



# **SOIL, WATER, and ECOSYSTEM SCIENCES DEPARTMENT**

## **Graduate Student Guide**

**August 24, 2022**

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## 1. INTRODUCTION

This publication describes graduate programs and procedures for the Soil, Water, and Ecosystem Sciences Department (SWESD) at the University of Florida (UF). It is intended to supplement, rather than duplicate, the [University Graduate Catalog](#). Information contained herein is a general guide for both graduate students and faculty involved in graduate programs. This manual is not a legal document; if conflicts arise, the policy stated in the current University Graduate Catalog will prevail.

There is no distinction between graduate students enrolled as on-campus students or distance students. All SWESD graduate policies apply to all students. Because of the unique conditions of distance students, the department has a Distance Education (DE) Coordinator. The role of that coordinator and information specific to distance students is also outlined in this handbook.

Note: The name of the Soil and Water Sciences (SWS) Department was recently changed to Soil, Water, and Ecosystem Sciences (SWES). The academic program (including course numbers) through which our degrees are earned is still named Soil and Water Sciences (SWS). Both of these abbreviations are used throughout this guide to differentiate between departmental and academic program references.

### 1.1. RESPONSIBILITIES OF GRADUATE STUDENTS

Each graduate student is responsible for becoming familiar with all graduate requirements of the University of Florida [Graduate School](#), the [Office of the Registrar](#), the [College of Agricultural and Life Sciences \(CALs\)](#), [Institute of Food and Agricultural Sciences \(IFAS\)](#), and the [SWESD](#). These requirements constitute a contractual agreement between each student and the University. All graduate students are expected to activate, maintain, and use their University of Florida email account for all professional communications since this is the sole means of written electronic communication between the University, its various entities, and the student. It is the responsibility of the student to comply with deadlines that are e-mailed to the student, published on the official University of Florida websites, or in official UF publications and notices.

***IMPORTANT: IGNORANCE OF A RULE OR A DEADLINE DOES NOT CONSTITUTE A BASIS FOR WAIVING THAT RULE OR DEADLINE.***

### 1.2. RESPONSIBILITIES OF THE GRADUATE ADVISOR AND SUPERVISORY COMMITTEE

The Graduate Advisor (Major Advisor) serves as Chair of the student's Supervisory Committee. This committee is responsible for approving course work, administering exams, and providing guidance and review of the student's professional development and research. The Supervisory Committee has primary responsibility for the quality of each degree program. Graduate Advisors serve as mentors to students, providing guidance in research and professional development, and ensuring that adequate resources are available for the student to complete the proposed research project within the allotted time. Advisors confirm student compliance with departmental requirements by periodically reviewing the Plan of Study with the student and completing an annual evaluation of student performance.

### **1.3. RESPONSIBILITIES OF THE GRADUATE COORDINATOR**

A faculty member in the SWESD is designated by the Chair to coordinate all graduate programs in the department. General duties and responsibilities of the Graduate Coordinator as published by the Graduate School include assuming primary responsibility for ensuring that graduate programs conform to existing policy and approving programs after students have been counseled by their supervisory committees or other departmental advisers. The Graduate Coordinator also provides a communication link between graduate students, Graduate Advisors, the Chair of the department, the Dean and Associate Deans in the College of Agricultural and Life Sciences, the Dean of the Graduate School and the Registrar's Office. The Graduate Coordinator is responsible for informing faculty and students of changes in University and College policies, enforcing written policies and regulations, and assisting students with programmatic issues and/or problems that may arise. She/he also serves on the SWESD Teaching Committee (formerly Academic Programs Committee), assists faculty in recruiting quality students, and processes all on-campus graduate student applications.

### **1.4. RESPONSIBILITIES OF THE DISTANCE EDUCATION (DE) COORDINATOR**

The Distance Education (DE) Coordinator is a faculty member in the SWESD who is designated by the Chair to coordinate the distance education MS programs. The DE Coordinator works closely with the Graduate Coordinator to ensure programmatic continuity, providing a communication link between distance education students, Graduate Advisors, Chair of the SWESD, Associate Dean of IFAS, Dean of the Graduate School, and the Office of the University Registrar. She/he advises students on courses and programs offered via distance education, serves on the SWES Teaching Committee (formerly Academic Programs Committee), and assists students with problems that may arise. The DE Coordinator also assists in recruiting students, provides advice on the adoption of new digital technologies suitable for the distance education track, and processes all distance education graduate student applications.

## **2. LEARNING OUTCOMES AND COMPETENCIES**

The learning outcomes and expected competencies for SWES graduate students upon completion of their graduate programs include the following:

- Show comprehensive understanding in soil and water sciences.
- Show effective oral and written communication of scientific findings.
- Work both independently and as a member of a team.
- Critically evaluate scientific data and literature.
- Synthesize and interpret scientific findings.
- Employ scientific methods to generate new information and knowledge.
- Apply the scientific methods learned in the program to problems in soil and water sciences (transferable skills).
- Develop new solutions to problems in soil and water sciences.

These competencies cover the complexity of learning from lower-to-higher levels, including knowledge, comprehension, application, analysis, synthesis, evaluation, and creation.

The learning outcomes and expected competencies for students enrolled in the SWES Certificate

Programs are that upon completion the student will be able to:

- Demonstrate a solid understanding in the topic areas of: (i) biodegradation and bioremediation; (ii) global agroecology; (iii) soil ecosystem services; (iv) soil, water, and public health (v) sustainable agroecosystems; (vi) sustainable land resource and nutrient management; or (vii) wetland and water resource management.
- Summarize and interpret scientific findings focused on soil and water sciences.

The expectations for students pursuing one of the certificates target the suite of Bloom's lower-to-medium level competencies including: knowledge, comprehension, application, and analysis.

### **3. FINANCIAL SUPPORT**

Graduate students enrolled in MS or PhD programs offered by SWESD may be eligible to receive financial support through the following mechanisms.

#### **3.1. ASSISTANTSHIPS**

Assistantships are awarded on a competitive basis. Stipends for these assistantships are subject to periodic revision as additional funds become available. Continuation of assistantship stipends is contingent upon the maintenance of satisfactory progress towards meeting the requirements of the degree as well as the availability of funds. Each graduate student receiving an assistantship of any form must maintain an average grade point average of 3.0 or higher and enroll in the required number of credit hours each semester (specified by the assistantship type, see section 5.17.1.2); otherwise, the assistantship is subject to termination.

Assistantships originate from funds provided by state and federal governments, industry, and foundations. When a student has been chosen to fill an assistantship, the Graduate Coordinator sends the student *a letter of appointment*. This letter will include the name of the student's supervisor, the percentage of full-time equivalent (FTE) assigned, the salary, and a description of the specific duties for the appointment. In addition, the letter will contain a statement that the student's signature does not constitute a waiver of the right to process a grievance, as described in the Grievance Procedure section (Article 11) of the Graduate Collective Bargaining Agreement. Copies of this letter should be sent to the faculty member responsible for the assistantship, the Department's Administrative Services Specialist and the Department's Academic Advisor. No salary may be paid, nor appointment papers processed, until this letter of appointment is signed by the student and returned to the Department, where it will be kept on file.

##### **3.1.1. Minimal work requirement**

Graduate assistantships are jobs. Therefore, a student is expected to work the time equivalent to his/her full time (40 hour) equivalent (FTE) appointment. For example, a student on a 0.4 FTE assistantship is expected to work a minimum of 16 hours per week (0.4 FTE x 40 hr/week) on activities associated with departmental obligations (e.g. teaching assistants assigned to courses by Departmental Chair) or programmatic priorities of the Major Advisor. Assistantships should be viewed as opportunities to earn wages while students pursue their graduate programs and should not be interpreted as funding to pursue a student's own research program. Unless otherwise indicated in the Letter of Appointment or a contractual agreement, assigned activities for fulfilling

the FTE appointment may or may not be directly related to the student's research project. There will often be occasions when students are offered assistantships to perform professional duties that are only indirectly related to their research program plan. In these instances, students should carefully consider their needs, goals, and time commitments before committing to the program since the Letter of Appointment is a contractual agreement.

### **3.2. STATE-FUNDED ASSISTANTSHIPS**

Many departmental assistantships are matched (typically 50% of the assistantship) with state funds. Students supported by these funds are required to meet the responsibilities of the matching funds, such as assisting in teaching programs. Assignments for teaching as a part of matching assistantship requirements will be made by the Department Chair.

### **3.3. ASSISTANTSHIPS FROM RESEARCH GRANTS AND FELLOWSHIPS**

Well over 95% of all assistantships are funded through grant funds controlled by the faculty researcher. The awarding of these assistantships is controlled by the faculty member or members who have the grant funds. One or more new CALS Dean's Awards are usually made available each year to support recruitment of well-qualified PhD students. To be considered for one of these competitive fellowships applicants must be nominated by their prospective faculty advisor, so establishing contact with the prospective advisor as early as possible can be advantageous. Fellowship awardees are selected based on evaluation by a committee appointed for the purpose. Fellowship awardees are required to serve as a Teaching assistant for (3) three semesters during the four-year award period. Assignments for teaching as a part of CALS Dean's Award requirements will be made by the Department Chair.

### **3.4. OTHER FINANCIAL AID**

Students admitted without assistantships can often find part-time employment with departmental faculty on other funds. Short- and long-term loans are also available through the Student Financial Services Office. In addition, the Graduate School maintains a list of various scholarships, loans, and awards available to graduate students. Special fellowships for minority students and women are available on a competitive basis. The following websites may be helpful in identifying potential scholarships:

- [CALS Student Awards, Travel Grants and Fellowships](#)
- [UF Office for Student Financial Affairs](#)
- [UF Graduate School Funding Opportunities](#)
- [School of Natural Resources and Environment, Financial Support for Graduate Students](#)

### **3.5. TRAVEL GRANTS**

#### **3.5.1. UF/IFAS Travel Grants**

The Academic Programs/Research Dean offices will provide matching funds up to \$250/student/academic year for travel for students presenting a poster or paper at a national or international meeting. These funds are in conjunction with those provided by the department. Graduate students who have departmental or grant support to attend a meeting should check with their advisor' department regarding the need to complete a Travel Authorization Request

(TAR). The \$250 for the IFAS Travel Grant will be paid to the department upon receipt of a copy of the student's travel expense report. The student will receive direct reimbursement upon submission and approval of an expense report. Application forms may be obtained from the Academic Program Specialist and must be signed by the Major Advisor. In addition to the form, the conference announcement and a copy of your abstract must be submitted. See the [CALs Graduate Student Awards, Travel Grants and Fellowships](#) website for more details.

### **3.5.2. James Davidson Travel Scholarship**

The purpose of these grants is to provide funding to help defray travel expenses for graduate students presenting a paper at a national or international professional meeting or conference. These scholarships are named after Dr. James M. Davidson, former Vice President for Agriculture and Natural Resources, Institute of Food and Agricultural Sciences, University of Florida (and former faculty member in the Soil and Water Sciences Department) who established the endowment to fund these scholarships. Application procedures and deadlines are on the [CALs Graduate Student Awards, Travel Grants and Fellowships](#) website.

### **3.5.3. Research and Graduate Programs Travel Grant**

Travel to conferences, symposia, and special research opportunities are essential for the professional development of advanced research students. The University also benefits by being represented at such events. The Office of Research and Graduate Programs (RGP) has therefore established a program to supplement student travel when other funding sources are insufficient. RGP guidelines for travel funding cap awards at \$300 per trip and require 1:1 matching funds from the department and/or college. These funds are primarily for assistance with the cost of travel, particularly airfare. These grants are one-time awards to graduate students. RGP cannot provide any retroactive reimbursements. Application procedures and deadlines are on the CALs Graduate Student Awards, Travel Grants and Fellowships website.

### **3.5.4. Graduate Student Council Grants**

Students may also be eligible for travel funds from the UF Graduate Student Council. Apply online at the [UF GSC Grants](#) website. For more information, visit the website or email [gscgrants@gmail.com](mailto:gscgrants@gmail.com).

## **3.6. TUITION WAIVERS**

All Graduate Assistants on a minimum of 25% employment FTE are issued tuition waivers covering tuition, according to their Letter of Appointment. UF charges activity fees per credit hour, which are not covered by tuition waiver. These fees provide students with access to health care, transportation, athletic facilities, and other services on campus. Each student is responsible for paying their own fees.

During the first year, non-Florida resident students may meet requirements for, and are encouraged to file for Florida residency status which will result in significant tuition savings (out-of-state vs. in-state). Detailed procedures and requirements for establishing Florida residency are outlined on the Graduate School's webpage on [Residency for Tuition Purposes](#).



### **3.7. HEALTH INSURANCE**

The University provides health insurance for graduate students who are on certain fellowships, or assistantship appointments, based on their FTE assignment. Eligibility and enrollment information can be found at the [GatorGradCare](#) website.

## **4. DEPARTMENTAL AWARDS**

### **4.1. ENDOWED FELLOWSHIPS AND AWARDS**

The department has several [endowed fellowships](#) for students who meet specific criteria including grade point average, research accomplishments, and service activities. The deadlines for these fellowships are typically during the Fall semester. Qualified students can self-nominate or be nominated by their advisors.

#### **William Robertson Fellowship**

The William K. Robertson Fellowship is presented annually to an outstanding SWESD graduate student on the basis of leadership and excellence in academics and research. The recipient must have demonstrated leadership by active participation in departmental programs, service, and extra-curricular activities such as student club activities. The Fellowship will be awarded, whenever possible, to a continuing graduate student, i.e., one who is in the early- to mid-stage of his/her graduate program.

Application Deadline: October 1

#### **Sam Polston Fellowship**

The Sam Polston Fellowship is presented annually to an outstanding SWESD graduate student who leads the way among the department's graduate students in academic performance and research. Superior academic performance is interpreted as a graduate GPA of 3.75 or more. Although any SWESD student having completed at least one year of graduate work is eligible to apply, the Fellowship will be awarded whenever possible to a graduate student who is in the mid- to late stage of his/her graduate program.

Application Deadline: October 1

#### **Ben Skulnick Fellowship**

The Ben Skulnick Fellowship is presented annually to an outstanding SWESD graduate student who leads the way in academic performance and research. Preference will be given to MS students. The student's research interests must be in the area of Soil and Water Sciences as related to protection of Natural Resources. Superior academic performance is interpreted as a graduate GPA of 3.75 or more. Although any SWESD student having completed at least one year of graduate work is eligible to apply, the Fellowship will be awarded whenever possible to a graduate student who is in the mid- to late stage of his/her graduate program.

Application Deadline: October 1

#### **V. W. Carlisle Fellowship**

This fellowship will be presented annually to a graduate student studying Pedology (soil genesis, classification, and soil survey) or Soil Mineralogy in the Soil and Water Sciences Department. The student must be pursuing an MS or PhD degree with a course of study leading to a thesis or dissertation that will emanate, in whole or in part, from scientific investigation of Florida soils. Preference will be given to graduate students who have also achieved academic excellence and exhibited leadership ability as indicated by departmental service and extra-curricular activities such as club activities, soil judging, and departmental social activities.

Application Deadline: October 1

### **Biogeochemistry Graduate Fellows Program**

The Wetland Biogeochemistry Laboratory (WBL) was established by Dr. K. R. Reddy in 1982 within the Soil and Water Sciences Department (SWESD). The WBL has established an endowment to support and promote research and education in biogeochemical cycling of macro-elements in terrestrial, wetlands, and aquatic ecosystems with a focus on ecosystem productivity, climate change, water quality, and sea level rise. Some of the income derived from this endowment will support current and future activities of SWESD graduate students working in the area of “Biogeochemistry”. These funds can be used by students pursuing basic and applied research in biogeochemistry for travel to visit nationally recognized labs to learn new techniques, participate in scientific meetings related to their research, and to present research at national and international meetings.

Primary selection criteria include a) meeting the eligibility requirements to apply as stated below, and b) evidence of proposed or current research at any scale (molecular to landscape level) that has significant emphasis on linkages to terrestrial, urban, wetlands, and aquatic systems, and c) graduate student commitment to actively contribute to SWES/SNRE initiatives during the graduate program.

### **Biogeochemistry Graduate Fellow Terms**

- Fellow Awards begin on January of each year.
- A maximum of two new Fellows (PhD) and one new Fellow (MS) will be awarded annually.
- Fellows in Ph.D. program will receive \$1,500 to support their research and Fellows in MS program will receive \$1,000 to support their research.
- Nominations are required by October 1st or by a revised date each year.

### **Biogeochemistry Graduate Fellows will:**

- Present their research at the SWES Annual Research Forum.
- Display a research poster on the departmental poster board.
- Acknowledge WBL funding source in publications and presentations.
- Take a leadership role in promoting the SWES Biogeochemistry activities within and outside the department.

### **Eligibility**

- SWESD Ph.D. and M.S. (thesis) students and SNRE (IE program) advised by SWES tenured and non-tenure track faculty and SWES affiliate faculty.
- SNRE (IE) Ph.D. and M.S. (thesis) students advised by SWES tenured and non-tenure track faculty and SWES affiliate faculty.
- Student must be enrolled full time as a graduate student for the full calendar year during the year fellowship is awarded.
- Superior academic performance interpreted as a graduate GPA of 3.50 or higher
- Graduate students are eligible for re-nomination following a one-year hiatus after holding the WBL Fellowship.

### **Biogeochemistry Graduate Fellow Application**

Students are encouraged to apply for these Fellowships. In order to apply, a student must submit the following:

- Letter outlining their qualifications for the Fellowship.
- A copy of research proposal (2 pages single space) describing motivation in addressing scientific questions.
- Completed IDP (Individual Development Academic Plan) must be on file with SWES Admin Office for Ph.D. students and optional for M.S students.
- Letter (limited to 200 words or less) of endorsement from the major advisor indicating the importance of research related to the biogeochemistry program area.
- Additional support material may be submitted if the student wishes to do so and feels that it will strengthen his/her application.

### **Biogeochemistry Graduate Fellow Selection Process**

The SWESD committee appointed by the department chair or his/her designee will review the nominations and make recommendations to award a maximum of two new PhD Fellows and one new MS Fellow annually.

Application Deadline: October 1

### **George J. Hochmuth Education Award**

This award will be given once a year to one outstanding graduate student. Qualified students must exhibit a significant interest in issues related to sustainable agricultural production and environmental management, focusing on improved soil and water quality. In addition to meeting academic excellence, preference will be given to students who demonstrate participation and leadership activities in clubs and other extracurricular activities related to improving agriculture efficiency and environmental quality.

Application Deadline: October 1

### **Quantitative Environmental Soil Science / Pedometrics Award**

This award is given annually to an outstanding candidate in recognition of cutting-edge research in Quantitative Environmental Soil Science / Pedometrics. We invite applications on: (i) the

development and application of new quantitative methods or simulation models, (ii) fusing of disparate environmental data to derive new conclusions (synthesis analysis), (iii) up/downscaling of environmental soil properties and ecosystem processes, or (iv) advanced modeling across larger soil-landscapes. The award is open to students, Post-Docs, and staff members in the Soil and Water Sciences Department or students enrolled in a graduate program in the School of Natural Resources and Environment with Major Advisor or Co-Advisor in SWES.

Application Deadline: October 1

#### **4.2. EXCELLENCE IN GRADUATE STUDIES AWARDS**

The Soil and Water Sciences Department presents awards annually for excellence in graduate studies and service for MS and PhD graduate level programs. One award is presented for each degree level. Selections are based on (1) the quality of the dissertation presentation (organization, style, and clarity), quality of the research (thoroughness, contribution to the field, importance, originality, depth, and scope) (70 points) and (2) student related leadership activities in the department, UF, and professional societies, and undergraduate and student mentoring (30 points). To be considered, the SWESD student's advisor (or committee member) must submit a letter of nomination, and provide electronic copies of the thesis or dissertation, and a current CV for the student. Supporting materials such as copies of journal articles and listing of honors and leadership activities at state, national, and international levels can also be submitted.

Application Deadline: Call for nominations usually sent out in December

### **5. PROGRAM PLANNING AND DEVELOPMENT**

#### **5.1. SELECTION OF DEGREE PROGRAM**

Three graduate programs are open to students in SWESD: Master of Science (MS-Thesis and MS-Professional), Doctor of Philosophy (PhD), and Combined Bachelor's and Master's (BS/MS). Minors may be taken in addition to the major degree programs, as outlined below.

##### **5.1.1. Master of Science-Thesis**

The MS-Thesis program is designed for those interested in a research degree, culminating in a thesis.

The requirements for fulfilling the MS-Thesis degree are:

- Minimum of 30 credit hours
  - 24 of the 30 must be in letter-graded courses (non-S/U courses).
  - At least 15 of the 30 must be graduate-level SWS/ALS letter-graded courses.
- Up to 6 credit hours of SWS 6971 (Master's Research) can be counted towards the degree. As described in the **Registration for Final Term** section below, during the term of the student's final examination and during the term the degree is awarded a minimum of 3 credit hours of SWS 6971 are required (2 credit hours if during summer). These credit hours are not letter-graded.

- Up to 5 credit hours of SWS 6910 (Supervised Research) and 5 credit hours of SWS 6940 (Supervised Teaching) may count towards the MS thesis degree. These credit hours are not letter-graded.
- One credit hour of SWS 6940 (Supervised Teaching), or one credit hour of SWS 6910 (Supervised Research) culminating in an extension/service product is required to meet the professional development teaching/service requirement. These courses are not letter-graded. See **Professional Development** below for guidelines and options for meeting this requirement.
- One letter-graded credit hour of SWS 6931 (Seminar) is required in the final semester for all students enrolled in the MS-Thesis program. Students taking Seminar will present their thesis research to the department and a grade will be assigned by the student's major advisor. MS-Non-thesis (Professional) students are not eligible for this course. For more information, see **Seminar Policy** below.
- SWS 5050 is required unless the student completed a senior-level undergraduate course in introductory soil science.
- Up to 6 credit hours of 3000-4000 level courses outside the SWESD may count towards the MS degree under the following conditions:
  - Must be UF courses
  - Courses must have been taken as a graduate student. Undergraduate-level credits earned as a non-degree seeking student and courses taken through UF Flexible Learning Office will not count towards the MS degree.
- Up to 9 credits may be transferred from another institution that is approved by the Graduate School. Transfer credits are not letter-graded.
- Up to 2 minors may be taken but are not required. (See **MINORS** below.)
- Courses at the 1000-2000 level may be taken, as required, for foundation to provide a properly balanced program. However, these courses will not count toward the minimum total credits required for this degree.
- All course requirements must be completed within the 7 years immediately preceding the degree award date.
- Overall and Major GPA must be at least 3.0 for degree to be certified.
- A final written and/or oral examination is required (see **Examinations** below).
- A Thesis is required (see **Theses (MS) and Dissertations (PhD)** below).
- An Exit Interview with the Department Chair is required in the last semester.
- Courses at the 1000-2000 level may be taken, as required, for foundation to provide a properly balanced program, but such courses will not count toward the minimum total credit hours required for this degree.

See **TRANSFER OF CREDITS** (below) for more information regarding credit transfers both within UF

and from other institutions.

### 5.1.2. Master of Science-Professional

The MS-Professional degree was created to provide an opportunity for students to undertake an intensive course program in SWS and related fields to prepare for employment in regulatory agencies, consultancies, natural resource management agencies, and related organizations. A thesis is not required for this degree. The program does not prohibit the student from seeking a PhD in SWS or any other subject. Students are encouraged to engage in research.

The requirements for the MS-Professional degree are:

- Minimum of 30 credit hours
  - 29 of the 30 must be in letter-graded courses (non-S/U courses).
  - At least 18 of the 30 must be letter-graded SWS/ALS courses at the 5000-level or above.
  - The actual courses are selected by the student and committee.
- One credit hour of SWS 6940 (Supervised Teaching, as teaching assistant in any SWS-affiliated course), or two credit hours SWS 6950 – Professional Development in Soil, Water, and Ecosystem Sciences course is required to meet the professional development teaching/service requirement. SWS 6940 is not letter graded. SWS 6950 is letter graded.
- SWS 5050 is required unless the student completed a senior-level undergraduate course in introductory soil science.
- Communication through writing is a critical skill that students are expected to master. Accordingly, two options are provided for helping students master writing. These include:
  - Write a major paper on a topic in soil and/or water sciences representing work sufficient for at least 2 credits of SWS 6905 (Special Problems). Topic and extent of major paper will be agreed upon by the student and the Supervisory Committee. Students are discouraged from taking more than 3 total credits of SWS 6905 (see **Major Paper** below).
  - Enroll in a 2-3 credit hour technical or scientific writing course offered through the University of Florida and approved by your advisor(s)/committee members. Your advisor(s) may need to judge the technical merit of writing projects completed in the course.
- Up to 6 credit hours of 3000-4000 level courses outside the SWESD may count towards the MS degree under the following conditions:
  - Must be UF courses
  - Courses must have been taken as a graduate student. Undergraduate-level credits earned as a non-degree seeking student and courses taken through UF Flexible Learning Office will not count towards the MS degree.
- Up to 2 minors may be taken but are not required. (See **MINORS** below.)

- Students are required to pass a written and/or oral comprehensive exam administered by the Supervisory Committee.
- All course requirements must be completed within the 7 years immediately preceding the degree award date.
- Overall and Major GPA must be at least 3.0 for degree to be certified.
- An Exit Interview with the Department Chair is required in the last semester.
- Courses at the 1000-2000 level may be taken, as required, for foundation to provide a properly balanced program, but such courses will not count toward the minimum total credit hours required for this degree.

### 5.1.3. Doctor of Philosophy (PhD)

The PhD program is more comprehensive than other SWES graduate programs, such that the student's Supervisory Committee plays the major role in tailoring the course of study for each doctoral student. The SWESD requires that PhD graduate students demonstrate competency in four areas of soil and water sciences: Soil and Water Chemistry, Environmental Soil Physics, Soil Microbial Ecology, and Environmental Pedology. If an incoming PhD student has not taken at least senior-level undergraduate courses in these areas, he/she can complete SWS 5050 and any other courses deemed by the committee as necessary to bolster these competencies.

General requirements for the PhD are as follows:

- Minimum of 90 credit hours beyond the bachelor's degree.
  - Up to 30 credits hours may be transferred from a previous MS degree with demonstrated relevance to the PhD program. Only graduate-level work with a grade of B or better is eligible for transfer of credit. Up to an additional 15 credit hours of work beyond the master's degree may be transferred, provided that the courses were taken at an institution offering the doctoral degree. The maximum number of credit hours that may be transferred is 45. If you have a MS degree in Soil and Water Sciences from the University of Florida and are now pursuing a PhD degree in Soil and Water Sciences from the University of Florida, please see section 5.6 **Transfer of Credit** for further information.
- One credit hour of SWS 6931 (Seminar) is required. This credit hour is letter graded by the student's major advisor. For more information, see **Seminar Policy** below.
- One credit hour of SWS 6940 (as teaching assistant in any SWS-affiliated course) and either an additional credit hour of SWS 6940 or one credit of "service" (SWS 6910) is required. See **Professional Development** below for guidelines and options for meeting this requirement.
- SWS 5050 is required unless the student completed at least a senior-level undergraduate course in introductory soil science.
- Up to 5 credits of SWS 6910 (Supervised Research) and 5 credit hours of SWS 6940 (Supervised Teaching) may count toward the PhD degree. These credit hours are not letter-

graded.

- Up to 6 credit hours of 3000-4000 level courses outside the SWSD may count towards the PhD degree under the following conditions:
  - Must be UF courses
  - Courses must have been taken as a graduate student. Undergraduate-level credits earned as a non-degree seeking student and courses taken through UF Flexible Learning Office will not count towards the PhD degree.
- Up to 2 minors may be taken but are not required. (See **MINORS** below.)
- Courses at the 1000-2000 level may be taken, as required, for foundation to provide a properly balanced program, but such courses will not count toward the minimum total credit hours required for this degree.
- A Qualifying Examination and a Final Examination are required (see **Examinations** below).
- A Dissertation is required (see **Theses (MS) and Dissertations (PhD)** below).
- Overall and Major GPA must be at least 3.0 for degree to be certified.
- A maximum of 5 years is permitted between the date of the qualifying exam and the fulfillment of the PhD requirements, or the qualifying exam must be retaken. After the qualifying exam is passed, students should register for SWS 7980 (Doctoral Research). SWS 7979 (Advanced Research) is for PhD students who have not taken and passed the qualifying exam.
- An Exit Interview with the Department Chair is required in the last semester.

PhD students may earn the degree in mixed on-campus and online modes. All PhD students must fulfill UF residency requirements. A SWS tracking system is implemented to track the status of a graduate student throughout their studies at UF at the main campus in Gainesville, Research and Education Centers (REC), or remote sites in U.S. and elsewhere. According to the UF Graduate Catalog:

“Beyond the first 30 credits counted toward the doctoral degree, students must complete 30 credits enrolled at the University of Florida campus or at an approved branch station of the University of Florida Agricultural Experiment Stations or the Graduate Engineering and Research Center. An academic unit or college may establish and monitor its own more-stringent requirement as desired.” (Page 70)

#### [Graduate Catalog Requirements for Doctoral Degrees](#)

The University of Florida has numerous RECs that offer excellent opportunities to conduct soil and water sciences research. To fulfill residency requirements, students may reside at a REC, the Gainesville main campus, or both, depending on research requirements and objectives. Information about statewide programs and facilities at RECs with SWESD faculty can be accessed via the [Research Centers](#) webpage.



See **TRANSFER OF CREDITS** (below) for more information regarding credit transfers both within UF and from other institutions.

#### **5.1.4. Combined Bachelor of Science (BS) / Master of Science (MS) Degree**

The Combined BS/MS degree program allows qualified undergraduates to double-count graduate level courses toward both a bachelor's and master's degree. Application normally occurs in the junior or senior year (requirements are 3.2 undergraduate GPA). Students who meet the combined-degree application requirements can enroll in 12 credits of graduate courses during the junior and senior years. These credits will satisfy the undergraduate degree requirements and, if admitted to graduate school at UF, the 12 credits also will satisfy graduate degree requirements if they are completed with grades of "B" or better. A Transfer of Credit form must be submitted during the first semester of graduate study for any credits taken as an undergraduate. Qualified students can pursue the graduate degree outside the undergraduate major or department. Admission into the graduate portion of the degree program occurs the semester after the bachelor's degree is awarded. Once the student has entered the graduate program, all degree requirements are as stated in the master's sections above.

## **5.2. SPECIAL CREDITS**

### **5.2.1. Special Problems Credits (SWS 6905)**

Credits on special select problems in soil, water, or environmental sciences can be earned by working under supervision of a SWES faculty member. The special topic credits [letter graded] are assigned if there is no graduate course available at UF on the selected special problem or to work on a Major Paper (see section MS-Professional Major Paper). It is the responsibility of the student to identify a faculty member (e.g. Major Advisor or Co-Advisor) with expertise in the area of the 'special problem' and seek the faculty member's permission to register for SWS 6905. The faculty member provides mentoring and advice on the special problem in the form of discussion, focus questions, reading assignments, and others, adopting an inquiry-based learning method. The student summarizes the findings on the special problem in the form of a report (see guidelines posted under MS non-thesis Major Paper), which is approved and letter-graded by the faculty member at the end of the semester. Students are discouraged from taking more than 3 total credits of SWS 6905. All Special Problem reports intended to satisfy the Major Paper requirement for the MS-Professional degree are archived electronically in the SWESD on the [Technical Papers](#) webpage.

*Examples – Special Problem:*

- Develop a sampling design for a research project which involves strategic soil sampling
- Use of specific statistical (e.g. data mining methods) or instrumentation technique (e.g. stable isotope mass spectrometry) to address a specific soil, water, or environmental problem

### 5.2.2. Professional Development Requirement

All graduate students in the SWESD are expected to gain additional professional experience by becoming involved in teaching, extension, or service. Specific activities, subject to the constraints stated below, are chosen in consultation with the Supervisory Committee.

- MS-Professional students can take one (1) credit hour of SWS 6940 (Supervised Teaching, as teaching assistant in any SWS course), or two (2) credit hours SWS 6950 – Professional Development in Soil, Water, and Ecosystem Sciences course to meet the professional development teaching/service requirement. SWS 6940 is not letter graded. SWS 6950 is letter graded.
- PhD students must complete professional development work equivalent to a minimum of 2 semester credits, while MS-Thesis students must complete work equivalent to a minimum of 1 semester credit.
- All PhD students must earn a minimum of 1 semester hour credit by assisting in teaching any Soil and Water Sciences course. This obligation should be included in the course program submitted to the department with the Plan of Study and the student should register for SWS 6940 Supervised Teaching during the semester in which they assist in the course.
- For PhD students, additional teaching credit(s) may be earned by teaching in any approved SWSD courses (i.e., to serve as a Teaching Assistant).
- MS-Thesis and PhD students may also elect to work with a SWES faculty member to perform specific tasks in extension or professional service to meet the additional Professional Development credit for PhD students or the single credit for MS-Thesis students. Such work must lead to a tangible product (e.g., extension fact sheet, demonstration project, audio-visual training material), and should be performed while registered for SWS 6910 (Supervised Research). Activities may not include internships, professional work, presentations given at a professional scientific meeting, or consulting on projects conducted under supervision of non-SWES faculty members.
- For MS and PhD students, teaching credit(s) may be earned by serving as a Teaching Assistant (TA) for a course, by developing teaching or eLearning materials, or by assisting to improve course material (e.g. lab component of a course) while enrolled in SWS 6940.

Professional development activities (SWS 6940 and SWS 6910) must be supervised by a SWES faculty member who will evaluate the activities. The SWES faculty member agrees to mentor the student on teaching, extension, or service-related issues. The aim is to provide a comfortable and stimulating learning environment that allows the student to grow professionally. Pre- and post-advisory meetings between students and faculty advisor will be conducted to evaluate learning outcomes if the selected activity is focused on teaching. For other work, a tangible product (e.g. report, fact sheet, etc.) should be produced by the student and evaluated by the SWES faculty member at the end of the semester.

Students should register for one hour of SWS 6910 to indicate the service requirement when not teaching. The use of SWS 6910 as a service requirement should be indicated on the course form submitted to the department.

All graduate students involved in formal teaching must be proficient in spoken English. For international students from countries where English is not the native language, such proficiency must be verified by passing the Test of Spoken English or the SPEAK Test. Such verification is also a formal requirement for international students who register for SWS 6940. For additional details on these tests, contact the [Academic Spoken English Office](#) (352-392-3286). There is a fee for the test. When the foreign student is not responsible for an entire section, but is simply helping with teaching a course, the foreign student should sign up for one hour of SWS 6940 to represent the teaching requirement.

### **5.2.3. Supervised Research (SWS 6910)**

Students registered for Supervised Research credits work on a specific research topic or service/extension project, which may or may not be related to a MS thesis or PhD dissertation research project. Before the student registers for SWS 6910, the specific research tasks will need to be approved by the Major Advisor. Supervised Research may include working on a proposal for a thesis or dissertation, conducting a literature review, conducting field sampling or specific lab analysis, analyzing an environmental dataset, synthesizing monitoring data into a larger database, developing or using a model to simulate ecosystem processes, writing a research document or manuscript, or similar. The Major Advisor assigns the final grade (pass/fail) for the conducted research tasks by the end of the semester. Supervised Research credits are intended to produce specific research products and promote understanding of how to conduct research effectively and successfully. Students may also register for SWS 6910 Supervised Research credits when working on a service/extension project that meets the professional development (teaching/service) requirement as described above.

### **5.3. CHANGING DEGREE PROGRAMS**

Students may change the degree program during the course of study with the approval of the Supervisory Committee. To change majors (same or different college), the student must contact the department's Academic Program Specialist for the major they are interested in changing to for their required procedures, as well as inform their Major Advisor a minimum of 2 months prior to changing major. To change the degree program from MS-Thesis to MS-Professional (non-thesis) in the Soil and Water Sciences Department, the Graduate Advisor must submit a letter to the Graduate Coordinator stating the intentions of the student and confirming the approval of all members of the Supervisory Committee. Students will also be required to prepare a new plan of study for the MS-Professional non-thesis degree program, have it signed by their supervisory committee, and submit it to the SWESD administration office. Please note the differences in degree requirements for the two MS degrees; research credits will not count toward the professional MS. If necessary, the student must take additional letter-graded courses to meet the requirements of the professional MS degree.

## **5.4. MINORS**

Students have the option, with the approval of the Supervisory Committee, of pursuing up to two minors while studying in any of the degree programs offered by the SWESD. Minors are not required by either the Graduate School or the SWESD, and minor work may be done in any department other than SWES that has been approved for graduate degree programs at this University. Upon selection of a minor, and for each additional minor, the student and the Supervisory Committee must select an additional committee member to serve as the Minor Representative. All courses counting towards a minor must be graded “B” (3.0) or higher.

### **5.4.1. Minors in the MS programs**

Minor work must be in an academic unit other than the major department and must be represented on the Supervisory Committee by a member from the appropriate academic unit. At least 6 credits of work are required in the minor field. Two 6-credit minors may be taken with the major academic unit and Supervisory Committee’s approval. A minor in Soil and Water Sciences (for students not within the major) consists of six hours of graded SWS coursework at the discretion of the Minor Representative.

### **5.4.2. Minors in the PhD program**

If one minor is chosen, the Supervisory Committee member representing the minor suggests 12 to 24 credits of courses numbered 5000 or higher as preparation for the qualifying examination. Part of this credit may have been earned in the master’s program. If two minors are chosen, each must include at least 8 credits. Competence in the minor is demonstrated by written examination by the minor academic unit, or by the oral qualifying examination. A minor in Soil and Water Sciences (for students not within the major) consists of 12 hours of graded SWS coursework at the discretion of the Minor Representative.

### **5.4.3. Special Minors**

Minor course work at the doctoral level may include courses in more than one academic unit if the objective of the minor is clearly stated and the combination of courses is approved by the Graduate School (this approval is not required for a minor in one academic unit). This allows for greater flexibility of academic interest, with the student being able to choose a highly specialized minor. A graduate faculty member must be included on the Supervisory Committee who clearly represents the special minor. A petition must be submitted to the Graduate School delineating the specific course work to complete the special minor and naming the graduate faculty member who has the area of expertise. All special minors must have specific, descriptive titles as agreed upon by the student and the Supervisory Committee.

## **5.5. CERTIFICATES AND CONCENTRATIONS**

### **5.5.1. Concentrations Offered at UF**

Students have the option, with the approval of the Supervisory Committee, of pursuing various interdisciplinary certificate programs and/or concentrations in several areas of study (see the [Graduate Catalog](#) for a complete listing). The concentrations most relevant to Soil and Water

Sciences are as follows:

- Agroecology
- Climate Science
- Geographic Information Systems (GIS)
- Global Systems Agroecology
- Hydrologic Sciences
- Research Methods (MS-Thesis only)
- Tropical Conservation and Development
- Wetland Sciences

### **5.5.2. SWS Graduate Certificates**

The SWESD offers six certificates at the graduate level that may be earned as a non-degree seeking student or concurrently with a SWS MS or PhD degree. The certificates are offered in on-campus and online modes and generally require 12 credits to be earned. Each certificate has specific core and elective courses and a competency exam based on the required core courses. Completion of a certificate program is noted on the student's UF transcript. Registration, as outlined on the [Graduate Certificates](#) webpage, is required to earn a SWS certificate in one of the following topical areas:

- Biodegradation & Bioremediation
- Global Agroecology (interdepartmental collaboration)
- Soil Ecosystem Services
- Soil, Water, and Public Health (interdepartmental collaboration)
- Sustainable Agroecosystems (interdepartmental collaboration)
- Sustainable Land Resource and Nutrient Management
- Wetland and Water Resource Management

### **5.6. TRANSFER OF CREDITS**

Only graduate-level (5000-7999) work with a grade of B or better is eligible for transfer of credit. With the exception of course work from a previous MS degree (see below), a maximum of 15 transfer credits is allowed, which can include no more than 9 credits from other institutions approved by UF. The balance is obtained from post-baccalaureate/non-degree work at UF. In addition, no more than 9 credits from a previous master's degree may count towards a second master's. Doctoral students may transfer up to 30 credits from a previous master's degree; up to 15 credits of additional work beyond the master's degree may be transferred, provided the courses were taken at an institution offering the doctoral degree. The maximum number of credits that may be transferred into a Doctoral program is 45. Credits transferred from other universities are applied toward the degree requirements, but grades earned are not computed in the student's GPA (i.e., transfer credits are not letter-graded). Acceptance of transfer of credit requires approval

of the student's Supervisory Committee and the Dean of the Graduate School. Petitions for transfer of credit must be made during the student's first term of enrollment in the Graduate School. Note: If you have a MS degree in Soil and Water Sciences from the University of Florida and are now pursuing a PhD in Soil and Water Sciences at the University of Florida, all eligible credits from MS degree program will automatically count towards the PhD degree program.

### **5.7. SELECTION OF SUPERVISORY COMMITTEE CHAIR (GRADUATE ADVISOR)**

Prior to admission, each graduate student must secure a Graduate Advisor who agrees to serve as the Chair of the student's Supervisory Committee. A faculty member may be appointed as Co-chair of a student's Supervisory Committee. It is the policy of the Graduate School that Supervisory Committees may have both a Chair and a Co-chair, but not two equal Co-chairs. If two members are listed as Co-chairs, the Graduate School will consider the first person listed as the Chair and the second to be the Co-chair. Affiliate faculty may serve as either chair or co-chair of graduate committees. Courtesy faculty may apply for the right to chair graduate committees, subject to a positive vote by two thirds of the eligible faculty. Applicants to chair graduate committees must have demonstrated prior involvement in graduate student education, such as participation on graduate committees and/or serving as co-chair of a student's committee. They are otherwise restricted to the role of Co-Chair. "Special appointment" (non-UF) faculty may not serve as Chair or Co-chair on a student's committee.

### **5.8. SELECTION OF GRADUATE SUPERVISORY COMMITTEE**

Each graduate student must have a Supervisory Committee, whose responsibility is to aid the student in planning and facilitating attainment of their graduate program goals. The Supervisory Committee: (i) carefully reviews and evaluates past education; (ii) identifies academic deficiencies; (iii) advises and suggests appropriate course work, (iv) advises on development of the thesis or dissertation proposal; (v) reviews, evaluates, and approves Major Paper (MS-Professional) or thesis (MS-thesis) or dissertation (PhD); and (vii) conducts exams. Advising on the student's research is primarily the responsibility of the Graduate Advisor, but research must ultimately be approved by all members of the Supervisory Committee.

Qualified faculty members who serve on the Supervisory Committee are chosen by the student with advice and final approval from the advisor. Students are encouraged to select committee members who can help with their professional development by providing research expertise, advice, training, access to resources, etc. The Supervisory Committee must be appointed by the end of the second term of graduate study for full time students or by the end of the semester in which 12 cumulative credits are earned for part-time students. Failure to do this will result in the student's record being flagged and the student will not be allowed to register for the third semester. All members of the Supervisory Committee, the Graduate Coordinator, and the Distance Education (DE) Coordinator for distance education students must be notified by the Graduate Advisor of any pending changes in the student's program or Committee membership.

Students in the MS-Professional (non-thesis) option (including the Agroecology Concentration) will have a minimum of two faculty members on their supervisory committee, one of which is the student's advisor (from SWES) + one UF Graduate Faculty member from within or outside the

SWES department. The Supervisory Committee for students in the MS–thesis option will be composed of a minimum of three UF Graduate Faculty members, one of whom must be the Graduate Advisor (committee chair) from the SWESD. Students with a minor in another department must have one UF Graduate Faculty member from that department on the Committee. Special members/appointments non-UF Graduate Faculty status are not counted toward the minimum graduate faculty requirements for the supervisory committee.

The Supervisory Committee for a PhD program will be composed of at least four members: the Graduate Advisor (committee chair), the “external” member, and at least two additional members with Graduate Faculty status at the University of Florida. At least two members, including the committee chair, must be from the SWESD. The external member must be from a different educational discipline at the University of Florida. Each declared field of study or minor must be represented by a GF from the appropriate department. Note: The “external” member may not serve as co-chair; however, s/he may serve as a minor representative. Special members may not serve as co-chair, external member, or minor representative. In addition, special members/appointments are not counted toward the minimum graduate faculty requirements for the supervisory committee.

For distance thesis students who are outside Florida, one member of the Supervisory Committee must be from a research or academic institution geographically close to the student’s living or work location. Assignment of a committee member who does not have UF Graduate Faculty Status to the Supervisory Committee is possible and will be done as described by Graduate School policy.

The MS or PhD Supervisory Committee must meet to evaluate and discuss the thesis/dissertation proposal. The Committee reviews procedures, progress, and expected results and makes suggestions for the completion of the research project. The student informs the Supervisory Committee in the form of a face-to-face (on-campus students) or online (distance education students) meeting on course work and research at a minimum of once a year. These meetings serve to review progress and address questions related to the research. For both thesis and professional MS and PhD degrees, the oral portion of the final exam and qualifying exam (only PhD students) must be attended by the entire committee. These exams can be conducted using distance technology as long as everyone is present (physically or remotely through DE technology) at the same time.

Special circumstances occasionally require that the Major Advisor (Chair), Co-Advisor (Co- Chair), or members of the supervisory committee be changed. To change the Chair or Co-Chair of the supervisory committee, the student or Chair/Co-Chair must send a petition to the Department Chair for approval. A justification letter must be provided outlining why the change is proposed. A change in Chair and/or Co-Chair may only be approved once during the course of studies. Additional requests to change Chair and/or Co-Chair require that the student reapply to re-enter the graduate program and identify a new Major Advisor (Chair of committee). The Graduate Coordinator and Distance Education (DE Coordinator) will only approve changes in Major Advisors (and Co-Advisors) if an alternative Major Advisor in the SWESD has been found. At no point in time during the course of studies in SWS programs can a student be without a Major Advisor. While the

practice is discouraged, members of the supervisory committee may be changed at any point up to the semester prior to the comprehensive (MS) or qualifying (PhD) exam; subsequent committee membership changes must be approved by either the Graduate Coordinator or Distance Education (DE) Coordinator. No changes to the Supervisory Committee are permitted after the student has made the first submission of the thesis or dissertation, or the mid-point of the graduating semester, in the case of professional MS students.

Students are encouraged to develop a close working relationship with their advisors and Supervisory Committee members and to communicate academic and departmental interests and concerns to them. Each student should schedule meetings with his/her Graduate Advisor as often as needed to ensure adequate communication and progress. Students should also keep Supervisory Committee members informed of their progress at least annually or as often as appropriate. Each PhD student should also meet with his/her Graduate Advisor at least once a year to discuss the student's Individual Development Plan (see section 5.11). MS students are encouraged (but not required) to develop an IDP and discuss with their advisor.

Problems that develop between a student and member(s) of his/her Supervisory Committee can be arbitrated on a confidential basis by the Graduate Coordinator (on-campus students), Distance Education (DE) Coordinator (distance education students) or the Department Chair. In case the student does not resolve the problem within the Department, he/she should follow the University Grievance Procedure. That procedure can be found in the [UF Graduate Student Handbook](#).

### **5.9. PLAN OF STUDY FORMS**

An effective graduate degree program requires that course work, research, and assistantship duties reinforce the student's educational objectives. To facilitate this coordination, a comprehensive plan of study should be formulated as soon as practical. The graduate student and the Graduate Advisor are expected to develop a plan of study during the student's first term in Graduate School. The plan includes a proposed program of courses for the degree, as conveyed via the "Proposed Plan of Study" form. It should be finalized and signed by all committee members by the end of the second semester for full-time MS students and PhD students, or by the end of the semester in which 12 credit hours are earned for part-time students. If the plan is not formalized by this time, the student's records will be flagged and the student will not be allowed to register for the following semester until the form is turned in with all signatures.

The finalized, signed Proposed Plan of Study is submitted to the Graduate Coordinator (on-campus students) or Distance Education (DE) Coordinator (distance education students), who then submit it to the Department Chair for approval. The student is expected to conform his/her course choices to the Plan of Study approved by these parties. At the end of the degree program, before the student is cleared for graduation, a Final Plan of Study form (reflecting all courses actually taken by the student) must be signed and turned in to Student Services along with the Final Exam Form. Students are encouraged to prepare this finalized form in advance and bring it to their Final Exam for the sake of convenience in getting Supervisory Committee members to sign it. Any discrepancies between the Proposed and Final Plan of Study forms must be justified and approved by all members of the Committee before the student may graduate.



### **5.10. WRITTEN PROPOSAL FOR RESEARCH PROJECT**

Each MS-thesis and PhD student is expected to complete and present a research project proposal. MS-Professional students are expected to present a proposal for their major paper topic to his/her Supervisory Committee if they choose this option. The proposal should be submitted as early as possible in the student's program. The approved proposal will serve as a guideline for initiation of the student's research. Copies should be prepared for each member of the Supervisory Committee. Proposals for MS-Thesis and PhD research typically include the following (see section 5.13 for Major Paper proposals):

- Proposed thesis or dissertation title -- Title should be brief and clear.
- Introduction / Significance and Rationale -- What pertinent question or questions are you addressing with this research? Why do these questions need answers?
- Literature Review -- What specific scientific information has been obtained by previous investigators on the subject of your research? What information is needed to provide improved understanding of mechanisms and processes involved? Briefly describe your research proposal. In what way will your research contribute to improved understanding?
- Hypotheses -- What hypotheses do you plan to test through the proposed research?
- Objectives -- What are the specific objectives for the proposed research? In other words, what do you plan to accomplish?
- Plan of Work -- What data do you plan to collect? What methods do you propose to use to collect and analyze data? Describe, in detail, how you plan to perform this research. What is the sequence of steps? How much time do you estimate that each step will require? What special equipment or techniques will you use in your research?
- Research Results -- In what form will you report your results? How will these results be used to draw conclusions from your research? In what ways do you anticipate that your results will contribute to scientific knowledge?
- Novelty of Research -- Describe how your research will advance science.

SWS graduate students are expected to think and act as independently as possible while developing and completing their research projects. However, this doesn't mean that you should not consult your advisor for guidance, especially for MS students. In fact, maintaining a consistent dialogue between the student and advisor(s) can enhance the mentoring process. Each student is expected to exert initiative and assume responsibility for developing quality scientific research in collaboration with his/her major advisor. Each student is expected to communicate openly and frequently with his/her Major Advisor and Supervisory Committee. Communication--both verbal and written--is a vital part of the graduate student training process. Each student is expected to become familiar with published literature that relates to the topic of his or her research. A thorough literature review should be performed early in the student's graduate program and updated regularly during the student's tenure.

Distance education students pursuing the thesis option are encouraged to thoroughly outline in

their proposal the resources and instrumentation needs to accomplish research goals and objectives. Thesis projects may be conducted in conjunction with stakeholders, agency-facilitated projects, soil and water monitoring and mapping efforts, ongoing research projects in the SWESD, or data provided through environmental databases (e.g. [SWS Soil Data Bank](#); [Terrestrial Carbon Information System](#); [DB Hydro database – South Florida Water Management District](#)). Thesis and dissertation projects can be conducted on-campus, at UF/IFAS RECs or other geographic locations. If a research project is conducted off-campus, a local research advisor should serve on the student’s Supervisory Committee.

### **5.11. INDIVIDUAL DEVELOPMENT PLAN**

All PhD graduate students in the SWESD (starting in Fall 2018 semester) must develop an Individual Development Plan (IDP) with input from their major professor. The [Graduate School policy](#) explains the rationale for this requirement. The IDP serves as a means whereby students can: 1) reflect on their values, interests and professional goals, 2) self-assess their competency in important professional skills, 3) develop plans to enhance those skills with input from their supervisor and other mentors, 4) work through the plan utilizing resources provided by advisors, the department, college, university or other sources, and 5) review progress and revise the plan as needed (at least annually). This is a student-initiated process. Instructions will be provided during the new student orientation each fall semester. The Soil and Water Sciences IDP template can be used adaptively in accordance with what best facilitates effective student-advisor communication and generally best serves the student’s interest. Annual re-evaluations of the plan are due to the Graduate Coordinator by annually before May 15th for the duration of the student’s graduate program. The template can be downloaded from the Soil and Water Sciences website under [Academic Forms](#). Following the initial evaluation and subsequent reviews, students should submit the last page with signatures as an assignment through the SWESD Graduate Students module in Canvas (<https://ufl.instructure.com/courses/358536>). While not required, MS students are encouraged to also develop IDPs to help insure they reach their programmatic goals.

### **5.12. EXAMINATIONS**

#### **5.12.1. Master of Science (MS)**

A final oral or written examination is required. Oral exams may be given in-person, through remote means (e.g. Zoom, Teams, etc.), or any combination of the two as long as they are conducted in the simultaneous presence of the entire supervisory committee, allowing all participants access to the presentation at the same time, and all questions and responses are given in “real” time. Let Mike Sisk know when your exam is scheduled at least 10 business (working) days in advance so he can send an announcement of the exam to the CALS Office, Supervisory Committee Members, and the SWESD faculty (University requirement). This examination is usually oral, but the nature is not specified by the Graduate School and is the prerogative of the Supervisory Committee. The examination evaluates the student’s proficiency and general knowledge in at least the major field of study and, in particular, evaluates the thesis and the student’s comprehension thereof. This examination may not be scheduled earlier than six months before the degree is to be conferred.

### 5.12.2. Master of Science (Professional MS)

The student is required to pass a written and/or oral comprehensive exam administered by the advisory committee no more than six months before the degree is to be conferred. This exam is comprehensive, covering all aspects of soil, water, and environmental sciences. Students prepare for this exam through course work, studying of standard textbooks (such as R.R. Weil and N.C. Brady, 2016, 15th ed. "The Nature and Properties of Soils", Pearson Education, ISBN: 978-0133254488). In the exam the student demonstrates proficiency in the following categories: knowledge, comprehension, application, analysis, synthesis, evaluation, and creation. Example questions are provided for water and soils in Table 1.

Table 1. Categories, descriptions and examples of soil and water science questions. Questions cover competencies as outlined in Bloom's Taxonomy (Bloom, 1984)<sup>1</sup> and enhanced version of the taxonomy (Anderson and Krathwohl, 2001)<sup>2</sup>.

Category	Description	Water – Example Questions	Soil – Example Questions
Knowledge – remember <sup>1</sup>	Recall data and information.	Describe the water cycle. Describe the process of infiltration in soils.	Describe the soil order Histosols. What key functions do microorganisms play in the N cycle?
Comprehension – understand <sup>1</sup>	Understand the meaning, translation, interpolation, and interpretation of instructions and problems. State a problem in one's own words.	What is the difference between infiltration and percolation?	What is the difference between soil organic matter and soil carbon?
Application – apply <sup>1</sup>	Use a concept in a new situation or unprompted use of an abstraction. Applies what was learned in the classroom into novel situations in the work place.	How would you assess water quality in a stream? Within a watershed?	How would you assess soil carbon stocks across a large region?
Analysis – analyze <sup>1</sup>	Separates material or concepts into component parts so that its organizational structure may be understood. Distinguishes between facts and inferences.	What is the difference between phosphorus concentrations and loads? How do you derive loads?  The soil texture in a soil profile A is 90% sand, 7% silt, and 3% clay and in profile B is 25% sand, 25% silt, and 50% clay. Describe the expected differences in soil hydrologic properties and nutrient leaching behavior in the two profiles.	A regression model that relates soil organic carbon and soil-forming factors shows a coefficient of determination ( $R^2$ ) of 0.85 and a root mean square error (RMSE) of 2.0 kg C m <sup>-2</sup> . Explain the differences in $R^2$ and RMSE; & the differences between accuracy and precision. Explain methanogenesis and describe the soil & environmental factors that impart control on methanogenesis.
Synthesis – synthesize <sup>1</sup>	Builds a structure or pattern from diverse elements. Put parts together to form a whole, with emphasis on creating a new meaning or structure.	Explain the interaction effects between land cover / land use (LC/LU) and nitrate loads measured at the drainage outlet of a watershed. Which LC/LU do you infer to correlate with high nitrate loads? (explain why)	The carbon:phosphorus ratio in wetland A is 290 and in wetland B is 915. Which one of the wetlands is impacted by an environmental stressor? Describe possible sources of this stressor and how the impacted wetland could be remediated.

Evaluation – evaluate <sup>1</sup>	Make judgments about the value of ideas or materials.	Best management practices (BMPs) and conservation management have been suggested to improve water quality. Discuss 2 or more examples of BMPs/conservation management and the underlying mechanisms to improve water quality.	Afforestation and deforestation have an impact on the soil ecosystem. Evaluate possible consequences of afforestation and deforestation in a tropical and temperate climate setting.
Creation – Create <sup>2</sup>	Create new studies, material, findings.	What would you suggest to better address water shortage problems in basins used for drinking water?	What would you suggest to improve existing soil surveys?

References:

Anderson L. W. and Krathwohl D. R. (Eds.) 2001. *Taxonomy for learning, teaching and assessing: A revision of Bloom's Taxonomy of educational objectives*. Longman Publ. New York, NY.

Bloom B.S. 1984. *Taxonomy of Educational Objectives*. Publ. Allyn and Bacon, Boston, MA.

**5.12.3. Doctor of Philosophy (PhD)**

Qualifying and Final Examinations are required. Oral exams may be given in-person, through remote means (e.g. Zoom, Teams, etc.), or any combination of the two as long as they are conducted in the simultaneous presence of the entire supervisory committee, allowing all participants access to the presentation at the same time, and all questions and responses are given in “real” time. An announcement of the exams must be sent to the CALS Office, Supervisory Committee Members, and the SWESD faculty 10 business (working) days before the examination. Notify Mike Sisk as soon as you have a date so he can get the announcements posted. The Qualifying Exam may be taken as early as the third semester of graduate study beyond the master’s degree and must be completed at least two terms prior to graduation. The term in which the qualifying examination is passed is counted if the examination occurs before the midpoint of the term. The Qualifying Exam is both written and oral, covering the major and minor areas of study. The Qualifying Exam provides an evaluation of the knowledge and preparation to enter candidacy for a PhD. The student should apply for admission to candidacy as soon as the qualifying exam is passed and a dissertation topic is approved.

Graduate faculty who are not on the supervisory committee and students may receive permission from the Graduate Advisor to attend the oral portion of the Qualifying Exam. Graduate faculty members who are not members of the student’s Supervisory Committee are not permitted to vote with the Committee.

The PhD Final Exam provides an evaluation of the dissertation as well as the student’s comprehension thereof. The final oral examination is open to all interested faculty. Students defending their thesis or dissertation should be well-prepared and should have appropriate visual aids to effectively present their data, results, and interpretation.

**5.13. MAJOR PAPER (SWS 6905) (MS Professional)**

Students may choose to write a Major Paper to fulfill requirements for the MS-Professional

degree. This paper should be on a topic in soil, water and/or environmental science that is of interest to the student and committee members. The paper should represent work sufficient for at least 2 credits of SWS 6905. The Major Paper is similar to a MS thesis, but much smaller in scope. For the Major Paper, a student demonstrates knowledge and understanding of a select topic in the soil, water, and/or environmental science discipline. Examples of paper content include but are not limited to (i) summary and critical interpretation of scientific findings; (ii) analysis of soil, water or environmental datasets using (geo)statistical methods or models to compare and contrast scientific findings; and/or (iii) synthesis / evaluation where disparate soil, water and/or environmental data, information, and knowledge are combined to generate new knowledge addressing an environmental problem.

*Examples – major paper topics:*

- Literature-based analysis on the type and effectiveness of best management practices in Florida.
- Statistical analysis of an environmental dataset.
- Combine soil, vegetation, and phosphorus data to assess nutrient enrichment in a wetland.
- Case study – e.g. contamination and remediation problem.

The topic selected for the Major Paper is evaluated and approved in the form of a proposal reviewed by the supervisory committee before the paper is started (2-3 page proposal). The student works independently with advice from the supervisory committee to develop and write the Major Paper and compiles a paper consisting of the following sections (as applicable) to the selected topic: (i) Abstract; (ii) Introduction – Significance and Rationale; (iii) Objectives; (iv) Methodology; (v) Results; (vi) Discussion; (vii) Conclusions; and (viii) References.

The Major paper is typically 25-40 pages in length, including figures and tables, plus references (Format: double line spacing). The Major Paper must be original work and honesty rules of the University of Florida must be observed (refer to section 5.10 Honor Code and Plagiarism). The Major Advisor assigns the letter grade for the Major Paper with recommendations from the supervisory committee. All Major Papers are archived [in electronic form](#) in the Soil and Water Sciences Department (final and approved version of the Major Paper must be sent to the departmental Academic Program Specialist). Major Papers are separate from the comprehensive exam and cannot replace the exam.

Some resources on scientific writing:

Alley M. 1996. *The Craft of Scientific Writing*. Springer, Berlin.

Hofmann, A.H. 2009. *Scientific Writing and Communication: Papers, Proposals, and Presentations*. Oxford University Press.

Nair, P.K.R., and V.D. Nair. 2014. *Scientific Writing and Communication in Agriculture and Natural*

*Resources*. Springer International Publishing, Switzerland. ISBN 978-3-319-03100-2; ISBN 978-3-19-03101-9 (eBook)

Perelman, L.C., J. Paradis, and E. Barrett. 1998. *The Mayfield Handbook of Technical and Scientific Writing*. Mayfield Publ. Company, Mountain View, CA.

Resources available for the Major Paper:

- UF Library
- Soil, water, and environmental databases and monitoring sets' (e.g., [SWS Soil Data Bank](#); [Terrestrial Carbon Information System](#); [DB Hydro database – South Florida Water Management District](#); [National Cooperative Soil Survey Soil Characterization Database](#)).
- Data from historic or ongoing research projects in the SWESD or data to be collected.
- SWSD Virtual Machines and UF Apps that provide workspace and software (e.g. MS Office Suite, statistical software, ArcGIS, and more).

**5.14. THESES (MS) and DISSERTATIONS (PHD)**

The Graduate School has a useful [guide for preparing Theses and Dissertations](#). Students are encouraged to read this guide carefully. Copies should also be prepared for members of the Supervisory Committee who desire a copy. Copying expenses are the responsibility of the student. Copies may not be made on Departmental copy machines.

The thesis or dissertation is to be developed by the student with the supervision, recommendations, and critique of the Major Advisor. The student and the Major Advisor should thoroughly review the thesis/dissertation before submitting it to the Supervisory Committee. When the Graduate Advisor is satisfied that the document is ready for review by the Supervisory Committee, the advisor will authorize disbursement. The student should be prepared to receive suggestions for major changes and corrections in the thesis or dissertation, as required by the Supervisory Committee. Therefore, the student must allow sufficient time to make such changes. The student should plan to present the thesis or dissertation to members of the Supervisory Committee at least three weeks prior to the date of the final exam. This will allow approximately two weeks for review, and the student will have at least one week for preparing the corrected copy to be presented at the final exam. The submitted draft should be complete in every respect--including figures, tables, and bibliography. Formatting guidelines of the ETD office must be observed. [Deadlines for the First and Final submissions](#) of signed original theses and dissertations are published by the Graduate School each term and can also be obtained by contacting the Academic Program Specialist. The Department uses the deadline for submission of signed theses and dissertations as the deadline for obtaining committee members' signatures on the final document. In all cases, the student must schedule the oral examination sufficiently ahead of the deadlines to allow for corrections, since corrections are to be completed before final signatures are collected.

Students are required to submit their theses and dissertations electronically (also called ETD).

Workshops are offered by the Editorial Office and the Center for Instructional and Research Computing Activities. Information is available online at the [Application Support Center of the UF Computing Help Desk](#).

## **5.15. PUBLICATION OF RESEARCH**

Graduate students are strongly encouraged to submit manuscripts of their findings for publication. Expectations are that PhD and MS students strive towards high quality in their research and publish their work in peer-reviewed journals. Major Advisor and supervisory committees outline their own expectations regarding publications to students. University policy allows the thesis/dissertation chapters to be published as articles, and students are encouraged to take this approach. However, the thesis/dissertation must comply with the UF editorial standards and guidelines. Students are also encouraged to prepare and submit papers for publication before graduation. Students are responsible for complying with all copyright requirements.

### **5.15.1. What do I need to know about signing agreements with publishers?**

When your research is published as part of a conference, journal, or book, you usually sign some sort of agreement with the publisher. Read the agreement carefully before signing and make sure you understand and agree with its terms and conditions. If you don't agree with them, you may want to negotiate to change it with the publisher or seek legal or other counsel as to what to do. The agreement should be explicit about what future rights you will keep for use of your work. If you want to include the materials in a dissertation or reuse them for teaching or a chapter in a book, say so!

### **5.15.2. What if I want to use a journal article as a chapter in my ETD?**

You have several options if you have published an article (or articles) before turning in your ETD and want to incorporate them into it. Discuss them with your Supervisory Committee and your publisher. First, you can simply cite that publication in your references. Second, if the publisher has the publication online, you can put a hyperlink to it in your ETD (with the permission of the publisher, who usually has some sort of website protection, allowing only paying customers or subscribers access to it). Third, if the publisher gives you a signed release, you can include the publication in your ETD, as allowed by that release and described in "Chapter 4: Articles as Part of Thesis or Dissertation" in the [Graduate School's Guide for Preparing Theses and Dissertations](#).

If your ETD delves into your research in a very different way than the published article, permission would not be necessary, since articles are typically short, and your ETD may be the only place where all the details, data, tables, and other aspects of your research are presented in full. See additional information from the [UF Graduate School Editorial Office](#).

## **5.16. PRESENTATION OF RESEARCH RESULTS AT SCIENTIFIC MEETINGS**

All graduate students are strongly encouraged to actively participate in the Department's semi-annual Research Forum. The forum provides an opportunity for graduate students to interact with fellow students and faculty and present their research as oral or poster papers. As a part of their professional development, students should seek opportunities to present their discoveries at scientific meetings at state, national, and international levels. Though the Department cannot

ensure financial support for out-of-pocket expenses, partial assistance may be provided to students when funds are available. Frequently, transportation to the meetings may be provided for students presenting papers. Grant funds are often used to provide partial travel support as well. Students are strongly encouraged to seek travel funding in consultation with their mentors. Travel assistance for meetings is discussed above in the Financial Assistance section.

## 5.17. ACADEMIC REQUIREMENTS

Course requirements for each graduate student are determined by the Supervisory Committee but must meet standards as set forth by the Graduate School. Courses will vary with the degree sought, with each graduate program being designed to fit the needs and objectives of the student. Most graduate students will find that their bachelor's degree program did not completely prepare them for graduate study. Consequently, additional foundation courses are often required.

### 5.17.1. REGISTRATION

#### 5.17.1.1. General Information

All graduate students are required to register each semester during the specified periods established by the Office of the University Registrar. All course section numbers should be carefully checked. When "DEP-X" or "DEPT" appears in place of a section number, this indicates that the course is controlled by the department offering the course. In this case, the student should contact the specific department for registration.

Graduate students on assistantship or fellowship must be registered for the appropriate number of hours, based on their appointment (see below) to qualify for the assistantship/fellowship funding and tuition waiver. If the student leaves the assistantship or fellowship during a semester, the tuition waiver does not apply and the student must pay tuition and fees for that semester. If the student registers for more than the required number of credits, the student must pay the balance of tuition not covered by the assistantship.

#### 5.17.1.2. Minimum Credits for Registration

Minimum registration requirements (credits) are as follows:

<b>Assistantship Type</b>	<b>Fall/Spring</b>	<b>Summer A/B/C</b>
Full-time students (non-assistants)	9	4/4/8
Students on fellowship	12	4/4/8
Assistants on .01 to .24 FTE	12	4/4/8
Assistants on .25 to .74 FTE	9	3/3/6
Assistants on .75 to .99 FTE	6	2/2/4
Full time Assistants	3	varies
Part-time students	3	2 total

For students on appointment for the full summer, registration must total that specified for the C term, and students must be registered during each term on appointment. A student must not have two consecutive semesters when s/he is not registered for the minimum credits, or the student



must submit the Readmission Application to UF. There are no minimum credit requirements per semester for students not on assistantships or fellowships (i.e. self-paying). For distance education students it may be common to register for fall and spring semesters, but not register for summer.

#### **5.17.1.3. Seminar Policy**

All MS-Thesis students and PhD students are required to give an exit seminar in fulfillment of their degree requirements. Students are required to get approval of their Major Advisor before giving the exit seminar to ensure that the seminar content is ready for presentation. The Major Advisor has the right to cancel an exit seminar for a student who is not ready. Students should register for the seminar course (SWS 6931) during their final semester in which they will present their exit seminar. The seminar will be graded by the student's major advisor. The student's Major Advisor will ensure that a student presents an exit seminar before graduation.

Students should meet with the Departmental Seminar Coordinator to discuss seminar procedures and obligations. All graduate students (located on campus) in the department are expected to attend all seminars sponsored by the department. Students located at RECs and distance education students are expected to attend the livestreams of the seminar or view the recordings. At the end of each semester, graduate students should provide their Major Advisor with a list of seminars attended. Graduate students are also encouraged to attend seminars of special interest that may be sponsored by other departments. All students are encouraged to work with their advisors to take advantage of opportunities to make presentations in professional settings in order to gain experience that will improve their public speaking skills.

All departmental seminars are recorded to facilitate participation of distance education students and REC faculty in synchronous (real-time) or asynchronous modes (archived digital seminars). Seminar information, including livestream links, is available on the [Seminars](#) page of the departmental website and links to past recordings are also accessible on the [Archived Seminars page](#).

#### **5.17.1.4. Registration for Final Term**

Students who have completed all course requirements but need to finalize their thesis/dissertation, or non-thesis students who need to complete final exam and final project report, must register for at least 3 credit hours during the fall or spring terms or 2 hours for the summer term. All thesis and doctoral degree candidates must be registered for at least the minimum number of credits for SWS 6971 or SWS 7980 during the term that the final examination is given and the term the degree is conferred. All non-thesis candidates must be registered for at least the minimum number of credits that count toward the degree program during the term the final examination is given and the term the degree is conferred.

#### **5.17.1.5. Cleared Prior Status**

Clearing prior is a possibility only for Thesis and Dissertation students who have met all published deadlines for the current term except Final Clearance from the Graduate Editorial Office. No other students are eligible. Clear Prior permits students to be exempt from registration for the term in

which the degree will be awarded. A student requesting to clear prior must meet ALL the following criteria:

- Student has successfully submitted a degree application for the current term within the published deadlines, as confirmed by print screen available from ONE.UF.
- Student has appropriately satisfied the current term registration requirement.
- Student has successfully met the current term first submission deadlines for the thesis or dissertation, as confirmed by the Editorial Office via a confirmation email to the student and Supervisory Committee chair.
- Student has successfully met all other degree and administrative requirements within the published deadlines for the current term.
- Student is in the process of finalizing the thesis or dissertation with the Graduate School Editorial Office.
- Student has filed a Graduation Date Change Form at the Registrar’s Office by the last day of classes of the current term.

**5.18. UNSATISFACTORY ACADEMIC PROGRESS**

Students pursuing the MS or PhD degrees are expected to complete at least the minimum hourly requirement each term and to maintain an acceptable academic grade point average. "Acceptable" is understood to mean a cumulative GPA of 3.00, as well as a 3.00 in all SWS courses. Students who fall below these standards will be placed on academic probation and may lose their assistantship. For the third and subsequent semesters of enrollment, students who demonstrate less-than-adequate academic progress will be subject to the following actions:

Category	Cumulative GPA	Action to be taken
A	2.9 to 3.0	Students who fall in this range for the first time will be given 2 semesters to correct the deficiency. Students who fall in this range for the second time will be will be given 1 semester to correct.
B	2.7 to 2.89	Students who fall in this range for the first time will be given 2 semesters to correct this deficiency. Students who fall in this range for the second time may be dismissed.
C	less than 2.7	The student's graduate program may be immediately terminated.

Students who wish to request a waiver of this policy or any portion thereof must do so in writing to the Graduate Coordinator, who will schedule an oral hearing with the Departmental Teaching Committee (formerly Academic Programs Committee). The Committee will submit a recommendation to the Department Chair, who will inform the student of the action to be taken. Exceptions to this policy will require legitimate reasons to substantiate any request for a waiver.

Upon notification by the Graduate School of graduate students having a cumulative GPA of <3.0, the Academic Program Specialist will send letters to each student and to the student's Major Advisor informing each of Departmental policy toward unsatisfactory academic progress.

New graduate students who demonstrate less-than-adequate progress at the end of their first semester will be subject to the following actions:

Category	Cumulative GPA	Action to be taken
A	2.9 to 3.0	Conditionally admitted students will be given one semester to correct this deficiency. Directly admitted students will be given two semesters to correct this deficiency. If at the end of a conditionally admitted student's second semester the cumulative GPA remains <3.0, the student's graduate program may be terminated.
B	2.7 to 2.89	Conditionally admitted students may be terminated; directly admitted students will be given one semester to correct this deficiency.
C	less than 2.7	Possible termination of graduate program.

### 5.19. EXIT INTERVIEW

At the conclusion of the degree program each student is expected to have an exit interview with the Chair of the SWESD. Distance education students can conduct the exit interview using distance technology. Do not schedule your exit interview until the final, corrected thesis/dissertation/non-thesis project has been submitted and approved.

## 6. ADMINISTRATIVE AND ACADEMIC POLICIES

### 6.1. PETITIONS REGARDING GRADUATE REQUIREMENTS

Petitions regarding waivers or alterations of any departmental requirement must be submitted to the Chair of the Academic Programs Committee by the Graduate Advisor. The Academic Programs Committee will recommend action on the petition to the Department Chair. Petitions regarding waivers or alterations of any Graduate School requirement must be submitted to the Graduate School by the Graduate Advisor, co-signed by the Graduate Coordinator and CALS Senior Associate Dean on or before the last day of classes in the term preceding the term in which the degree is awarded.

### 6.2. DESK SPACE ASSIGNMENT

Office space is assigned to graduate students on a space-available basis.. Most office space is in conventional offices shared by other graduate students. To request office space, please contact the SWESD Facilities Operations Specialist (Kyle Davis).

### **6.3. COMPUTER FACILITIES AND RESOURCES**

Financial support for computer use for thesis or dissertation research activities and other work-related assignments will normally be available through the student's Major Advisor. Computer support available for research from the Graduate Advisor is not to be used for course work assignments. Computer time for course work is available through the instructor teaching the course or through a special Departmental teaching allocation. Students should have their own computers for class work and personal use. All students must have a GatorLink account, which will be the primary method of communication via email. It is important that students check their GatorLink email frequently!

The CALS Computer Teaching Laboratory (3086 McCarty Hall B) is currently available to students and faculty on a no-cost basis and can be accessed for computer-based work. The Virtual Machines (VMs) serve as a virtual desktop computer lab, providing students with remote access to software (Office Suite, ArcGIS, statistical and geostatistical software, etc.) and secure workspace for work on research projects, course work or thesis/dissertation projects. See the [CALS Virtual Labs](#) for instructions on connecting to the virtual computer lab through VMWare software. Students can also access many software applications from any computing device through [UF Apps](#).

Distance education students and students enrolled in courses with web-based content must have reliable Internet access and a computer with the software required by the course instructor. Discounted software may be available at the UF Bookstore. A computer is required to access digital course material provided to students via course management systems. To participate in live chats (online course meetings) students are required to have a webcam, speakers, and microphone. It is the responsibility of the student to gain access to technical equipment (e.g. computer and accessories) to access course material provided in distance education courses.

### **6.4. USE OF DEPARTMENTAL VEHICLES**

State vehicles are for OFFICIAL USE ONLY. Operators of State vehicles must abide by all State laws as specified in the [Florida Driver License Handbook](#), which is available from any Florida Highway Patrol Office or online. Special courtesy to other drivers should be exercised at all times, since one is representing the Department, University, and State when driving a State vehicle.

A valid Florida driver's license is required to operate State vehicles, with operation of vehicles heavier than 8,000 pounds gross requiring a commercial license as well. Caution: Only persons employed by the University are permitted to operate a University-owned vehicle. A graduate student on an assistantship meets the employment criterion.

Students who wish to operate any Departmental vehicles (including PI-managed vehicles) must request authorization from the Department's main office, which includes providing a copy of your driver's license to keep on file in the department. Students operating State vehicles should check with their advisors concerning current procedures for signing out vehicles, purchase of fuel, maintenance of the vehicle log book, etc.

## **6.5. FINANCIAL SUPPORT FOR RESEARCH**

Materials, supplies, equipment, travel, and support services (graphical and technical)—as required for the performance of research contributing to a Departmental research program—will be supported through the Department with State and Federal funds and extramural grants and contracts to the extent that funds are available. Requests for services and support are to be channeled through the student's Major Advisor. Such services are not available for activities related to course work, thesis, or dissertation preparation unless allowed by grant funds. Students are encouraged to participate with faculty in the preparation of grant proposals to obtain necessary support for research activities.

All purchases made for extension, research, and teaching activities—whether related to thesis research or not—must receive prior approval of the student's Major Advisor. Details for making purchases are available from the Department's Administrative Services Specialist.

Students have full access to the e-library and the library facilities on the main campus of the University of Florida. To use library services such as computerized literature searches, billed copying services, etc., the student must obtain the approval of his/her Major Advisor and use the appropriate account number for each library. For certain libraries it may be necessary for the Major Advisor to write a letter authorizing the student to charge the specific services to Departmental account numbers.

Expenses for thesis and dissertation preparation—typing, drafting, paper, photocopying and covers—are considered personal expenses and are borne by the student, not the Department. On the other hand, expenses related to the preparation of required reports or publications derived from theses and dissertations are legitimate Departmental expenses.

## **6.6. LEAVES OF ABSENCE (Copied from 2021-2023 UF GAU-CONTRACT – ARTICLE 8)**

8.1. An employee shall not be required to perform assigned duties when:

- (a) Disabled or otherwise unable to perform them because of injury, illness (physical or mental), jury duty, required U.S. military service, or when unable to perform because the employee's presence is required elsewhere because of injury, illness, or death in the immediate family. Immediate family shall consist of mother, father, spouse, sister, brother, child, domestic partner, a person in a legal dependent relationship with the employee, or other relative living in the employee's household. The employee shall notify the supervisor as soon as possible of the inability to serve.
- (b) The University is closed for a state holiday or a declared emergency unless the special conditions of the appointment require the employee to perform duties at these times. These days shall not be held against the employee with regard to permitted days of leave pursuant to Article 8.2.
- (c) Taking examinations for professional licensing related to the degree or qualifying examinations required by the University. These days shall not be held against the employee with regard to permitted days of leave pursuant to Article 8.2.
- (d) Traveling to conferences or other events for professional development. The University and UFF-GAU encourage supervisors to facilitate professional development and approval of attendance at such events shall not be unreasonably denied. These days shall not be held against the employee with regard to permitted days of leave pursuant to Article 8.2.

8.2. Personal time under this Article shall be with pay for up to five (5) days per semester appointment. Each employee shall be credited with five (5) days at the beginning of each semester and shall use leave in increments of not less than one (1) day. For example, an employee scheduled to work six (6) hours on Monday and three (3) hours on Tuesday, who is unable to perform assigned duties on these days for any of the reasons described above, would be charged with two (2) days of personal time regardless of FTE appointment or number of work hours scheduled. The personal time provided under this Article shall not be cumulative.

### 8.3. Unpaid Leave.

- (a) Graduate assistants shall be entitled to six (6) weeks of unpaid leave during any 12-month period for one (1) or more of the following reasons:
  - 1. The birth of a child and in order to care for that child;
  - 2. The placement of a child with a graduate assistant for adoption or foster care;
  - 3. The care of a spouse, domestic partner, mother, father, sister, brother, child, legal dependent, or a relative living in the graduate assistant's household;
  - 4. A serious health condition of the GA which makes the GA unable to perform his or her duties.
- (b) The GA shall provide the University with written notice not less than thirty (30) days prior to the date of the requested leave, if practicable. In the case of an emergency, the GA must give verbal notice within twenty-four (24) hours of taking leave. In the case of a serious health condition, the University may request medical verification from a health care provider. The

University may also require the GA to see a health care provider of the University's choice and at the University's expense.

- (c) The GA may request an extension of the leave which the University at its sole discretion may provide.
- (d) The GA is entitled to return to the same or similar position at the conclusion of the leave. This return provision does not apply if the return date is after the completion of an employment contract.
- (e) The University shall continue to pay the health care premiums during the duration of the GA's leave. If applicable, the University's tuition waiver shall be maintained.
- (f) A GA must be in at least a second semester of employment as a GA to be eligible for this leave provision.

8.4 Members of the bargaining unit may request a leave of absence for a semester or a year to pursue research related to their academic program. The GA shall be considered an employee during such leave. Such leaves are subject to the University's approval.

#### **6.7. OUTSIDE EMPLOYMENT**

Outside employment or other activities that the University can show interfere with an employee's obligation to the University or that constitute a conflict of interest is prohibited. No employee who engages in outside employment or other activity shall claim to be an official University representative in connection with outside employment or other activity. No employee may use University personnel, equipment, or facilities in connection with outside employment or activity without prior approval of the University. Approval for the use of University facilities, equipment, or services may be conditioned upon reimbursement for the use thereof.

Report of Outside Activity. Any employee who proposes to engage in any outside activity or who has a financial interest which the employee should reasonably conclude may create a conflict of interest, shall report to the employee's supervisor, in writing, the details of such proposed activity prior to engaging therein. The report shall include, where applicable, the name of the employer or other recipient of services; the funding source; the location where such activity shall be performed, and the nature and extent of the activity.

#### **6.8. MEETINGS WITH DEPARTMENTAL CHAIR**

The Chair, as well as the Graduate Coordinator, will meet with SWS graduate students at least once per year. All graduate students are urged to attend and participate in these meetings.

The Chair, as well as the Distance Education (DE) Coordinator, will also meet online with SWS distance education graduate students at least once per year (online videoconferences). All distance education graduate students are urged to participate in these meetings.

#### **6.9. GRIEVANCES**

Policies and procedures for pursuing grievances, when informal resolution has not proven

effective, are listed in Article 22 of the Collective Bargaining Agreement between the Board of Regents and Graduate Assistants United, United Faculty of Florida. All attempts should be made to resolve all problems, first at the department level through the Graduate Advisor, Graduate Coordinator (on-campus students) or Distance Education (DE) Coordinator (distance education students), and Department Chair, in that order.

#### **6.10. HONOR CODE AND PLAGIARISM**

All students, staff and faculty members, and administrators in the Soil and Water Sciences Department follow the honor code of academic honesty as outlined by the [UF Dean of Students Office](#).

**Preamble:** In adopting this honor code, UF students recognize that academic honesty and integrity are fundamental values of the university community. Students who enroll at the University commit to holding themselves and their peers to the high standard of honor required by the honor code. Any individual who becomes aware of a violation of the honor code is bound by honor to take corrective action. The quality of a University of Florida education depends on community acceptance and enforcement of the honor code.

**The Honor Code: We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.**

On all work submitted for credit by students at the University, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment."

The University requires all members of its community to be honest in all endeavors. A fundamental principle is that the whole process of learning and pursuit of knowledge is diminished by cheating, plagiarism and other acts of academic dishonesty. In addition, every dishonest act in the academic environment affects other students adversely, from the skewing of the grading curve to giving unfair advantage for honors or for professional or graduate school admission. Therefore, the University will take severe action against dishonest students. Similarly, measures will be taken against faculty, staff and administrators who practice dishonest or demeaning behavior.

**Student responsibility:** Students should report any condition that facilitates dishonesty to the instructor, department chair, college dean, or Student Honor Court.

**Faculty responsibility:** Faculty members have a duty to promote honest behavior and to avoid practices and environments that foster cheating in their classes. Teachers should encourage students to bring negative conditions or incidents of dishonesty to their attention. In their own work, teachers should practice the same high standards they expect from their students.

**Administration responsibility:** As highly visible members of our academic community, administrators should be ever vigilant to promote academic honesty and conduct their lives in an ethically exemplary manner.



## **Student Conduct Code**

Students enjoy the rights and privileges that accrue to membership in a university community and are subject to the responsibilities that accompany that membership. For a system of effective campus governance, it is incumbent upon all members of the campus community to notify appropriate officials of any violations of regulations and to assist in their enforcement. The University's conduct regulations, available to all students in the UF Student Guide, are set forth in Florida Administrative Code. Questions can be directed to the Dean of Students Office.

**Librarians at Marston Science Library** have created a resource guide on [Responsible Conduct of STEM Research](#).

Any violations of the honor code, in particular plagiarism in research documents, theses, dissertations, manuscripts, publications, presentations, and course work, will be rigorously addressed following steps outlined by the [judicial process for honor code violations](#). A Faculty/Student Resolution Form will be completed and forwarded to Student Conduct and Conflict Resolution, 202 Peabody Hall. This results in a student disciplinary file for the student as a violation of the Student Honor Code and in worst case, expulsion from the UF.

## **7. CONTACT INFORMATION**

### **Dr. Matthew Whiles**

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### **Dr. Joel Brendemuhl**

Associate Dean of Graduate Programs  
College of Agriculture and Life Sciences – IFAS  
352.392.1963  
2020 McCarty Hall D

### **Dr. Nicole Stedman, Dean of the Graduate**

352.392.6622  
Graduate School  
164 Grinter Hall  
P.O. Box 115500  
Gainesville, FL 32611-5500

### **Registrar and Admissions Office**

Records and Registration  
352.392.1374

**Graduate Student Records**

352.392.4643  
1st Floor, Grinter Hall  
P.O. Box 115500 CAMPUS

**Graduate Editorial Office: Theses/Dissertations**

352.392.1282  
128 Grinter Hall  
P.O. Box 115500  
CAMPUS

**Student Financial Affairs**

352.392.0181  
S-107 Criser Hall  
CAMPUS

222 Criser Hall  
P.O. Box 114000  
CAMPUS

**International Center**

392.5323  
170 HUB  
P.O. Box 113225  
CAMPUS

**Student Infirmary**

352.392.1161

## APPENDIX A GRADUATION CHECKLIST

Time tables for meeting all deadlines are published by the Graduate School each semester in the [UF Graduate Catalog](#).

- **The semester before you plan to graduate**, check with the Academic Program Specialist to ensure that you have completed all requirements and resolved any issues before graduation. Graduate students cannot graduate with “I,” “N,” or “H” grades on the transcript. A 3.0 GPA overall and in your major is also required to graduate.
- For the final term, registration for the minimum hours of SWS 6971 is required for MS thesis students and the minimum hours of SWS 7980 are required for PhD students, unless the student has obtained “cleared prior” status. Non-thesis students must register for at least the minimum hours of course work that can be counted toward the degree. (See ***Registration for Final Term*** section)
- Fill out an online degree application (through One.UF) for the correct degree and submit it to the Office of the University Registrar by the UF deadline.
- Schedule the thesis or dissertation defense/final examination and notify Student Services no later than 10 business days ahead of time. Final Exam Form, ETD Signature Page, and Publishing Agreement forms must be generated in the system for all students, and an announcement of examinations must be made.
- The Final Plan of Study form must be signed and turned in to Student Services along with the Final Exam Form, ETD Signature Page, and Publishing Agreement. Any discrepancies between the Proposed and Final Plan of Study forms must be approved by all members of the Committee at the defense/final examination before the student may graduate.
- Review the checklists below and the [Graduate School Graduation Checklists](#) to ensure you meet all Thesis and Dissertation submission requirements and deadlines.

## **APPENDIX B CHECKLIST FOR STUDENTS AND FACULTY MEMBERS**

- (1) Admission into the graduate program; a SWESD faculty member must agree to serve as Major Advisor before a student can be admitted to the graduate program.
- (2) First semester:
  - (i) Graduate student orientation (conducted in Gainesville main campus for on-campus students and online for distance education students).
  - (ii) Register for courses (start w/ foundation courses, e.g. SWS 5050 and 5000 level courses first, which serve as prerequisites for more advanced graduate level courses at the 6000 level).
  - (iii) Students and Major Advisor discuss ideas for research (MS-thesis and PhD) or Major Paper (MS-Professional).
  - (iv) Student develops research proposal under supervision of Major Advisor.
  - (v) Student develops draft Plan of Study with recommendations by Major Advisor.
  - (vi) Initial steps to form a Supervisory Committee.
- (3) Second semester:
  - (i) Continue course work (all graduate students); and research (PhD and MS thesis students).
  - (ii) Form Supervisory Committee.
  - (iii) Share Plan of Study with Supervisory Committee and modify according to recommendations by faculty members.
  - (iv) Approve Plan of Study (signatures by student and committee members) – required by the end of second semester.
  - (v) Continue to develop research proposal (MS thesis and PhD student).

(4) Third semester:

- (i) Continue course work (all graduate students); and research (PhD and MS thesis students).
- (ii) MS thesis students: Finalize research proposal and present it to the Supervisory Committee.
- (iii) Meeting of Supervisory Committee (at least once a year).

(5) Forth semester:

- (i) Continue course work (all graduate students); and research (PhD and MS thesis students).
- (ii) MS professional students: Start to work on Major Paper.
- (iii) PhD students: Finalize research proposal and present it to the Supervisory Committee.

(6) ~ Fifth semester:

- (i) Continue course work (all graduate students); and research (PhD and MS thesis students).
- (ii) MS students: Schedule examination. The examination may not be scheduled earlier than six months before the degree is to be conferred.

(7) ~ Sixth semester:

- (i) MS professional students: Complete Major Paper – after approval by committee the paper is archived in the SWESD and made available on the website (forward paper to Academic Program Specialist); written OR oral comprehensive exam administered by Supervisory Committee; exit interview with Department Chair; complete SWES survey form; graduation
- (ii) MS thesis students: Complete thesis and present thesis to Supervisory Committee – after approval by committee the thesis can be submitted to ETD office; final oral OR written examination administered by Supervisory Committee; exit seminar; exit interview with Department Chair; complete SWES survey form; graduation; publish research results jointly with faculty advisors.
- (iii) PhD students: Qualifying Examination - The exam may be taken as early as the third semester of graduate study beyond the master's degree and must be completed at least two terms prior to graduation. Commonly the qualifying exam is taken after major course work has been completed. Note: PhD students should meet at least once a year with supervisory committee to provide update on progress of research.

(8) Seventh .... following semesters (PhD students):

- (i) Continue course work and research.

(ii) Meet at least once a year with supervisory committee to provide update on progress of research. Discuss research questions. Refine research according to suggestions by committee.

(iii) Start writing manuscripts as soon as research evolves and submit for publication in peer-reviewed journals.

(9) Final semester (PhD students):

(i) Complete dissertation.

(ii) Defend the dissertation (oral) in front of Supervisory Committee.

(iii) Refine dissertation according to suggestions by committee.

(iv) Exit seminar.

(v) Submit the final revised version of dissertation to Supervisory Committee and seek faculty approval (signatures).

(vi) After approval by committee, submit dissertation to ETD office.

(vii) Exit interview with Department Chair.

(viii) Return office keys and other related materials to the department / Major Advisor.

(ix) Finalize manuscripts and submit them to peer-reviewed journals.

(x) Graduation.

***Congratulations to all graduate students!***

## APPENDIX C SOIL & WATER SCIENCES COURSE LISTINGS

### Core Courses

SWS 5050 Soils for Environmental Professionals (3)

SWS 5050L Soils for Environmental Professionals Laboratory (1)

**SWS 5050 is required for all students entering the program with no background in soil and water sciences. SWS 5050L is only required for on-campus students entering the program with no background in soil and water sciences. Other students are strongly encouraged to take these courses to obtain a broad overview of soil and water sciences.**

Graduate Students work directly with their Major Advisor and supervisory committee to come up with a plan of study that is agreeable to all parties. See below for Soil and Water Sciences Department course listings.

### [Soil & Water Sciences Graduate-Level Courses by Semester \(Subject to Change\)](#)

- a. Note, 5000+ Level Courses Are Graduate-Level.
- b. Registration in Undergraduate Level Courses in Soil and Water Sciences is prohibited.