

WATER SCIENCE AND POLICY

GRADUATE PROGRAM POLICY STATEMENT

(UPDATED – January 2024)

I. PROGRAM HISTORY

A. RATIONALE

Global climate change, unsustainable population growth, and widespread pollution and degradation of our natural resources are putting immense pressure on the supply and quality of our water resources. Addressing these complex challenges and finding solutions will require a comprehensive, integrated and interdisciplinary approach. Not only must society address the physical, chemical and biological aspects of these problems; society must also ensure that the proposed solutions are socially acceptable, economically viable, and environmentally sustainable. The National Science Foundation, National Academy of Sciences, Congressional Research Service, USGS, NOAA, and USEPA have all concluded that a new interdisciplinary education and research approach is needed that integrates science and policy to address society's emerging challenges in water sustainability. The interdisciplinary graduate program in Water Science and Policy at the University of Delaware is focused on these challenges by training students and professionals who can think broadly across disciplines and simultaneously possess a depth of knowledge to address important water issues.

The graduate program in Water Science and Policy reflects the strategic priorities at the University of Delaware, including an emphasis on environmental research and sustainability, the growing number of environmentally focused faculty, and the University's *Initiative for the Planet*, all within the University's *Path to Prominence*.

The vision is a university-wide graduate program that will attract students to many departments and colleges across the campus. The students will be located within individual departments and will work with individual advisors who are affiliated with the program. The students are required to meet the specific requirements of the program to be awarded the degree in Water Science & Policy.

The graduate program in Water Science & Policy is synergistic with other programs on campus, and draws entirely upon existing courses. All students in the Water Science & Policy program take a team-taught course, entitled "Research Methods and Topics in Water Science and Policy" that involves both field and lab experiences, as well as a companion one-credit seminar series.

The availability of high quality water to sustain human activities and ecosystem health is among the most critical global challenges of the 21st century, given pressures on water resources due to climate change, contaminants, population growth, hydrogeology, conservation issues and infrastructure challenges. Solutions to complex problems of water quantity and quality will require both scientific understanding and implementation through effective policy. Scientists, engineers and policy experts need to understand and predict the interactions of Earth's water system with climate change, land use, the built environment and ecosystem function and services. They will

need to determine how the built water systems and our governance systems can be made more reliable, resilient and sustainable in the face of diverse and often conflicting needs.

Despite its name, the Earth is a water planet. However, pressure on water resources is growing, increasing the need for understanding water availability, quality and dynamics. The impacts of climate change and human activity have created an urgent need for experts who bring both depth and breadth of experience, and a systemic perspective to the science and policy of water at the local, regional, national, and international scales.

The program in Water Science and Policy at the University of Delaware is designed to meet this increasing national and international demand for interdisciplinary water experts and to provide students with an educational opportunity that crosses traditional disciplinary and organizational boundaries. Due to the interdisciplinary nature of water sciences and policy, experts in these fields within the University of Delaware are housed in many Colleges and Departments and affiliated centers and institutes on campus; thus, the faculty affiliated with the program may be in one of several science, engineering or social science disciplines.

The Water Science & Policy program aims to train the next generation of researchers and professionals who will play key roles in protecting and managing a vital resource, and who will play a key role in multi- and interdisciplinary teams, bridging physical, chemical, biological and policy sciences. The program is administered through the College of Agriculture & Natural Resources, and the scientific curriculum builds upon the research and educational strengths of departments across the Colleges of Agriculture & Natural Resources, Arts & Sciences, Earth, Ocean & Environment, and Engineering. Water Science & Policy is an essential 21st century environmental thrust in academia, industry, and government, and affects public policy decisions across the globe.

B. DEGREES OFFERED

Three degree options are offered:

- 1) **PhD in Water Science & Policy**, Water Science Concentration;
- 2) **PhD in Water Science & Policy**, Water Policy Concentration; and
- 3) **Master of Science in Water Science & Policy**.

Doctoral students in the Water Science Concentration complete course requirements and carry out research that emphasizes science and engineering, but that provides exposure to policy tools and processes. Doctoral students in the Water Policy Concentration complete course requirements and carry out research that emphasizes economics and public policy, but that provides exposure to relevant science and engineering areas. Students in both Concentrations will have the opportunity to pursue directed research, a special problem, independent study or internship as part of required work.

The Master of Science option in Water Science and Policy prepares students to carry out advanced research at the doctoral level, or to take professional positions requiring graduate level preparation.

II. ADMISSION

A. ADMISSION REQUIREMENTS

Admission to graduate programs is competitive. Those who meet stated requirements are not guaranteed admission, nor are those who fail to meet all of those requirements necessarily precluded from admission if they offer other appropriate strengths.

To officially apply for admission, see <http://www.udel.edu/gradoffice/apply/> for detailed instructions, web-based forms, and contact information. To be admitted to the graduate program applicants should meet the following requirements:

1. A completed University of Delaware Graduate Studies application. In the application, prospective students should indicate clearly whether they are applying for the MS or the Ph.D. program (select the Water Science or the Water Policy concentration). Students may apply to the program prior to arranging for a faculty advisor; however, all students in the program will need a program faculty member to serve as advisor.
2. A personal statement is required in the Graduate Studies application, and should discuss the following questions:
 - a. What are your specific research and educational goals?
 - b. What are your long-term professional career objectives?
 - c. How do you see this program assisting you with achieving your objectives?
 - d. What is the name of the faculty member (affiliated with the program) who has agreed to be advisor?
3. The Graduate Record Examination (GRE) is optional. Any scores submitted voluntarily by an applicant will be evaluated holistically but will not be used to determine admission or funding decisions
4. Official, up-to-date transcripts of all undergraduate and graduate programs. A minimum of 3.0/4.0 is required in the major.
5. Three letters of recommendation from individuals knowledgeable of the applicant's academic preparation and potential ability as a graduate student.
6. International students must take the Test of English as a Foreign Language (TOEFL) (Minimum Score: 550 paper test, 213 computer test or 79 on Internet-based tests.) TOEFL scores more than two years old cannot be considered official.

B. PRIOR DEGREE REQUIREMENTS

Applicants for the Ph.D. program will typically have an M.S. degree in a related field. Direct admission to the Ph.D. program immediately after a B.S. degree will only be considered for exceptionally qualified candidates, as determined by the Program Committee. These candidates will, however, have to complete all the course requirements associated with the Water Science and Policy M.S. program prior to starting the Ph.D. curriculum. Prior graduate coursework (a maximum of 9 credit hours) will be considered toward Ph.D. course requirements, with the approval of the Program Committee.

CHANGE OF CLASSIFICATION AND TRANSFER STUDENTS

Students that are currently matriculated in other degree programs should complete a “Change of Classification” Form to seek approval to be admitted into the Water Science and Policy Program. The Program Committee will evaluate the change in classification and transfer requests on a case-by-case basis to determine if the applicant will need to complete a full application form submitted to the Office of Graduate and Professional Education. All transfer students will still have to meet the requirements listed above.

C. APPLICATION DEADLINES

Admission decisions are made on a rolling basis as and when applications are complete. The application deadlines are:

- Fall Semester: July 1 ; February 1 for financial aid
- Spring Semester: December 1

D. SPECIAL COMPETENCIES NEEDED

None.

E. ADMISSION CATEGORIES

Students are accepted in the following degree programs:

- M.S. – Master of Science (thesis) in Water Science and Policy
- Ph.D. – Doctor of Philosophy in Water Science and Policy (Water Science concentration)
- Ph.D. – Doctor of Philosophy in Water Science and Policy (Water Policy concentration)

Part-time students

In some circumstances it is possible to pursue a degree on a part-time basis.

Provisionally-accepted students

Full and part time students may be admitted to the program with provisional status if there are deficiencies in their academic backgrounds, as determined by the Admissions Committee. Deficiencies typically include an inadequate academic background, particularly a lack of appropriate course work in the major area and are usually remedied by satisfactory performance in a course(s) in the deficient area. A letter of provisional admission will indicate specific area(s) of academic deficiency, and the time limits for satisfactory completion of course(s) needed to make up

deficiencies. Satisfactory completion of the stipulations in the letter of provisional admission will result in a change of status from provisional to regular student status. The student's advisor and the Program Director will inform the student and the Office of Graduate and Professional Studies of the change in status. Students who do not complete the remedial training in the stipulated time may be expelled from the program.

F. OTHER DOCUMENTS REQUIRED

None.

III. ACADEMIC PROCEDURES

A. DEGREE REQUIREMENTS

1. COURSE REQUIREMENTS SUMMARY

a. PhD Program Requirements: Water Science & Policy

PhD in Water Science & Policy (36 Credits)		
Course Areas	Water Science Concentration	Water Policy Concentration
Water Science	9 Credits	3 Credits
Water Policy	3 Credits	9 Credits
Research Methods	3 Credits	3 Credits
Statistics, Analysis & Techniques	3 Credits	3 Credits
Directed Research/Special Problem/Internship/Independent Study	9 Credits	9 Credits
Dissertation	9 Credits	9 Credits

b. Master of Science Program Requirements: Water Science & Policy

MS in Water Science & Policy (30 Credits)	
Credit Hours Total	
Water Science, Policy, Research Methods, Statistics & Analysis	24 Credits
Thesis	6 Credits

2. CURRICULUM

The tables below list the course curriculum for the major components of the graduate program in Water Science & Policy. Some courses may be offered at both the 400- and 600- levels. A student who has completed a course at the 400-level may not take the same course at the 600-level for credit toward the graduate degree.

To be included as an elective in the Water Science and Policy graduate program, a course will have to be 600-level or higher and be approved after a review of the syllabus by the Program Director and Faculty Steering Committee. If a student would like to substitute a required course with another course, they must fill out a Course Substitution Form and have the course approved by their advisor and the Program Director prior to enrolling in the course.

Table 1. PhD Program Requirements: Water Science & Policy

PhD in Water Science & Policy (36 Credits)		
Course Areas	Water Science Concentration	Water Policy Concentration
Water Science	9 Credits	3 Credits
Water Policy	3 Credits	9 Credits
Research Methods	3 Credits	3 Credits
Statistics, Analysis & Techniques	3 Credits	3 Credits
Directed Rsch/Special Prob./Internship/Independent Study	9 Credits	9 Credits
Dissertation	9 Credits	9 Credits
Science Courses	a) Physical Sciences	
<p>Water Science Concentr. Students (9) [Select at least 3 credits from each category.]</p> <p>Water Policy Concentr. Students (3) [Select one course from physical or chemical/biological science.]</p>	CIEG 634 Physical Aspects of Environmental Engineering	
	CIEG 698 Groundwater Flow and Contaminant Transport	
	GEOG 632 Environmental Hydrology	
	GEOG 651 Microclimatology (4)	
	GEOG 656 Hydroclimatology	
	GEOL 603 Groundwater Modeling	
	GEOL 611 Fluvial Geomorphology	
	GEOL 628 Hydrogeology	
	GEOL 803 Topics in Geomorphology	
	PLSC 603 Soil Physics	
	b) Chemical/Biological Sciences	
	CHEM 683/MAST 683 Environmental Chemistry	
	CIEG 632 Chemical Aspects of Environmental Engineering	
	CIEG 636 Biological aspects of Environmental Engineering	
	CIEG 668 Principles of Water Quality Criteria	
	GEOL 619 Environmental Geochemistry	
	MAST 618 Marine Microbial Ecology	
	MAST 646 Chemical Oceanography	
	MAST 852 Isotope Geochemistry	
PLSC 608/CHEM 608 Environmental Soil Chemistry		
PLSC 612 Ecosystem Ecology		
PLSC 621 Nonpoint source pollution		
PLSC 643 Watershed Hydrochemistry		
Policy Courses	c) Policy	
<p>Water Science Concentr. Students (3) [Select one course.]</p> <p>Water Policy Concentr. Students (9) [Select three courses.]</p>	APEC 820 Experimental Economics	
	ECON 670 Cost Benefit Analysis	
	ENEP 624 Water Resources Management	
	ENEP 626 Climate Change: Science, Policy and Political Economy	
	ENEP 810 Political Economy of the Environment	
	GEOG 617 Seminar in Climate Change	
	GEOG 619 Climate Change Adaptation Policy	
	GEOG 622 Resources, Environment, Development	
	GEOG 649 Environment & Society	
	MAST 662/UAPP 665 Climate Change: Policy, Equity and Mitigation	
	MAST 663/UAPP 663 Decision Tools for Policy Analysis	
	MAST 674 Legal Aspects of the Coastal Zone	
	MAST 676/ECON 676 Environmental Economics	
	POSC 818 Environmental Politics and Policy	
	SPAA 614/GEOG 614/MAST 614 Environmental Justice in Disasters	

	UAPP 611 Regional Watershed Management
	UAPP 652 GIS in Public Policy
	UAPP 701 Public Policy
<u>Research Methods Courses (3)</u>	d) Research Methods
	MAST 663/UAPP 663 Decision Tools for Policy Analysis
	PLSC 640 Field Methods in Soil-Water-Air
	UAPP 707 Public Policy Analysis

Statistics, Analysis & Techniques (3) [Select three credits from the category Statistics, Analysis & Techniques]	e) Statistics, Analysis & Techniques:
	APEC 807 Mathematical Programming with Economic Applications
	CHEG 604 Probability and Statistics for Engineering Problem Solving
	GEOG 604 GIS in Environmental Research
	GEOG 657/STAT 657 Statistics for Earth Sciences
	GEOG 666 Research Design & Mixed Methods
	GEOG 670 Geographic Information Systems and Science
	GEOG 671 Advanced Geographic Information Systems
	GEOG 673 Open-sourced Environmental Computing
	MAST 681 Remote Sensing of Environment
	MEEG 690 Intermediate Engineering Mathematics
	SOCI 605 Research Methods and Statistics
	SPPA 704 Advanced Quantitative Methods
	SPPA 718 Survey Research Methods
	STAT 608 Statistical Research Methods
	STAT 659/GEOL 659 Spatial Statistics
STAT 674 Applied Database Management	
UAPP 684 Performance Management and Program Evaluation	
Directed Research/Special Problem/Internship/Independent Study (9)	
Dissertation (9)	

Table 2. M.S. Requirements

MS in Water Science & Policy – Course Curriculum (30 credits)	
Select 24 credits, with at least 3 credits from each category.	a) Physical Sciences
	CIEG 634 Physical Aspects of Environmental Engineering
	CIEG 698 Groundwater Flow and Contaminant Transport
	GEOG 632 Environmental Hydrology
	GEOG 651 Microclimatology (4)
	GEOG 656 Hydroclimatology
	GEOL 603 Groundwater Modeling
	GEOL 611 Fluvial Geomorphology
	GEOL 628 Hydrogeology
	GEOL 803 Topics in Geomorphology
	PLSC 603 Soil Physics
	b) Chemical/Biological Sciences
	CHEM 683/MAST 683 Environmental Chemistry
	CIEG 632 Chemical Aspects of Environmental Engineering
	CIEG 636 Biological aspects of Environmental Engineering
	CIEG 668 Principles of Water Quality Criteria
	GEOL 619 Environmental Geochemistry
	MAST 618 Marine Microbial Ecology
	MAST 646 Chemical Oceanography
	MAST 852 Isotope Geochemistry
	PLSC 608/CHEM 608 Environmental Soil Chemistry
	PLSC 612 Ecosystem Ecology
	PLSC 621 Nonpoint source pollution
	PLSC 643 Watershed Hydrochemistry
	c) Policy
	APEC 820 Experimental Economics
	ECON 670 Cost Benefit Analysis
	ENEP 624 Water Resources Management
	ENEP 626 Climate Change: Science, Policy and Political Economy
	ENEP 810 Political Economy of the Environment
	GEOG 617 Seminar in Climate Change
	GEOG 619 Climate Change Adaptation Policy
	GEOG 622 Resources, Environment, Development
GEOG 649 Environment & Society	
MAST 662/UAPP 665 Climate Change: Policy, Equity and Mitigation	
MAST 663/UAPP 663 Decision Tools for Policy Analysis	
MAST 674 Legal Aspects of the Coastal Zone	
MAST 676/ECON 676 Environmental Economics	
POSC 818 Environmental Politics and Policy	

	SPAA 614/GEOG 614/MAST 614 Environmental Justice in Disasters
	UAPP 611 Regional Watershed Management
	UAPP 652 GIS in Public Policy
	UAPP 701 Public Policy
	d) Research Methods
	MAST 663/UAPP 663 Decision Tools for Policy Analysis
	PLSC 640 Field Methods in Soil-Water-Air
	UAPP 707 Public Policy Analysis
	e) Statistics, Analysis & Techniques:
	APEC 807 Mathematical Programming with Economic Applications
	CHEG 604 Probability and Statistics for Engineering Problem Solving
	GEOG 604 GIS in Environmental Research
	GEOG 657/STAT 657 Statistics for Earth Sciences
	GEOG 666 Research Design & Mixed Methods
	GEOG 670 Geographic Information Systems and Science
	GEOG 671 Advanced Geographic Information Systems
	GEOG 673 Open-sourced Environmental Computing
	MAST 681 Remote Sensing of Environment
	MEEG 690 Intermediate Engineering Mathematics
	SOCI 605 Research Methods and Statistics
	SPPA 704 Advanced Quantitative Methods
	SPPA 718 Survey Research Methods
	STAT 608 Statistical Research Methods
	STAT 659/GEOL 659 Spatial Statistics
	STAT 674 Applied Database Management
	UAPP 684 Performance Management and Program Evaluation
Directed Research Option (3) With advisor approval, MS students may opt to carry out directed research, in lieu of one course, within categories a, b, or c above.	
Thesis (6)	

3. GRADE MINIMUMS

See University policy.

4. COURSES INELIGIBLE TOWARDS DEGREE

Registration as a listener (L) or enrollment in undergraduate-level courses will not apply toward the degree. Course work which is not previously approved may be judged unacceptable by the graduate advisory committee and, therefore, should be discussed with committee members when registering.

5. ENGLISH COMPETENCY

Students are expected to communicate effectively in written and oral English, including the ability to concisely present their data and compose a manuscript or research proposal. This will be assessed by the advisor and graduate committee and, more formally, during seminar presentations.

B. COMMITTEES FOR EXAMS, THESIS, OR DISSERTATIONS

1. INITIAL PROCEDURES FOR ADVISOR/STUDENT

Ideally, students may contact advisors directly to pursue study in their laboratories. Advisors can also examine the applicant pool to select students whom they are interested in advising.

2. PROCEDURE FOR SELECTING COMMITTEE MEMBERS

The major advisor and student should discuss potential committee members who might provide support for the student's research. It is the responsibility of the graduate student to ask each committee member if they are willing to serve.

Requirements for the composition of advisory committees are:

M.S. Minimum of three members, including -

- advisor
- at least one additional faculty member affiliated with the Water Science and Policy program who should be from the area of concentration other than that of the student

Ph.D. Minimum of four members, including -

- advisor
- at least two faculty members affiliated with the Water Science and Policy program
- at least one committee member must be external to the program or from outside the University

3. DEADLINES

Establishment

For a MS student, the committee should be established within the first year after being admitted to the program. For a PhD student, the committee should be established within 1.5 years of joining the program. Coincident with its establishment, it is the responsibility of the student to notify the Program Director in writing of the committee members and their affiliations.

Meetings

- Graduate committees must meet at least once each year and meetings every 6 months are recommended to provide a review to the student of his/hers progress or needs for improvement. It is the responsibility of the student to organize the meetings.
- Responsibilities of committee members include the following:
 - Work with student to develop a program of study
 - Review research proposal defense and provide recommendations
 - Ensure acquisition of skills (competence in certain laboratory, greenhouse, and/or field research techniques is essential for completion of an acceptable thesis or dissertation) are developed
 - Serve as advisory body during period of candidacy
 - Administer written and oral qualifying examinations to Ph.D. candidates
 - Establish the contribution of the thesis or dissertation to chosen area of expertise and determine the degree of scholarship attained by the student

4. EXAMINATION AND GRADING POLICIES

Ph.D. candidates must have at least one year between their qualifying exam and their defense. Formal grading of committee examinations will be at the discretion of the student's graduate committee.

5. GUIDELINES FOR RESEARCH PROPOSAL INVOLVING HUMAN AND ANIMAL SUBJECTS

Students must attend human or animal subjects training and request approval from the human or animal subject committee at the University. Proposals that include interviews, case studies, or other interrogative methodologies must have all questions approved by the University Human Subjects Review Board.

6. PROCEDURES FOR THESIS/DISSERTATION APPROVAL

Admission to candidacy for the Ph.D. degree, and acceptance of the M.S. thesis or Ph.D. dissertation in partial fulfillment of the degree requirements, will be recommended if no more than a single dissenting vote is cast by the graduate committee.

7. PROCEDURES FOR CHANGES IN COMMITTEE MEMBERS

Changes are to be coordinated by advisor and student when necessary.

C. SATISFACTORY PROGRESS

1. ACADEMIC LOAD

Full-time students are expected to complete the MS program (30 credits) within two years. The program may be completed over a longer time frame for part-time students. Students in the Ph.D. program (36 credits) will typically complete the program in four to six years.

Students enrolled in at least 9 credit hours or in sustaining credit are considered full-time students. Those enrolled for fewer than 9 credit hours are considered part-time students, although students holding assistantships are considered full-time with six credits. Generally, a maximum load is 12 graduate credit hours; however, additional credit hours may be taken with the approval of the student's adviser and the Office of Graduate and Professional Education. A maximum course load in either summer or winter session is 7 credit hours. Permission must be obtained from the Office of Graduate and Professional Education to carry an overload in any session

2. TRANSFERABILITY

Previous graduate level courses (a maximum of 9 credit hours) from another institution will be considered toward completion of Ph.D. course requirements, subject to approval by the Program Committee.

3. GRADE REQUIREMENTS

Only graduate courses completed with a grade of B- or higher count towards the requirements of the MS and PhD program in Water Sciences and Policy. Graduate students receiving financial assistance must maintain a 3.0 overall GPA. If a student's GPA should fall below this level, loss of stipend is possible. A one-semester grace period may be provided in which the student has the opportunity to improve his/her GPA. However, the grace period is not automatic and requires approval that is initiated by a written request from the faculty advisor to the Program Director and the Office of Graduate and Professional Studies. A student's stipend may be reinstated, if lost for academic or other reasons, only after approval by the Program Committee and the Director. Any graduate student, self-supporting or those receiving financial assistance, with a GPA less than 3.0, is subject to a reclassification of academic status to warning, probation, or termination depending upon the severity of the substandard academic performance. Details are provided in the University Graduate Catalog. It is the responsibility of the faculty advisor to inform the student committee and Program Director of substandard academic performance.

4. MASTER'S DEGREE REQUIREMENTS

The development of a program of study will be the joint responsibility of the student in consultation with the major advisor. The student will select a minimum of three-person thesis committee that includes the student's major advisor and at least one other member from the Water Science and Policy program. The thesis committee needs to be established within one year in the program. The names of the selected thesis committee members should be forwarded to the Program Director by the student.

M.S. Thesis students must complete 24 credit hours of course work and 6 credit hours of thesis (a total of 30 credits). Specific course requirements for the M.S. in Water Science and Policy are described above in Section on Course Curriculum. All full-time MS students are required to complete the degree requirements in six semesters or fewer. Students are expected to write and successfully defend the thesis to receive the degree.

Advancement to degree candidacy is contingent upon successful completion and presentation of the thesis proposal. The thesis proposal should be presented to the Thesis Committee for approval within 1.5 years in the program. The completed thesis will be presented to the Thesis Committee in typewritten form at least two weeks before the scheduled oral defense. The oral defense of the student thesis will be publicly announced and all program members will be notified at least one week prior to the defense date.

An extension of time for the completion of the master's degree beyond five years requires approval from the student's advisor and the Graduate Program Director and the Associate Dean of the Graduate College.

5. PH.D. REQUIREMENTS

The development of a program of study will be the joint responsibility of the student in consultation with the graduate advisor. The student will select a minimum of four-person Dissertation Committee that includes the student's major advisor and at least two other faculty members from the Water Science and Policy program. The Dissertation Committee needs to be established within 1.5 years of study in the program. The names of the Committee members should be submitted to the Program Committee for approval.

Ph.D. students must complete 18 credit hours of coursework, plus 9 credit hours of research, and 9 credit hours of dissertation (a total of 36 credits). Specific course requirements for the Water Science and the Water Policy concentrations are described above in Section on Course Curriculum. Students must maintain a minimum of 3.0 cumulative GPA in order to receive the degree. Course with a grade below a B- will not be counted towards the degree. The program of study must be submitted before the end of the first year to the graduate advisor for approval. Previous graduate-level coursework will be considered toward Ph.D. course requirements, subject to the approval of the Program Committee.

Students who complete the MS in Water Science and Social Policy may be approved to continue in the PHD program. To do this, a Change of Classification form should be completed and signed by the Graduate Director, the Chair of the Department and the student's doctoral advisor. The student will be required to complete 36 credits beyond the credits completed for the master's degree.

The PhD qualifying exam should be taken within 2.5 years of study in the program. The qualifying examination will include written and oral portions. The student's graduate advisor will chair and administer the exam and the content of the exam (written and oral) will be decided jointly by the student's Dissertation Committee. The exam will be graded by the Dissertation Committee and each member of the committee will provide a single

grade (including written and oral sections) of PASS or FAIL. A student can only take the exam a maximum of two times. A failure in two attempts will result in dismissal from the PhD program.

The student must submit a research proposal prior to initiating dissertation research. A pre-proposal should be prepared within the first year and should be shared with the Dissertation Committee. A formal proposal should be presented and defended by the student no later than six months from the completion of the written qualifying exam. The proposal defense and oral qualifying examination can be combined.

Upon successful completion of the qualifying exam and the proposal defense, the student is certified as a candidate for the doctoral degree. The graduate advisor will notify the Program Committee on the result of the qualifying exam. A copy of the student's PhD proposal will also be placed in the program records.

Upon the recommendation of the Dissertation Committee the student may be admitted to candidacy for the Ph.D. degree. The stipulations for admission to doctoral candidacy are that the student has (1) had a program of study approved, (2) completed one academic year of full-time graduate study in residence at the University, (3) passed the program's qualifying examination, (4) demonstrated the ability to do research, and (5) had a research project accepted by the Dissertation Committee.

The final examination of the PhD degree will involve approval of the written dissertation and an oral defense of the candidate's dissertation. The written dissertation will be submitted to the Dissertation Committee and the Water Science & Policy Program office at least three weeks in advance of the oral defense date. The oral defense date will be publicly announced at least two weeks prior to the scheduled date. The oral presentation will be open to the public and all members of the Water Science and Policy program. The Dissertation Committee will approve the candidate's dissertation. The student and graduate advisor will be responsible for making all corrections to the dissertation document and for meeting all Graduate School deadlines for submission.

An extension of time for the completion of the doctorate beyond seven years requires approval from the student's advisor and the Graduate Program Director and the Associate Dean of the Graduate College.

6. STANDARDS OF STUDENT CONDUCT

All graduate students are subject to University of Delaware regulations regarding academic honesty. Violations of the UD regulations regarding academic honesty or other forms of gross misconduct may result in immediate dismissal from the Program.

7. DISMISSAL

The procedures for dismissal as detailed in the University Catalog will be followed. Briefly, the Graduate Committee will report its recommendation and reason for dismissal to the

Director of the Water Science and Policy program. The Director will make a recommendation to the Office of Graduate Studies, who will decide whether to dismiss the student. The student may appeal this decision to the Office of Graduate Studies, following the procedure given in the University Catalog.

8. GRADUATE STUDENT GRIEVANCE PROCEDURES

Students who feel that they have been graded inappropriately or receive what they perceive as an unfair evaluation by a faculty member may file grievances in accordance with University of Delaware policies. Students are encouraged to contact the Director of the graduate program in Water Science & Policy prior to filing a formal grievance in an effort to resolve the situation informally.

9. ATTENDANCE AT CONFERENCES AND PROFESSIONAL MEETINGS

The Water Science & Policy program encourages students to attend conferences and professional meetings. They provide opportunities to meet future employers and colleagues, and can offer specialized training beyond course work.

IV. FINANCIAL AID

A. FINANCIAL AWARDS

Admission to the graduate program in Water Science & Policy does not automatically entitle an applicant to financial aid. Students may seek financial aid opportunities, such as fellowships or scholarships from sources within the University and from private and federal agencies. Interested students should check the Office of Graduate Studies website for the most current opportunities.

Financial aid is awarded on a competitive basis from the pool of admitted applicants. The University of Delaware's policies apply to all forms of financial aid. Please refer to the University Policies for Graduate Student Assistantships and Fellowships.

Students in the Water Science and Policy program may apply for Graduate Assistantships:

Research Assistantships (RAs) are generally funded by research grants and contracts provided by external funding agencies. Students may be supported as an RA through their Faculty Advisor's research funds after their first year. A research assistantship provides full tuition and a stipend. The RA's advisor is responsible for defining the student's responsibilities and for evaluating the student's performance. The amount of service or research may vary from week to week, but the average is usually expected to be 20 hours per week.

Teaching Assistantships (TAs) are offered for graduate students to perform teaching and other instructional activities by individual departments. The amount of service may vary from week to week, but the average is usually expected to be 20 hours per week. A teaching assistantship provides full tuition and a stipend. A TA award will be decided by the primary advisor and their department.

Preference for graduate student stipends will be given to students in the PhD Program. Students receiving full stipends will be expected to work 20 hours per week on faculty projects and students are expected to maintain full-time status.

B. CONTINUATION OF FINANCIAL AID

Students who are awarded financial aid must maintain satisfactory academic progress with satisfactory performance of assistantship duties (when applicable). Satisfactory academic progress includes registering for a minimum of 9 graduate-level credits each Fall and Spring semester, and maintaining a minimum cumulative 3.0 GPA.

The Faculty Advisor will establish the RA's responsibilities and performance standards. In the event of an unsatisfactory performance by an RA, the advisor will notify the student and the Program Committee at least four weeks prior to terminating the assistantship.

The Director of the course in which the student teaches will establish the TA's responsibilities and performance standards. In the event of an unsatisfactory performance

by a TA, the Course Director will notify the student and the Program Committee of the academic department offering the course. The Committee may recommend termination of the assistantship to the Department Chair.