

GRADUATE STUDENT INFORMATION HANDBOOK

**DEPARTMENT OF
NATURAL RESOURCE
ECOLOGY AND MANAGEMENT**

IOWA STATE UNIVERSITY

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INTRODUCTION

This handbook describes the graduate programs, policies, and operating procedures of the Department of Natural Resource Ecology & Management (NREM) at Iowa State University. The Graduate Admissions Committee of the Department assembled it to provide a supplement to the Graduate College Handbook. It is intended to provide explanations and guidelines to graduate students and graduate faculty in NREM.

OTHER SOURCES OF INFORMATION AT ISU

NREM Graduate Student Information Handbook 2021: Find this handbook online at: <https://www.nrem.iastate.edu/academics>

ISU Catalog -- Courses and Programs (general catalog): Includes the academic calendar, a complete list of faculty, admission and registration procedures, fees and expenses, student regulations, housing and services, student activities, descriptions of all courses and a section devoted to graduate students. The bulletin is accessible at: <http://catalog.iastate.edu/>

Schedule of Classes: Gives the specific courses offered and meeting times for each semester and summer session. The web site for the Schedule of Classes is: <http://classes.iastate.edu>

University Policy Library: <http://policy.iastate.edu>, policies and procedures on all university matters.

Iowa State Daily: The ISU newspaper. It carries announcements of academic events and is available at various campus locations. It may also be found at: www.iowastatedaily.com

Iowa State University Telephone Directory -- Faculty/Staff/Students: Academic and campus events calendars, names and addresses of Departments, university offices, faculty, staff and students, and other university related information are found on the ISU website. An abbreviated directory of faculty and staff is also printed in the back of the Ames phone book. Copies of these are available for student use in the NREM Student Services Center or the Departmental office.

Web page: The Department maintains a home page at: www.nrem.iastate.edu. Materials and ideas for inclusion may be directed to NREM IT.

A Guide to the Parks Library General Collection: Available at the Help and Information desk in the library lobby. A more detailed guide, the Library 160 Independent Study Manual is sold at the University Bookstore. Most library information is available by accessing the website: www.lib.iastate.edu

Graduate College Handbook: Contains detailed information on Graduate College procedures, including a checklist of what should be done and when. The handbook is accessible at the Graduate College web site: <https://www.grad-college.iastate.edu/handbook/>

ISU Graduate College Thesis Checklist: Rules for preparation of ISU theses and dissertations. The checklist is accessible at the web site: <http://www.grad-college.iastate.edu/thesis/>

ADMINISTRATION

NREM is administered in the College of Agriculture and Life Sciences; the Dean's office is located at 138 Curtiss Hall. Graduate students are enrolled in the Graduate College, 1137 Pearson Hall. Most of our research activities are administered through the Iowa Agriculture and Home Economics Experiment Station. The Iowa Cooperative Fish and Wildlife Research Unit (Coop Unit), a cooperative effort of the university, the U.S. Department of Interior, the Iowa Department of Natural Resources, and the Wildlife Management Institute, is an integral part of our Department.

Director of Graduate Education (DOGE): Julie Blanchong, 205 Science II

Graduate Student Administrative Specialist: Sandra Schroeder, 339 Science II

The Department has strengths in the ecological sciences; applications of ecology, social and managerial sciences to the protection and utilization of renewable resources on a sustainable basis; human dimensions of resource management and utilization; and dissemination of information on ecology and natural resource management to the public, corporations, and government and non-government agencies.

The research program is conducted at several levels of biological integration, ranging from the study of individual plants and animals to populations and communities to small- and large-scale ecosystems. These efforts support a better understanding of the ecology, management and utilization of natural resources. An over-riding goal is to better sustain our natural resources in terms of diversity, resiliency and productivity.

GRADUATE DEGREE REQUIREMENTS

The Department offers M.S. and Ph.D. degrees in Fisheries Biology, Forestry, and Wildlife Ecology. Students may also select interdepartmental graduate majors in Biorenewable Resources Technology, Ecology and Evolutionary Biology, Environmental Science, Genetics and Genomics, Immunobiology, Microbiology, Plant Physiology, Sustainable Agriculture, and Toxicology.

NREM Graduate Faculty:

See current list on NREM website <https://www.nrem.iastate.edu/people/231>

MASTER OF SCIENCE DEGREES

A. Graduate College Requirements - all majors. See Graduate College Handbook <https://www.grad-college.iastate.edu/handbook/>

1. **English:** New teaching assistants whose native language is not English are evaluated before their first teaching assignment using the SPEAK/TEACH tests. These tests are administered by the Graduate College before the beginning of each semester. The Graduate Program Secretary has information.
2. **Foreign Language:** None.
3. **Residence requirement:** There is no on-campus residence requirement for the M.S. degree other than that dictated by course work.
4. **Time limits:** The Graduate College has a time-to-degree limit for both MS and PhD programs of 7 years. In special cases involving medical or other extenuating circumstances the student's POS committee may recommend that the Graduate Dean extend this time limit.
5. **Minimum credits:** Semester credits of acceptable graduate work must be completed, not less than 22 of which must be earned at ISU. A Program of Study Form (POS) (developed by the student, major professor, and the Program of Study committee) should be routed for approval by the end of the second semester. Graduate credits earned at another institution (or through a distance education program) may be transferred if the grade was B or better. Such courses must be acceptable toward an advanced degree at that institution and must have been taught by individuals having faculty status at that institution. These credits may be included on the POS with committee approval.
6. **Minor:** Students may declare a formal minor in any Department or interdepartmental unit authorized to grant such minors. Requirements for declared minors are determined by the minor Department or program and coordinated by the faculty member representing the minor Department on the POS committee. For a minor to appear on the transcript, it must be approved on the POS and listed on all examination reports and the Application for Graduation slip.
7. **Final oral exam:** A final oral examination must be held by the deadline date for the semester in which the degree is granted. All coursework on the POS study must either be completed or in progress before the final oral examination can be scheduled. This examination is oral; it may also include a written component if specified by the student's POS committee.

B. NREM Requirements

1. **Departmental M.S. degree requirements - thesis option.** These requirements pertain to all M.S. degree students whose home Department is NREM regardless of their major.

- a. **Research proposal procedures:** All M.S. degree students must prepare a research proposal and present an outline of the proposed research to the POS committee. The proposal should be prepared and presented before the end of the second semester of enrollment.
- b. **Thesis:** All graduate theses must comply with the requirements and deadlines established by the Graduate College as stated in the Thesis Checklist. Students should become thoroughly familiar with the instructions on the checklist. The current Thesis Checklist is available online at: <https://www.grad-college.iastate.edu/thesis/checklist/>

Those students pursuing the thesis option are expected to complete a thesis produced from original research. Students are also expected to prepare at least one manuscript for publication in a professional journal.

Copies of the thesis must be distributed to the POS committee at least two weeks prior to the final examination.

- c. **Teaching or oral technology transfer experience:** Each student is responsible for meeting the teaching/oral technology transfer requirement and the faculty are responsible for providing each student with a positive, meaningful experience. The purpose of the experience is to strengthen the graduate's qualifications for academic, public, or industrial employment.

A student in an M.S. program can satisfy this requirement by planning and presenting at least one unit of subject matter in a course or extension workshop; the student may volunteer for greater participation in the instruction of the course or workshop. A student with an interest in either an undergraduate or a graduate course or specific outreach program may approach the instructor/lead facilitator about assisting. Alternatively, a faculty member may suggest that a student help with the instruction in a particular setting. Students will document the teaching-related activities during the semester and submit the documentation to the POS committee. The student will be given 1 credit in NREM 598 (Teaching Practicum) for the teaching experience. This course will be graded on a satisfactory-fail basis.

- d. **Seminar:** Formal, oral presentations are an essential component of the training program in graduate studies. Prior to the final oral examination, each student is required to present his/her M.S. thesis research or creative component results in a seminar *open to all faculty, staff, and students*.

2. Departmental M.S. degree curriculum requirements - thesis option. These requirements pertain only to M.S. degree students with majors offered by the NREM Department.

- a. **Foreign language:** none, but a second language may be required by the POS committee.
- b. **Minimum credit hour requirements:** 30 credit hours of acceptable graduate work, including at least 15 credit hours of graduate-level coursework and at least 10 credit hours of research (A ECL, FOR, NREM 699) must be earned for the M.S. Credit in

500 and 600 level seminars counts as coursework. At least 22 credit hours (including A ECL/FOR/NREM 699 research) must be earned under the supervision of the student's POS committee at Iowa State, and at least 7 credit hours must be taken from courses outside the NREM Department.

- c. Applicable courses:** Graduate courses at Iowa State are numbered in the 500 and 600 series. Graduate students may receive graduate credit for lower numbered courses in other Departments if they are approved for non-major graduate credit by the offering Department. The catalog description of each Department lists the courses offered for non-major graduate credit. No undergraduate courses offered by the NREM Department may be used for graduate credit unless they are dual-listed at the 500-level, with extra work required for graduate credit. Graduate transfer credits may be applied with the restrictions discussed under "minimum credits" in the Graduate College Requirements section in the Graduate College Handbook. Normally, graduate credits of B grade or better earned at another institution are included in the coursework for the POS, with committee and Graduate College approval. Such courses must have been acceptable toward an advanced degree at that institution and must have been taught by individuals having graduate faculty status at that institution.
- d. Statistics:** One 500-level or above course in statistics is required for all students

3. M.S. in Fisheries Biology

- a.** Preparation for an advanced degree should include work equivalent to a B.S. in biological science, including courses in biology, aquatic botany, ecology, ichthyology, limnology, fisheries biology, and aquaculture.

Upon enrollment, students with limited background in these areas may be required to complete course work in relevant 300- or 400-level courses to ensure success in the graduate curriculum, as recommended by the graduate Admissions Committee in consultation with the DOGE, the student's major professor, and POS Committee.

- b.** Two 500-level or above courses in statistics.
- c.** An M.S. program should include one or more graduate courses in fisheries or related areas offered by the NREM Department.

4. M.S. in Forestry

- a.** Preparation for an advanced degree should include work equivalent to a B.S. in biological or environmental science, including courses in forestry, biology, botany, environmental science, ecology, hydrology, economics, or wood science.

Upon enrollment, students with limited background in these areas may be required to complete course work in relevant 300- or 400-level courses to ensure success in the graduate curriculum, as recommended by the Graduate Admissions Committee in consultation with the DOGE, the student's major professor, and POS Committee.

- b. STAT 587 (or equivalent) is required.
- c. An M.S. program should include two forestry courses at the 500- or 600-level.

5. M. S. Wildlife Ecology

- a. Preparation for an advanced degree should include work equivalent to a B.S. in biological science, including courses in biology, ecology, and wildlife biology.

Upon enrollment, students with limited background in these areas may be required to complete course work in relevant 300- or 400-level courses to ensure success in the graduate curriculum, as recommended by the Graduate Admissions Committee in consultation with the DOGE and the student's major professor and POS Committee.

- b. Two quantitative courses, including STAT 587 and an additional 3 credit hours in a 500-level STAT course, AECL 611, or from seminars, special studies, or experimental quantitative courses approved by the POS committee and DOGE.

One course from the following:

A ECL 516	Avian Ecology
A ECL 531	Conservation Biology
A ECL 551	Wildlife Behavioral Ecology
A ECL 589	Population Ecology
A ECL 554	Wildlife Disease Ecology

- c. One additional 3 credit hour course offered by the NREM Department.

In addition to the above requirements, graduate students are strongly encouraged to develop competency in plant ecology. Federal employment as a wildlife biologist and professional certification by The Wildlife Society both require 9 credit hours in plant sciences at either the undergraduate or graduate level. We also strongly encourage students to take at least 1 course in the area of natural resource policy, administration, or human dimensions.

6. Departmental M.S. degree requirements - non-thesis option

- a. **Overview:** This degree program provides a broad experience in ecological, environmental, and related areas so that individuals will be prepared for career advancement with natural resources organizations in government and the private sector. Whereas the traditional thesis-based M.S. degree is academically specialized and emphasizes research preparation, the non-thesis option is more general in orientation, involves student preparation of a "creative component," and is generally not an appropriate degree for those interested in pursuing a career or advanced study in research. The non-thesis option is designed to produce graduates who wish to develop professional skills and apply knowledge that is broadly relevant to natural resources conservation and management. It is intended to serve individuals with somewhat non-traditional backgrounds, as well as practicing natural resource professionals who want to advance their careers through education, perhaps through cooperative arrangements with their employers. Some students in the program will take courses on a part-time basis while continuing employment, or they may take leaves of absence from employment for

periods of academic study.

- b. Foreign language:** none
- c. Minimum credit hour requirements:** 30 credit hours of graduate coursework plus a 3-credit creative component (A ECL/FOR/NREM 599) are required. At least 22 credit hours must be earned from ISU under the supervision of a POS committee. Credit in 500- and 600-level seminars counts as coursework. With POS committee approval, a student may also apply up to 8 graduate credits of regular and distance delivered graduate-level courses from other reputable universities. There is no limit to the number of ISU off-campus courses that may be taken. In addition to the creative component credits, a minimum of six credits of Departmental courses must be taken.

The student, the supervisory major professor, and the POS committee will design a program to meet the student's needs and interests. However, to provide some structure for a diverse clientele while maintaining quality, students are strongly encouraged to pursue coursework from each of the following categories: ecology and natural resources (at least 12 credits); (2) communications, (3) data and information management; and (4) human dimensions, policy, economics, and business. The POS committee may approve additional courses.

- d. Creative component:** The creative component generally will take the form of an in-depth analysis of a given problem or topic culminating in a specific set of conclusions or recommendations. In nearly all cases, the final creative component will require a substantial written report or a multimedia presentation. A creative component proposal must be prepared and presented to the POS committee during the first eight months after admission and prior to commencement of work on the creative component.
- e. Teaching or Oral Technology Transfer:** Students in a non-thesis M.S. program can satisfy this requirement in a number of ways depending on their current employment situation and future career goals. The key elements of the experience should include organizing at least one unit of subject matter and orally presenting at least one session on this information to students or to a stakeholder group. This could be done for an on-campus course or off-campus extension workshop, agency meeting, or other public forum.

Non-thesis students are encouraged to develop their own ideas of how to best meet this requirement within their own context of job responsibilities or professional group participation. Alternatively, a faculty member may suggest a particular course or extension workshop where the student could be involved. The student develops a plan with the major professor and other pertinent individuals and provides the POS committee with a one-page description for approval.

Students will document the teaching or technology transfer activities and submit the documentation to the POS committee. At least one NREM faculty member should be in attendance for the oral presentations. The student may be given one credit in NREM 598 (Teaching Practicum) for the teaching experience. This course will be graded on a satisfactory-fail basis.

- f. **Seminar:** Formal, oral presentations are an essential component of the training program in graduate studies. Prior to the final examination, each student is required to present his/her M.S. creative component results in a Departmental seminar *open to all faculty, staff, and students*.

C. M.S. in Interdepartmental Graduate Majors

Students enrolled in an interdepartmental graduate major must also complete the NREM M.S. degree requirements that pertain to all majors (see Section B.1).

DOCTOR OF PHILOSOPHY DEGREES

A. Graduate College Requirements - all majors. Graduate College Handbook

<https://www.grad-college.iastate.edu/handbook/>

1. **English:** Non-native speakers must take the English Placement Test, a test of English grammar, usage, spelling, and punctuation, at the beginning of the first semester. Students not passing this test must take one or more courses in English. For information, contact the Graduate College or the Student Services Center.

New teaching assistants whose native language is not English are evaluated before their first teaching assignment using the SPEAK/TEACH tests. These tests are administered by the Graduate College before the beginning of each semester.

2. **Foreign Language:** Each Department establishes its own foreign language requirement. See the general requirements for all Ph.D. degrees in the NREM Department.
3. **Residence requirement:** Campus residency is highly recommended for the PhD. Of the 72 graduate credits required for a PhD, at least 36 credits, including all dissertation credits, must be earned at ISU.
4. **Time limits:** The Graduate College has a time-to-degree limit for both MS and PhD programs of 7 years. In special cases involving medical or other extenuating circumstances the student's POS committee may recommend that the Graduate Dean extend this time limit.
5. **Minimum credits:** At least 72 semester credits of acceptable graduate work must be earned for the Ph.D. At least 36 credits, including all dissertation credits must be earned under the supervision of the student's POS committee at Iowa State. Graduate credits earned at another institution with a B grade or better may be included on the POS study, with committee and Graduate College approval. Such courses must have been acceptable toward an advanced degree at that institution and must have been taught by individuals having graduate faculty status at that institution.
6. **Minor:** Students may declare a formal minor in any Department or Interdepartmental program authorized to grant such minors. Requirements for declared minors are determined

by the minor Department or program and coordinated by the faculty member representing the minor Department on the POS committee. To have a minor placed on the transcript after graduation, it must be approved on the POS and listed on all examination reports and the Application for Graduation form.

7. **Preliminary oral exam:** Students must satisfactorily pass a preliminary examination before becoming a doctoral candidate. This exam is comprehensive and should not be restricted only to the content of graduate courses. More details about purpose, expectations, and exam format are provided later in this document.

Despite efforts to achieve full, in-person participation, students may discover that one or more committee members cannot be physically present on campus. In such cases, the member who cannot be physically present for the examination may participate remotely if the arrangement is agreeable to all committee members and that person is engaged in the session for its entirety. A student can arrange for this participation with approval of a Preliminary or Final Oral Examination with Committee Member at a Distance form, submitted by the distance committee member prior to the exam.

The preliminary exam must be completed at least six months before the final examination. After successful completion of the oral examination the student is admitted to candidacy for the Ph.D. degree. A Preliminary Oral Exam Request must be submitted to the Graduate College at lead two weeks before the date of the exam.

8. **Final oral exam:** Ph.D. candidates must pass a final oral examination at the time all degree work, including the dissertation, is completed and the GPA above 3.00. This exam is ordinarily focused on the dissertation but may be more comprehensive in nature. A Request for Final Oral Examination must be submitted to the Graduate College. Graduate students must be registered for a minimum of one credit during the semester in which the oral exam is taken.

B. NREM Requirements

1. **Departmental Ph.D. requirements:** These requirements pertain to all Ph.D. degree students whose home Department is NREM regardless of their major.
 - a. **Research proposal procedure:** All Ph.D. degree students must prepare a research proposal and present an outline of the proposed research to the POS committee. The proposal should be prepared and presented before the end of the second semester of enrollment.
 - b. **Dissertation requirements:** Each student is expected to complete a dissertation produced from original research. Students are also expected to prepare at least one manuscript for publication in a professional journal. This requirement may be met either by including the manuscript as part of the dissertation (alternate thesis format) or by submitting the manuscript to the major professor prior to the final oral examination.

All graduate dissertations must comply with the requirements and deadlines established

by the Graduate College as stated in the Thesis Checklist in the Graduate College Handbook.

Copies of the completed dissertation must be distributed to the POS committee at least two weeks prior to the final examination.

- c. Teaching or oral technology transfer experience:** Each student must perform a formal college-level teaching experience. The purpose of the experience is to strengthen the graduate's qualifications for academic, public, or industrial employment. A student can satisfy this requirement by (1) teaching a seminar or course in the NREM curriculum, (2) providing instruction for a series of outreach/extension events, or (3) assisting an instructor in a substantive manner in a course for one semester. The student should be directly involved in planning subject matter and responsible for teaching that subject matter for a minimum of three weeks in either lecture or laboratory or both. A student with an interest in either an undergraduate or a graduate course or particular outreach/extension program may approach the course instructor about assisting them. Alternatively, a faculty member may suggest that a student help with the instruction in a particular course. The student would develop a plan with the major professor and the instructor and provide the POS committee with a one-page description for approval prior to implementation of the plan.

Students will document the teaching or oral technology transfer related activities during the semester and submit the documentation to the POS committee. The student may be given 1 credit in NREM 698 (Teaching Practicum) for the teaching experience. This course will be graded on a satisfactory-fail basis.

- d. Seminar:** Formal, oral presentations are an essential component of the training program in graduate studies. Prior to the final examination, each student is required to present his/her Ph.D. dissertation research results in a Departmental seminar *open to all faculty, staff, and students*.
- 2. Departmental Ph.D. curriculum requirements:** These requirements pertain only to Ph.D. degree students with majors offered by the NREM Department.
- a. Foreign language:** There is no requirement of foreign language in the NREM Department. The student's POS committee, however, may require a foreign language competence as they so determine.
- b. Minimum credit hour requirements:** 72 credit hours of acceptable graduate work, including at least 36 semester hours of graduate level course work and at least 30 credit hours of research (A ECL, FOR, NREM 699), must be earned for the Ph.D. (which may include credits earned for the M.S.). Research credits (A ECL, FOR, NREM 699) will be graded on a satisfactory-fail basis. Credit in 500- and 600-level seminars counts as coursework. At least 36 credit hours (including A ECL, FOR, NREM 699 research) must be earned under the supervision of the student's POS Committee at Iowa State, and at least 12 hours must be taken as courses outside the NREM Department.
- c. Applicable courses:** Graduate courses at Iowa State are numbered in the 500 and 600

series. Graduate students may receive graduate credit for lower numbered courses if they are approved for non-major graduate credit by the offering Department. The catalog description of each Department lists the courses offered for non-major graduate credit. No undergraduate courses offered by the NREM Department may be used for graduate credit. Normally graduate credits of B grade or better earned at another institution are included in the course work for the POS, with Committee and Graduate College approval. Such courses must have been acceptable toward an advanced degree at that institution and must have been taught by individuals having graduate faculty status at that institution.

d. Statistics: Two 500-level or above courses in statistics are required for all students.

3. Ph.D. in Fisheries Biology

a. Preparation for an advanced degree should include work equivalent to an M.S. in biological science, including courses in ecology, ichthyology, limnology, fisheries biology, and aquaculture.

Upon enrollment, students with limited background in these areas may be required to complete course work in relevant 300- or 400-level courses to ensure success in the graduate curriculum, as recommended by the Graduate Admissions Committee in consultation with the DOGE and the student's major professor and POS Committee.

b. A Ph.D. program should include two graduate courses in fisheries or related areas offered by the NREM Department. Graduate seminars do not meet this requirement.

4. Ph.D. in Forestry

a. Preparation for an advanced degree should include work equivalent to an M.S. in biological science, including courses in forestry, biology, botany, ecology, hydrology, environmental science, economics, or wood science.

Upon enrollment, students with limited background in these areas may be required to complete course work in relevant 300- or 400-level courses to ensure success in the graduate curriculum, as recommended by the Graduate Admissions Committee in consultation with the DOGE and the student's major professor and POS Committee.

b. Coursework should include completion of: a) 14 credits of research (FOR 699) beyond the M.S. program; b) 3 additional forestry courses at the 500- or 600-level; and c) courses in science basic to the area of specialization and necessary to apply the basic science to forest resource problems.

c. STAT 587 (or equivalent) and at least one additional graduate-level course in statistics are required.

d. At the discretion of the student's POS committee, previous graduate course work may be applied on the student's Ph.D. POS study within the limits prescribed by the Graduate College.

5. Ph.D. in Wildlife Ecology

- a. Preparation for an advanced degree should include work equivalent to an M.S. in a biological science, including courses in ecology and wildlife biology.

Upon enrollment, students with limited background in these areas may be required to complete course work in relevant 300- or 400-level courses to ensure success in the graduate curriculum, as recommended by the Graduate Admissions Committee in consultation with the DOGE and the student's major professor and POS Committee.

- b. In addition to M.S. degree requirements, 3 additional credit hours are required in courses offered by the NREM Department.

In addition to the above requirements, graduate students are strongly encouraged to develop competency in plant ecology. Federal employment as a wildlife biologist and professional certification by The Wildlife Society both require nine credit hours in plant sciences at either the undergraduate or graduate level.

C. Ph.D. in Interdepartmental Graduate Majors

Students enrolled in an interdepartmental graduate major must also complete NREM Department Ph.D. degree requirements that pertain to all majors (see Section B.1).

MAJOR PROFESSOR, POS COMMITTEE, AND EXAMS

A. Responsibilities of the Major Professor: The major professor serves as the chair or co-chair of the POS committee. The major professor assists students with: (1) establishment of a program of study (POS), (2) selection of members of the POS committee (3) direction and advice during the research program, and (4) review and editing of the thesis or dissertation.

B. Responsibilities of the POS committee: Each student has a POS committee. Students are encouraged to set up their POS committee soon after the first semester of graduate study because the POS form must be submitted to the Graduate College prior to the end of the second semester of residence for both M.S. and Ph.D. students. Students meet with their major professor and discuss possible members (requirements are given in the Graduate College Handbook). When the student and the major professor have agreed on the composition of the POS committee, the student should visit with each of the prospective members and ask them if they are willing to serve. The student must submit the POS form online.

The POS Committee:

1. Approves the POS form prior to submission to the Graduate College online. The POS committee may recommend courses or require a foreign language if it is pertinent to the student's program, and must approve graduate transfer credits from another institution.
2. Advises the student regarding the research plan for the thesis or dissertation.
3. Administers the preliminary examination for students in the Ph.D. program.

4. Administers the final oral exam for both M.S. and Ph.D. candidates.
5. Approves the M.S. thesis and Ph.D. dissertation.

C. Research and Thesis: All thesis-option graduate degrees in the Department require research and the preparation of a thesis or dissertation. Thesis research is a critical component of the graduate program and will demand an appreciable portion of the student's time. A written research plan (objectives, methods, state of knowledge, etc.) must be prepared and presented to the POS committee for approval by the end of the 2nd semester after enrollment.

D. Graduate Examinations: Students should consult the Graduate College Handbook (<https://www.grad-college.iastate.edu/handbook/>) and/or the Graduate College web site (<http://www.grad-college.iastate.edu/>) to determine the forms and the timing of their submission that are required in preparation for graduate exams.

1. Final oral examination for M.S. degree (thesis and non-thesis options):

A final oral examination is taken by all M.S.-level students, covering the field of study and the thesis or creative component. The exam is given by the student's POS committee, and details of content and format are the responsibility of that committee. The major professor will chair the examination session. The schedule for the final examination, and the Departmental seminar preceding the final exam, are arranged by the student in consultation with the major professor and other committee members.

The objectives of the final examination are to: (1) provide an opportunity for the committee to assess the ability of the student to synthesize and integrate principles from their studies and bring them to bear on the solution of natural resource-related problems, and (2) provide an opportunity to assess the ability of the student to articulate and defend ideas central to their thesis/creative component.

Procedures and requirements for the final examination are set forth by the Graduate College in the Graduate College Handbook. A Request for Final Examination form must be submitted at least three weeks prior to the examination date. The final examination will be preceded by a Departmental seminar in which the student presents his/her thesis or creative component results. During the final exam the POS committee will identify any modifications to the thesis or creative component that are required before its final approval.

2. Preliminary Examination for Ph.D. degree:

Each student must pass a preliminary examination before that student is granted advancement to candidacy for the Ph.D. degree. In NREM, the examination is both written and oral. The details of content and the format of the examinations are the responsibility of the student's POS committee.

Objectives of the preliminary examination for the Ph.D. are:

1. To provide a learning experience for the student by formally requiring self-examination and integration of basic principles from several areas of coursework, with the opportunity for discussion of these ideas with several persons qualified in the student's special area of

interest and in allied areas.

2. To assess the suitability of the student as a candidate for the Ph.D. by determining whether the student has assimilated, synthesized, and integrated principles from various areas of study and can bring these to bear on the solution of natural resource problems and can also communicate the results of this process by both written and oral means.

To satisfy these objectives, the Department suggests that the POS committees use the following guidelines for content, format, and timing of the preliminary oral examination:

1. The preliminary exam must be completed within the first three years of enrollment in the graduate program and at least six months before the final oral examination.
2. The examination should consist of both written and oral parts as follows:

Written:

- a. The written examination should precede the oral examination by not less than two weeks, and not more than four weeks.
- b. The exam should be scheduled to accommodate at least one half-day for each POS committee member who submits questions.
- c. At least one question should be solicited from each member of the POS committee, with the major professor ensuring that the total number of questions and time expectations are appropriate. In general, the questions should relate to the subject matter, ideas, and principles in the areas of specialization of the members of the student's POS committee.
- d. Copies of all of the questions, and the student's answers to these questions, should be made available to each member of the student's POS committee at least one week before the oral examination.
- e. For students who have declared a minor in another Department, the examination to cover the minor shall be as specified by that Department or its representative(s) on the student's POS committee. Similarly, for students who have a co-major with another Department, the examination to cover the other field shall be as specified by that Department or its representative(s) on the student's POS committee.

Oral:

The format of the oral part of the preliminary examination is unspecified. Some objectives of the preliminary oral examination can best be achieved only by an unstructured oral questioning and by discussion between the student and the members of his/her POS committee. Oftentimes committee members may ask questions as a follow-up to topics addressed in the written exam. The learning experience objective can only be satisfied if there is a sufficient period for study and reflection between the written and the oral examinations.

Procedure:

- a. Arrangements for the written and oral preliminary examinations should be made by the student with his/her POS committee. The major professor will chair the examination session. A *Request for Preliminary Oral Examination* form should be submitted to the Graduate College two weeks before the date of the presentation.

- b. The *Report of Preliminary Oral Examination* form should be submitted immediately following the oral examination to the Graduate College. The student should walk the original copy of the report form to the Graduate College and disperse the other copies to the major professor and the graduate secretary.

3. Final oral examination for Ph.D. degree:

A final oral examination is taken by all Ph.D. students, covering the field of study and the dissertation. The exam is given by the student's POS committee, and details of content and format are the responsibility of that committee. The major professor will chair the examination session. The schedule for the final oral examination, and the Departmental seminar preceding the final oral exam, are arranged by the student in consultation with the major professor and other committee members.

The objectives of the final oral examination are to: (1) provide an opportunity for the committee to assess the ability of the student to synthesize and integrate principles from their studies and bring them to bear on the solution of natural resource-related problems, and (2) provide an opportunity to assess the ability of the student to articulate and defend ideas central to his/her dissertation.

Procedures and requirements for the final oral examination are set forth by the Graduate College in the Graduate College Handbook.

A *Request for Final Oral Examination* form must be submitted at least three weeks prior to the examination date. The final oral examination will be preceded by a Departmental seminar in which the student presents his/her dissertation results. During the final oral exam the POS committee will identify any modifications to the dissertation that are required before its final approval.

E. Required forms – M.S. and Ph.D. degrees: There are several forms used by the Graduate College that must be completed for various purposes. They can be found on the Graduate College website <https://www.grad-college.iastate.edu/student/forms/>

Those most frequently used are:

- Program of Study (POS) Form
- Application for Graduation (Diploma Slip)
- Request for Preliminary Oral Examination
- Request for Final Oral Examination

F. Writing Thesis in Absentia: When courses, research, and other requirements except the writing of the thesis are completed, students sometimes take a job with the notion that they will write the thesis in absentia. This is strongly discouraged. Most who have tried this have found that the time demands of a new job, and many other new commitments, leave little time for the writing of the thesis or dissertation. Services such as the library, computer center, statistical consultants, etc. are not available, nor are there large blocks of time to digest data and write. Students who leave before finishing the degree are required to move all personal possessions out of their university office space.

CHECKLIST FOR COMPLETION OF NREM GRADUATE REQUIREMENTS

Student: _____
Degree Sought: _____ Date Started at ISU: _____
Major Professor: _____ Co-advisor (if any): _____
Major: _____ Minor or Co-Major: _____

Times when each academic requirement should be completed are indicated in parentheses. For several of the requirements, Graduate College forms must be completed. For each requirement listed below, the date when the requirement is completed should be written down (either by the student or the major professor). The major professor should initial the date to verify its accuracy.

Graduate English Exam (during 1st semester): _____

POS committee formed (within 1st two semesters): _____

Program of Study Approved by the POS committee (by the end of the first year): _____

Thesis/Dissertation/Creative Component Proposal presentation: _____
(by the end of the 2nd semester after enrollment)

Teaching Experience/Oral Technology Transfer Completed (before final oral exam): _____

Request for Ph.D. Preliminary Oral Exam (due 2 weeks before the prelim): _____

Ph.D. Preliminary Oral Exam (within first 3 yrs. of enrollment; > 6 mo. before final): _____

Application for Graduation: (due by Friday of the first week of the semester for fall and spring and the last week of spring semester for summer graduation): _____

Request for Final Oral Exam (due at least 3 weeks before the final exam): _____

Final Submission of Thesis/Dissertation to POS committee _____
(thesis/dissertation must be given to POS committee and at least 2 weeks before the final exam.)

Final Research Seminar (this should precede the final exam.): _____

Final Oral Exam: _____

Graduation: _____

GRADUATION

- A. Diploma:** The diploma will indicate the major the student has chosen, not the Department name. An *Application for Graduation (diploma slip)* must be filed by Friday of the first week of classes for fall and spring semesters and by Friday of the last week of spring semester for summer graduation beginning the semester in which a student expects to graduate. The form is available on the Graduate College website. A new application for graduation must be filled out for a subsequent semester if graduation did not occur as planned.
- B. Holds on graduation for outstanding financial obligations:** It is an Iowa State University policy that students who have outstanding financial obligations with the University will be permitted to participate in graduation ceremonies, but will not be able to obtain the diploma or copies of the transcript. Several campus offices provide the Accounts Receivable Office with lists of students who have outstanding financial obligations, and holds are placed on their files. Where sufficient notice has been given that a student is expected to graduate at the end of a particular semester, every attempt is made to notify the student that he/she must arrange for payment prior to graduation.
- C. Hoods:** Candidates for the degree Ph.D. may use a hood provided by ISU or may rent or purchase a hood through the University Book Store. Arrangements for the hood should be made with the Registrar's Office at least six weeks prior to graduation and are to be returned following the ceremony.

STUDENT STATUS, TUITION, AND FEES

Graduate students are enrolled for a combination of coursework and/or research credits during each semester in residence. Graduate students are accepted into the Department based upon the willingness of a faculty member to serve as major professor, availability of support (RA or TA), matching interests with a faculty member, and appropriate academic backgrounds and work experience. Every effort is made to provide graduate students with financial support year-round, but this is contingent upon availability of funds.

- A. Registration requirements:** It is required that graduate students enroll as full-time students during spring and fall semesters in which they receive an assistantship stipend. Students on a 1/2-time teaching assistantship (TA) or research assistantship (RA) should register for up to twelve credits in both fall and spring semesters unless their advisors indicate otherwise. During summer, students may register for summer courses or research credit on an as-needed basis. A minimum of 1 credit is necessary for summer registration and students can enroll in GR ST 633 or a research credit to maintain enrollment for assistantship purposes. No student may hold a graduate assistantship or University-administered fellowship unless currently enrolled in the Graduate College (degree basis). RAs and TAs must be registered each semester in order to be paid by the University. Students not on assistantships (rare in NREM) have different registration and associated tuition expectations and should meet with their advisors to discuss registration.

Ph.D. students who leave campus for one or more semesters before receiving their degrees and after successful completion of their preliminary examination must pay the continuous registration "R" fee for maintenance of their records each semester they are absent and not using university facilities or faculty time. Students must be registered for at least one credit during the semester in which they take their final oral exam. Ph.D. students who have passed preliminary oral exams must be registered every term until they take their final exam oral.

B. Tuition Scholarships: All graduate assistants (one-quarter time or more) who are on appointment for at least three months during the fall and spring semesters are assessed full resident (in-state) tuition regardless of the number of credit hours for which they are registered. Students may elect to register for courses in summer and will be assessed tuition and fees accordingly. The amount of a tuition scholarship is as follows:

- For an M.S. student:
 - 50% of **full** resident tuition per semester for each student on an assistantship appointment of 1/2-time or more or
 - 25% of **full** resident tuition per semester for each student on an assistantship appointment of 1/4-time or more, but less than 1/2-time.
- For a Ph.D. student:
 - 100% of **full** resident tuition per semester for each student on an assistantship appointment of 1/2-time or more or
 - 50% of **full** resident tuition per semester for each student on an assistantship appointment of 1/4-time or more, but less than 1/2-time.

FINANCIAL ASSISTANCE OPPORTUNITIES

A. Departmental Scholarships: NREM has several scholarships to award to graduate students. Application materials and deadlines are available at <https://www.nrem.iastate.edu/content/graduate-student-scholarships>. Questions about the awards or process may be directed to the Student Services Center.

B. Loan Funds: Limited funds are available in the Department for loans to students to assist with extenuating circumstances. Selection of recipients will be based on criteria established in the various Memoranda of Agreement in effect for a particular loan fund at the time. A graduate student who, with the concurrence of his or her major professor, feels that they are faced with extenuating circumstances should contact the Department Chair to discuss possibilities for a Departmental loan.

EMPLOYMENT POLICIES

Most graduate students in NREM are employed by the Department as teaching assistants (TAs) and/or as research assistants (RAs). At the time of appointment of new or continuing students, graduate students sign a Letter of Intent (LOI) from the Department that outlines the specific time and stipend for appointment. This document is a contract between the graduate student and the Department. A new LOI must be prepared and signed whenever there is a change in the appointment. The Department Chair is responsible for processing official personnel forms but the major professor and the graduate student should be aware that these forms must be revised annually.

A. Bases of employment - C Base: The C-base is assigned to all graduate assistants and fellows who may be appointed for various periods. Students placed on academic probation are eligible for assistantship appointment but may not be eligible to receive a tuition scholarship. Non-degree grad students are administered through the Graduate College and cannot be on appointment (only degree-seeking students can be on appointment). Guidelines for stipends of TAs and RAs are established by the Graduate College, but the Departmental minimum stipend level is set by the Department Chair, in consultation with the major professors. Stipends are usually similar for TAs and RAs but individual rates may vary depending on contract or grant circumstances and/or experience. TAs and RAs may receive salary increases, depending on budgetary circumstances and University requirements.

B. Insurance Benefits: All C-base graduate assistants receive single student coverage free of charge under the ISU Student Health Insurance Plan. Annual coverage for hospital, accident expenses, surgical care, and maternity care are included. Graduate assistants may also enroll their lawful spouse or domestic partner, and unmarried dependent children under age 26. A portion of the monthly premium will be deducted from the graduate assistant's paycheck when adding coverage for dependents. Dependents must be added within 30 days of your appointment date or with a qualifying event.

C. Taxes and payroll deductions: All TA and RA salaries are subject to federal and state withholding for income taxes. FICA is not withheld. Tuition remissions and scholarships are not considered taxable income because they are not available to all graduate students. Information on withholding for hospitalization and medical benefits may be obtained at the Benefits Office, Human Resource Services, room 0570 Beardshear, 294-2394.

D. Holidays: Nine scheduled holidays established in the official university calendar, as defined from Iowa Code Section 1C.1, include:

- New Year's Day (January 1)
- Martin Luther King Day (third Monday in January)
- Memorial Day (last Monday in May)
- Independence Day (July 4)
- Labor Day (first Monday in September)
- Thanksgiving Day (fourth Thursday in November)
- Friday after Thanksgiving Day
- Christmas Day (December 25)

- One additional day each year as determined by the university administration

When a holiday falls on a Saturday, the Friday preceding will be declared the holiday. When any holiday falls on a Sunday, the following Monday will be declared a holiday.

ASSISTANTSHIP APPOINTMENT GUIDELINES

The Department supports Teaching Assistantships (TAs) to assist in the undergraduate teaching program and Research Assistantships (RAs) to assist with grant-sponsored research. These are collectively termed Graduate Assistants (GA). Although responsibilities of TA employment often overlap with the educational goals and responsibilities for the degrees, there is no assurance that this will be the case. Responsibility for specific TA appointments and personnel matters rests with the Department Chair. The immediate supervisor of the graduate student is the major professor or professor in charge of the course. RAs are funded by extramural contracts and grants differ only in that more discretionary authority in setting stipend levels resides with the faculty who manage the accounts.

By Graduate College policy, only students admitted to, and enrolled in, a graduate degree program may hold assistantships. An assistantship awarded to a graduate student on probation must be approved by the Dean of the Graduate College term-by-term (each semester or each summer session). The Graduate College requires that graduate assistants register for credit each term that they hold an appointment.

The most common appointment is 1/2-time (minimally 20 hours/week) but 1/4-time appointments occur. Full-time appointments are permitted in summer only and for not more than three months. Three-quarter time appointments are permitted at any time for U.S. students and only during the summer term for persons on student and visitor visas. International students who are on curricula practical training (c.p.t.) are allowed up to three-quarter time appointments during the academic year.

TA appointments are most commonly made for the academic year, for either one or both semesters. Occasionally, summer TAs are available. TAs will be awarded by the Department chair based using the following guidelines:

1. Teaching experience, appropriate expertise, and the recommendation of the instructor.
2. Students lacking teaching experience will be considered based on recommendation of the instructor and teaching needs of the Department.
3. GPA of 3.0 or better.
4. Proficiency with spoken English.
5. Preference given to the following students:
 - a. Those advised by faculty in the Department of Natural Resource Ecology and Management.
 - b. Those who have previously held a TA, are in good academic standing, with satisfactory teaching evaluations, a recommendation of the instructor, and fill a Departmental teaching need.

RA appointments are made both for the academic year and summer, for time periods ranging

from two weeks to 12 months. It is possible for a student to hold a TA and a RA simultaneously, for example, serving on a quarter-time basis for each case.

Major professors annually request Departmentally administered teaching assistantships for their students. The Department chair is responsible for managing the Department's assistantship resources and for approving specific appointments. Most appointments for the next fiscal year are made early in spring semester but appointments may be made throughout the year.

It is Departmental philosophy to reappoint graduate assistants who are making reasonable progress toward completing their degree program and who perform their assistantship duties well. However, the permitted length of service of TAs and RAs is currently 7 years. All reappointments are contingent upon the availability of funds. Contractual terms often specify the duration of RAs supported by extramural funds.

At any time, a graduate assistantship may be terminated for one of the following reasons as indicated in the ISU Graduate Student Handbook:

- Failure to maintain minimum registration as a student,
- Neglect of duty or incompetence,
- Persistent refusal to follow reasonable advice and counsel of the faculty supervisor in carrying out assistantship obligations,
- Failure to maintain academic standing,
- Failure to comply with assistantship responsibilities, Departmental/program rules and regulations governing assistantships, or the terms of sponsored research agreements that fund the assistantship,
- A finding by a Research Misconduct Investigatory Committee constituted under the [University's Research Misconduct Policy](#),
- Personal conduct seriously prejudicial to the University, including violation of the Regents' Uniform Rules of Personal Conduct, state or federal law, [Student Disciplinary Regulations](#), and General University Regulations discussed in the "Student Life" section of the [Policy Library](#)

TA AND RA RESPONSIBILITIES

A. Responsibilities of TAs: Effective teaching is a two-way street for the student and the instructor, and both should be sensitive and responsive to student feedback related to the teaching performance. The quality of teaching reflects directly upon every staff member in the Department. Effective teaching requires serious thought and preparation.

1. TAs who have a 1/4-time appointment are expected to give, minimally, 10 hours of service per week. Teaching assistants who have a 1/2-time TA are expected to contribute a maximum of 20 hours of service per week.
2. A 1/2-time TA is usually assigned about six to nine hours of contact time per week in lab or recitation sections. The remainder of the time may be devoted to help proctor examinations, grade papers, set up demonstrations, repair equipment, clean up laboratories, maintain or assist in obtaining specimens, assist with maintaining computers, and any other preparations

for the lab exercises.

3. At the end of the course, all instructors, including TAs, are evaluated on a standardized form by their students. Later, a numerical summary of the evaluations is provided to all instructors.

B. Responsibilities of RAs: Research assistants work under the direction of a major professor or principal investigator performing duties as assigned. Because conduct of research varies considerably depending on the goals of the project, access to equipment, field locations, and collaboration with other researchers, the actual amount of time spent in research activities will vary, especially during field seasons. Each student should work out the research schedule with the major professor. Most often, the advisor allows the student to use a portion of the overall project as a thesis or dissertation, but this is a privilege not a right, and a clear understanding should be developed between the student and professor. All research findings legally belong to Iowa State University, and original records and collections are to be left with the major professor for future reference. RAs with 1/2-time appointments are expected to give 20 hours per week, minimally, to the research activities of the project to which they have been assigned

C. Research and Teaching Permits: Every research project and course in which live vertebrate animals are to be used must have a Protocol Review Form approved by the Institutional Animal Care and Use Committee (IACUC; see <http://www.compliance.iastate.edu/iacuc> for the forms and any updated procedures). Students must complete online training (<https://www.compliance.iastate.edu/committees/iacuc/training>) before approval of protocols will be released.

In addition to an Animal Use Protocol, the state of Iowa (for all species) and the federal government (for migratory birds and endangered species) require proper scientific collecting permits. This is also true for projects conducted in other states or countries. Marking or banding birds requires a federal banding permit. Professors are responsible for filing appropriate forms and obtaining necessary permits. Students should check with their major professor to see that these items are properly prepared before commencing field or lab work involving animals.

Permits for Research Involving Biohazards: If a research project involves biohazards, it is required to have an Institutional Biosafety Protocol (IBC) in place. See <https://www.compliance.iastate.edu/committees/ibc> for policies and procedures. Students must complete online training before approval of protocols will be released.

Permits for Research Involving Humans: If a research project involves humans, it is required to have an Institutional Review Board (IRB) protocol in place. See <https://www.compliance.iastate.edu/committees/irb> for policies and procedures. Students must complete online training before approval of protocols will be released.

The Occupational Medicine Program provides medical surveillance for all personnel who are exposed to biohazard risks in the workplace. A Hazard Inventory form is available (<http://www.ehs.iastate.edu/forms/hazardinventory.pdf>) to report regular hazards. An example would be possible exposure to rabies. Personnel who work with human pathogens must be offered the choice of receiving a vaccine, if available, and informed of the risks associated with

the vaccine. Affected personnel choosing to receive the vaccination will be asked to complete an Immunization Consent Form at the Occupational Medicine Office (G11 TASF, between Gilman and Spedding Halls). Affected personnel choosing not to receive a vaccination must complete the Decline of Immunization Form.

PROFESSIONAL DEVELOPMENT

Traditional undergraduate work is presented in well-defined packages called courses. In graduate education, greater emphasis is placed on developing your own abilities to discover information through means such as independent research, reading scientific literature, and communicating with other people with similar interests as in seminars and informal discussions. These are the techniques that you will have to use to maintain and develop your professional competence following graduation.

A. Scientific Societies: Scientific societies play an important role in this process through the publication of journals, special reports and newsletters, and through the sponsorship of professional meetings. Graduate students should join appropriate societies and attend professional scientific meetings. Some benefits of attending professional meetings include meeting and talking with the people who are active in your field; learning how meetings are conducted and papers presented before you are scheduled to present your first paper; participating in the business sessions of societies where such items as goals, editorial policies, dues, etc. may be discussed; and making contacts for future jobs.

The NREM faculty believes that this is an important part of your education and will assist you in the following ways:

1. Provide you with information on scientific societies and how to join them and alert you to meetings that you might find beneficial. You should discuss this with your major professor.
2. We will adjust your work assignments, examinations or due dates for papers so that you can attend professional meetings. If you ask in advance, most of your other professors will also do what they can to help you.
3. The Graduate College and Graduate and Professional Student Senate (GPSS) have a program to provide limited funds for graduate students to attend scientific meetings. The Department may provide financial support to students who make presentations at local, regional, and national meetings. Professors may also provide for such travel expenses from their grants and contracts. Students are encouraged to contact the Department chair early in the academic year to make their potential request for funding known.

B. Publication of Scientific Papers: The goal of research projects conducted by graduate students is the preparation of manuscripts suitable for publication in reputable scientific journals. This is important for the dissemination of new information, and it helps the student to develop a professional reputation. The faculty generally recommends preparation of the thesis in a journal manuscript form.

Because most graduate research projects involve collaboration with a major professor and/or other graduate students, it is important that all graduate students discuss publication plans with their major professors to work out details of authorship, use of data, credits for sponsoring

agencies, and appropriate journals. If the work is sponsored through the Coop Unit or by outside granting agencies, their approval may also be necessary prior to publication. Later publications based on work done at Iowa State must still list ISU as the major address, with the author's present address as a footnote.

C. Presentation of Research Results: Students are expected to present their research results at Departmental seminars and at professional scientific meetings or workshops.

D. Participation in Departmental Governance: The members of the Graduate Student Organization (GSO) elect a representative and an alternate to represent them at faculty/staff meetings. Both can attend faculty/staff meetings but only one may vote. In addition, a graduate student is usually chosen to serve on faculty selection committees, the Errington Lecture Committee, and others.

E. NREM Graduate Student Organization: Students are strongly encouraged to actively participate in the Department Graduate Student Organization. The purpose of the GSO is to enhance the graduate experience in the Department and to provide a channel of communication between the graduate students and the faculty. The GSO receives an annual allocation of funds from the Graduate and Professional Student Senate (GSS) and uses those funds for such activities as seminar speakers and computer software and hardware. Money is also raised from annual membership dues. The GSO elects the representative to the Department and the GSS.

F. NREM Departmental Seminar: The GSO is responsible for the organization and conduct of the weekly Departmental Seminar Series. Speakers are typically a mix of ISU faculty and of faculty or scientists from other universities, colleges, and state and federal natural resource agencies. Regular attendance by all graduate students is mandatory.

G. Field Notes Publication: The GSO publishes NREM Field Notes, a graduate student magazine that contains articles that describe research and professional accomplishments of the graduate student body.

DEPARTMENTAL SERVICES

A. Graduate Student Offices: If space permits, the Department provides shared office space for all graduate students.

B. Keys: Graduate students are issued keys to their offices, to rooms where teaching or research is done. Having other keys, for which there is no authorization, can be grounds for dismissal from the University. Upon arrival, new students should check with the secretary in the Administrative Office regarding the issuance of keys. The cost for a replacement key is \$25 if lost or not turned in upon graduation or leaving the University.

C. Support Staff: Clerical support is provided for the faculty but such help generally cannot be provided to graduate students. However, some general research and teaching functions are performed by Departmental support staff in support of the Departmental mission. In general, questions concerning employment status should be directed to the Administrative Specialist

located in the Departmental office. Questions associated with teaching, registration, graduation status, and Graduate College forms should be addressed to the Graduate Programs Secretary. Students whose projects are administered through the Iowa Cooperative Fisheries and Wildlife Research Unit should address administrative questions to the Unit Administrative Specialist. At the direction of the instructor in charge, support staff may help to prepare teaching materials for TAs.

D. Library Resources: Parks Library has an excellent collection in life sciences and supporting areas and provides a full range of library services, including online bibliographic searches, interlibrary loan, etc. Students may obtain orientation materials at Parks Library. The Department maintains the Reading Room in 312 Science II which includes journals, collections and donations from faculty and alumni. The collection includes a wide range of natural resource and ecology publications.

E. ISU World-Wide Web Profile: As part of the department you should have a web profile on the department website at <https://www.nrem.iastate.edu/people> to describe your research and make you findable by potential employers. Instructions for completing your profile are [here](#).

Your major professor may have a lab website or research project website already. By federal law all websites must be accessibility-compliant. Additionally, Iowa State University websites are subject to ISU legal and marketing requirements. The department provides websites which meet these requirements at no cost. For help with websites please contact websupport@iastate.edu.

F. Poster Printing: Poster printing is available through printing services. A [PowerPoint template for research posters](#) is available in various sizes.

G. Photocopying Facilities: Grad students may use the photocopy machines in the Administrative Office, Student Services Center, and Coop Unit offices for copying material for research if they have approval of their major professor. If you have questions about use of the machine, ask the clerical support staff. Large numbers of copies (more than 10) should be sent to the ISU copy centers; see the clerical support staff for an order form. Pick-up and delivery services are available. For personal copying, you can add CyCash to your ISU Card in the ISU Card office located in 530 Beardshear Hall. Thesis copying is done at student expense at one of the copy centers.

H. Letterhead Stationery: Official stationery can be obtained from the clerical support staff for official use only.

I. Research Equipment: Research equipment may be borrowed only upon permission from the staff member responsible for it. Having a key to a research laboratory does not entitle anyone to use the equipment present. All equipment must be returned in good condition. Any damage must be reported to the person in charge. Departmental boats and canoes, and other large equipment are kept at the Horticulture Farm or Hinds Farm. Forestry equipment is maintained and stored in various locations at the forestry greenhouse and Hinds farm. Students need permission from their major professor and equipment must be checked out appropriately.

All equipment is for official use only.

- J. Conference Room:** Several rooms in Science II are available for committee meetings, oral exams, and other official meetings. They must be reserved in advance.
- K. Photographic Darkroom:** The Department maintains a darkroom in 308 Science II. Inquire in the main office (339 Science II) if you wish to use it.
- L. Reading Room:** The Reading Room, 312 Science II is available to graduate students and faculty. Publications should not be removed from the rooms. The room also has computers and study area with material and publications on animal ecology, forestry, and general science.
- M. Audio Visual Equipment:** Rooms in Science II have for teaching purposes: LCD Projector, Elmo Projector, and DVD player. You also have the capability to connect a laptop computer to the LCD projector. This equipment may not be removed from these rooms. Visit with NREM IT if you have questions about how to use this equipment.

COMPUTER SUPPORT

Computer support for the department is provided by [Biology IT](#) (537 Science II).

- A. Access to Computers:** Your major professor should provide you with a computer for use during your studies. Using a university-provided computer gives you access to a large number of software packages that are licensed for use on university computers only. Computers must be purchased through Biology IT on the existing university contract with approved vendors; a [catalog of current models](#) is available.

In the unusual case where your major professor is unable to provide you with a computer, older computers may be available by contacting Biology IT.

Specialized computer facilities are available as follows:

Geospatial Computing Laboratory: 139 Science II has workstations that are optimized for geographic information systems (GIS). This includes large screens, powerful graphics cards, and local scratch space for interacting with downloaded geospatial datasets.

Collaborative computing space: 241 Science II has several stations along the north wall for quick access. They are connected to a black and white laser printer on the south side of the room. The room also has four large screens equipped with Solstice wireless displays that allow for collaborative work and presentation practice.

Quiet computing lab: 111 Science II has several stations along the west wall for general computing. A color printer is available and connected to these computers.

Reading room: 312 Science II has several stations for general computing. A scanner and printer are available for use in this room.

Please note that food and drink is strictly prohibited in these areas.

Computing equipment for checkout:

The department maintains an inventory of computing peripherals for checkout to be used in support of the departmental mission. This includes laptops, portable projectors, cordless presenters/laser pointers, GoPro cameras, external CD/DVD drives, portable microphone, and miscellaneous adapters. For a current inventory and policies regarding the use of these items, see the [Biology IT Laptop and Equipment Checkout](#) page.

- B. Access to Software:** When using a university-owned computer supported by Biology IT, you are able to install many software packages yourself by using [Self-Service Software Installation](#). No administrative account is needed to install software using self-service.

Software updates and security patches are automatically pushed to university-owned computers by a central service. If your computer requests that you restart to install security patches, please attend to this promptly.

If you have need of specialized software that is not available in Self-Service/Software Center, please contact Biology IT for licensing information and installation. Please *do not purchase software without checking with Biology IT* as there may already be a software license agreement in place that gives you access to software without charge.

- C. Acceptable Computer Use and Policies:** Computers and workstations are for graduate students, faculty, and staff use only in support of the departmental mission. This includes undergraduates who are working for graduate students or faculty on departmental research.

You must comply with all university policies including those regarding acceptable computer use, software licensing, and data classification. Please take the time to read and understand [Iowa State University's information and technology policies](#).

- D. Access to Storage:** Check with your major professor to learn about how data should be stored.

The College provides 2 TB of storage on the [Large Scale Storage System](#) for each faculty member. Faculty with active research laboratories often use this space as a repository for their research data.

Some labs also use Box cloud storage, which is branded “CyBox” at ISU. For data that is meant to be shared with your major professor, a best practice is to have your major professor create the Box share and add you as a co-owner. Otherwise your data will not be available post-graduation and your major professor will be sad.

Speaking of sadness, flash drives and external hard drives should be used for data transfer only, not for permanent storage of data. These devices tend to fail suddenly and permanently.

- E. Data Backup:** It is critical that your data be backed up. The department provides data backup for university-owned computers. If you have had a hardware failure and need data restored, or want to check that your data is being backed up, please contact Biology IT. While an excellent line of defense against data loss, this backup is best-effort, not a guarantee, and you are ultimately responsible for the safety and integrity of your data.
- F. Computer Security:** Biology IT provides computer virus detection software as a standard part of a computer build. There is no need for additional software. The university security team uses tools to detect potentially dangerous internet traffic on the university network. If you have any concern that your computer has contracted a virus, please contact Biology IT.
- G. Research Computing:** The College of Agriculture and Life Sciences collaborates with the College of Liberal Arts and Sciences to make high-memory, high-speed and clustered computing available to researchers. If you have need for high-performance computing for bioinformatics or other work that exceeds the capacity of your computer, please contact [Research IT](#) for a consultation.
- H. Power Settings:** If you are assigned a desktop computer for your graduate work or do work in a computer lab, please log out but do not turn the computer off. Backups and security updates can take place overnight and turning off a computer prevents these from happening.

TRAVEL POLICIES AND PROCEDURES

- A. Travel:** University vehicles are available from Transportation Services. Only state employees, including graduate assistants and hourly employees, are permitted to drive university vehicles (undergraduate and graduate students must have a review of their driving record done by the Department of Motor Vehicles before they will be allowed to drive a University vehicle. Motor vehicle record checks are available online.). A valid driver's license is required to operate state and federal vehicles. In addition, operation of federal vehicles requires a Volunteer Services Agreement and completion of a federal defensive driving course.

Use of vehicles and travel plans must be approved by the major professor before departure. A valid Worktag is necessary to reserve any vehicle. University vehicles can be reserved through the online reservation system on the Transportation Services website.

When authorized and funded, the use of private cars for in-state travel is reimbursable on a per mile basis. Claims for mileage reimbursement must be made within 90 days of the travel.

All University motor vehicles are covered by public liability and property damage insurance and information about it is in the glove compartment of each vehicle. All drivers should become acquainted with this insurance protection and follow the procedures to be used in case of accident. Anyone involved in an accident with a University vehicle should immediately notify Transportation Services (515-294-1882) and obtain the information requested on accident report forms provided with the vehicle. If an accident occurs after office hours, call the same phone number and listen to the voice message and contact ISU Public Safety at the phone number given in the message. **NOTE:** When using your personal vehicle on University

business, be aware that if you are involved in an accident it is your personal liability, not that of the University. You should check with your insurance carrier to be sure of coverage.

The Iowa Code explicitly states that NO EMPLOYEE SHALL USE ANY STATE OWNED CAR FOR PERSONAL USE. Vehicles from Transportation Services should be parked there or in authorized parking lots and be returned promptly after use. Parking of University vehicles on city streets is prohibited, but off-street parking on personal property is allowed.

The ISU "fleet card" (credit card) is in the key chain for university vehicles. Also, in the key chain is a list of designated stations where the credit card may be used (be sure to retain the receipt). If fueling at a station not listed, the cash sale will also require a receipt to be turned in with the vehicle. Transportation Services requests users of vehicles to fuel at their pump on Haber Road whenever possible because there is no tax on gas purchased there and is therefore a savings to Departments.

B. Travel expense reimbursement: After completion of official, expense-approved travel, complete a travel reimbursement through Workday. Details on allowable expenses can be found here: <http://www.controller.iastate.edu/travelinformation/homepage.htm>

C. Professional advancement grants: Travel PAGs are provided for ISU graduate students by the Graduate College and the Graduate and Professional Student Senate (GPSS). Each graduate student is eligible to receive one Travel PAG per fiscal year (July 1 through June 30). PAG forms are available at <https://www.gpss.iastate.edu/pag>.

PURCHASING PROCEDURES

A. General: By rule of the State Board of Regents, responsibility for all University purchases is assigned to the Director of Purchasing and Stores. If proper purchasing procedures are not followed, it makes extra work for everyone. Most graduate students working on research projects will have access to funds for purchases of supplies. Each research project is assigned a fund number that must be used to identify purchases. TAs may be directed to make purchases for courses in which they instruct. Check with your major professor or teaching supervisor about policies regarding purchases and for the appropriate fund number. Approval signatures are required prior to purchase.

B. On-campus purchases: Many supplies are carried in stock in the Memorial Union Bookstore, Central Stores (like a large hardware store), or Chemistry Stores. Purchases from Central Stores and Chemistry Stores can be made in person or through the ISU electronic purchasing system CyBuy that can be accessed through the Procurement tab in Workday. Worktags are necessary for purchases and should be obtained from your advisor. If your needs can be filled by campus stores, do not requisition from outside sources.

C. Off-campus purchases: Extramural purchases are those made from sources outside the university. The University has preferred vendors with whom prices have been negotiated. Purchasing from these vendors takes place through the ISU purchasing system CyBuy that can

be accessed through the Procurement tab in Workday. Purchases from other vendors (including Amazon) requires special permission from the Procurement Office. University purchasing policy distinguishes between equipment (most items over \$5,000) and supplies. Purchasing policy requires the employee to solicit competitive bids for equipment more than \$10,000. Graduate students should consult with their major professors regarding appropriate policies for purchases. Large purchases should always be approved by the major professor and administrative staff.

SAFETY AND SECURITY

A. Safety: The staff and the University are concerned about the personal safety of graduate students. Nothing that you do is so important that you cannot take the time to see that it is done in a safe manner. Make the effort to take safety training and learn how to operate all equipment safely. In laboratories, face shields or goggles must be used when working with dangerous materials. Make sure that flammable liquids are stored in a safe manner. Do not put them in a refrigerator where a spark could cause an explosion. If you are using boats, be sure that you have personal flotation equipment for each individual and that the boats are not overloaded. Make yourself aware of the location of fire extinguishers, first aid kits, emergency showers, and fire alarms in the areas where you work. The Department chair is responsible for the safety of all members of the Department. It is the responsibility of each staff member and student to report all unsafe conditions that are observed in laboratories, offices, or in field situations.

The Environmental Health and Safety office coordinates chemical waste management and disposal, and biohazards, among other responsibilities. There are specific protocols for disposal of chemicals that should be reviewed by your major professor and posted in the laboratories. All laboratories must be posted for the presence of chemical and biological hazards. First aid kits must be present in all laboratories, and students should be briefed on emergency procedures.

All injuries or accidents should be reported immediately to the major professor and a report made.

B. Control Practices for Biohazardous Materials: Biohazardous materials are those materials of biological origin that could potentially cause harm to humans, wild animals, or plants. The ISU Biosafety Manual <http://www.ehs.iastate.edu/publications/manuals/bsm.pdf> provides information to protect faculty, staff and students from exposure to biohazardous materials; to guard against the release of biohazardous materials that may harm humans, animals or the environment; and to protect the integrity of experimental materials. The manual outlines appropriate practices, University policies and regulatory requirements for working safely with biohazardous materials. Contact Environmental Health and Safety Office (2809 Daley Drive) if you have questions. Students should consult the Biosafety Manual for details concerning their individual research projects; some of the most relevant information is summarized below.

Biohazard Control Practices: Safe lab practice is the most critical part of preventing exposure when working with biohazardous materials. Anyone planning to work with biohazardous

materials must be adequately trained before beginning the work.

Supervisors are responsible for ensuring that all personnel receive proper training. Information communicated in the training should include: (1) a discussion of the Biosafety Manual and how it applies to activities conducted in specific work areas, (2) an explanation of the health hazards, signs and symptoms of exposure to biohazardous materials used in specific work areas, and (3) a description of actions personnel can take to protect themselves from exposure, such as special work practices, use of safety equipment, vaccinations, emergency procedures, etc.

Personal Protective Equipment: Appropriate personal protective equipment (e.g., lab coats, gloves, respirators) is chosen by considering the potential routes of exposure that need to be blocked to prevent exposure and infection.

Animal Handling on Campus: The spread of infectious agents between animal populations can be prevented and laboratory personnel can be protected from zoonotic agents by adhering to the following basic guidelines, required by ISU Laboratory Animal Resources (telephone 294-8507) wherever animals are housed or used on campus.

C. Emergency Treatment of Students: Students are occasionally injured in classrooms or laboratories or on field trips. Services rendered beyond the immediate emergency treatment of the student will be the responsibility of the individual student, either personally or through a health care program. Staff members are reminded that appropriate records should be kept at the Departmental level regarding student injuries in case a future claim or question should arise regarding the incident involved. This information is also necessary in order that the university can take appropriate steps or corrective measures, if needed, to eliminate any hazards that may be connected with the university activities.

D. Security: It is necessary to keep offices, laboratories, and other rooms locked when not in use. Books, money, and other valuables have been stolen from the laboratories, classrooms, and offices. You are expected to exercise common sense in preventing theft and vandalism. A key to your office, and other keys as required, will be issued. No student below the level of instructor will be allowed to have a master key or any un-authorized key, and possession of same will be considered in violation of Departmental regulations. The person concerned will be subject to dismissal from the University.

GRIEVANCES

Complaints about any aspect of the graduate student experience should first be discussed with the individual most directly involved – an instructor, major professor, laboratory supervisor, etc. If the issue cannot be directly resolved, a graduate student may elect to discuss the issue with the Director of Graduate Education. The DOGE may assist directly, or may refer graduate students to the Department Chair. Formal procedures for grievances are outlined in the Graduate College Handbook, Chapter 9 and most require written documentation of each step (and the outcome of each step) previously described.