive to educate scientists and engineers to be more politically aware and policymakers to be more scientifically knowledgeable. To accomplish both objectives, the program is designed to have three overlapping degree option areas in both the M.S. and Ph.D. programs:

- Water Resources Engineering & Science
- Water Resources Science & Management
- Water Resources Law, Management & Policy

Additionally, concurrent JD/MS and JD/PhD degree options are available with any of the three option areas. Cross recognition of courses allows a JD/MS to be completed in 4 years and a JD/PhD in 6 years.

Overview of Graduate Degree Requirements and Recommendations

Students in the Water Resources Program must meet the general requirements set forth by the College of Graduate Studies (see Part Four) for the M.S. or Ph.D. degrees with the following exceptions. The degree of M.S. in Water Resources requires 21 credits of course work and completion of a thesis, equivalent to a minimum of 9 credits of Research and Thesis, for a total of 30 credits¹ (note for transfers: An M.S. student must complete at least 18 of the total 30 required credits at the University of Idaho while matriculated in the College of Graduate Studies). A total of 18 credits must be at or above the 500 level.

The degree of Ph.D. in Water Resources requires a minimum of 33 credits of course work beyond the bachelor's degree and completion of a dissertation for a total of 78 credits (note for transfers: A Ph.D. student must complete at least 39 of the 78 required credits at the University of Idaho while matriculated in the College of Graduate Studies). A total of 52 credits must be at or above the 500 level. Students in the Water Resources concurrent J.D. track must meet the general requirements set forth by the College of Graduate Studies and Water Resources Graduate Program for the M.S. or Ph.D. degrees and the College of Law for the J.D. The following sections summarize specific requirements for the three option areas as well as for the joint M.S./ J.D. and Ph.D./ J.D.

PLEASE NOTE: We update this publication annually. However, changes can occur in academic regulations during the year. Please check with the College of Graduate Studies for the latest changes.

¹ The Water Resources Graduate Program curriculum is currently undergoing minor revisions and requirements listed in Degree Audit can be aligned with the requirements in this handbook by completing a [substitution/waiver form](#).

II. Water Resources Curriculum and Requirements

Engineering & Science Option Area

Entry Requirements

Coursework in the following is required for (M.S. and Ph.D.) admission to the Water Resources Engineering & Science Option Area. Provisional admission for M.S. students may be granted to those who have completed the majority of this coursework, provided the remaining coursework is completed as deficiency requirements.

- Calculus (minimum of 9 credits)
- Differential Equations (3 credits)
- Statistics for Scientists/Engineers (3 credits)
- Chemistry (minimum of 4 credits)
- Physics (minimum of 4 credits)
- Engineering Fluid Mechanics (minimum of 3 credits)

Water Resources Graduate Program Recommendations

- Water Resources Common Core (3 credits)
- Engineering & Science Option Core (MS 9 credits; PhD 18 credits)
- Quantitative and Statistics Courses (MS 3 credits; PhD 6 credits)
- Outside Track Core (MS 3 credits; PhD 6 credits)
- Elective Courses (MS 3 credits; PhD 6 credits)

Water Resources Required Common Core

The following courses are required of both M.S. and Ph.D. students in all of the Water Resources Option Areas. The objective of WR506 is to understand the epistemological foundations of different disciplines that contribute to natural resources science and management. The objective of WR501 is to expose students to diverse questions and challenges facing water resources in the region.

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|------------|--|
| WR 501 | Water Resources Seminar (1 cr.) |
| NRS/WR 506 | Interdisciplinary Methods in Water Resources (2 cr.) |

Engineering & Science Option Core Courses

M.S. students are recommended to take 9 credits, and Ph.D. students are recommended to take 18 credits from the following:

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|---------------|---|
| CE 507 | River Restoration (3 cr.) |
| CE 521 | Sedimentation Engineering (3 cr.) |
| CE 526 | Aquatic Habitat Modeling (3 cr.) |
| CE 532 | Design of Water and Wastewater Systems II (3 cr.) |
| CE 535 | Fluvial Geomorphology and River Mechanics (3 cr.) |
| ENVS 541 | Sampling and Analysis of Environmental Contaminants (3 cr.) |
| ENVS 546 | Drinking Water and Human Health (3 cr.) |
| HYDR 512 | Environmental Hydrogeology (3 cr.) |
| ENVS 579 | Introduction to Environmental Regulations (3 cr.) |
| ENVS/SOIL 450 | Environmental Hydrology (3 cr.) |
| FOR 515 | Physical Hydrology (3 cr.) |
| GEOG 524 | Hydrologic Applications of GIS and Remote Sensing (3 cr.) |
| GEOL 531/511 | Chemical Hydrology |
| SOIL 422 | Environmental Soil Chemistry (3 cr.) |

FISH 530	Stream Ecology (3 cr.)
SOIL 514	Environmental Geophysics (3 cr.)
SOIL 515	Soil and Environmental Physics (3 cr.)
GEOL 535	Glaciology and the Dynamic Frozen Earth
SOIL 552	Environmental Water Quality
SOIL 504	Landscape Nutrient Management
SOIL_SCI 514	WSU: Environmental Biophysics (2 cr.)
SOIL_SCI 515	WSU: Environmental Biophysics Laboratory (1 cr.)

Quantitative and Statistics Courses

M.S. students are recommended to take 3 credits, and Ph.D. students are recommended to take 6 credits from the following:

CE/ME 520	Fluid Dynamics (3 cr.)
HYDR 509	Quantitative Hydrogeology (3 cr.)
STAT 514	Nonparametric Statistics (3 cr.)
STAT 516	Applied Regression Modeling (3 cr.)
STAT 517	Statistical Learning and Predictive Modeling (3 cr.)
STAT 519	Multivariate Analysis (3 cr.)
STAT 535	Introduction to Bayesian Statistics
STAT 555	Statistical Ecology (3 cr.)
STAT 565	Computer Intensive Statistics (3 cr.)

Outside Track Core

M.S. students are recommended to take 3 credits, and Ph.D. students are recommended to take 6 credits from the following:

AGEC 526	Master's Microeconomics Analysis (3 cr.)
AGEC 532	Natural Resource Economics and Policy (3 cr.)
AIST 421	Native American Natural Resource Law (3 cr.)
ANTH 565	Environment, Policy, and Justice (3 cr.)
AGEC/WR 504	Water Economics and Policy Analysis
FOR 585	Natural Resource Policy Analysis (2 cr.)
GEOG 455	Societal Resilience & Adaptation to Climate Change (3 cr.)
HIST 524	American Environmental History (3 cr.)
LAW 852	Natural Resource and Environmental Law (2 cr.)
LAW 938	International Environmental and Water Law (3 cr.)
LAW 942	Water Law I (1-2 cr.)
LAW 948	Natural Resources Law and Policy (3 cr.)
LAW 949	Native American Law (3 cr.)
LAW 969	Water Law II (2 cr.)
NRS 504	Coupled Human-Natural Systems
PHIL 470	Philosophy of Law (3 cr.)
POLS 555	Public Administration Theory (3 cr.)
WR 544	Water Quality in the Pacific Northwest

Electives for Engineering & Science Option Area

As noted above, one elective *must* be in either the Science & Management or Law, Management & Policy Option Areas for PhD students. A core course may be considered an elective course once the core requirements are satisfied. Electives not listed below will be considered on a case-by-case basis.

ENGR 428	Numerical Methods (3 cr.)
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FISH 415	Limnology (4 cr.)
FISH 430	Riparian Ecology (3 cr.)
FISH 515	Large River Fisheries (2 cr.)
FISH 530	Stream Ecology (3 cr.)
FISH 540	Wetland Restoration (3 cr.)
FOR 462	Watershed Science and Management (3 cr.)
GEOE 428	Geostatistics (3 cr.)
GEOG 401	Climatology (3 cr.)
GEOG 410	Applied Meteorology and Climatology (3 cr.)
LARC 440	Grading, Drainage, and Stormwater Management for Landscape Architecture (4 cr.)
LARC 504	GIS Applications in Land Planning

Additional courses may be substituted with the permission of the academic committee if they pertain to water resources science, management, and/or outreach.

Course descriptions: <http://www.uidaho.edu/registrar/classes/catalogs>.

Science & Management Option Area

Entry Requirements

Coursework in the following is required for (M.S. and Ph.D.) admission to the Water Resources Science & Management Option Area. Provisional admission for M.S. students may be granted to those who have completed the majority of this coursework, provided the remaining coursework is completed as deficiency requirements.

- Calculus (6 credits)
- Statistics (3 credits for MS, 6 for PhD)
- Chemistry or Physics or Biology/Ecology (6 credits total)

Water Resources Graduate Program Requirements and Recommendations

- Water Resources Core (3 credits)
- Science & Management Option Core (MS 9 credits; Ph.D 18 credits)
- Quantitative and Statistics Courses (MS 3 credits; Ph.D 6 credits)
- Outside Track Core (MS 3 credits; Ph.D 6 credits)
- Elective Courses (MS 3 credits; Ph.D 6 credits)

Water Resources Required Common Core

The following courses are required of both M.S. and Ph.D. students in all of the Water Resources Option Areas. The objective of WR506 is to understand the epistemological foundations of different disciplines that contribute to natural resources science and management. The objective of WR501 is to expose students to diverse questions and challenges facing water resources in the region.

- WR 501 Water Resources Seminar (1 cr.)
- NRS/WR 506 Interdisciplinary Methods in Water Resources (2 cr.)

Water Resources & Science Option Core Courses

M.S. students are recommended to take 9 credits, and Ph.D. students are recommended to take 18 credits from the following:

- ENVS 546 Drinking Water and Human Health (3 cr.)
- ENVS 579 Introduction to Environmental Regulations (3 cr.)
- ENVS/SOIL450 Environmental Hydrology (3 cr.)
- FISH 415 Limnology (4 cr.)
- FISH 530 Stream Ecology (3 cr.)
- FOR515 Physical Hydrology (3 cr.)
- FS 509 Principles of Environmental Toxicology (3 cr.)
- GEOG 401 Climatology (3 cr.)
- GEOG 410 Applied Meteorology and Climatology (3 cr.)
- GEOG 524 Hydrologic Applications of GIS & Remote Sensing (3 cr.)
- GEO 410 Techniques of Groundwater Study (3 cr.)
- GEO 531/511 Chemical Hydrology
- GEO 535 Glaciology and the Dynamic Frozen Earth
- HYDR 509 Quantitative Hydrogeology (3 cr.)
- HYDR 512 Environmental Hydrogeology (3 cr.)
- HYDR 576 Fundamentals of Modeling Hydrogeological Systems (3 cr.)
- LARC 504 GIS Applications in Land Planning (3 cr.)
- POLS 555 Public Administration Theory (3 cr.)
- SOIL 422 Environmental Soil Chemistry (3 cr.)

SOIL 504	Landscape Nutrient Management (3 cr.)
SOIL 514	Environmental Geophysics (3 cr.)
SOIL 515	Soil and Environmental Physics (3 cr.)
SOIL 552	Environmental Water Quality
SOIL_SCI 514	WSU: Environmental Biophysics (2 cr.)
SOIL_SCI 515	WSU: Environmental Biophysics Laboratory (1 cr.)
WR 544	Water Quality in the Pacific Northwest (3 cr.)

Quantitative and Statistics Courses

M.S. students are recommended to take 3 credits, and Ph.D. students are recommended to take 6 credits from the following:

GEOL 534	Geostatistics (3 cr.)
GEOL/GEOE 428	Geostatistics (3 cr.)
MATH 539	Theory of Ordinary Differential Equations (3 cr.)
MATH 540	Partial Differential Equations (3 cr.)
STAT 431	Statistical Analysis (3 cr.)
STAT 507	Experimental Design (3 cr.)
STAT 514	Nonparametric Statistics (3 cr.)
STAT 519	Multivariate Analysis (3 cr.)

Outside Track Core

M.S. students are recommended to take 3 credits, and Ph.D. students are recommended to take 6 credits from the following:

AGEC/WR 504	Water Economics and Policy Analysis
AGEC 526	Master's Microeconomics Analysis (3 cr.)
AGEC 532	Natural Resource Economics and Policy (3 cr.)
AIST 421	Native American Natural Resource Law (3 cr.)
ANTH 565	Environment, Policy, and Justice (3 cr.)
FOR 585	Natural Resource Policy Analysis (2 cr.)
GEOG 455	Societal Resilience & Adaptation to Climate Change (3 cr.)
HIST 524	American Environmental History (3 cr.)
LAW 852	Natural Resource and Environmental Law (2 cr.)
LAW 938	International Environmental and Water Law (3 cr.)
LAW 942	Water Law I (1-2 cr.)
LAW 948	Natural Resources Law and Policy (3 cr.)
LAW 949	Native American Law (3 cr.)
LAW 969	Water Law II (2 cr.)
NRS 504	Coupled Human-Natural Systems
PHIL 470	Philosophy of Law (3 cr.)

Electives for Science & Management Option Area

As noted above, one elective *must* be in either the Science & Management or Law, Management & Policy Option Areas for PhD students. A core course may be considered an elective course once the core requirements are satisfied. Electives not listed below will be considered on a case-by-case basis.

ENGR 428	Numerical Methods (3 cr.)
FISH 430	Riparian Ecology (3 cr.)
FISH 515	Large River Fisheries (2 cr.)
FISH 530	Stream Ecology (3 cr.)
FISH 540	Wetland Restoration (3 cr.)

FOR 462	Watershed Science and Management (3 cr.)
FOR 516	Hydrological Effects of Forest Management (1 cr.)
LARC 440	Grading, Drainage, and Stormwater Management for Landscape Architecture (4 cr.)

Additional courses may be substituted with the permission of the academic committee if they pertain to water resources science, management, and/or outreach.

Course descriptions: <http://www.uidaho.edu/registrar/classes/catalogs>.

Law, Management & Policy Option Area

Entry Requirements

A background in government, public policy, or management is required for M.S. and Ph.D. admission to the Law, Management, and Policy Option Area. Students without an undergraduate degree in Political Science, Public Policy, Government, Constitutional Law, Civil Procedure, or related field may be granted provisional admission, but will be required to complete coursework (in addition to standard program and option area requirements) that demonstrates a minimum level of competency. This should include:

- American Government (6 credits at the 400 level)
- Public Policy (6 credits at the 400 level) or
- Both requirements above may be met by taking equivalent law courses including:
- Constitutional Law and Civil Procedure (12 credits at the 900 level, as approved by major advisor)

Subject to approval of the Water Resources Program curriculum committee, other relevant completed courses (or professional experience) may be substituted to meet these requirements.

Water Resources Graduate Program Requirements and Recommendations

- Water Resources Core (3 credits)
- Engineering & Science Option Core (MS 9 credits; Ph.D 18 credits)
- Quantitative and Statistics Courses (MS 3 credits; Ph.D 6 credits)
- Outside Track Core (MS 3 credits; Ph.D 6 credits)
- Elective Courses (MS 3 credits; Ph.D 6 credits)

Water Resources Required Common Core

The following courses are required of both M.S. and Ph.D. students in all of the Water Resources Option Areas. The objective of WR506 is to understand the epistemological foundations of different disciplines that contribute to natural resources science and management. The objective of WR501 is to expose students to diverse questions and challenges facing water resources in the region.

- WR 501 Water Resources Seminar (1 cr.)
- NRS/WR 506 Interdisciplinary Methods in Water Resources (2 cr.)

Water Resources Law, Management & Policy Option Core Courses

M.S. students are recommended to take 9 credits, and Ph.D. students are recommended to take 18 credits from the following:

- AGEC 526 Master's Microeconomics Analysis (3 cr.)
- AGEC 532 Natural Resource Economics and Policy (3 cr.)
- ANTH 565 Environment, Policy, and Justice (3 cr.)
- AGEC/WR 504 Water Economics and Policy Analysis
- ENVS 546 Drinking Water and Human Health (3 cr.)
- ENVS 579 Introduction to Environmental Regulations (3 cr.)
- FOR 585 Natural Resource Policy Analysis (2 cr.)
- HIST 524 American Environmental History (3 cr.)
- LAW 852 Natural Resource and Environmental Law (2 cr.)
- LAW 938 International Environmental and Water Law (3 cr.)
- LAW 942 Water Law I (1-2 cr.)
- LAW 948 Natural Resources Law and Policy (3 cr.)
- NRS 504 Coupled Human-Natural Systems
- POLS 555 Public Administration Theory (3 cr.)

Quantitative and Statistics Courses

M.S. students are recommended to take 3 credits, and Ph.D. students are recommended to take 6 credits from the following:

AGEC 525	Master's Econometrics (3 cr.)
ECON 451	Econometrics
STAT 431	Statistical Analysis (3 cr.)
STAT 516	Applied Regression Modeling (3 cr.)
STAT 517	Statistical Learning and Predictive Modeling (3 cr.)
STAT 519	Multivariate Analysis (3 cr.)

Outside Track Core

M.S. students are recommended to take 3 credits, and Ph.D. students are recommended to take 6 credits from the following:

GEOG 524	Hydrologic Applications of GIS and Remote Sensing (3 cr.)
CE 507	River Restoration (3 cr.)
CE 526	Aquatic Habitat Modeling (3 cr.)
ENVS 541	Sampling and Analysis of Environmental Contaminants (3 cr.)
ENVS/SOIL 450	Environmental Hydrology (3 cr.)
FISH 415	Limnology (4 cr.)
FISH 530	Stream Ecology (3 cr.)
FOR 462	Watershed Science and Management (3 cr.)
FS 509	Principles of Environmental Toxicology (3 cr.)
GEOG 401	Climatology (3 cr.)
GEOG 410	Applied Meteorology and Climatology (3 cr.)
GEOLOG 410	Techniques of Groundwater Study (3 cr.)
GEOLOG 535	Glaciology and the Dynamic Frozen Earth
HYDR 509	Quantitative Hydrogeology (3 cr.)
HYDR 512	Environmental Hydrogeology (3 cr.)
HYDR 576	Fundamentals of Modeling Hydrogeologic Systems (3 cr.)
LARC 504	GIS Applications in Land Planning (3 cr.)
SOIL 422	Environmental Soil Chemistry (3 cr.)
SOIL 504	Landscape Nutrient Management
SOIL 514	Environmental Biophysics (3 cr.)
SOIL 515	Soil and Environmental Physics (3 cr.)
SOIL 552	Environmental Water Quality (3 cr.)
WR 544	Water Quality in the Pacific Northwest (3 cr.)

Electives for Water Resources Law, Management & Policy Option Area

As noted above, one elective *must* be in either the Science & Management or Law, Management & Policy Option Areas for PhD students. A core course may be considered an elective course once the core requirements are satisfied. Electives not listed below will be considered on a case-by-case basis.

FISH 530	Stream Ecology (3 cr.)
ENGR 428	Numerical Methods (3 cr.)
FISH 430	Riparian Ecology (3 cr.)
FISH 515	Large River Fisheries (2 cr.)
FISH 530	Stream Ecology (3 cr.)
FISH 540	Wetland Restoration (3 cr.)
GEOLOG/GEOE 428	Geostatistics (3 cr.)
LAW 906	Natural Resources Law Seminar (3 cr.)

LAW 907	Administrative Law (3 cr.)
LAW 934	Land Use Law and Planning (3 cr.)
LAW 937	Wildlife Law & Policy (3 cr.)
LAW 939	Law, Science, and the Environment (2 cr.)
LAW 946	Water and Energy Policy Seminar (2 cr.)
LAW 947	Environmental Law (3 cr.)
LAW 949	Native American Law (3 cr.)
LAW 951	Environmental Policy (3 cr.)
LAW 979	Native American Natural Resource Law (3 cr.)
POLS 572	Local Government Politics and Administration (3 cr.)

Additional courses may be substituted with the permission of the academic committee if they pertain to water resources science, management, and/or outreach.

Course descriptions: <http://www.uidaho.edu/registrar/classes/catalogs>.

Concurrent J.D. Degree

Entry Requirements

Completion of requirements for admission to both the College of Law and the specific Water Resources option area is required. Students are required to apply separately to the College of Law and the College of Graduate Studies, Water Resources Graduate Program. Acceptance to both colleges does not have to occur simultaneously. A law student can apply for summer or fall admission to the Water Resources Program in the College of Graduate Studies during the first year of law school. Then, during the second year of law school, a student can begin graduate school. A Steering Committee consisting of the Director of the Water Resources Graduate Program, the Associate Dean for Administration and Students of the College of Law, one non-law member of the Water Resources faculty and one member of the Law faculty will make admission decisions to the concurrent degree program.

Common/Core Courses

All students seeking to earn the Water Resources concurrent J.D. degree are required to complete coursework as specified for the particular Water Resources Option Area for the M.S. or Ph.D., as well as coursework required by the Law School for a J.D.

Electives

The student and faculty committee will select courses appropriate to satisfy the requirements of the College of Graduate Studies and College of Law.

Concurrent Degree Details

Students in the Water Resources concurrent J.D. track must meet all graduation requirements set forth by the College of Graduate Studies for the M.S. or Ph.D. degrees and the College of Law for the J.D.

Each student shall have a “graduate committee.” The student’s graduate committee must meet the requirements of the College of Graduate Studies and must have at least one member from the faculty of the College of Law.

A total of 18 credits may be double counted for a J.D./M.S. concurrent degree, and a total of 21 credits may be double counted for a J.D./Ph.D. concurrent degree under the following guidelines:

No more than 12 credits of M.S. and Ph.D. graduate school credit are allowed toward the J.D. degree. The courses must be approved by the student’s advisor in the College of Law with the following guidelines: 1) courses approved for credit toward a J.D. must be complementary to an emphasis in water law; 2) must enhance the candidate’s ability to serve clients and the legal profession in the area of water law; and, 3) must not be the substantive equivalent to a course offered in the College of Law and available to the student.

No more than 6 credits from Law are allowed toward the M.S. degree in Engineering & Science and Science & Management option areas, no more than 12 credits towards the M.S. degree in Law, Management & Policy option area, and no more than 9 credits toward the Ph.D. degree from the following list:

Law 906	Natural Resources Law Seminar (3 cr)
Law 907	Administrative Law (3 cr)
Law 934	Land Use Law and Planning (3 cr)
Law 937	Wildlife Law & Policy (3 cr)
Law 938	International Environmental and Water Law (3 cr)
Law 939	Law, Science and the Environment (2 cr)
Law 942	Water Law I (1 cr)

Law 946	Water and Energy Policy Seminar (2 cr)
Law 947	Environmental Law (3 cr)
Law 948	Intro to Natural Resources Law (3 cr)
Law 949	Native American Law (3 cr)
Law 951	Environmental Policy (3 cr)
Law 969	Water Law II (2 cr)
Law 979	Native American Natural Resource Law (3 cr)

Satisfactory completion of both degrees is required to qualify for the exchange credit, as the degrees are granted concurrently. The first year of study for concurrent M.S. or Ph.D. students must be exclusively in the College of Law. M.S. students are required to write a thesis. Ph.D. students are required to write a dissertation. If the student fails to complete the M.S. or Ph.D. in Water Resources, only 6 credits from the Water Resources Program are allowed toward the J.D. degree. If a student fails to complete the J.D. degree, the student must satisfy all requirements for the particular option area in the Water Resources Program to receive the M.S. or Ph.D. degree.

Once in the Program

Students should develop a study plan consulting with both their Law and Graduate advisors by the end of the second semester of graduate school.

Eighteen credits may be double counted toward both degrees [12 from the MS can count toward the JD, 6 from the JD can count toward the MS; this may be reversed for an MS in the Law, Policy and Management Option Area].

Students should be advised to take the full 4-5 years for both degrees. This is necessary if they want to double count the 18 credits. In addition, completion of the JD in 3 years followed by the bar exam reduces the level of integration with the graduate degree and the likelihood of timely completion of the graduate degree.

Students should be advised to take Water Law I and II in their 2L year and Water Resources 506 in the fall of their 3rd year.

Law Emphasis Areas

Students completing a JD/MS in water resources should have no difficulty also completing the requirements for a Natural Resources and Environmental Law Emphasis and are encouraged to do this.

III. Student and Major Professor Expectations

The student, not the major professor, is responsible for meeting all deadlines and academic requirements and for initiating a process of regular communication with major professor and committee. The student is responsible for his/her own program. This includes:

- Initiating regular communication and frequent meetings with Major Professor.
- Beginning work with the Major Professor on research topic immediately. To complete all requirements in a timely manner requires focus and diligence.
- Setting a timetable with short- and long-term goals and referring to it regularly.
- A meeting of the committee as early as possible to ensure that the program of study and/or research includes thinking from the physical, biological, and/or social science areas.
- Working with the Major Professor to create and present the research proposal including interdisciplinary integration of the proposed research, if appropriate.
- Completing the Interdisciplinary Thesis/Dissertation Approval Form after proposal presentation, if appropriate.
- Considering meeting with the academic committee each semester to keep them up-to-date on scholarly activities. At a minimum, the student should communicate with them regularly.
- Professional development activities such as attending conferences, presenting conference papers, presenting at departmental graduate student seminars, and writing papers for publication.
- Informing the committee of participation in professional development activities.
- Writing sections of the thesis/dissertation as soon as possible. Delaying writing is a common problem for many graduate students and substantial early progress on the introduction, background, and methods can be made by developing a detailed research proposal.
- Preparing drafts (proposal, thesis, etc.) in consultation with the Major Professor prior to sending it to committee members. Drafts should be grammatically correct and free of typographical and spelling errors and forwarded to the committee following approval by the Major Professor.
- Completing the Interdisciplinary Thesis/Dissertation Approval Form prior to thesis/dissertation defense, if appropriate.

* Adapted from Graduate Orientation, "Surviving (and Enjoying!) Graduate School" by Dr. Margrit von Braun, former Dean of the College of Graduate Studies.

IV. Interdisciplinary Requirements and Opportunities

“Interdisciplinary research (IDR) is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice.” From *Facilitating Interdisciplinary Research*, National Academy of Sciences (NAS), 2004.

To ensure that each thesis/dissertation is interdisciplinary, the Water Resources Program requires the following:

1. Committee Requirements

Each Committee shall be composed of members from more than one discipline. For the M.S. a minimum of three members is required; for the Ph.D. a minimum of four members is required. All committee members must approve a) the student’s study plan, b) the interdisciplinary component(s) of the thesis/dissertation proposal by signing the Interdisciplinary Thesis/Dissertation Proposal Approval Form (if applicable), and c) the interdisciplinary component(s) of the thesis/dissertation at the time of the final defense by signing the Interdisciplinary Thesis/Dissertation Approval Form (if applicable).

2. Program Requirements

Each program of study and/or thesis/dissertation shall reflect integration beyond a single discipline. Integration can be achieved throughout the academic program and/or through a separate interdisciplinary chapter (possibly co-authored) that specifically integrates knowledge, methods, and/or information from at least two distinct disciplines. All chapters of the thesis/dissertation shall be integrated into a coherent whole. Each student may evaluate the interdisciplinarity of their thesis/dissertation, at the proposal stage by completing the Interdisciplinary Thesis/Dissertation Proposal Approval form, and prior to the final defense by completing the Interdisciplinary Thesis/Dissertation Approval Form.

Strategies for Interdisciplinary Research

Suggested ways to develop interdisciplinary work:

- From the beginning of your project, think about how the research includes aspects and implications of physical, biological, and/or social sciences, and/or humanities.
- Your research question and objectives should be created so that achieving the objectives requires work in at least two of the disciplinary areas.
- Consider and discuss with your Major Professor and committee how your research is different as a Water Resources student than in a single discipline.
- Think about devoting a chapter in the thesis/dissertation to explaining the interdisciplinary nature of the research or discussing the broader implications of the work.
- Engage in a process of planning and thought regarding how you would go about collecting and using data from at least one of the other disciplines. For example, why and how would social science and/or physical science data enrich a biological research project? What would you collect, given sufficient time and money, and how would you use it?
- Imagine that an agency is so impressed by your research that they decide to fund you to include the broader aspects of the problem including the other two areas. What would you do, how would you do it, and how would you use it?
- At the defense, your Major Professor and committee should ask at least one of the following questions (or another integrating question):

- How has this research used ideas or approaches from at least two of the areas of physical, biological, social science, and humanities?
- Could this work have been done in the same way in a single discipline?
- What are the broader implications of your work as they apply outside of your option area?
- If you went on to continue work on this project, how would you continue to gather data and integrate information from the different disciplines into your research?
- As you apply the results of your work in the field, how would you integrate information or methods from the different disciplinary areas?
- If you had to explain the implications of your research to a person with a completely different background (a manager, politician, or member of the public), what would you say?
- What is important about your research in solving environmental problems?

Further Readings in Interdisciplinarity

National Academy of Sciences. 2004. Committee on Facilitating Interdisciplinary Research, National Academy of Sciences, National Academy of Engineering, Institute of Medicine. Facilitating Interdisciplinary Research.

Gilbert, L.E. 1998. "Disciplinary breadth and interdisciplinary knowledge production," *Knowledge, Technology, and Policy* 11: 4-15.

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V. Materials, Equipment, and Services

The following is a list of policies and procedures for ordering materials, equipment and services related to the research. These are laid down by the university and the department as it pertains to graduate students. University equipment or material (including such things as tablets and paper clips) is for project use only as authorized by the project leader. University property may NEVER be used for personal use.

Travel

Discuss arrangements for travel to conferences and meetings with your major professor. Graduate students can apply for travel funding through the Graduate and Professional Student Association (GPSA). For more information, visit the GPSA website: <http://www.uiweb.uidaho.edu/gpsa/>.

Copying, Printing, and Library Use

Many references are available on-line. See the library web site for a Journal List (<http://www.lib.uidaho.edu/>). U.S. Government documents, magazines and journals in the library holding cannot be checked out. A copy of a portion of a book or an article from a journal or magazine at the library can be scanned onsite on delivered directly to your email. Students are responsible for observing copyright rules (<http://www.lib.uidaho.edu/copyright/index.html>). Copies made for the project reference files will remain part of the project and cannot be removed after graduation. Students are advised to keep detailed record of sources of articles and books so they can be tracked at a later time.

Graduate students may check books out of the library for an entire semester. These books should be returned in a timely manner when they are no longer actively used. This also applies to books and references borrowed from fellow students and faculty members. Books or reference material cannot be taken from an office or lab without asking permission.

Computer Usage

All students have access to computer resources. Computer accounts are requested from the University Information Technology Services (<http://www.uidaho.edu/its>). When using a computer, students are responsible to adhere to the computer use policy for the University of Idaho (<http://www.uidaho.edu/apm/30/12>).

Research Records and Notebooks

During the course of the thesis/dissertation research, a voluminous amount of data will be collected along with many notes, reminders, procedures, etc. It is very important to keep these data in an organized fashion so all records are available when writing the thesis/dissertation chapters. Research records must be zealously protected from any harm. Consider purchasing a notebook that can be dedicated solely to your research. Also, be sure to back-up your files and keep copies of all important information.

VI. Steps to the Degree

M.S. Program

<u>Activity</u>	<u>Suggested Completion</u>
Identify Major Professor	Prior to Admission
File Committee Form Appointment of Major Professor http://www.uidaho.edu/cogs/forms	Beginning of 1 st semester
Appoint Committee	Beginning of 2 nd semester
File Committee Form Appointment of Committee http://www.uidaho.edu/cogs/forms	2 nd semester
Prepare Study Plan	End of 2 nd semester
File Study Plan via Vandal Web	End of 2 nd semester
Research proposal to Committee	2 nd semester
Present research proposal	2 nd semester
Research	
Analyze data/summarize results	End of 3 rd semester
Work with Major Professor & Committee on draft document	3 rd and 4 th semester
File application for degree via Vandal Web	End of 3 rd semester
Thesis review by Major Professor & Committee	4 th semester
Prepare final draft	4 th semester
Grad school check of thesis format	End of 4 th semester
File authorization for final defense Request to Proceed with Final Defense http://www.uidaho.edu/cogs/forms	End of 4 th semester
Pick up defense forms from Grad school	End of 4 th semester
Final defense	End of 4 th semester
Prepare final copy of thesis, complete forms, & turn into the Grad school Checklist for Final Submission of Document http://www.uidaho.edu/cogs/forms	End of 4 th semester

Ph.D. Program

<u>Activity</u>	<u>Suggested Completion</u>
Identify Major Professor	Prior to Admission
File Committee Form Appointment of Major Professor http://www.uidaho.edu/cogs/forms	Beginning of 1 st semester
Appoint Committee	Beginning of 2 nd semester
File Committee Form Appointment of Committee http://www.uidaho.edu/cogs/forms	2 nd semester
Prepare Study Plan	3 rd semester
File Study Plan via Vandal Web	End of 3 rd semester
Qualifying Exam (if needed)	
Research proposal to Committee	End of 3 rd semester
Present research proposal	End of 3 rd semester
Preliminary Examination	End of 3 rd semester
File Candidacy form Report of Preliminary Exam & Advancement to Candidacy http://www.uidaho.edu/cogs/forms	End of 3 rd semester
Research	
Analyze data/summarize results	End of 4 th semester
Work with Major Professor & Committee on draft document	End of 4 th semester
File application for degree via Vandal Web	End of 5 th semester

Dissertation review by committee	6 th semester
Prepare final draft	6 th semester
Grad school check of dissertation format	6 th semester
File authorization for final defense Request to Proceed with Final Defense http://www.uidaho.edu/cogs/forms	6 th semester
Pick up defense forms from Grad school Authorization to Submit Thesis or Dissertation http://www.uidaho.edu/cogs/forms	End of 6 th semester
Final defense	End of 6 th semester
Prepare final copy of dissertation, complete forms, & turn into the Grad school Checklist for Final Submission of Document http://www.uidaho.edu/cogs/forms UMI Doctoral Dissertation Agreement http://www.uidaho.edu/cogs/forms Survey of Earned Doctorates http://www.uidaho.edu/cogs/forms	End of 6 th semester

VII. Professional Conduct and Ethics

As graduate students and professional scholars-in-training, you are expected to exercise high standards of ethical and professional behavior toward your peers and your professors. Science as a whole can only make progress if individual scientists are truthful and trustworthy. As academic professionals and members of the larger community of scientists, graduate students should practice intellectual honesty at all times. You should exercise scholarly discipline and good critical skills, while engaging in civil, collegial discussion of scientific and professional matters. Ideally, scientific professionals should strive to be objective and fair in their criticism and discussion of colleagues' work. Graduate students must never engage in, permit or otherwise support professional misconduct, including plagiarism, falsification of information, or deception of any kind. Each of us is obligated to report professional misconduct to a supervisor or Program Director as appropriate.

Academic Honesty and Research Ethics

As stated above, graduate students are expected to uphold high standards of intellectual and academic honesty at all times, and to enforce university and departmental standards for academic honesty. The University Faculty and Staff Handbook states that "cheating on classroom or outside assignments, examinations or tests is a violation of [the academic honesty] code. Plagiarism, falsification of academic records, and the acquisition or use of test materials without faculty authorization are considered forms of academic dishonesty..." Should you encounter academic dishonesty, you should immediately bring it to the attention of your teaching supervisor. Other instances should be discussed with your major professor or the Program Director. There is an expectation that graduate students spend an appropriate amount of time researching and producing new papers for class research projects. If previous papers are to be expanded, you must have permission from the course instructor. A paper written for one course and turned in for a subsequent course will be considered a breach of academic honesty.

Harassment

Graduate students are expected to treat other students, peers, professors, and other colleagues in the university workplace respectfully at all times. By the same token, you are also entitled to respectful behavior on the part of your coworkers. "Harassment" in the workplace is often defined in sexual terms. However, harassment in a broader sense can also take the form of teasing, insults and other hostile or harsh speech, crude gestures, or otherwise acting toward another person in an extremely objectionable or humiliating manner, even when that behavior lacks a sexual context. Legally prohibited harassment includes not only sexual harassment but also harassment based on race, color, national origin, religion, age, disability, sexual orientation or status as a Vietnam-era veteran.

The University of Idaho Faculty and Staff Handbook Policy 3220 defines sexual harassment as "unwelcome sexual advances, requests for sexual behaviors, or other verbal or physical conduct of a sexual nature." Such conduct is deemed especially deplorable when it occurs in a relationship where there is a significant power differential, such as harassment of a student by an instructor, "...creating an intimidating, hostile, or offensive learning environment," or interfering with a student's education. Under no circumstances should a graduate student engage in behavior that might be construed as harassment, sexual or otherwise. If you feel you have been harassed or are aware of a possible violation of the University's harassment policy, you are strongly encouraged to contact the University's Office of Diversity and Human Rights, the Women's Center, your major professor, supervisor, or the Program Director.

Policy on Graduate Student Complaints

If a graduate student has a serious complaint regarding how they have been treated in class or research projects, this should be brought to the Program Director or the student graduate committee advisor. Complaints may include, but are not limited to, conflicts that involve a colleague, teaching supervisor, employer, or major professor. The student should attempt to resolve the problem by informal discussion

with those involved in the grievance before a formal grievance is brought to the Program Director. The Program Director will work with the student to bring the situation to a reasonable conclusion. If necessary, the student may visit the College of Graduate Studies for additional assistance.

Online Resources

Water Resources Graduate Program Homepage

<https://www.uidaho.edu/cals/water-resources>

College of Graduate Studies

<http://www.uidaho.edu/cogs>

Admission Requirements

<http://www.uidaho.edu/admissions>

Financial Aid

<http://www.uidaho.edu/financialaid.aspx>

Schedule of Classes

<https://webpages.uidaho.edu/schedule/>

Student Accounts/Cashier

<https://www.uidaho.edu/current-students/student-accounts>

Graduate and Professional Student Organization

<https://uidahogpsa.com>

Brand Resources Center – logos, PowerPoint templates etc.

<https://www.uidaho.edu/brand-resource-center>

Copy and Print Center

<https://printonline.uidaho.edu/home>

UI Water Resources Facebook Page

<https://www.facebook.com/UIWaterResources/>