



SOIL & WATER SCIENCE DEPARTMENT

Graduate Student Guide

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1. INTRODUCTION

This publication describes graduate programs and procedures for the Soil and Water Science Department (SWSD) at the University of Florida (UF). This manual 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 SWSD 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.

1.1. RESPONSIBILITIES OF GRADUATE STUDENTS

Each Soil and Water Science (SWS) 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) or the Institute of Food and Agricultural Sciences (IFAS) and the SWSD. 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 E-mail account for all professional communications, as the E-mail account provided by UF 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 the deadlines that are E-mailed to the student or published on the official University of Florida websites or in the official UF publications or 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 the Chair of the student's Supervisory Committee. This committee is responsible for approval of course work, administers exams, and provides guidance and review of the student's professional development and the research project. The Supervisory Committee has primary responsibility for the quality of each degree program. The Graduate Advisors serve as mentors to students fostering providing strong interpersonal skills, organizational knowledge, technical competence, strong leadership skills, and personal growth in people, motivation and inspiration to others to reach their full potential, and guidance on ethics in research and the profession. The Graduate Advisor assures that adequate resources are available for the student to complete the proposed research project within the allotted time. The Graduate Advisor confirms student compliance with departmental requirements by periodically reviewing the Plan of Study with the student. The Graduate Advisor completes an annual academic evaluation for each student.

1.3. RESPONSIBILITIES OF THE GRADUATE COORDINATOR

A faculty member in the SWSD is designated by the Chair to coordinate all graduate programs in SWS and shall serve a period of time mutually agreed upon. General duties and responsibilities are documented on the web at <http://gradschool.ufl.edu> which is published by the Graduate School. The Graduate Coordinator provides a communication link between graduate students, Graduate Advisors, the Chair of the SWSD, the Dean for Resident Instruction in the CALS, 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, assigning desk space to students, and assisting students with special problems. The Graduate Coordinator also 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 SWSD who is designated by the Chair to coordinate the distance education track and programs in SWS. The DE Coordinator shall serve a period of time mutually agreed upon. The DE Coordinator works closely with the Graduate Coordinator to ensure programmatic continuity, provides a communication link between distance education students, Graduate Advisors and co-advisor, the Chair of the SWSD, the Associate Dean of IFAS, the Dean of the Graduate School and the Office of the University Registrar. The Distance Education (DE) Coordinator updates enrolled distance education students on a regular basis on updates to the distance education Environmental Science track, advises students on courses offered via the distance education Environmental Science track and distance education courses in environmental science offered by other academic institutions in Florida and the U.S., serves on the SWS Distance Education Committee, and assists with special problems. The Distance Education (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 SWS graduate students upon completion of their graduate programs are:

- Demonstrate comprehensive understanding in soil and water sciences.
- Demonstrate effective oral and written communication skills of scientific findings.
- Show capability to work independently and to work 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.

- Demonstrate the ability to 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 levels to higher levels of learning, including: knowledge, comprehension, application, analysis, synthesis, evaluation, and creation.

The learning outcomes and expected competencies for students enrolled in the SWS Certificate Programs are the following:

Upon completion of this graduate certificate program the student will be able to:

- Demonstrate a solid understanding in the topic areas of: (i) biodegradation and bioremediation; (ii) soil ecosystem services; (iii) sustainable land resource and nutrient management; or (iv) 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 M.Sc. or Ph.D. programs offered by SWSD 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 toward 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 for the specified number of credit hours each semester; 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 Advisor 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 Graduate Coordinator, the Departments Office Manager and the Department's Student Services Specialist. No salary may be paid, or 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, such as research and service, which are in compliance with the overall Departmental and/or grant objectives, as determined by the student's advisor and the Department Chair. Assistantships should be viewed as opportunities to earn wages while students pursue their graduate programs, and should not be interpreted as funding to pursue student's own research program. Unless otherwise indicated in the Letter of Appointment or a contractual agreement, activities performed with assistantship funding may or may not be in line with the student's existing or projected research interests. There will often be occasions when students are offered assistantships to perform professional duties that are only indirectly related to their research program plan. When assistantship duties and student's research goals do not overlap significantly, the student is expected to work with the Major Advisor to delineate specific responsibilities.

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 UF Graduate School Fellowships are awarded each year on a competitive basis. The Graduate Coordinator jointly with the Department Chair are responsible for identifying suitable candidates for the UF Graduate School Fellowship(s) and submitting their names and supporting packages with the assistance of the faculty members responsible for the respective students.

3.4. ENDOWED FELLOWSHIPS AND AWARDS

The department has several endowed fellowships for students who meet specific criteria including: grade point average and research accomplishments. The deadlines for these fellowships are typically during the second week of Fall semester. Qualified students can be nominated by their advisors or self-nominated.

William Robertson Fellowship

The William K. Robertson Fellowship is presented annually to an outstanding SWSD 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 SWSD 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 SWSD 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 SWSD graduate student who leads the way in academic performance and research. Preference will be given to M.S students. The student's research interests must be in the area of Soil and Water Science as related to protection of Natural Resources. Superior academic performance is interpreted as a graduate GPA of 3.75 or more. Although any SWSD 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 Science Department. The student must be pursuing an M.S. or Ph.D. 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 shown 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

Quantitative Environmental Soil Science / Pedometrics –

Award to outstanding graduate students, Post-Docs or staff members for excellence in modeling/quantitative analysis in soil science.

Application Deadline: October 1

3.5. 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:

- <http://cals.ufl.edu/students/graduate-travel-awards.php>
- <http://www.sfa.ufl.edu/welcome/graduate/>
- <http://graduateschool.ufl.edu/finances-and-funding/financial-aid-bulletin-board>
- <http://snre.ufl.edu/graduate/financial.htm>

3.6. TRAVEL GRANTS

3.6.1. UF/IFAS Travel Grants

The Academic Programs/Research Dean offices will provide matching funds up to \$200/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 \$200 for the IFAS Travel Grant will be paid to the department upon receipt of a copy of the student's travel voucher. The student will receive a check from the department. Application forms may be obtained from the Student Services 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 following web site for more details: <http://cals.ufl.edu/students/graduate-travel-awards.php>.

3.6.2 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 Science Department) who established the endowment to fund these scholarships. Application procedures & deadlines: <http://cals.ufl.edu/students/graduate-travel-awards.php>

3.6.3. 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: <http://cals.ufl.edu/students/graduate-travel-awards.php>

3.6.4. Graduate Student Council Grants

Students may also be eligible for travel funds from the UF Graduate Student Council. Requests for Graduate Student Council application forms may be made in your department office or at 310 J. Wayne Reitz Union, PO Box 118505 or E-Mail gscgrants@gmail.com. The program is described at the following website: <http://ufgsc.org/>

3.7. TUITION WAIVERS

Graduate assistants are issued tuition waivers covering a substantial portion of in-state tuition. Tuition waivers are not guaranteed, and may be restricted by availability of funds. When available, out-of-state tuition waivers for other qualified students can be obtained from the CALS during the registration period of each term. For students classified as non-Florida residents, tuition charges are considerably higher than for Florida residents. However, non-Florida residents on graduate assistantships may be issued tuition waivers covering about 90% of the out-of-state tuition in the first year of their studies.

Non-Florida residents who are U.S. citizens or permanent residents are ineligible for out-of-state tuition waivers and/or Departmental support for tuition after they have been enrolled in the Graduate School at the UF for one year. During the first year, the student may meet requirements for, and file for, Florida residency status; at which time he/she may become eligible for an in-state tuition waiver. If they choose not to apply for residency, they will most likely be assessed the difference between in-state and out-of-state tuition. The difference between in-state and out-of state tuition will not be covered by the assistantship tuition waiver. Detailed procedures and requirements for residency of Florida are outlined at <http://graduateschool.ufl.edu/admission/florida-residency>

The current policy for international students is that they are eligible for tuition waivers for the entire time that they are on assistantship because they are ineligible for Florida residency.

3.8 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 <http://www.hr.ufl.edu/benefits/gatorgradcare/>

PROGRAM PLANNING AND DEVELOPMENT

4.1. SELECTION OF DEGREE PROGRAM

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

4.1.1. 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 are:

- Minimum of 30 credit hours
 - 24 of the 30 must be in letter-graded courses.
 - 15 of the 30, exclusive of SWS 6971, must be SWSD letter-graded courses.
- Up to 6 credits 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 credits of SWS 6971 are required (2 credits if during summer). These credits are not letter-graded.
- Up to 5 credits of SWS 6910 (Supervised Research) and 5 credits of SWS 6940 (Supervised Teaching) may count towards the MS thesis degree. These credits are not letter-graded.
- One credit hour of SWS 6940 (Supervised Teaching) or SWS 6910 (Supervised Research) is required to meet the teaching/service requirement.
- One credit hour of SWS 6931 (Seminar) is required. This credit is letter graded. 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 credits of 3000-4000 level courses outside the SWSD may count towards the 30 credit hours on the following conditions:
 - Must be UF courses
 - Courses must have been taken as a graduate student. Non-degree undergraduate-level credits will not count towards the MS thesis.
- 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, but such 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 & Major GPA must be at a least 3.0 for degree to be certified
- An Exit Interview with the Department Chair is required in the last semester.

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

4.1.2. Professional Master of Science

The professional MS 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 credits, 29 of which must be letter-graded (non-S/U courses).
 - o 18 of the 30 must be letter-graded SWSD courses at the 5000-level or above.
 - o The actual course hours are determined by the student and committee.
- All credits taken outside the department must be at the 3000-level or above.
- One credit hour of SWS 6940 (Supervised Teaching) or SWS 6910 (Supervised Research) is required to meet the teaching/service requirement. These courses are not letter-graded.
- SWS 5050 is required unless the student completed a senior-level undergraduate course in introductory soil science.
- One credit hour of SWS 6931 (Seminar) may be required at the discretion of the Supervisory Committee (see **Seminar Policy** below).

- A major paper on a topic in soil and/or water science is required for this degree, which represents work sufficient for at least 2 credits of SWS 6905. 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).
- Up to 6 credits of 3000-4000 level courses outside the SWSD may count towards the 30 credit hours on the following conditions:
 - o Must be UF courses
 - o Courses must have been taken as a graduate student. Non-degree undergraduate-level credits will not count towards the professional MS.
- Up to 2 minors may be taken, but are not required. (See **MINORS** below.)
- Students are required to pass a written comprehensive or oral exam administered by the Supervisory Committee.
- All course requirements must be completed within the 7 years immediately preceding the degree award date.
- Overall & Major GPA must be at a least 3.0 for degree to be certified.
- An Exit Interview with the Department Chair is required in the last semester.

4.1.3. Doctor of Philosophy (PhD)

The PhD program is more comprehensive than other SWS graduate programs, such that the student's Supervisory Committee plays the major role in tailoring the course of study for each doctoral student. However, a minimum of 90 credits of course work beyond the Bachelor's degree is required. Typically, 30 hours from the student's MS degree are petitioned into the student's program to account for the first 30 hours. The SWSD requires that PhD graduate students demonstrate competency in four areas of soil and water science: Soil and Water Chemistry, Environmental Soil Physics, Soil Microbial Ecology, and Environmental Pedology. If an incoming PhD student has not taken senior level (4000) undergraduate courses in these areas, he/she can satisfy this requirement by completing SWS 5050, whichever the committee deems more appropriate. After completion of this course, student may take other 5000 level courses as needed by his/her research program.

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. Up to an additional 15 credits 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 credits that may be transferred is 45.

- One credit hour of SWS 6931 (Seminar) is required. This credit is letter graded. The Major Advisor has the discretion to waive this credit requirement if the graduate student has already completed a MS – Thesis degree in Soil and Water Science from UF. For more information, see Seminar Policy below.
- One credit of SWS 6940 (as teaching assistant in any SWS course) is required, and either an additional credit of SWS 6940 or one credit of “service” (SWS 6910) is required.
- Up to 5 credits of SWS 6910 (Supervised Research) and 5 credits of SWS 6940 may count towards the PhD degree.
- Up to 6 credits of 3000-4000 level courses outside the SWSD may count towards the remaining 60 credit hours on the following conditions:
 - o Must be UF courses
 - o Courses must have been taken as a graduate student. Non-degree undergraduate-level credits will not count towards the PhD.
- 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 credits required for this degree.
- Overall & Major GPA must be at a 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 passed the qualifying exam.

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 (main campus in Gainesville, Research and Education Center (REC), or remote sites in U.S. and elsewhere). According to the UF Graduate Catalog: <http://gradschool.ufl.edu/catalog/current-catalog/catalog-graduate-degrees-and-programs.html#doctoral>

“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.”

The UF has numerous RECs which offer excellent opportunities to conduct soil and water science research. A student may reside at a REC, the Gainesville main campus, or both, dependent on research requirements and objectives, to fulfill residency requirements. Information about Statewide Programs and REC facilities can be found at: <http://cals.ufl.edu/distance-ed/statewide/index.php>

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

4.1.4. 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 towards both a bachelor’s and master’s degree. Application normally occurs in the junior or senior year (requirements are 3.2 GPA and 1100 GRE). 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.

4.2. Special Credits

4.2.1. Special Problems Credits (SWS 6905)

Credits on special select problems in soil, water, or environmental science can be earned by work conducted under supervision of a SWS 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 (compare section M.S. non-thesis 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 (compare guidelines posted under M.S. 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 are archived electronically in the SWSD.

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

4.2.2. Professional Development- Supervised Teaching (SWS 6940)

All graduate students in the SWSD 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.

- PhD students will perform professional development work equivalent to a minimum of 2 semester credits, while MS students will perform 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 Science Course. This obligation should be included in the Course program submitted to the department with their Plan of Study.
- For PhD students, an additional teaching credit(s) may be earned by teaching in any approved SWSD courses (i.e., to serve as a Teaching Assistant).
- MS and PhD students may also elect to work with a SWS 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 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, or consulting on projects conducted under supervision of others than SWS faculty members or presentations given at a professional scientific meeting.
- For MS and PhD students, teaching credit(s) may be earned by developing teaching or eLearning material (e.g. Reusable Learning Objects, RLOs) or assist to improve course material (e.g. lab component of a course).

Students seeking to develop eLearning material are encouraged to utilize the departmental EcoLearnIT RLO System (<http://ecolearnit.ifas.ufl.edu>), which provides tools and tutorials to develop stimulating online learning material in form of videos, audio recordings, animations, artwork, music clips, and more. RLOs are small learning units focused on a select learning

objective and after peer-review they are published online. To pursue this teaching/service option for professional development follow these steps: (i) Contact your Major Advisor (or Co-Advisor) and agree on a topic for the RLO(s) (before you register for SWS 6940); (ii) Contact the Distance Education (DE) Coordinator and indicate the topic of the RLO(s) and name of Major Advisor (or Co-Advisor); (iii) Develop the RLO in EcoLearnIT and add your faculty advisor as co-author; this allows the student and faculty member to work jointly on the RLO in a collaborative online environment; (iv) Submit the RLO for peer-review at least 2 weeks before the end of the semester; consult with the faculty advisor on the quality and implementation of the RLO learning material *before* you submit the RLO; (v) The Editor of EcoLearnIT will provide a decision to publish the RLO in EcoLearnIT or return the RLO for further revisions. A pass grade will be assigned only if the RLO has passed peer-review and is accepted for online publication.

A departmental Distance Education / Web Studio is available to students (<http://soils.ifas.ufl.edu/distance/resources.html>), which provides resources (hardware and software, video camera, web-cam, etc.) to develop RLOs and other course material. For in-depth training on RLO development a 1-credit graduate course is offered (ALS 5027 – Reusable Learning Objects).

Professional development activities (SWS 6940 and SWS 6910) must be supervised by a SWS faculty member who will grade the activities. The SWS faculty member agrees to coach, mentor, and advise the student on teaching, extension, or service related questions. 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, or RLO) will need to be produced, which is evaluated and graded by the respective SWS faculty member at the end of the semester.

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, 111 Anderson Hall, phone number 392-3286, Monday-Friday between 9 a.m. and noon. The office is closed during the summer. 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. 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.

4.2.3 Supervised Research (SWS 6910)

Students registered for Supervised Research credits work on a specific research topic, which may or may not be related to a Major Paper (M.S. non-thesis), M.S. thesis or Ph.D. 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 learn how to conduct research effectively and successfully.

4.3. 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 submit a completed Change of Degree Program for Graduate Students form to the Graduate School and inform the Major Advisor at a minimum of 2 month before submitting the form. To change the degree program from MS thesis to professional MS, the Graduate Advisor must submit a letter to the (Graduate Coordinator) stating the intentions of the student and demonstrating the approval of all members of the Supervisory Committee. 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.

4.4. 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 SWSD. Minors are not required by either the Graduate School or the SWSD, and minor work may be done in any department other than SWS which 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.

4.4.1. 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 Science (for students not within the major) consists of six hours of **graded** SWS coursework at the discretion of the Minor Representative.

4.4.2. 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 a 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 Science (for students not within the major) consists of 12 hours of **graded** SWS

coursework at the discretion of the Minor Representative.

4.4.3. 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 a 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.

4.5. CERTIFICATES AND CONCENTRATIONS

4.5.1. Certificates and 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 certificates/concentrations with most applicable relevance to Soil & Water Science are as follows:

- Agroecology
- Agroforestry
- Biodegradation and Bioremediation
- Biological Sciences
- Ecological Engineering
- Geographic Information Systems (GIS)
- Hydrologic Sciences
- Latin American Studies
- Soil Ecosystem Services
- Sustainable Land Resource and Nutrient Management
- Transnational and Global Studies
- Tropical Agriculture
- Tropical Conservation and Development
- Tropical Studies
- Wetland and Water Resource Management
- Wetland Sciences

Students should contact the specific departments for details regarding certificate programs, or see the Graduate Catalog for more information:

<http://graduateschool.ufl.edu/academics/graduate-catalog>

4.5.2. SWS Graduate Certificates

The SWSD offers four certificates at the graduate level which 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 mode and require 12 credits to be earned. Each certificate has specific core and elective courses and a competency exam based on the core courses which are required to earn the certificate. Completion of certificate program is noted on student's UF transcript. Registration, as outlined at <http://soils.ifas.ufl.edu/distance/certificate.html>, is required to earn a SWS certificate in one of the following topical areas:

- Biodegradation & Bioremediation
- Sustainable Land Resource and Nutrient Management
- Soil Ecosystem Services
- Wetland and Water Resource Management

4.6. 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 M.S 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 that 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 towards 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.

4.7. SELECTION OF SUPERVISORY COMMITTEE CHAIR (GRADUATE ADVISOR)

Prior to admission, each graduate student must secure a Graduate Advisor who becomes the Chair of the student's Supervisory Committee (Graduate Advisor). 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.

4.8. SELECTION OF GRADUATE SUPERVISORY COMMITTEE

Each graduate student must have a Supervisory Committee, whose responsibility it is to aid the student in planning and facilitating the graduate program goals. The Supervisory Committee: (i) carefully reviews and evaluates past education; (ii) identifies academic deficiencies; (iii) advises and selects course work, (iv) advises on development of the thesis or dissertation proposal, (v) advises student's research; (vi) reviews, evaluates, and approves Major Paper or thesis (MS) and dissertation (PhD), respectively; and (vii) conducts exams. Advising students' research is primarily the responsibility of the Graduate Advisor, but must be approved by all members of the Supervisory Committee. Qualified faculty members who serve on the Supervisory Committee are chosen by both the advisor and student. The Supervisory Committee must be appointed by the end of the second term of graduate study. 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 and the Graduate Coordinator (on-campus students) and Distance Education (DE) Coordinator (distance education students) must be notified by the Graduate Advisor of any pending changes in the student's program or Committee membership.

The Supervisory Committee for the MS program will be comprised of a minimum of three Graduate Faculty members. At least one member must be from the SWSD. Students with a minor in another department must have one graduate faculty member from that department on the Committee. In addition, special members/appointments are not counted towards the minimum graduate faculty requirements for the supervisory committee.

The Supervisory Committee for a PhD program will be comprised of no fewer than **four** members. The Graduate Advisor, the "external" member, and at least two additional members of the Committee must have Graduate Faculty (GF) status at the University of Florida. At least two members must be from the SWSD and 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 members, or minor representatives. In addition, special members/appointments are not counted towards the minimum graduate faculty requirements for the supervisory committee.

For distance students who are outside Florida, one member of the Supervisory Committee must be from research or academic institutions geographically close to the student's living or work location. Assignment of a foreign committee member to the Supervisory Committee is possible and will be done as described by Graduate School policy.

The MS and PhD Supervisory Committee must meet to evaluate and discuss the thesis/dissertation proposals and to review procedures, progress, and expected results and to make suggestions for the completion of the research study. The student informs the Supervisory Committee in form of a face-to-face (on-campus students) or online (distance education students) meeting at a minimum of once a year on course work and research. These meetings serve to discuss progress and questions related to 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 video- and/or telecommunications or web-based teleconferencing. It is required that the student and chair or co-chair be in the same physical location. All other members may participate from remote sites via teleconferencing.

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 by the Graduate Coordinator/Distance Education (DE) Coordinator. 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 SWSD has been found. A student, at no point in time during the course of studies in SWS programs, can 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 at least once each month to ensure adequate communication and should meet at least twice yearly with his/her Supervisory Committee. 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 Guide at <http://dso.ufl.edu/studentguide/>.

4.9. 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, the "Proposed Plan of Study" form and should be finalized by the end of the second semester for MS students and PhD 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 Proposed Plan of Study is submitted successively to the student's Supervisory Committee, the Graduate Coordinator (on-campus students) or Distance Education (DE) Coordinator (distance education students), and 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. It is recommended that this form be prepared in advance and brought to the Final Exam for the sake of convenience on the part of the Supervisory Committee. 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.

4.10. WRITTEN PROPOSAL FOR RESEARCH PROJECT

Each MS and PhD student is expected to complete and present a research project proposal (thesis/dissertation option) or major paper proposal (professional option) to his/her Supervisory Committee. The proposal should be submitted as early within the student's program as soon as possible. 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. A proposal should include the following:

- 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 prove or disprove 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 -- Which data do you plan to collect? Which methods do you propose to use to analyze data? Describe, in detail, how you plan to perform this research. What is the sequence of steps for your research? 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? Explain how your specific study provides an independent mastery of a field of knowledge and the successful pursuit of research.
- Novelty of Research -- Describe how your research will advance science and novelty of your research.

SWS graduate students are expected to think and act as independently as possible while developing and completing their research projects. Each student is expected to exert initiative and assume responsibility for developing quality scientific research. In addition, each student is expected to communicate openly and frequently with his/her 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 SWSD, or data provided through environmental databases (e.g. SWS Soil Data Bank – <http://soildb.ifas.ufl.edu>; Terrestrial Carbon Information System – <http://terrac.ifas.ufl.edu>; DB Hydro database – South Florida Water Management District, or others). 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 students Supervisory Committee.

4.11. ANNUAL PROGRESS REPORT

Annual progress reports for all students will be provided in writing toward the end of the period of appointment. These reports are required by the Graduate Assistants Union for all students on assistantships. The Graduate Advisor is responsible for initiating and completing these reports. Each student will have an opportunity to discuss the evaluation with his/her supervisor and to sign it before it is filed. Comments submitted by the student may be included with the evaluation.

Two files--academic and employment--are maintained for each student. Annual progress reports, letters of appointment, letter of acceptance, and letter of termination are kept in the employment file by the Soil & Water Science Personnel Office. Students may examine their employment file by giving the Personnel Office reasonable advance notice during regular business hours.

Full-time MS students (both thesis and professional) are expected to complete degree programs within 2 to 2.5 years. Full-time PhD students should complete degree programs within 3 to 5 years. Distance education students are expected to complete their degree programs within 2 to 7 years.

4.12. EXAMINATIONS

4.12.1. Master of Science (MS)

A final oral or written examination is required. It is required that the student and chair or co-chair be in the same physical location. All other members may participate from remote sites via teleconferencing. An announcement of the exam must be sent to the CALS Office, Supervisory Committee Members, and the SWSD faculty 10 business (working) days before the examination. 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.

4.12.2. Master of Science (Professional MS)

The student is required to pass a written comprehensive or oral 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 (SWSD), studying of standard textbooks (such as Brady N.C. and R.R. Weil, 2007. *The Nature and Properties of Soils*, Prentice Hall, New Jersey). 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)¹ and enhanced version of the taxonomy (Anderson and Krathwohl, 2001)².

Category	Description	Water – Example Questions	Soil – Example Questions
Knowledge – remember ¹	Recall data of information	Describe the water cycle.	Describe the soil order Histosols.
		Describe the process of infiltration in soils.	What key functions do microorganisms play in the Nitrogen cycle.
Comprehension - understand ¹	Understand the meaning, translation, interpolation, and interpretation of instructions and problems. State a	What is the difference between infiltration and percolation?	What is the difference between soil organic matter and soil carbon?

	problem in one's own words		
Application - apply1	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? and within a watershed?	How would you assess soil carbon stocks across a large region?
Analysis - analyze1	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? And 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 which 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 ⁻² . Explain the differences in R ² and RMSE; and the differences between accuracy and precision. Explain methanogenesis and describe the soil and environmental factors which impart control on methanogenesis.
Synthesis - synthesize1	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 attribute to correlate with high nitrate loads? (explain why)	The carbon:phosphorus ratio in wetlands 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 - evaluate1	Make judgments about the value of ideas or materials	Best management practices (BMP) and conservation management have been suggested to improve water quality. Discuss two 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 - Create2	Create new studies,	What would you suggest	What would you suggest

material, findings

to better address water shortage problems in basins used for drinking water?

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.

4.12.3. Doctor of Philosophy (PhD)

Qualifying and Final Examinations are required. It is required that the student and chair or co-chair be in the same physical location. All other members may participate from remote sites via teleconferencing. An announcement of the exams must be sent to the CALS Office, Supervisory Committee Members, and the SWSD faculty 10 business (working) days before the examination. 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 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 and students may receive permission from the Graduate Advisor to attend the oral portion of the Qualifying examination. Graduate faculty members who are not members of the student's Supervisory Committee are not permitted to vote with the Committee. The PhD final examination 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.

4.13. MAJOR PAPER (SWS 6905) (MS Professionals)

A Major Paper on a topic in soil, water and/or environmental science is required for this degree, which represents work sufficient for at least 2 credits of SWS 6905. The Major Paper is similar to a M.S. thesis, but much smaller in scope. For the Major Paper, a student demonstrates knowledge and understanding of a select topic in the soil, water or environmental science discipline. The paper project should include (i) summary and critical interpretation of scientific findings; (ii) analysis of soil, water or environmental datasets using (geo)statistical methods or models which allow to compare, distinguish, and contrast scientific findings; and/or (iii) synthesis / evaluation where disparate soil, water and/or environmental data, information, and knowledge are combined and new knowledge is generated to address an environmental problem.

Examples – major paper topics:

- (i) Literature based analysis on the type and effectiveness of best management practices in Florida
- (ii) Statistical analysis of an environmental dataset.
- (iii) Combine soil, vegetation, and phosphorus data to assess nutrient enrichment in a wetland.
- (iv) 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 by the supervisory committee before the paper is implemented (2-3 page proposal). The student works independently with advice from the supervisory committee to implement the Major Paper and compiles a paper consisting of the following sections: (i) Abstract; (ii) Introduction – Significance and Rationale (Problem Statement)); (iii) Objectives (and Hypotheses);); (iv) Methodology (Study Area, Description of Data and Methods); (v) Results; (vi) Discussion; (vii) Conclusions; and (viii) References. The Major paper is in average 25-40 pages including figures and tables; plus references (Format: double line spacing). However, in some instances the paper can be substantially longer. The Major Paper has to be original work and honesty rules of the University of Florida have to be observed (compare section on 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 Science Department (final and approved version of the Major Paper must be send to the departmental Student Services Specialist). It must be noted that Major Papers are separate from the comprehensive exam and cannot replace the exam.

Recommended literature 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.

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 Data Bank (<http://soildb.ifas.ufl.edu>) and other soil, water, and environmental databases and monitoring sets.

- Data from historic or ongoing research project in the SWSD or data to be collected
- SWSD Virtual Machines which provides workspace for students to work on a Major Paper and software (e.g. MS Office Suite, statistical software, ArcGIS, and more).

4.14. THESES (MS) and DISSERTATIONS (PHD)

The Graduate School has a useful guide for preparing Theses and Dissertations: <http://www.graduateschool.ufl.edu/graduation/thesis-and-dissertation>. 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 criticism of the advisor. The student and the Major Advisor should thoroughly review the thesis/dissertation--either section-by-section, or in its entirety-- 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 with a letter of transmittal. 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 typing or correcting the 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 are critical to 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 Student Services Specialist (<http://graduateschool.ufl.edu/graduation/deadlines>). 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 who entered in Fall 2001 or later 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 <http://helpdesk.ufl.edu/application-support-center/>

4.15. 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 committee 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 has to comply with the editorial UF standards and guidelines. Students are also encouraged to prepare and submit papers for publication before graduation. Students are responsible for complying with all copyrights with regards to previously published articles.

4.15.1. 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 that agreement carefully before signing: 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!

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

You have a number of 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 our 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 also: <http://graduateschool.ufl.edu/graduation/thesis-and-dissertation>.

4.16. PRESENTATION OF RESEARCH RESULTS AT SCIENTIFIC MEETINGS

All graduate students are strongly encouraged to actively participate in the Research forum organized by the SWS graduate students. 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 assure 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.

4.17. 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. Such 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.

4.17.1 REGISTRATION

4.17.1.1. 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), in order 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.

4.17.1.2. Minimum Credits for Registration

Minimum registration requirements (credits) are as follows:

Full-time students (non-assistants) - Fall/Spring: 9; Summer A/B/C: 4/4/8

Students on fellowship – Fall/Spring: 12; Summer A/B/C: 4/4/8

Assistants on .01 to .24 FTE - Fall/Spring: 12; Summer A/B/C: 4/4/8

Assistants on .25 to .74 FTE – Fall/Spring: 9; Summer A/B/C: 3/3/6

Assistants on .75 to .99 FTE – Fall/Spring: 6 Credits; Summer A/B/C: 2/2/4

Full time Assistants Fall/Spring: 3; Summer A/B/C: varies

Part-time students Fall/Spring: 3; Summer A/B/C: 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. For distance education students it may be common to register for fall and spring semesters, but not register for summer.

4.17.1.3. Seminar Policy

All MS thesis students and PhD students are required to give an exit seminar in fulfillment of their degree requirements. MS professional students are not required to present a seminar, but have the option to give a seminar to present their Major Paper. 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 (e.g. research results and conclusions are complete). The Major Advisor has the right to cancel an exit seminar of a student who is not ready for presentation. Students should complete the seminar course (SWS6931) before they present a proposal seminar (proposal seminar pending vote) or exit seminar. The exit seminar is not part of the requirements for SWS6931. 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 webinars (i.e., the web-delivered seminars). At the end of each semester, graduate students should provide their advisor with a list of seminars attended. Graduate students are also encouraged to attend seminars of special interest which may be sponsored by other departments. All students are encouraged to work with their advisors to take advantage of any and all opportunities to make presentations in professional settings in order to gain experience that will improve their public speaking skills and audience presence. PhD students are not required to present their proposal for the dissertation research in the SWS Seminar Series. The advisory committee has the option to decide if student should give a presentation as seminar or poster. The presentation should focus on outlining: (i) Significance and Rationale; (ii) Objectives and Hypotheses; (iii) Methods; (iv) Expected Results; and (v) Novelty in Research (how this research will advance science). The PhD student is given the opportunity to incorporate feedback and suggestions raised in the seminar into the dissertation research project.

All departmental seminar are recorded to facilitate participation of distance education students and REC faculty in synchronous (real-time) or asynchronous modes (archived digital seminars). Recorded seminars are accessible at: <https://swsde.ifas.ufl.edu/>.

4.17.1.4. Registration for Final Term

Students who have completed all graduation requirements before the published deadlines but have all course requirements completed and need to finish their defense or finalize their thesis/dissertation, 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.

4.17.1.5. 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 ISIS
- 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 e-mail 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. No other students are eligible.
- Student has filed a Graduation Date Change Form at the Registrar's Office by the last day of classes of the current term.

4.18. 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 are first-time offenders will be given 2 semesters to correct this deficiency. Students who are second-time offenders will be given 1 semester to correct.
B	2.7 to 2.89	Students who are first-time offenders will be given 2 semesters to correct this deficiency. Students who are second-time offenders may be dismissed.

C	less than 2.7	The student's graduate program may be immediately terminated.
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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 Graduate Committee. The Graduate 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 demonstrating a cumulative GPA of <3.0, the Student Services Specialist will send letters to each student and to the student's 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.

4.19. EXIT INTERVIEW

At the conclusion of the degree program each student is expected to have an exit interview with the Chair of the SWSD. Distance education student can conduct the exit interview using online chat systems (e.g. Adobe Connect, Skype, or Polycom). Do not schedule your exit interview until the final, corrected thesis/dissertation has been submitted and approved.

5. ADMINISTRATIVE AND ACADEMIC POLICIES

5.1. PETITIONS REGARDING GRADUATE REQUIREMENTS

Petitions regarding waivers or alterations of any departmental requirement must be submitted to the Chair of the Graduate Committee by the Graduate Advisor. The Graduate Committee will recommend action on the petition to the Graduate Coordinator & 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 proceeding the term in which the degree is awarded.

5.2. DESK SPACE ASSIGNMENT

Office space is assigned to graduate students on a space-available, priority basis, with assignments being made by the Graduate Coordinator. Most office space, at present, is in conventional offices shared by other graduate students. In order to request office space, please see the Student Services Specialist. The Graduate Coordinator, through the Student Services Specialist, monitors all desks available to graduate students in the Department.

5.3. 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 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 (yourname@ufl.edu). 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 IFAS computer network system provides access to electronic mail and global computing via Internet.

The SWS Department Virtual Machines (VMs) provide 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. Students have to request a login to SWS-VMs at: <http://swsde.ifas.ufl.edu>.

Distance education students and students enrolled in courses with web-based content must have access to reliable Internet access and a computer with the software required by the course instructor. Students are advised that 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 provide web cam, speakers, and microphone. It is the responsibility of the student to gain access to technical equipment (e.g. computer, DVD player) to access course material provided in distance education courses.

5.4. USE OF DEPARTMENTAL VEHICLES

State vehicles are for OFFICIAL USE ONLY. Operators of State vehicles must abide by all State laws as specified in Rules of the Road, which is available from any Florida Highway Patrol Office. 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 chauffeur's 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 Departmental vehicles must request authorization from the Department's main office. 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.

5.5. FINANCIAL SUPPORT FOR RESEARCH

Materials, supplies, equipment, travel, and support services (secretarial, drafting, 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 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 advisor. Details for making purchases are available from the Department's Fiscal Assistant.

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 advisor and use the appropriate account number for each library. For certain libraries, it may be necessary for the 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.

5.6. LEAVE (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 so 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 of the inability to serve as soon as possible.**

(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 Section 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 Section 8.2.

(d) Traveling to conferences or other events for professional development. UFBOT and the UFF-UF-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 Section 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 such 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.

SWSD: The employee shall notify the supervisor of the need for personal time as soon as possible. Time-off must be mutually agreed upon by the student and the Graduate Advisor.

8.3 Unpaid Leave.

(a) Graduate assistants shall be entitled to six (6) weeks of unpaid leave during any 12- month period for one 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, brother, sister, child, legal dependent, or a relative living in the graduate assistant's household;
4. A serious health condition of the graduate assistant which makes the GA unable to perform his or her duties.

(b) The graduate assistant 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 emergency,

the graduate assistant must give verbal notice within twenty-four (24) hours of taking leave. In 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 graduate assistant 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 tuition waiver shall be maintained.

(f) A GA must be in at least a second semester of employment as a graduate assistant to be eligible for this leave provision.

5.7. 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 an outside employment or other activity. No employee may use University personnel, equipment, or facilities in connection with the 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.

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

5.9. 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 Programs (distance education students), and Department Chair, in that order.

5.10. HONOR CODE AND PLAGIARISM

All students, staff and faculty members, and administrators in the Soil and Water Science Department follow the honor code of academic honesty as outlined by the UF Graduate School (<http://graduateschool.ufl.edu/academics/graduate-catalog>):

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.

Resources on plagiarism at UF:

A Guide for Students to avoid plagiarism is available at: <http://web.uflib.ufl.edu/msl/subjects/Physics/StudentPlagiarism.html>.

Plagiarism Guide: <http://web.uflib.ufl.edu/msl/07b/studentplagiarism.html>.

Any violations of the honor code, in particular plagiarism in research documents, thesis, dissertations, manuscripts, publications, presentations, and course work, will be rigorously addressed following steps outlined by the judicial process for honor code violations: <http://www.dso.ufl.edu/sccr/procedures/judicialprocess.php>. 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 worse case expulsion from the UF.

6. CONTACT INFORMATION

Dr. K. Ramesh Reddy	Michael Sisk
Chairman of SWSD	Academic Support Services, Coordinator
Distance Education Coordinator	294.3152
294.3151	2181 McCarty Hall A
2181 McCarty Hall A	P.O. Box 110290
P.O. Box 110290	Gainesville, FL 32611-0290
Gainesville, FL 32611-0290	Email: mjsisk@ufl.edu
Email: krr@ufl.edu	
Dr. Max Teplitski	Dr. Elaine Turner
Graduate Coordinator	Senior Associate Dean of Graduate Programs
2189 McCarty Hall A	392.1963
P.O. Box 110290	College of Agriculture and Life Sciences – IFAS
Gainesville, FL 32611-0290	2002 McCarty Hall
Email: maxtep@ufl.edu	

Graduate Student Records	Dr. Henry Frierson, Dean of Grad School
392.4643	392.6622
1 st Floor, Grinter Hall	Graduate School
P.O. Box 115500 CAMPUS	164 Grinter Hall
	P.O. Box 115500
	Gainesville, FL 32611-5500
Graduate Editorial Office: Theses and Dissertations	
392.1282	Registrar and Admissions Office
224B HUB	Records and Registration
P.O. Box 118461	392.1374
CAMPUS	222 Criser Hall
	P.O. Box 114000
Student Infirmary	CAMPUS
392.1161	
	International Center
Student Financial Affairs	392.5323
392.0181	170 HUB
S-107 Criser Hall	P.O. Box 113225
CAMPUS	CAMPUS

7. EXCELLENCE IN GRADUATE STUDIES AWARD

Ph.D. Level

Soil and Water Science Department also presents an award annually for the excellence in graduate studies during the graduate program. This award is looking for excellence beyond research. The selections will be based on the following criteria: (1) the quality of the dissertation presentation (organization, style, and clarity), and 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 apply, the SWSD student must submit a letter of application stating why he/she should be considered for this award, a letter of endorsement from the student's major advisor, an electronic copy of the thesis or dissertation, and a copy of current CV that includes any supporting materials such as copies of journal articles, abstracts, awards or honors, leadership activities at state, national, and international levels, and any other related materials.

Application Deadline: December (Specific Date TBA)

M. S level

Soil and Water Science Department also presents an award annually for the excellence in graduate studies during the graduate program. This award is looking for excellence beyond research. The selections will be based on the following criteria: (1) the quality of the thesis presentation (organization, style, and clarity), and 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 (30 points). To apply, the SWSD student must submit a letter of application stating why he/she should be considered for this award, a letter of endorsement from the student's major advisor, an electronic copy of the thesis or dissertation, and a copy of current CV that includes any supporting materials such as copies of journal articles, abstracts, awards or honors, leadership activities at state, national, and international levels, and any other related materials.

Application Deadline: December (Specific Date TBA)

APPENDIX A GRADUATION CHECKLIST

Time tables for meeting all deadlines are published by the Graduate School each semester at <http://gradschool.ufl.edu/catalog/current-catalog/catalog-academic-calendar.html>.

- **The semester before you plan to graduate**, check with the Student Services 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 ISIS) 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 to ensure you meet all Thesis and Dissertation submission requirements and deadlines:

<http://www.graduateschool.ufl.edu/graduation/thesis-and-dissertation>

APPENDIX B

CHECKLIST FOR STUDENTS AND FACULTY MEMBERS

- (1) Admission into the graduate program; a SWSD 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 & 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 SWSD (forward paper to Student Services Specialist); written OR oral comprehensive exam administered by Supervisory Committee; exit interview with Department Chair; complete SWS 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 SWS 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 SCIENCE COURSE LISTING

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

Graduate Students work with 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 Science Department course listings.

[On-Campus Soil & Water Science 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 Science is prohibited.

[Distance Ed Soil & Water Science 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 Science is prohibited.