



Oregon State
University

DEPARTMENT OF CROP & SOIL SCIENCE

College of Agricultural Sciences

GRADUATE STUDENT HANDBOOK

For

CROP and SOIL SCIENCE PROGRAMS

CSS Graduate Handbook – August 2023

<https://cropandsoil.oregonstate.edu/cropandsoil/graduate/graduate-student-handbook>

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1. WELCOME



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Welcome to the Department of Crop and Soil Science (CSS). Your graduate experience is a unique opportunity to learn scientific principles and techniques, contribute to the scientific literature and develop professionally. In addition, it will provide exposure to peer-review experiences and reflection about ethical scientific behavior. The more time and energy you invest, the greater the educational rewards and the preparation for your science career.

This handbook is designed as a guide toward your degree success. It supplements information found on the Graduate School website and Oregon State University policy statements. It does not include all details of the requirements of the University Graduate School, rather, it provides information on departmental-specific graduate student policies and procedures.

University-level Graduate Learning Outcomes

University-wide Graduate Learning Outcomes (GLOs) for doctoral and master's programs were proposed by the Graduate Council and approved by the Faculty Senate in 2011 (<https://apa.oregonstate.edu/assessment/graduate-program-assessment>).

Learning outcomes for PhD Degree programs state that the student shall:

- a. Produce and defend an original significant contribution to knowledge
- b. Demonstrate mastery of subject material
- c. Conduct scholarly activities in an ethical manner.

Learning outcomes for Master's Degree programs state that the student shall:

- a. Conduct research or produce some other form of creative work
- b. Demonstrate mastery of subject material
- d. Conduct scholarly or professional activities in an ethical manner.

Additional outcomes, the assessment of all outcomes, and the specification of learning objectives related to these outcomes will be developed and reviewed periodically at the program level.

Crop & Soil Science Department Graduate Programs

The Department of Crop and Soil Science offers two graduate programs: Crop Science and Soil Science. The Crop Science degree includes three options: 1) Agronomy, 2) Plant Breeding and Genetics (PBG), and 3) Entomology (ENT). Successful candidates may earn the MS or the PhD in any of these options. Much of this handbook is similar for students in any of the options. Where differences exist, they are detailed. Soil Science includes different disciplines within its program such as soil physics, soil chemistry, soil microbiology, etc.

Crop Science Learning Outcomes

In addition to university-level GLOs, five program-level (PL) outcomes have been developed for Crop Science degree candidates. Four of the five are identical for PhD and MS candidates—PL3 distinguishes the level of independence of project development and execution.

PL1: Evaluate the design and quality of relevant research in academic journals.

PL2: Apply current research tools to field and laboratory research.

PL3: (PhD): Apply scientific methods to independently developed and directed collaborative research.

PL3: (MS): Apply scientific methods to independent research under major advisor's direction.

PL4: Write and publish a peer-reviewed journal manuscript in the discipline and commodity specialty area. (Does not apply to non-thesis students).

PL5: Synthesize, organize, and communicate crop science concepts to appropriate audiences and demonstrate skill in the use of social media.

Academic Disciplines

Crop Science Study Options

Areas of study leading to MS and PhD degrees in Crop Science include: crop breeding, genetics and cytogenetics; crop physiology and biochemistry; forage and pasture management; crop production; post-harvest seed technology; seed biology; seed crop physiology; seed production; weed biology; weed management; and entomology.

Original research is an essential part of MS and PhD thesis programs. **Each research program is individually designed by the student and their graduate committee.**

Graduate students are expected to complete their research program of their thesis as an essential part of the graduate program and an excellent opportunity for the student to apply knowledge gained in the classroom to field, greenhouse or laboratory situations.

See the specific course requirements for all Crop Science degree options in Section 9.6.1 of this document.

Soil Science Study Options

Graduate programs in Soil Science lead to MS and PhD degrees with specialization in various fields of soil science – environmental soil science; forest soils; nutrient cycling; soil geochemistry; soil conservation and land use; soil fertility and plant nutrition; soil genesis and classification; soil microbiology; soil physics; and water resources.

Original research is an essential part of MS and PhD thesis programs. **Each research program is individually designed by the student and their graduate committee.** Graduate students are expected to participate in the on-going research program with which their thesis is associated regardless of their funding source. This research is considered an essential part of the training program and an excellent opportunity for the student to apply knowledge gained in the classroom to field or laboratory situations.

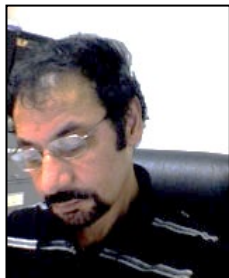
See the specific course requirements for all Crop Science degree options in Section 9.6.1 of this document.

2. IMPORTANT PEOPLE AND INFORMATION SOURCES

2.1 Your Major Advisor

Your major advisor is your mentor in successfully navigating graduate school requirements. See sections 8.1 and 8.2 in this document for a list of your responsibilities in your success and those of your major advisor. See Section 7 for some guidelines to optimize this relationship.

2.2 Graduate Program Coordinators



Sabry Elias, Crop Science –
(sabry.elias@oregonstate.edu)



Kate Lajtha, Soil Science –
(kate.lajtha@oregonstate.edu)



Shaun Townsend, Plant Breeding and Genetics –
(townsenm@oregonstate.edu)

These faculty members manage and coordinate CSS graduate programs. Individuals filling these roles will change over time, but they are available to address your questions about graduate school, CSS policies, or issues that cannot be addressed through interaction with your major advisor. They are also available to receive comments or suggestions about ways that the Department can improve the graduate program. Speak with them about things you don't feel comfortable talking about with your major advisor or to receive a different perspective.

The Graduate School is the official administrative unit of your graduate enrollment and tracks progress towards your degree. While your major advisor can help you negotiate the Graduate School system, it often is best to obtain guidance directly from the Graduate School <https://gradschool.oregonstate.edu/>.

2.3 Administrative Manager/Assistant to Department Head

Jolene Bunce Jolene.Bunce@oregonstate.edu 541-737-5854

Jolene assists the Department Head with signature requests, scheduling meetings with the Department Head as well as Graduate Faculty nominations.



2.4 Graduate Program Assistant/Office Specialist

In addition to the Administrative Manager, there is an administrative program assistant and an office specialist housed in the main office.

Emmalie Goodwin Emmalie.Goodwin@oregonstate.edu 541-737-2821

Emmalie is responsible for office, building and lab keys, AV equipment, purchase and travel requests, office assignments, expense reimbursements, meeting space reservations, and day-to-day logistics.



Rachel Swindon: Rachel.Swindon@oregonstate.edu 541-737-1286

Rachel is responsible for Graduate Assistantship paperwork, Graduate admissions, course overrides, student employee hiring, announcing your defense date and department website maintenance.



2.5 Information Technology (IT) and Computer Support Group

Roots IT Support Group <http://support.roots.oregonstate.edu/> 541-737-2470

The ROOTS IT staff provides computer support ranging from advice on computer purchases to setting up a remote connection for your thesis defense. The IT group is located on the first floor of the Crops Building. Go there for assistance or send an email to roots.support@oregonstate.edu.

2.6 Graduate School

Main website: <https://gradschool.oregonstate.edu>

Guide to success: <https://gradschool.oregonstate.edu/graduate-student-success>

The Graduate School officiates your study program. It is the source and destination of all the documents and forms that you must file as you progress toward completion of your degree program. They also set the scheduled mileposts for your degree.

2.7 CSS Department Website

General website: <http://cropandsoil.oregonstate.edu>

Graduate student pages: <https://cropandsoil.oregonstate.edu/department-of-crop-and-soil-science/graduate-students-0>. Refer to the Departmental website for policies and procedures for CSS graduate programs.

2.8 CSS Graduate Faculty

Crop and Soil Science Graduate Faculty: <https://cropandsoil.oregonstate.edu/crop-and-soil-science/directory/faculty>

The above links provide a list of graduate faculty for each degree program. Only faculty who are designated *graduate faculty* can serve as major or co-major advisors for CSS degrees or serve on student committees. Faculty members may request the graduate faculty designation.

When considering selection of your graduate committee, see section 15.2 for information on the branch experiment stations; many of their faculty can serve as your major advisor or other committee members.

2.9 International Programs Office

Information for new international students and visiting scholars:

<https://internationalservices.oregonstate.edu/international-osu>

The Office of International Services provides a wide variety of services and assistance for international students, including information about immigration regulations and support services. If you are an international student, this should be your first stop upon arrival on campus.

3. ORIENTATION EVENTS

3.1 Required Orientation for All New Graduate Students

This orientation session is sponsored by the Graduate School during the fall term. Check the [Graduate School Calendar](#) for scheduling and registration information.

3.2 Orientation and Training for New Graduate Teaching Assistants (GTAs)

This is sponsored by the Graduate School each fall term. If you will be a GTA during the coming academic year, or if you have a special interest in teaching, you should attend this training.

3.3 CSS Orientation Session

CSS new graduate student orientation session is held each fall during the week prior to classes. All students are expected to participate. Continuing students are encouraged to attend to learn about new policies and procedures. Check the [CSS website](#) for details.

3.4 International Student Orientation and Document Check

<https://internationalservices.oregonstate.edu/international-students/getting-here>

All newly admitted international students are required to attend an international student orientation and the immigration document check-in session. You cannot register for classes if you do not attend both. If you are unable to attend one or both of these sessions, contact International Student Advising and Services by phone at 541-737-6310 or email them at Intl.Orientation@oregonstate.edu. To cover the cost of orientation, all students will be charged an orientation fee of \$35 to \$50 (depending on the term). This one-time fee will be charged automatically to your OSU student account. If you are on a state-funded teaching or research assistantship that pays for your tuition, this fee will be automatically paid for you.

This session will provide information about:

- Immigration rules and regulations that affect your visa status.
- OSU student health services and health insurance requirements.
- Academic life at OSU and how to register for classes.
- Campus and community resources.
- Opportunities to meet other new international and domestic students at OSU.

3.5 University Day

<http://oregonstate.edu/events/universityday/>

This event initiates the new academic year; it is a celebration of OSU. Visit the expo to learn about other departments and service units across campus, as well as community and resources. Usually there is a free lunch!

4. FIRST THINGS TO DO WHEN YOU ARRIVE ON CAMPUS

4.1 Check your admission status and degree.

Graduate students may be admitted as regular, conditional, provisional, or special (non-degree). You may be admitted to the Master of Science (MS) or Doctor of Philosophy (PhD) program. Check your admission status and degree program; be certain that you understand what it means relative to your educational goals and confirm that it is correctly recorded. Refer to the <https://catalog.oregonstate.edu/> for definitions of student status and reclassification requirements.

4.2 Obtain your student identification (ID) card.

<http://fa.oregonstate.edu/business-affairs/idcenter>

To obtain a student ID card, you must show evidence of official admission to OSU at the Identification Center in the Memorial Union (MU) room 103.

4.3 Obtain your keys, a mailbox, and desk space.

As a graduate student at Oregon State University, you are eligible for departmental mail delivery and office space. You may require access to buildings and research areas during times when the University is closed.

Keys: Check with your major advisor regarding keys needed, then have your major advisor send a list of keys needed and your student ID number to Emmalie Goodwin. Greenhouse key requests are handled by Greenhouse Operations (located in the East Greenhouse). Once your keys are ready, they can be pick up at the OSU ID Center in the Memorial Union, Room 103 (2501 SW Jefferson Way, Corvallis, OR 97331) Key Shop hours are 9:00am - 3:00pm.

Mailboxes: All graduate students who are in residence are assigned a mailbox. The mailboxes are located in the Soils office (ALS 3017) or Crops Building office, room 107. United States and campus mail are delivered and picked up twice daily.

Office and desk space: As space permits, the department provides a desk for each graduate student in an office shared with other students.

4.4 Get an After-Hours Pass

Obtain an After-Hours Pass from the administrative program assistant Rachel Swindon, so that you can be authorized to be in the buildings after working hours or on weekends.

4.5 Get connected.

Computing and Information Technology (IT) support for the Department is coordinated through the Roots IT Support Group. Their website provides information and the contact information of people who can help in a wide range of IT needs:

<http://support.roots.oregonstate.edu/>

General IT support across campus is coordinated through OSU Information Services:

<https://is.oregonstate.edu/>

When you were accepted to graduate school at OSU, you were given an OSU Network ID (ONID) account. ONID login credentials are your portal to OSU online services, including registration, viewing, and obtaining transcripts, and checking your employment status. An email address is associated with your ONID account. You may request a CSS-specific address to link with your ONID account. Ask for help in having all your ONID email delivered to your other email account. See the Roots IT Support Group to get started.

As a CSS computer user, you have access to the following network SharePoint:

- **U Drive:** A personal directory that only you can access; it has a limit of 14 GB and is archived nightly.
- **R Drive:** This is the department-wide research directory. It provides file sharing for labs and other work groups.
- **S Drive:** This is the department-wide shared directory and houses other files commonly used by department members.

4.6 Set up your payroll.

If you are appointed to a graduate assistantship, complete the necessary paperwork sent to your email from HR. Doing this **as soon as possible** will avoid a delay in receiving your first paycheck. International students must bring the original work authorization documents to HR; they are listed on page 4 of the I-9 form. Students on fellowships will also complete paperwork. The department office handles these appointments as well.

At the time you establish your payroll, you will complete federal tax withholding forms. The Valley Library provides tax booklets or visit the Internal Revenue Service website <http://www.irs.gov/>.

4.7 Register for classes.

Catalog and Schedule of Classes: <http://catalog.oregonstate.edu/>

With your major advisor, and your graduate committee, you will develop a comprehensive program of study, detailed in Section 9.4 of this document. Confer with your major advisor to design an initial study plan for the first term. The current Schedule of Classes will provide information and detailed instructions on registration. <http://oregonstate.edu/current>.

When considering registration, review the content in Section 10 of this document for degree credit requirements, Section 6 for policies about summer enrollment and employment, and Section 5 if you have a graduate assistantship of any type.

Be sure to register for the correct classes and note the various registration deadlines listed on the OSU <https://registrar.oregonstate.edu/osu-academic-calendar>. There are fees associated with late registration.

5. GRADUATE ASSISTANTSHIPS

Graduate student assistantships awarded by the department are of two types: Graduate Research Assistantship (GRA) and Graduate Teaching Assistantships (GTA). A graduate student may be offered either or both types for their Graduate Assistantship (GA). The minimum appointment is 0.40 full-time equivalent (FTE) and may be split as GRA and GTA depending on the student. The maximum FTE is 0.49.

Graduate School Description: <https://gradschool.oregonstate.edu/finance>

5.1 Graduate Research Assistantships (GRA)

GRAs are part-time (up to 0.49 FTE) appointments. Students who are awarded a GRA assist faculty in conducting research projects. **There are not automatically recurring GRA positions in the department.** Research project leaders or the department head may create ad hoc GRA positions; such appointments are for terms of one year or less. They may be subject to annual renewal based on program need, academic performance, and availability of funds. GRA renewals are considered each spring and are normally made effective September 16. Major advisors evaluate students based on coursework, progress on thesis research, and other contributions to the major advisor's research program.

When adequate budgetary support is available, the department will renew appointments of GRAs, but only for students with satisfactory performance in the position and who have not completed their graduate study.

Major advisors will provide students with notification of termination at least one quarter in advance whenever possible. Prior to the beginning of the appointment, advisors will inform students about financial support for the position for the upcoming fiscal year.

GRAs on 0.49 FTE appointments will provide an average of 20 hours of non-thesis service per week for the assistantship. Since GRAs ordinarily are doing research under their appointment as part of their thesis, separating work for which they are paid and work for their thesis may not always be easy. This is an important subject to discuss with your major advisor (see section 7). GRAs at other FTE levels are expected to provide proportional levels of service.

5.2 Graduate Teaching Assistantships (GTA)

GTAs in the CSS department are 0.49 FTE appointments. Students who are awarded a GTA assist faculty in designing and delivering undergraduate courses.

Appointment and re-appointment of GTAs will be made at the discretion of the Department Head or the Department Head's assignees. Only fully qualified students will be considered for appointment as a GTA in the department. GTAs must also have demonstrated previous competence as a GTA in order to be re-appointed. Appointments and re-appointments will be made to provide the needed support for instruction of CSS course offerings and to create learning opportunities for students in the art of teaching, but not as a means to provide financial support for a graduate student.

Many of the GTA appointments in our department assist in teaching SOIL 205 – an undergraduate class with ten labs each term; other GTA appointments exist. As a GTA, you must master the course content and gain the ability to communicate ideas clearly. This is a skill that is central to success in your graduate studies and professional life. As with GRAs, ***there are not automatically recurring GTA positions in the department.*** GTA appointments are typically for a term, although you may be offered multiple GTA appointments within a year or over the course of your graduate tenure.

The maximum number of quarters appointed as a departmental GTA is four for MS degree students and seven for PhD degree students. This policy does not govern the assignment of CSS graduate students to GTA appointments in other departments or programs.

GTAs on 0.49 FTE appointments are expected to provide an average of 20 hours of service per week for the assistantship. GTAs at other FTE levels are expected to provide proportional levels of service.

5.3 Stipends and Remissions

Assistantships provide a monthly stipend. The amount of these stipends depends upon the fractional appointment. Stipends are tied to a base rate established by the University. However, the specific stipend amount is determined by the major advisor. The decision is based on the experience and qualifications of the student and availability of funds. At the start of each academic year, the department administrative manager will present you with an offer letter that outlines your appointment terms, including the stipend amount.

Assistantships at appointments of 0.40 FTE or greater receive tuition remission during the academic year as well as remission of a portion of student fees. If an assistantship is awarded during the graduate student's first term, OSU will also remit the matriculation fee as well as the International Orientation Fee for international students.

Tuition remission for summer assistantships is not automatically guaranteed. Many students working during the summer may be placed on an hourly wage appointment, with no tuition. Please discuss this with your major advisor. If you defend your thesis and graduate in a summer term, **it is Graduate School policy that you register for 3 credits that term.** All graduate degree candidates who use university resources during summer term must register for a minimum of 3 credits, as discussed in Section 6 of this document.

Ecampus tuition is covered under remission policies. See section 4.7 for additional details. Cost of graduate tuition and fees can be found here: <http://gradschool.oregonstate.edu/admissions/cost>

5.4 Health Insurance

All students receiving graduate assistantships of 0.40 to 0.49 FTE are automatically enrolled in Pacific Source insurance coverage unless they file a waiver indicating comparable insurance coverage with Student Health Services Insurance. **OSU pays 90% of the premium for employee-only coverage, plus 50% of the administration fee during the term(s) of your appointment. You must pay the remaining 10% of the monthly premium, plus 50% of the administration fee. Dependents can be added for an additional cost.**

<https://studenthealth.oregonstate.edu/insurance> for more information.

Article 28, Section 4 of the Coalition of Graduate Employees bargaining agreement indicates that graduate assistants' health insurance coverage for summer session will match the coverage level during their last appointment period. One-ninth of the total summer session health insurance for the appropriate level of coverage will be deducted from each of the monthly paychecks during the academic year, beginning in October and ending in June. Graduate Assistants wishing to opt-out of the summer coverage must submit an opt-out form to Student Health Services by **May 01, during the spring term preceding the "opt-out" summer.** The employee contribution for any summer coverage premium that was deducted will be refunded no later than June pay cycle.

Students employed for a summer term, students on an hourly wage appointment, and students who will not return in the fall may enroll in the COBRA extension policy of the OSU student health insurance. Additional information about COBRA coverage can be obtained by calling Pacific Source Administrators: 877-355-2760.

5.5 Coalition of Graduate Employees

The Coalition of Graduate Employees (CGE) is the collective voice of the graduate student employees of Oregon State University. CGE is a labor union with the exclusive right to negotiate with OSU on behalf of graduate research and teaching assistants. The contracts CGE earns through collective bargaining determine the salary, working conditions, health coverage, and other rights and benefits of employment for the individuals they represent. Membership in CGE is voluntary, although, you may be required to contribute "fair-share" fees whether you are a member or not. For more information: <http://cge6069.org/>

Given the Supreme Court decision regarding unions and "fair share", students are advised to look into the consequences of that decision and union dues.

6. SUMMER ENROLLMENT AND EMPLOYMENT

University policy states that any graduate student working toward a degree during the summer and using University resources (office, library, lab, and/or access to faculty) must be enrolled in a minimum of three credits. The department expected minimum enrollment is 3-5 credits for students supported during the summer by their major advisor. Students enrolled in fewer than three credits are **ineligible** to use university resources. Please note that the department minimum enrollment of five credits is greater than the university minimum number of three. Due to Internal Revenue Service and Social Security Administration rules students enrolled in three credits are technically under enrolled and are therefore subject to Social Security and Medicare taxes which

total 7.65%. The department seeks to minimize tax consequences (i.e. higher tax due from student). Therefore, we expect enrollment of five credits preferably all with CSS, CROP or SOIL course designator. Please note these summer credit opportunities:

- Two 1-week, intensive soils courses have been developed; one focused on field methods (1-credit) and one focused on lab methods (2-credits).
- Planning is underway for a similar intensive course in seed science & technology.
- See the catalog of courses for other opportunities.

Students are responsible for summer tuition and fees. Tuition or fee remissions are not guaranteed during the summer. Graduate students are not required to enroll in classes during the summer to work on grant-funded research. However, there may not be funds to pay your summer tuition or fees directly from grant or project funds held by your major advisor. Discuss strategies to cover the cost of summer term tuition or fees and summer employment opportunities with your major advisor.

Typically, the Department does not offer research or teaching assistantships in the summer. However, many students continue assisting in the research projects with which they are connected during the summer. In these cases, students are employed on an hourly basis during the summer.

During any term, students holding graduate assistantships may work as student employees in addition to their assistantships. If a graduate assistant on less than 0.49 FTE takes on extra duties, the sum of wages from the assistantship plus wages from the extra duties may not exceed the equivalent of 0.49 FTE for any term. This is true for extra duties at any location within the Oregon State University system. Exceeding the 0.49 FTE limit jeopardizes the student's assistantship eligibility.

7. CULTIVATING THE RELATIONSHIP WITH YOUR MAJOR ADVISOR

The quality of the interaction with your major advisor significantly influences your graduate school experience. Ideally, it should be a mutually enriching relationship that not only results in successful degree conferral, but also maximizes the rewards and benefits from your time at OSU. Your major advisor can become a highly significant person in your professional career. Cultivating the relationship with your major advisor should be one of your top priorities in graduate school.

That does not mean that you must be close friends or socially compatible. What it does mean is that both of you must develop mutually open, honest, and frequent lines of communication about the progress on your research projects and your degree. The sections that follow are meant to provide topics you can use to open a dialog with your major advisor. If not addressed, misunderstandings or differing expectations on these topics may arise, and can become sources of conflict.

Answers to the topics listed here form a starting point to discussions between you and your major advisor. Many students and advisors find it valuable to write down specific expectations, responsibilities, and timelines. These documents serve as a reference to guide your progress and when questions arise. Alternately, you and your advisor may prefer to cover this information verbally. If this is the case, it is still useful to make written notes during your conversations, and to note questions or topics to cover during your next conversation.

You and your advisor are required to complete a formal annual review of your progress, as detailed in Section 12.1 of this document.

7.1 Research Expectations

One of the main things you, your major advisor, and your committee must discuss is research expectations. Much of this conversation will involve the best approach to the science.

Other important details to discuss Include:

- How much freedom will you have in designing your research plan?
- How does the research you do for your thesis relate to the research you do as part of any broader research assistantship responsibilities? Specifically, what are the major advisor's expectations for contributing to research activities outside of your thesis project? Be sure to discuss these topics with your major advisor early in your graduate program.

7.2 Authorship, Intellectual Property, and Data Management

Authorship is an important aspect of research expectations. Research is increasingly collaborative, even when done as part of an MS or PhD thesis. While there are broad guidelines for determining authorship (e.g. <https://www.hsph.harvard.edu/faculty-affairs/authorship-guidelines/>), specifics vary from field to field and even within sub-disciplines of crop and soil science. Discuss assignment of authorship with your major advisor.

- Does your major advisor expect to be a co-author on papers related to your thesis or dissertation?
- Will you be a co-author on work you do that is not part of your thesis/dissertation research project?
- The data you produce as part of your graduate work is valuable, even independent of its inclusion in a scientific article. What is your right to this data now and into the future, and how will these data be archived and shared?

Many funding agencies require that data produced under grants be made publicly available. There is a growing trend to make nearly all scientific data “open source.” In contrast, there may be restrictions on the communication of research results from work funded in part or wholly by private companies. For instance, a funding source may place an embargo on publishing work so that they have first access to the information. Also, your work may involve intellectual property that has commercialization potential. There are complex legal issues related to patentable results. These complicate how and when you communicate results. Discuss all these issues your advisor. See also *being part of a team* section below (7.4).

Storing and archiving data is another important issue. Granting agencies may require detailed data management plans as part of proposals. Data management plans include the physical aspects of storing data in ways that minimize the chance for loss of data. Solid data management plans also help prevent the more subtle and pernicious ways of losing data such not including units, not providing good descriptions of what the data are or how they were collected, or even forgetting where you put the data. Detailed metadata that describe the *what, where, how, and when* of data is important. A complete data management plan outlines the specific manner in which data will be shared and archived. Discuss the general data management strategy with your advisor and learn whether any specific data management plans apply your project.

7.3 Assistantship Expectations

Discuss your major advisor's expectations for participation in lab activities with them, and with other students in your group. Those with 0.49 FTE appointments will devote essentially half of their time to the assistantship.

- What does this mean?
- What does it mean if your assistantship has a lower FTE?
- What are your specific position and job description expectations?
- Does your advisor expect you to keep regular hours in the lab? If so, what are they?
- Are there periods of time (such as harvest season) when you may have to work more hours?

Agreeing with your major advisor about participation in lab activities will do much to reduce unmet expectations for both parties. Also, see the research expectations in Section 7.1 of this document.

7.4 Being Part of a Team

As a graduate student at Oregon State University, you represent the State of Oregon, OSU, CSS, your lab group, and your advisor. While you should be ethical and professional at all times, your actions and activities will now reflect on a larger group. Therefore, your major advisor may require review of any work (e.g. talks, publications) before it is shown to peers or the public. In addition, being part of a team involves obligations and responsibilities that are not specifically tied to your assistantship or research. For example, it is a common expectation that all lab members take part in mentoring and training undergraduate and new graduate students in research techniques and protocols. Other examples may include attending regular lab meetings, occasionally assisting other students, and contributing to clean, organized, and safe lab spaces. Discuss these broader expectations with your major advisor early in your graduate program.

7.5 A Schedule of Communication

Your major advisor is your direct and most frequent contact during your graduate program. This individual is your supervisor and mentor in your professional development. Contact your advisor for assistance with any aspect of your graduate education. Many advisors and students find their relationship is most productive with frequent (daily, or at least weekly) communication on both professional and personal levels. However, recognize that individuals differ in their work styles and communication expectations. Early in your degree program, discuss such expectations with your major advisor.

- Do they expect to receive frequent (e.g. weekly) updates on your progress?
- Do they only want to hear from you if you have a specific question or problem?
- What are your own expectations and desires for communication?

Conflicting non-expressed expectations are a common source of tension between students and advisors. Avoid this by having a conversation with your major advisor about when and how you both prefer to communicate. You may never be completely aligned but talking about this issue will assist you in reaching an accommodation that satisfies both parties.

7.6 Completing Your Degree Program

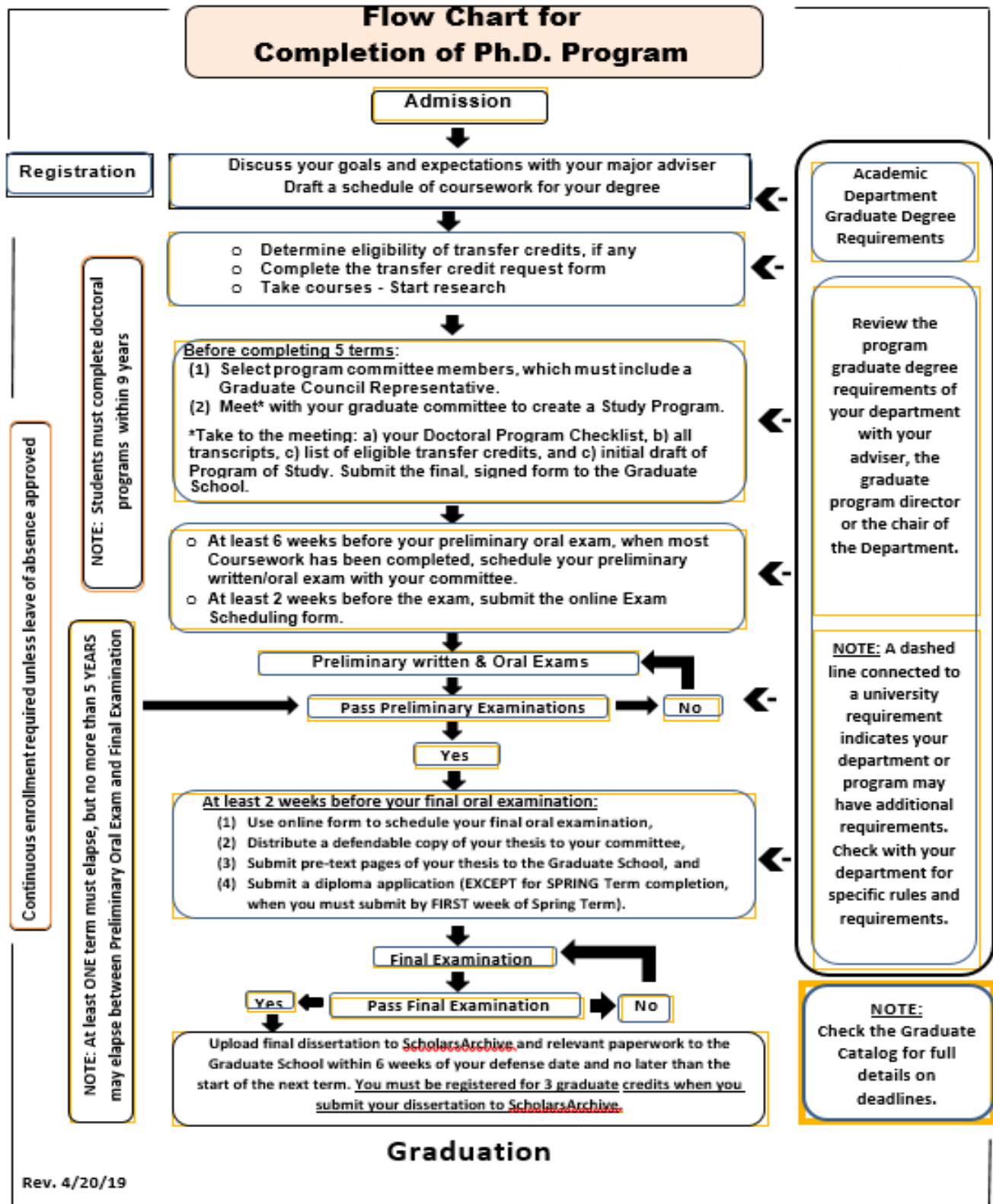
Communication becomes particularly important as you begin data analysis and the writing process. Develop a realistic schedule for writing, revising, and defending your thesis or dissertation. You must allow adequate time for meaningful feedback from your major advisor and other committee members, and to edit and revise your initial drafts. You must also coordinate your writing schedule with the scheduling requirements set by the Graduate School for your defense. Your schedule may be influenced by availability of funding or expiration date of your visa. Early and frequent communication with your major advisor and the rest of your committee about this schedule is essential. During your first committee meeting, develop a timeline for your program and revise it as needed as you progress toward your degree.

Many of your interactions with your major advisor during your degree program will involve discussions on how best to analyze your results and to communicate those results to your peers through your thesis or dissertation and associated publications.

- Does your advisor expect to be consulted about each interim analysis or figure you produce?
- Would they prefer a more polished selection of analyses?
- Would they like to see a more fully formed product such as a results section before providing feedback, or be more involved from the beginning?
- What are your expectations and preferences for input on the analysis and writing steps?

Maintain a regular flow of information, feedback, and interaction. Limited communication about data analysis, results, or review will limit your progress.

7.7. Flow Chart of Completing PhD Program



Source: OSU Graduate School website.

8. RESPONSIBILITIES

Several broad expectations govern students, advisors, and supporting administration of the CSS Graduate Programs.

8.1 Student Responsibilities

Students are expected to:

- Assume the major responsibility for their graduate program and initiate each step involved in obtaining the degree.
- Ensure that the members of their graduate committees are designated graduate faculty. If such is not the case, contact Jolene Bunce.
- Demonstrate honesty and ethics in all aspects of their academic work.
- File a Graduate Program Checklist (Appendix 1) with their major advisor and update this for each term as required.
- Meet regularly with the major advisor to discuss progress or difficulties in research and coursework.
- Contact graduate committee members to schedule committee meetings.
- Submit required Graduate School forms. (See Appendix 1).
- Discuss serious difficulties with the department head or graduate program coordinator, particularly if these are difficulties with the major advisor that have not been resolved by open communication between student and advisor.
- Engage willingly in their advisor's research, teaching, and extension programs.
- Maintain a GPA of at least 3.0. Strive for excellence in all coursework and research.
- Maintain a clean and organized office and lab space during the program and prior to departure.
- Be familiar with and comply with Graduate School and departmental requirements and regulations.
- Attend and participate in weekly department seminars and thesis defense presentations.
- Write the thesis/dissertation in journal article format and submit manuscripts for publication **before** leaving OSU.
- Return departmental keys upon completion of the degree program.
- Ensure that all research data have been archived according to the expectations of the major advisor.

Same rules apply for off-campus students.

8.2 Major Advisor Responsibilities

Major advisors are expected to:

- Responsibly advise and guide students in their graduate program development, coursework, and research, and in their development as professionals within their chosen discipline and sub-discipline.
- Instruct new students on departmental regulations and research facilities; introduce them to other graduate students, staff, and faculty members; and assist them in completing the Graduate Program Checklist.
- Be particularly alert to the guidance of beginning students and specifically encourage short-term research challenges to promote student interest, involvement, and development of research expertise and philosophy.
- Provide budgetary support for supplies, services, and equipment needed for thesis research.

- Guide advisees to develop programs of study consistent with the student's career goals and departmental and Graduate School requirements.
- Remain informed of advisee's progress and difficulties in research and coursework.
- Inform students if their performance is not satisfactory and discuss solutions and consequences in such cases as poor performance persists.
- Assist advisees in seminar preparation and practice.
- Assist in thesis organization and editing so that it is in good form before distribution to other committee members.
- Encourage students to participate in CSS and other departmental seminars and in regional, national, and international scientific meetings. Assist students in preparing their oral presentations and posters.
- Carefully edit manuscripts co-authored with students prior to submission for departmental review.
- Ensure that advisees function as an integral part of the research, teaching, and/or extension programs.
- Conduct an annual review of all GRAs and GTAs and submit a copy to the department's administrative manager.

8.3 Department Responsibilities

Departmental administrative personnel are expected to:

- Provide office and thesis research space, facilities, and educational resources to graduate students insofar as resources and opportunities permit.
- Encourage students to attend and present research at professional meetings by providing transportation funding and/or in deferring costs of such participation as resources and university policies permit.
- Ensure that the graduate policy and departmental standards are maintained.
- Assist in the solution of major problems that arise during the student's graduate program.
- Seek graduate student and major advisor input on issues of concern.
- Ensure that annual reviews are conducted for all graduate students.

9. Graduate Learning Outcomes and Program Components

9.1 University Graduate Learning Outcomes (GLO)

Overarching (University) **Graduate Learning Outcomes (GLO)** for doctoral and master's programs were proposed by the Graduate Council and approved by the Faculty Senate in 2011.

The graduate outcomes, as approved by Faculty Senate are:

University GLO for PhD programs state that the student shall:

- (a) Produce and defend an original significant contribution to knowledge
- (b) Demonstrate mastery of subject material
- (c) Conduct scholarly activities in an ethical manner

University GLO for MS programs state that the student shall:

- (a) Conduct research or produce some other form of creative work.
- (b) Demonstrate mastery of subject material.
- (c) Conduct scholarly and professional activities in an ethical manner.

The assessment of learning outcomes is to be formative, providing guidance for students as they work toward achieving required outcomes, and summative, determining satisfactory progress toward degree completion.

9.2 Department Graduate Learning Outcomes (GLO) for MS and PhD Degrees

a) Knowledge (Academic)

Demonstrate comprehensive understanding of fundamental and advanced concepts associated with crop/soil Sciences related to students' discipline.

b) Research Ability - Creativity

Show ability to design, conduct, analyze, and interpret **research**, ethically, addressing problems in the discipline, independently for PhD students, with PI for MS students.

c) Application (Critical Thinking)

Demonstrate potential ability to utilize research findings to laboratory and/or field settings in actual situations. Make an original (PhD) and/or significant (MS) contribution to the related discipline.

d) Communication (Outreach)

Communicate effectively to a diverse group of people using appropriate traditional and emerging technological media.

Assessing the progress of PhD and MS students toward achieving GLO:

Knowledge

- Performance in Coursework - GPA in Coursework.
- Oral preliminary exam (PhD) and Final defense (MS) – Graduate committee assesses quality of performance in closed session (pass or no pass).
- Minimum Requirement: Must have GPA of 3.0 or greater (minimum grade: B-).

Research Ability- (Creativity)

- Complete Grad 520 Research Ethics course; Prelim Exam (PhD); and Final defense (MS).

Application (Critical Thinking)

- Final oral defense (PhD and MS). Faculty use the MS/PhD Department Form for assessing GLO, located at the end of this handbook.

Communication (Outreach)

- One (MS) or two (PHD) public seminars (including Crop/Soil 507/607)
- Practicum – teaching in teaching (Crop/Soil 509) for PhD; optional for MS.

9.3 Preliminary Committee Meetings

During your first term, you will likely have a number of informal meetings with your major advisor for development of your academic program and to identify potential graduate committee members. It is not required that these early meetings include your official committee members, although it can be beneficial to include some of them in these meetings. Once your committee membership is confirmed, schedule a formal preliminary committee meeting. Ideally, this would occur before the end of your first term.

- This meeting must be held no later than the completion of 18 credits for MS students.
- PhD students with a master's degree should hold this meeting before completing two terms.
- PhD students without a master's degree must convene their committee before completing five terms.

Graduate School regulations do not require that MS students have a preliminary committee meeting before filing their program of study, but the department strongly encourages all graduate students to do so. MS students are not required to include the graduate representative in this meeting. They may identify a graduate representative later in the program of study. However, PhD students must have a formal preliminary committee meeting that includes the graduate representative before submitting their programs of study.

The preliminary committee meeting provides the graduate committee members with an opportunity for early input into the student's coursework and research. These can enhance the graduate student productivity and preempt problems that may otherwise arise.

During the meeting, committee members will point out course, research, and career options. They will assist you and your major advisor in developing a plan for your graduate career. The following is an outline for an effective committee meeting:

- **Introduction:** The student should present a brief verbal autobiography, including general background and educational experience, and short- and long-range professional goals. Present a projected timetable of graduate study and a tentative list of courses to be taken in the proposed program. If you have created a tentative thesis plan, it should be presented.
- **Discussion of Program:** The committee and the student will plan a tentative course program. This plan takes into account the candidate's previous education, research area, goals, and interests. It is helpful if the following written information is provided to members of the graduate committee before the meeting:
 - A brief statement of student's professional goals and objectives.
 - A listing of undergraduate and graduate courses taken including course names, numbers, credits, grades, and institutions.
 - A proposed list of courses to be taken at OSU.
 - A tentative timetable for the graduate study plan. Base this timetable on the Checklist found in Appendix 2.

9.4 Thesis Research Outline

Active engagement in research is central to your graduate education. Work with your major advisor and committee to develop a written outline and plan for your proposed research. The exact form and extent of this plan can vary. For instance, your major advisor might require that you write your plan in the form of a detailed research proposal, similar to something you would submit to a granting agency. Alternatively, they might simply request that you write a 3-4-page outline. In either case, be as specific and detailed as possible in your plan. The plan will help you and your major advisor think explicitly about how your research fits into the rest of your graduate program. For instance, it can be difficult to carry a heavy course load while establishing field research plots. The plan will also facilitate meaningful discussion and provide the graduate committee a basis for feedback. Part of research involves active planning and plan revision as necessary.

9.5 Graduate Committee, Graduate Major and Minor

The graduate committee is the formal body that guides, mentors, and evaluates your graduate experience. You and your major advisor should carefully consider the members of this committee. Include members who can provide you experience and expertise in areas related to your research and other career goals, including teaching and Extension.

You are not required to declare a minor for the PhD or MS degree. The distinction between a "major" and "minor" can be difficult to distinguish. However, you may declare a minor. Determine the program of study for a minor with your committee. The minor need not be restricted to one department. It may be an integration of supporting courses from two or more departments. However, note that some programs have specific requirements for a minor.

Even if you do not officially declare a minor field, you may wish to include the equivalent of a “minor field” faculty member from outside of the Department on your graduate committee. Also, your program of study will likely include a significant number of classes outside of those offered by the department.

Note that Crop Science and Soil Science graduate degrees are separate programs. Thus, a soil science faculty member on a crop science graduate committee, or vice versa, can be considered the faculty from another degree program. The Graduate School has a number of regulations on the structure of graduate committee.

Please read more on their website: <https://gradschool.oregonstate.edu/current/graduate-committee>

Table 1. Minimum Composition of Graduate Committee¹.

Degree	Major	Minor	Graduate Faculty at Large	Graduate Council Representative
MS (thesis with minor)	2	1	0	1
MS (thesis without minor)	2	0	1	1
MS (non-thesis with minor)	2	1	0	0
MS (non-thesis without minor)	2	0	1	0
PhD (with minor)	2	1	1	1
PhD (without minor)	2	0	2	1

¹ <https://gradschool.oregonstate.edu/current/graduate-committee>

You may have someone in mind to serve on your graduate committee, but they may not be appointed to the graduate faculty. Be sure to check the potential committee member’s graduate faculty status with the graduate school by sending an email to graduate.school@oregonstate.edu. For PhD students, the committee must be formed before the program of study is submitted. See below for more information on program of study. The Graduate School does not require MS students to select major and minor professors before submitting the program of study. However, CSS MS students are encouraged to form their graduate committee and schedule a preliminary meeting before completing two quarters of study.

All thesis MS and PhD students are required to have a Graduate Council Representative (GCR) on their committees. It is the GCR’s responsibility to represent the Graduate School, monitor the oral and thesis defenses to ensure rigor in these examinations, and to ensure that the student is treated fairly during the examination.

Generate a list of potential graduate representatives on the Graduate School’s website: <https://gradschool.oregonstate.edu/gcr-generate>. Consult with your major advisor before choosing a GCR. Individuals on the list are not obliged to be on your committee and may decline your invitation. You are not obligated to accept any graduate representative on the list. You may generate one GCR list per day. The GCR is not required to read your thesis or participate in questioning the candidate. However, many GCRs do read the thesis and participate in the defense examination.

9.6 Program of Study

The program of study is a list of courses you intend to study to fulfill the requirements of your degree. You will develop it in collaboration with your major advisor and graduate committee. Note the important program of study filing deadlines:

- MS students must file a program of study before the completion of 18 credit hours. At the very latest, you must submit an approved program of study at least 15 weeks before your final oral examination.

- PhD students who already hold a master's degree must file a program of study before completing two terms. At the very latest, you must submit an approved program of study at least six weeks before your preliminary oral exam.
- PhD students who do not hold a master's degree must file a program of study before completing five terms. At the very latest, you must submit an approved program of study at least six weeks before your preliminary oral exam.

The Graduate School will review your program of study to ensure that it conforms to the general rules and regulations for your degree. You must file a revised program of study each time your program changes. Construct a program of study that meets the minimum requirements for graduation and take as much additional coursework (including thesis and blanket courses – see 9.8) as you and your graduate committee see fit. Additional courses need not be listed on your program of study.

The program of study for PhD students must be approved by the full graduate committee in a formal meeting. See section 9.1. The program of study for MS students only requires approval by the major advisor. However, MS students should engage the full committees in the development of the program. All study programs are approved and signed by the department head.

The composition of your program of study is governed by a number of rules and regulations. Program of study forms that include a summary of these rules are available from the Graduate School: <https://gradschool.oregonstate.edu/current/program-study>. The university requires that your program of study include training on the responsible conduct of research. See information provided on the Research Office website: <http://research.oregonstate.edu/osp/responsible-conduct-research> and section 9.9 below for information on how to meet this requirement.

9.7 Seminars

Graduate students and faculty in Crop and Soil Science are **expected to attend the weekly departmental seminars unless there are travel or course schedule conflicts**. Students are expected to contribute to discussions and to make presentations as determined by the Seminar Committee and in consultation with the major advisor. Student seminar presentations will undergo written evaluation by the faculty and students present. The major advisor will discuss strengths and weaknesses of each seminar presentation with the student and develop a plan for improvements as needed.

Student seminar requirements

- Each MS student is required to present at least one seminar in addition to the thesis defense seminar. They must register for CROP/SOIL/ENT 507 during the term in which they present unless other arrangements are made.
- Each MS student is expected to present a research-plan seminar during the spring term of the first year of study. This seminar will include a comprehensive literature review and research plan. Alternately, MS students may give an oral research presentation at a professional meeting provided the major advisor gives advance approval. A poster presentation does not meet this requirement. If the MS student's only professional meeting presentation is a poster presentation, the MS degree defense must be publicized seminar.
- Each PhD student must present at least two seminars. PhD students must be enrolled in CROP/SOIL/ENT 607 during the terms in which these seminars are presented.
- The first seminar is a "research-plan" seminar presented in a spring seminar session or during another term if the spring term is not feasible.
- The second seminar must be presented at least six months before the dissertation defense. This requirement may be fulfilled by a departmental seminar presentation. The topic may not be related to the dissertation topic.
- The presentation may be presented at a professional meeting with advanced permission of the major advisor.

- It may be on some phase of the dissertation work which can be seen as separate from the dissertation topic.
- Each PhD dissertation defense will be a publicized seminar and open to the public.
- MS or PhD students enrolled in the PBG option must give an additional seminar under the PBG 507/607 class designation. These seminars are organized by the PBG faculty.

Guidelines for Seminar Development and Presentation

- Students are expected to deliver a well-prepared presentation, deliver it in a professional manner, and be knowledgeable about the subject and able to discuss and respond to questions. Students may involve members of the audience during the discussion period.
- Students should work closely with the major advisor to develop the seminar.
- Students should prepare and revise visual aids to ensure that they are effective and that charts are legible, etc.
- Students should provide the seminar committee chair with a brief, written biographical sketch 72 hours before the seminar. The chair will use it to introduce you.
- Non-thesis seminars should be approximately 20 minutes in length with 10 minutes allotted for questions.
- Thesis defense seminars should be about 40 minutes, with 10 minutes for questions.

9.8 Required Courses

Crop and Soil Science Degree

The Crop and Soil Science graduate program requires the following courses in addition to the general requirements for the program of study established by the Graduate School, the major professor and the graduate committee of the student.

1. Grad 520 Research Ethics.
2. Crop/Soil 507/607 Graduate Seminar (variable credits). See section 9.5 for details.
3. At least one term of a teaching activity, CROP/SOIL/PBG/ENT 509 (for PhD). Teaching activity is required for PhD students, optional for MS and non-thesis students. It is determined by the graduate committee for MS thesis students.
4. Some sponsors may not have funds to cover E-campus courses. Please discuss with your sponsor prior to registration.
5. All students must train in responsible conduct of research:
 - a. Complete the OSU Research Office Collaborative Institutional Training Initiative (CITI) on-line physical science training module and obtain a certificate of completion. See: <https://www.citiprogram.org/> for details, **or**
 - b. Take a formal class offered by the Graduate School (such as Grad 520) or other campus units that specifically address responsible conduct of research or research ethics.
 - c. Further, individual research projects and research groups are expected to have internal discussions about responsible conduct of research.
6. All students may complete training modules and obtain completion certificates on:
 - a. AlcoholEdu – High-Risk Alcohol Prevention
 - b. HAVEN – Sexual Violence Prevention

See <http://studenthealth.oregonstate.edu/welcome> for details on these trainings.

Crop Science Degree with PBG Option

The Crop Science Graduate Program with a PBG option has requirements beyond those listed in 9.6.2. Specifically, the PBG option requires that you include 12 credits from the following list in your program of study:

- (1) BOT/MCB 575. Comparative Genomics (4)
- (2) CROP 590. Experimental Design in Agriculture (4)
- (3) PBG 507. Seminar (1-2)
- (4) PBG 519. Current Topics in Plant Breeding and Genetics (2)
- (5) PBG/HORT/CSS 530. Plant Genetics (3)
- (6) PBG/HORT/MCB 541. Plant Tissue Culture (4)
- (7) PBG/HORT/CSS 550. Plant Breeding (4)
- (8) PBG/MCB/CSS 620. DNA Fingerprinting (1)
- (9) PBG/MCB/CSS 621. Genetic Mapping (1)
- (10) PBG/MCB/CSS 622. Mapping Quantitative Trait Loci (1)
- (11) PBG 650. Advanced Plant Breeding and Quantitative Genetics (3).

Crop Science Degree with ENT Option

The Crop Science Graduate Program with an ENT option has requirements beyond those listed in 9.6.2. Specifically, the ENT option requires that you include 12 credits from the following list in your program of study:

- (1) ENT 507. Seminar (1-2)
- (2) ENT/HORT 518. Current Topics in Entomology (2)
- (3) ENT 520. Insect Ecology (3)
- (4) ENT 542. Principles of Integrated Pest Management: Systems Design (4)
- (5) ENT/Z 547X. Insect Systematics: Diversity and Evolution (5)
- (6) ENT 599. Special Topics: Explorations in OSU Entomology (2)
- (7) Z 540. Insect Physiology (3)

9.9 Blanket Courses

Blanket-numbered courses provide course credit for the many activities that are part of your program but don't fit neatly into a traditional course structure. Blanket courses have a zero middle digit (e.g., 501-509 or 601-609). They may be repeated up to the maximum totals described for each degree program of study. Blanket courses in CSS include:

Thesis credits

- CROP/PBG/ENT/SOIL 503 for MS students
- CROP/PBG/ENT/SOIL 603 for PhD students.

Research credits

- CROP/PBG/ENT/SOIL 501/601.

Reading and Conference

- CROP/PBG/ENT/SOIL 505.
- These credits are given for special coursework that does not have a formal course number.
- This can be a way to gain credit for reading and discussing the body of literature on a specific topic.

Seminar

- CROP/PBG/ENT/SOIL 507/607.
- See section, 9.7 "Required Courses".

Teaching Practicum

- CROP/PBG/ENT/SOIL 509/609. Credit is awarded under this course number for effort in teaching activities.

9.10 Teaching Experience

- Your committee, major advisor, or the supervisor of your teaching experience will determine an appropriate number of CROP/PBG/ENT/SOIL 509 credits to include on your official program of study.
- Typically, assisting in an assigned undergraduate course equates to 3-4 credits of CROP/PBG/ENT/SOIL 509/609.
- Given career plans, some students may enroll in additional CROP/PBG/ENT/SOIL 509 credits.
- Other possibilities for teaching experience include assisting in the presentation of an extension program, field day, or other event, provided the experience includes direct contact with students or stakeholders. These experiences shall include preparation and presentation of one or more lectures or extension programs. They may include significant leadership during labs and recitation sections. These activities are not eligible for CROP/PBG/ENT/SOIL 509 credits.

9.11 Responsible Conduct of Research

“The Responsible Conduct of Research (RCR) Program at OSU has been designed to meet the requirements outlined in Section 7009 of the America COMPETES Act, which mandates training in the responsible conduct of research for all proposals. As a recipient of National Science Foundation (NSF) funding, OSU’s plan is designed to make available programs and materials that will increase the knowledge and facilitate the practice of responsible research, see [website](#). See OSU Research Office CITI requirement, Section 9.6 “Programs of Study.”

9.12 Thesis, Dissertation, or Research Project

Scientific research involves the application of the scientific method to generate information, the synthesis and analysis of that information, and the vetting the findings and analysis by peers. The MS and PhD programs are designed to give you practical training and experience in each of these elements. The publication of the thesis or dissertation is your contribution to the scientific literature. The work that you do in graduate school will have the greatest impact if it is peer-reviewed and made widely available to others.

Your thesis or dissertation will undergo peer review by your committee, and it will be available to anyone who seeks it. However, the process of writing a thesis or dissertation does not reflect the same rigor in review as that given to journal articles. Students are encouraged to write MS and PhD theses chapters in the form of stand-alone scientific journal articles, ready to submit to a journal.

The department may provide a professional writing experience to speeds up publication. The Graduate School has compiled a useful guide for the preparation and formatting of the thesis in this [website](#). See section 11.3 “Thesis Copies” in this document for departmental expectations about submission of bound thesis copies.

10. DEGREE REQUIREMENTS AND OUTCOMES

The general degree and credit requirements for all graduate programs can be found at <https://catalog.oregonstate.edu/>

- All graduate programs must include a minimum of 50% graduate stand-alone courses.
- The remaining credits may be the 500 component of 400/500 “slash” courses.
- Training in the Responsible Conduct of Research detailed in Section 9.7.

10.1 MS Degree Requirements

- See the Crop and Soil science graduate program website for a list of requirements: <https://cropandsoil.oregonstate.edu/departments-of-crop-and-soil-science/crop-science-graduate-program>

- A minimum of 45 graduate credits is required. Minimum of 12 thesis credits (Crop 503/Soil 503/PBG 503/ENT 503) and 6 research credit (Crop 501/Soil 501/PBG 501/Ent 501) are required.
- No more than 50% of the credits are slash courses, i.e., 4xx/5xx.
- If a minor field is identified, approximately two-thirds of the coursework (30 credits) must be in the major and the rest in the minor field.
- No more than 9 credits of blanket-numbered courses (such as 507 or 509) may be applied toward the minimum 45-credit MS degree. This does not include required thesis hours (CROP/SOIL/PBG/ENT 503).
- Full-time students with GRA or GTA must register for 12 credits during fall, winter and spring term and 5 credits during the summer term.
- At least one credit of seminar (CROP/SOIL/PBG/ENT 507) is required for thesis and non-thesis MS students, and two seminar credits are required for the PBG options.
- Three teaching practicum credits (CROP/SOIL/PBG/ENT 509) may be required (optional). The major professor and the graduate committees of MS students determine whether teaching is required depending on the student's career goals.
- Evidence of training in conducting scholarly and ethical research and activities, e.g., passing GRAD 520 (Responsible Conduct of Research).
- A maximum of 15 credits of graduate work completed at another accredited institution <https://registrar.oregonstate.edu/transfer-credits>, may be transferred, provided that courses fit into the program of the degree and grades of A or B have been earned. The transfer credits should be approved by the student's committee and by the Graduate School.
- Students must submit a Transfer Credit Request form before the end of their first year of study if they wish to include transferred courses within their course study program at OSU. Credit granted for work completed at another institution is tentative until validated by work in residence. Credit for out-of-state extension courses, correspondence courses, institute courses, certain distance education courses, and other non-traditional courses is not accepted. See the Graduate Catalog for a complete description of rules and procedures regarding transfer credits.
- Completion of an original research project and successful presentation and submitted thesis, or for the non-thesis option, completion of a research project and report.
- Pass the final thesis defense exam.
- Traditional thesis format or a different format that takes advantage of emerging technology systems is acceptable. Thesis should be accessible via Scholars Archive.
- Thesis and non-thesis tracks are offered and subject to the approval of major advisor and graduate committee.
- All work for an MS degree must be completed within seven years, including transferred credits, coursework, thesis, and all examinations.

10.2 MS non-thesis (Project) Option

- Students must decide early in their course of study whether they wish to follow the thesis or non-thesis MS degree.
- The non-thesis option requires students to complete 45 credits, out of which a minimum of six research credits (Crop 501/Soil 501 /PBG 501 /Ent 501) must be related to the research project. A Graduate Council representative is not required in the graduate committee of non-thesis MS students.

- The completed proposal should be reviewed by and receive signed approval from the student's major professor and two additional committee members. Find an example of the non-thesis research proposal [here](#).
- The length of the final research report depends on the topic, methods, and final product as agreed on with the student, major professor, and committee. The project report has the potential to be released to the public. The project content must be well researched, reliable, and academically defensible.

10.3 PhD Degree Requirements

See the graduate catalog for the formal list of requirements: <https://catalog.oregonstate.edu>

- A total of 108 credits are required to be completed for the PhD degree.
- At least 36 research/dissertation credits (Crop 603/Soil 603/PBG 603/Ent 603) are required.
- No more than 50% of the credits are slash courses, i.e., 4xx/5xx.
- A minimum of 27 credits must be completed in residence at Oregon State University. At least three terms of graduate academic work must be full-time (at least 9 credits per term). These three terms of full-time enrollment do not have to be consecutive.
- At least two credits of seminar (Crop 607/Soil 607/PBG 607/Ent 607) are required, with three credits being required for the PBG options.
- Three to four teaching practicum credits (CROP/SOIL/PBG/ENT 609) are required.
- No more than 15 blanket-numbered credits (e.g., 607) may be applied toward the minimum 108-credit doctoral program. This does not include required research credits, i.e., Crop 603/Soil 603/PBG 603/Ent 603.
- If a minor is declared, it must consist of at least 18 credits, or 15 credits for an integrated minor.
- Completion of an original research project.
- Evidence of training in conducting scholarly and ethical research and activities, e.g., passing GRAD 520 (Responsible Conduct of Research).
- Pass the preliminary written and oral exams. The option of written questions only or a grant proposal only has been instituted based on faculty vote in 2021. The preliminary oral exam must be completed in all cases.
- Pass the final defense thesis and successfully submit a PhD thesis.
- Traditional thesis format or a different format that takes advantage of emerging technology systems is acceptable. Thesis should be accessible via Scholars Archive.
- Students must submit a [Transfer Credit Request form](#) before the end of their first year of study if they wish to include transfer credits in their program of study at OSU. Students may transfer selected graduate credits if the OSU Graduate School approved them based on transfer credit guidelines and if the student's committee decides the courses are applicable to the proposed OSU program of study. See Policies Governing All Graduate Programs.
- Graduate courses to be transferred to a PhD program can be courses that were used to satisfy the graduate course requirements of a graduate certificate or a master's degree (or equivalent).
- Selected 700-level courses may be listed on doctoral programs of study if the courses are deemed equivalent to graduate-level learning and if the graduate committee approves.
- There is no limit on transfer credit toward the doctoral degree provided the doctoral residence requirement is satisfied.

- Credit granted for work completed at another institution is tentative until validated by work in residence. Credit for out-of-state extension courses, correspondence courses, institute courses, certain distance education courses, and other non-traditional courses are not acceptable. See the Graduate Catalog for a complete description of rules and procedures regarding transfer credits.
- All PhD students are required to teach one term (Practicum in Teaching Crop/Soil/PBG/Ent 609); however, two terms of teaching are desirable. Teaching will be evaluated according to the evaluation form found at the end of this handbook. It is the advisor's responsibility to schedule the time for the teaching. Teaching is evaluated by the faculty of record for the course. A teaching evaluation form, along with the yearly academic progress evaluation form (at the end of this handbook), will be placed in the student's academic file. These files may be held by the advisor or by the departmental administrative personnel. This will ensure that the student has met the teaching requirement.

11. EXAMINATION REQUIREMENTS

It is the MS and PhD student's responsibility to complete and submit the appropriate pre-examination Graduate School paperwork and to schedule the exam. [Exam Scheduling Form | Graduate School | Oregon State University](#).

The nature and timing of examinations are dictated by the Graduate School, and these policies must be adhered to for examinations to be valid <https://catalog.oregonstate.edu/college-departments/graduate-school/#policiestext>

MS Degree Examination Requirements in Crop Science and Soil Science

Master of Science (MS) degree candidates are not required to take a written examination; however, major advisors may use a written examination to prepare students for the oral examination. The major advisor may require a written examination as another means of assessing student achievement, pending consensus among members of the graduate committee.

Final Oral Examination for the MS Degree in Crop Science and Soil Science

- The thesis (for thesis students) or research paper (for non-thesis students), as well as the coursework final oral examinations are required for the MS degree candidates [Master's Students | Graduate School | Oregon State University](#).
- The formal oral presentation by the candidate is open to the public and must be publicized. However, admission to the oral examination is restricted to the candidate's graduate committee members.

11.1 PhD Degree Examination Requirements for Crop Science and Soil Science

Preliminary Qualifying Examination (PQE): Passing the preliminary written/grant proposal and oral exams is required. The option of written questions only or a grant proposal only has been instituted based on faculty vote in 2021. The preliminary oral exam must be completed in all cases.

A. Written Examination

- All PhD candidates must complete a written comprehensive examination or prepare a grant proposal in accordance with OSU guidelines [Doctoral Students | Graduate School | Oregon State University](#). Copies of the written preliminary examination or the grant proposal must be given to the committee members two weeks before the oral preliminary examination. The written preliminary examination or the grant proposal must be completed before the oral preliminary examination.

- **In Crop Science:** The graduate committee of each student is responsible for preparing the questions of the written examination. The major advisor will preside over this task. The examination will cover the main areas related to the discipline of each student.
- **In Soil Science:** All soils faculty will collectively compose a common exam to be administered once per year. The examination will cover the four areas of soils:
 - i) Soil Chemistry
 - ii) Soil Genesis, Morphology and Classification
 - iii) Soil Biology and Biochemistry
 - iv) Soil Physics
- **In both Crop Science and Soil Science:** Questions may be open or closed-book. The author of each question must indicate which questions are open-book or closed-book. In this context, “open-book” refers to text, library, or web resources.
 - Each author will indicate approximately how much time should be allotted to each question. Typically, this is 1-2 hours per question.
 - In addition, the graduate committee member whose discipline is not soil science may submit two or more questions.
 - All questions are to be appropriate to the program of study, student’s research, and student’s professional goals.
- Following completion of the written preliminary examination, the major advisor will return answers to the authors of the questions. The authors will indicate to the major advisor whether the student passed their question(s). All questions shall be evaluated within two weeks of the test date.
- All written examination answers will be provided to the student’s graduate committee and will be considered in deciding whether the student passes the preliminary qualifying examination.
- If a student does not pass one or more sections of the examination, they have one opportunity to be re-examined and to pass those sections. Additional coursework may be suggested by the graduate committee. The student may be encouraged to work towards an MS rather than PhD degree.

B. Written Research Proposal (Grant)

- Written “Proposal Checklist” and “Approval Form”, found at the end of the handbook, must be attached to the written proposal when submitted for review by the student’s graduate committee. Upon review, the committee members will return the written proposal, review comments, and a completed form to the student.
- The intent of this proposal exercise is for the student to demonstrate the ability to identify a researchable question, formulate testable hypotheses, and design experiments to definitively evaluate the hypotheses.
- The examination proposal evaluates the student’s ability to access and interpret scientific literature, to think critically, to write creatively, to articulate ideas, and to demonstrate understanding to the research principles. This examination proposal will also test the student’s ability to develop, investigate, and defend an original research idea. The originality, scholarly quality, and the technical feasibility of the proposal are important components of this assessment.
- Before the end of the third year of study, a PhD student must submit a one-page abstract or outline on a topic for a research proposal to the graduate committee for approval.
- The committee must accept or reject the topic of the proposal within one week of submission. A topic may be approved with one dissenting vote.

- If the committee votes “no-pass,” the student will have two weeks to modify and re-submit the proposal for a second decision.
- Within one week of re-submission, the committee must vote on the proposal as suitable for the exam.
- A PhD student will fail the oral examination if the revised proposal is not approved by two or more members of the committee.
- The topic of the proposal must differ from the student’s dissertation research project.
- The proposal must include, introduction, objectives, rationale and significance, research design and methods, timeline, literature cited, budget with justification, and personnel required to achieve the objectives.
- The written proposal should be limited to 10-15 single-spaced pages (references, timeline, and personnel information will not be included in the page count).
- The written proposal must be submitted to the committee not more than four weeks after the committee has approved the topic, and at least six weeks prior to the anticipated date for the oral exam.
- The committee must vote on the revised proposal within one week of re-submission.
- The student will fail the written examination if the revised proposal receives a no-pass decision by two or more members of the committee.
- The student must set a date for the oral examination within three weeks of the decision to pass the proposal.

C. Oral Preliminary Qualifying Examination

- It is the student’s responsibility to complete and submit the “Appropriate pre-examination Graduate School paperwork” and to schedule the exam.
- The major advisor officiates the examination. The graduate council representative (GCR) ensures that the student is treated fairly in the examination process and that all committee members have adequate opportunity to question the student.
- The PhD student must take the oral preliminary qualifying examination within six months after passing the written examination. The graduate committee (and the soils graduate faculty) must approve any exception to this six-month timeline.
- The preliminary oral examination begins with a 20-minute public presentation of the proposal followed by a comprehensive examination by graduate committee.
- The examination evaluates the student’s general knowledge and ability to convey and discuss scientific ideas, theories, and techniques. It is intended to review coursework and related subject matter.
- The oral examination consists of, 1) defense of the written proposal, and 2) open questions related to science or the student’s discipline and training that the committee members deem relevant.
- The decision to pass is made according to the rules of the Graduate School, which give the committee the options:
 - to pass,
 - not to pass and allow a re-examination,
 - not to pass and to terminate the student’s work, or
 - to recess and re-convene within two weeks.

D. Final Oral Examination for the PhD in Crop Science and Soil Science

- It is the student's responsibility to complete and submit the appropriate pre-examination Graduate School paperwork and to schedule the exam.
- At least one complete academic term must lapse between the preliminary and the final oral examinations.
- The formal oral presentation by the candidate is open to the public and should be publicized.
- The graduate committee alone will conduct the examination of the candidate. Neither the exam nor the final deliberation is public.
- The examination normally focuses on the thesis or dissertation.

11.3 Thesis/Dissertation Copies

The Graduate School does not require you to submit a paper copy of your thesis or dissertation but does have other filing requirements. See the Graduate School website for current requirements. Please note that if you miss deadlines, you may be required to register for minimal credits in the following term or may not obtain your degree in your desired timeframe. The department requires that you submit two copies of your thesis, bound at departmental expense, for departmental use. Talk with the office staff about where to have this work done. You may have two personal copies printed at no charge at the <https://is.oregonstate.edu/sms/equipment-checkout> located on the 2nd floor of the Valley Library. These copies are not suitable for departmental use.

12. KEEPING ON TRACK**12.1 Evaluation of Progress**

Each year, you and your major advisor are required to evaluate your performance and progress towards your degree. This is a formal process beyond the routine communications you have with your major advisor. See section 7 of this document. The annual evaluation is a structured method to receive feedback and constructive criticism. The evaluation process and record should point out strengths, successes, and areas for improvement. It is intended to contribute to your development as a scientist and a professional. This is an excellent opportunity for a comprehensive and reflective conversation with your major advisor about your program. It is also an opportunity to develop activities to enhance your program for the coming year. After the evaluation, your major advisor must complete the form and provide a copy to the graduate program coordinator and the department head by the last day of the fall term each year. After it is reviewed, the evaluation form will be placed in your graduate file.

Your satisfactory progress will be assessed against these metrics:

Graduate Committee

Selecting your major advisor before you start your graduate program and graduate committee as follows:

- For PhD candidates, this should be accomplished before completing 5 quarters of study; for
- MS candidates, before completing 2 quarters of study.

Annual Meetings

- **Both PhD and MS candidates are expected to hold annual meetings with their graduate committee and provide oral and written progress reports.**
- The committee will discuss progress and determine whether it is satisfactory. If not, a remedial course of action will be outlined, and a follow-up meeting will be scheduled within 6 months.

Program of Study

- All graduate degree candidates must submit an approved, signed program of study form to the Graduate School.
- For PhD candidates, this should be done before the end of the 5th term of enrollment; for MS candidates, before completing 18 hours of coursework.

Research

Graduate degree candidates are expected to prepare a research proposal and initiate research under the direction of their major advisor within the same timelines as submitting the program of study form (PhD candidates prior to the end of the 5th term, MS candidates before completing 18 hours of coursework).

Coursework

- PhD candidates are expected to satisfactorily complete required coursework within the first 3 years of enrollment. MS students are expected to satisfactorily complete required coursework within the first 2 years of enrollment.
- For satisfactory progress, all graduate students must maintain an overall grade-point average of *at minimum* 3.00 on a 4.00 scale.
- Courses for which a grade below 2.00 is received do not contribute to the graduate program of study.
- A minimum grade-point average of 3.00 is required before the final oral or written exam may be scheduled.

PhD Qualifying Exams

Passage of the written preliminary comprehensive examination and the preliminary oral examination is required before the end of the third academic year of enrollment.

12.2 Graduate Program Checklist

There are separate checklists for MS and PhD students provided at the end of this handbook. The Graduate School also provides a guide to track deadlines and milestones in your graduate study: <https://gradschool.oregonstate.edu/promotion/359>.

13. SCHOLARSHIPS AND AWARDS

13.1 Travel Awards

Attending and presenting at professional meetings are important aspects of academic life. The Department has several endowments that can provide funding for professional meetings and other travel. The typical award is \$200 per meeting. Application deadlines for the following quarter are April 15, July 15, October 15, January 15. See Emmalie Goodwin for application materials. Submit your email of interest to Emmalie Goodwin. Your major advisor or other funder will pay any additional costs. Follow Departmental travel procedures detailed in Section 14.7 below. In your pre-approval request, indicate that you are also requesting a travel award and specify the type and purpose. The Graduate School also offers a Graduate Student Scholarly Presentation Award that can be up to an additional \$1,000/year for reimbursement of travel funds. More details can be found on the Graduate School website: <https://gradschool.oregonstate.edu/awards/scholarly-presentation-award>.

13.2 Department Administered Scholarships for Continuing Students

The Department administers several annual scholarships that are available for continuing students in Crop Science and Soil Science graduate programs. Each scholarship has been funded by a different donor and each has slightly different criteria as listed below.

Award amounts vary based on the wishes of the donors and the balances available. Students interested in scholarship funding must use the College of Agricultural Sciences (CAS) scholarship application process and meet the published deadlines for application.

Find department level scholarship information here:

<https://cropandsoil.oregonstate.edu/departments-of-crop-and-soil-science/financial-support-0>

13.3 College of Agricultural Sciences

<https://agsci.oregonstate.edu/academics/students/scholarships>

13.4 Awards Administered by the Graduate School

The Graduate School administers several fellowships and scholarships that can be found here:

<https://gradschool.oregonstate.edu/finance/graduate-fellowships-and-scholarships>

You must be nominated by the department for these scholarships. Speak to your major advisor early if you would like to be nominated for one of these awards.

13.5 The OSU Valley Library

The OSU Valley Library subscribes to Grant Forward, a database with extensive offerings for supporting research and education. <https://www.grantforward-com.ezproxy.proxy.library.oregonstate.edu/index>

13.6 External Scholarships

There are a number of scholarships available from external sources. The Graduate School has compiled a list of some of these here, and other exist: <https://gradschool.oregonstate.edu/awards>

14. POLICIES, PROCEDURES, AND REGULATIONS

14.1 Use of State Vehicles

OSU maintains a fleet of vehicles for use for official business. See

<http://motorpool.oregonstate.edu/> to reserve a vehicle, and learn about rates, and regulations.

Graduate students must request written permission to drive a state vehicle. The request is signed by your major advisor, or the faculty in charge of the program you are working with, and submitted to Transportation Services at least three working days before the first time of travel.

- University policy requires that all drivers have a valid U.S. driver's license.
- International driver's licenses are not acceptable when driving state vehicles.
- Drivers reserving an 8 or 12 passenger van are required to watch <https://transportation.oregonstate.edu/motorpool/van-safety> and pass the test in addition to being an [authorized driver](#).
- Drivers are responsible for following all university and state regulations pertaining to use and operation of state vehicles.
- State vehicles **may never** be used for personal purposes.
- Partners, children, or pets **may never** be transported in state vehicles.
- Contact Emmalie Goodwin for information about making reservations for rental cars.

14.2 Laboratory and Facilities Policy

- Authorized departmental personnel are provided with keys to appropriate labs and facilities. The major advisor authorizes key requests which are approved by the department administrative manager or department head.
- Each room, lab, greenhouse section, and special facility has a designated faculty supervisor. Supervisors are responsible for coordinating and supervising the use of facilities for which they have responsibility. Present your request to use facilities, space, or equipment to the appropriate supervisor.
- All departmental facilities and equipment are the property of the University and the Department—not of individual project leaders or supervisors. The program of the responsible supervisor normally has scheduling priority over other departmental or cooperating department programs.

- Each research group must provide its own expendable supplies and chemicals, as well as the costs of such supplies used by others, and for repair costs resulting from unauthorized or negligent use of equipment. Consult with your project leader or major advisor about cost commitments for expendable supplies and shared equipment.
- All facility users are expected to respect and comply with established use policies. You must comply with check-out list policies, clean-up and glassware washing policies, equipment operation training requirements, and with the times assigned for use of facilities by the supervisor.
- Individuals who do not respect or comply with established procedures and policies may be denied use of facilities. Use-denial recommendations are made by facility supervisors and subject to approval by the department head.

14.3 Safety

Labs, research farms, greenhouses, and remote field sites have inherent dangers. If you work at any University laboratory, research and experiment station property, research farm, or greenhouse, **you are required to complete safety training before beginning work** and periodic refresher courses. The department has summarized information on university safety policies, procedures, and provides access to training modules on its website. Some equipment and facilities may require additional training. Check with your supervisor on specific training needs.

If you are based at an off-campus facility, make sure to follow specific safety training requirements (e.g., Hermiston Ag. Res. and Ext. Center has its own modules).

Immediately alert your immediate supervisor, major advisor, or the OSU office of Environmental Health and Safety if you have safety concerns: <http://oregonstate.edu/ehs/>.

14.4 Copy Machine Use

The Department has copy machines in each administrative office. These are available for faculty and students to copy items related to teaching, research, and Extension projects.

Office staff have the priority to use the copiers. Personal copying is not allowed.

Personal activities for which you may *not* use the departmental copier:

- Materials as a part of your class assignment,
- Copying thesis material for distribution to committee members,
- Copying journal articles and other materials for the student's files, or
- Any items of a personal nature

Check with the office staff

- If you are unsure whether a copy job is personal or official business or
- If you do not have an assigned copier access code. Copy code activity is recorded and audited monthly.

The departmental copy machine is designed for low-volume copying. Copy jobs of multiple more than 100 pages are sent to *Printing Services* (<http://printmail.oregonstate.edu/>). At Printing Services, costs are reduced as the number of copies increases. When preparing materials for meetings, programs, or large classes, plan ahead and use Printing Services.

Publicly owned resources are for official use only. The following guidelines apply to graduate student use of copiers:

Official activities for which you may use the departmental copier:

- Activities that contribute directly to the teaching, Extension, and research programs of the Department or University,

- Preparation of materials for class by a teaching assistant,
- Abstracts for distribution to seminar participants,
- Preparation of manuscripts for publication, even if included as a part of a student's thesis.

14.5 Poster Printing Policy and Procedure

When preparing posters for academic presentations, be sure to follow the current policies, outlined in detail at the IT Website <https://support.roots.oregonstate.edu/roots/poster-printing>

- Send an email to Roots Support one week or more in advance to advise them of your need for poster printing services.
- Submit your poster as a pdf file a minimum of three days in advance of the day needed.

Quick Tips for Posters

- The plotter paper is on a roll that is either 42 or 36 inches wide, make one dimension of your poster one of those two sizes.
- The plotter does not print to the edge of the paper; leave a one-inch margin around the poster content.

Other Poster Printing Options

- OSU Printing and Mailing Services (<http://printmail.oregonstate.edu/>) also can plot posters. Contact them for more information.
- Students can plot a limited number of free posters at the Student Multimedia Presentation Center. Contact them for more information: <http://is.oregonstate.edu/academic-technology/sms>.

14.6 Travel Policies and Procedures

For Travel help or questions contact Emmalie Goodwin-
Emmalie.goodwin@oregonstate.edu, 541-737-5093

University New Travel System (effective July 1st, 2021) – Concur Travel System

Concur Login Link: Employees and Students can access Concur through their My Oregon State Dashboard. Just search for “concur” under the resources section.

Direct Login Link: <https://login.oregonstate.edu/apps/concursolutions/>

Complete Your Profile: Before using Concur Travel and Expense for the first time, you should complete your profile by clicking the “Profile” link at the top left of the page, and then select Profile Settings. Please see our [video library](#) for help filling out your profile. Through your concur profile you can verify your email address, add your personal travel preferences, as well as update emergency contact information. An updated profile is critical and will really enhance your travel & expense experience.

Training and Support: There are various training materials available to help get up to speed on the new Concur Travel & Expense software. Please visit our [training library](#) to view training videos, process documents, or trip sheets. We will be continually adding content to our various libraries.

For general questions regarding Concur Travel & Expense please feel free to contact our team via travel@oregonstate.edu.

Concur Pre-Trip Requests

OSU employees and students need to submit pre-trip requests for their OSU sponsored domestic and international travel through Concur, except for in-state

travel. The International Travel Registry (housed in Global Opportunities) should still be used for ALL international travel. This will ensure OSU students and employees are properly supported in case of emergency while traveling abroad. Work is currently underway aimed at reducing the complexity around pre-trip registration processes for International Travel, but the International Travel Registry remains a critical component.

Other Travel Information

- Be sure to consult your major advisor or the entity providing travel funds before planning travel and submitting reimbursement requests. Some funding sources may not reimburse meals and incidentals, or they may be reimbursed at a lower rate.
- Conference registrations and abstract submission fees can be charged to the department credit card. Send the information by email to Emmalie or ask her to come to your computer and complete the transaction.
- You must pay for hotels, taxis, and shuttles at your destination. Keep all receipts for hotel, taxi, shuttle, etc. Hotel rates are covered up to current per diem rates. Emmalie can provide the current per diem rates for the cities to which you are travelling or check online through: <https://www.gsa.gov/travel/plan-book/per-diem-rates> You will be reimbursed after you return.
- It is not necessary to keep meal receipts, as the University pays a flat daily rate for meals. <https://www.gsa.gov/travel/plan-book/per-diem-rates>
- If you are gone for 5 days or more, you are entitled to a travel advance: <https://fa.oregonstate.edu/fiscal-policy-program/03-140-208-travel-advances>

15. RESEARCH SUPPORT FACILITIES

15.1 On-campus

Please review the Laboratory and Facilities Policy, Section 14.2 of this document. As a graduate student, you have direct access to a number of shared facilities:

<http://research.oregonstate.edu/shared-research-facilities-and-services>.

Much of the equipment and some of the services offered by these facilities are available at no charge for graduate student use or for a small fee to cover expendable supplies. However, the majority of services are fee-based, at a discounted rate to the OSU community. The campus facilities most commonly used by our students and program include the following:

Agricultural and Life Sciences Building (ALS), Crop Science (CS), Cordley Hall, and Seed Lab.

The department's main office is in 109 Crop Science and a satellite office is in ALS 3017. Several of our entomology faculty have offices and labs in Cordley Hall. Our Seed Laboratory is a fee-based laboratory to support Oregon's seed industry. Offices, teaching, and laboratory facilities are in all three buildings.

Greenhouses <http://agsci.oregonstate.edu/greenhouse/>

Two major greenhouse complexes on campus offer some 100,000 square feet total growing space for teaching and research. They are the College of Ag Science East (located immediately west of Cordley Hall) and West Greenhouses (about 1 block west of 30th Street between Orchard Avenue and Campus Way). New greenhouses are being built.

All new users (graduate students, faculty, and staff) are required to complete an initial orientation and safety training **before starting work in the greenhouses**. Contact greenhouse staff to arrange this orientation and training: <http://agsci.oregonstate.edu/greenhouse/about-us/staff>.

Greenhouse space is allocated on a long-term basis to primary users through their departments.

Primary users may make short-term assignments to secondary users. Users are responsible to the greenhouse manager to coordinate use or any modification of the facilities.

Research Farms <http://agsci.oregonstate.edu/farmunit>

Department faculty use three research farms:

- Hyslop Field Lab,
- Vegetable Farm, and
- Lewis Brown Farm.
- Off campus experimental stations may have their own rules and regulations.

Plantings and field laboratories at these locations are used in field plot research work.

Graduate students provide written requests to use these farms for research purposes, with requests approved by their major advisor and the College of Agricultural Sciences Farm Committee. These written requests must be made in advance and include materials, methods, and timing. Contact Dan Curry: dan.curry@oregonstate.edu

Center for Genome Research and Biocomputing (CGRB) 3021 Agriculture and Life Sciences Building <https://cgrb.oregonstate.edu/> CGRB provides services, technical expertise, collaborative functions, and shared-use equipment for molecular bioscience research at Oregon State University. The Core Labs are a fully staffed facility that serves as a focal point for acquisition and development of new instrumentation and technologies. CGRB provides service in four areas:

- *Genomics*
- *Functional Genomics*
- *Biocomputing and Bioinformatics*
- *Imaging and Image Analysis*

CGRB provides shared instrumentation, including real-time PCR, scanners, robotics, and computational facilities for use by walk-in users.

CSS Soil Health Lab; 3079 Agriculture and Life Sciences Building

<https://cropandsoil.oregonstate.edu/shl/soil-health-lab>

The Soil Health Lab provides fee-based analytical services to OSU scientists and cooperating investigators. The Soil Health Lab also serves as an important resource for Oregon students and Extension clientele seeking information and advice about plant, soil, and water analysis.

Stable Isotope Research Unit; Agricultural and Life Sciences Building

<https://cropandsoil.oregonstate.edu/departments-of-crop-and-soil-science/stable-isotope-research-unit>

The Stable Isotope Research Unit analyzes plant, soil, and other types of biological and environmental samples for ¹⁵N and ¹³C abundance by CF-IRMS and by GC-C-IRMS. Our systems include two PDZ-Europa 20/20 isotope ratio mass spectrometers interfaced with Sercon and Europa gas-solid-liquid prep modules and an Agilent Gas Chromatograph.

The OSU Seed Certification Service; 031 Crop Science Building <http://seedcert.oregonstate.edu/>

The OSU Seed Certification Service in the Department of Crop and Soil Science certifies seed acreage across the state. Seed Certification faculty have a wealth of information about local, regional, national, and international seed certification policies and procedures.

The OSU Seed Lab; Seed Lab Building – Campus Way <http://seedlab.oregonstate.edu/>

The OSU Seed Lab in the Department of Crop and Soil Science tests hundreds of types of seeds. Seed Lab faculty and staff have a wealth of information about seed testing procedures from around the world. Their extensive seed testing facilities can be used for cooperative research work.

The OSU Herbarium; 2082 Cordley Hall <https://bpp.oregonstate.edu/herbarium>

The herbarium is the world's most comprehensive collection of Oregon plants and fungi, with over 400,000 preserved specimens. Some identification services are provided, and voucher specimens are accepted from OSU research projects.

The Oregon State Arthropod Collection; 3029 Cordley Hall <https://osac.oregonstate.edu/>

A research collection of nearly 3 million preserved insect specimens. The collection is among the largest of university-owned insect collections in the country. It is the largest insect collection in the Pacific Northwest.

Research Office; A312 Kerr Administration Building <http://oregonstate.edu/research/>

Students and faculty can obtain information about grants, fellowships, etc., from the Research Office. The College regularly notifies via e-mail and provides pertinent information to faculty about upcoming grant and fellowship opportunities.

Statistics Consulting Services; 44 Kidder <http://stat.oregonstate.edu/content/consulting-services>

The Statistical Consulting Laboratory in the Department of Statistics offers consultation services to University researchers engaged in:

- design of studies and experiments (including proposal preparation)
- statistical and graphical analysis of data
- appropriate choice, application, and presentation of statistical methods

Researchers are strongly encouraged to interact with a consultant during the planning stage.

For graduate students at OSU, the [Statistics Student Consulting Service](#) provides free statistical advice on University-related research projects. OSU faculty may also submit consulting requests to the Statistics Student Consulting Service, or they may directly contact the manager of the Statistical Consulting Lab at 541-737-1984. Fee-based consulting can be arranged.

15.2 Off-Campus

Off-campus facilities and resources available to graduate students include the following:

H. J. Andrews Experimental Forest

The mission of the H.J. Andrews Experimental Forest is to support research on forests, streams, and watersheds, and to foster strong collaboration among ecosystem science, education, natural resource management, and the humanities. Located in the western Cascade Mountains of Oregon, the Forest is administered cooperatively by the USDA Forest Service's Pacific Northwest Research Station, Oregon State University, and the Willamette National Forest. The site is a charter member of the National Science Foundation's Long-Term Ecological Research Program. Through the 1970s, the site was part of the International Biological Program-Coniferous Forest Biome (IBP-CFB), and in 1976 it was designated a Biosphere Reserve as part of the United Nations' Man and the Biosphere Program. In 1948, the site was established as an Experimental Forest by the US Forest Service.

Branch Experiment Stations

As the state's land grant institution, Oregon State University has a system of eleven branch agricultural experiment stations (AES) serving the research needs of the state's diverse agricultural and marine enterprises. The OSU AES faculty and staff work with CSS-related research, extension, and teaching programs. Many of the faculty based at the stations are graduate faculty and can participate in graduate committee activities. Graduate students are encouraged to visit these locations to identify research endeavors, view the research plots and learn about the applied research activities of the crop, soil, and forestry industries specific to the regions of their locations. For the location and focus of each of the branch experiment stations, visit:

<http://aqsci.oregonstate.edu/research/oregon-agricultural-experiment-station/oaes-branch-stations>

National Clonal Germplasm Repository, Corvallis

http://www.ars.usda.gov/main/site_main.htm?modecode=53-58-15-00

This US Department of Agriculture (USDA), Agricultural Research Service (ARS) facility is part of the National Plant Germplasm System. It is adjacent to the Lewis Brown research farm on Peoria Rd. Corvallis, OR. This unit collects, maintains, evaluates, and distributes clonally propagated pear, hazelnut, hardy kiwifruit, berries, and other minor specialty crops. The facility houses four scientists: a small fruit curator, a plant pathologist in charge of *in vitro* culture and Cryo-preservation, a pear curator, and a molecular geneticist in charge of DNA technology.

USDA- ARS-National Forage Seed Research Lab, Campus Way

http://www.ars.usda.gov/main/site_main.htm?modecode=53-58-05-00

The mission of the Forage Seed and Cereal Research Unit is to improve the profitability of forage seed, cereal, hop, and shellfish production systems in the Pacific Northwest in a manner that meets the environmental expectations of society. Forage Seed Lab scientists cooperate extensively with CSS faculty and has specialized facilities to support cooperative projects.

USDA- ARS-Plant Materials Center, Hyslop Field Station

<http://www.nrcs.usda.gov/wps/portal/nrcs/main/plantmaterials/pmc/west/orpmc/>

The Corvallis Plant Materials Center provides plant solutions for northwestern California, western Oregon, and western Washington. Heavily forested coastal terraces, steep mountains, grasslands, foothills, valleys, flood plains, woodland prairies, and savanna vegetation in the Willamette Valley and Puget lowlands typify the topography and natural vegetation they study.

USEPA –Western Ecology Division (Corvallis Environmental Research Laboratory)

<https://www.epa.gov/>

This EPA research facility is a well-equipped facility studying air pollution effects, terrestrial pesticides, and hazardous waste and water. Research areas of special concern to plant scientists include air pollution effects on plant uptake, and effects of pesticides on plants, and acid rain effects on crop plants. Of particular interest is a unique system to study the uptake and translocation of chemicals by whole plants, and transpiration and photosynthesis monitoring.

16. LIFE BALANCE

Your research can be so engaging and fulfilling that it is easy to devote nearly all your time to it. However, you should make an effort to engage in some of the other activities and opportunities that Oregon and Oregon State University have to offer. Consult the OSU Calendar to schedule attending activities (<http://calendar.oregonstate.edu/>), many which are free <https://mu.oregonstate.edu/directory> or one of the numerous other events, lectures, and exhibitions, that are taking place on campus; work out at the [Dixon Recreation Center](#); take up a hobby at the <https://craftcenter.oregonstate.edu/>; join a <https://recsports.oregonstate.edu/sports/sport-clubs>; see some of [Oregon's natural beauty](#); [volunteer for university or community programs](#), sponsored by the many international associations.

The various demands of graduate school can also cause stress, anxiety, and more serious and debilitating mental illnesses. The University offers several resources to help. A good place to start is Counseling and Psychological Services (CAPS):

<https://counseling.oregonstate.edu/>. CAPS offers is after-hours crisis counseling. The University is committed to supporting the success of all students; there is no stigma in requesting services, and your participation can be confidential. **To access a counselor anytime call their main number: 541-737-2131.** CAPS is also home to the Mind Spa, a unique sanctuary where you can soothe your mind, body, and spirit: <https://counseling.oregonstate.edu/mind-spa>.

Forms and Checklists



Department of Crop and Soil Science
Timetable - Checklist for MS Students

See the Graduate School's Student Guide to Success for additional information at: <https://gradschool.oregonstate.edu/promotion/359>

Program Start Date: _____

Expected Completion Date: _____

Today's date: _____

Year	Activities	Date Completed
1	_____ Choose major advisor(s)	_____
	_____ Choose committee members and declare minor (if desired)	_____
	_____ Send Program of Study Statement to the Graduate Faculty for review by end of second term	_____
	_____ Secure Graduate Council Representative for your graduate committee	_____
	_____ File official OSU Graduate Program of Study form with Graduate School before finishing 18 credits	_____
	2	_____ Schedule the teaching requirement time (if applicable)
	_____ Before scheduling thesis defense, file the "Approval to Proceed with Final Defense" form with the Graduate School to get approval	_____
	_____ Schedule thesis defense and provide a copy of the thesis at least one week before the defense date	_____
	_____ Give thesis seminar	_____
	_____ Submit final thesis materials, per Graduate School Guidelines, to Graduate School no later than six weeks after exam	_____
Before graduating, be sure to fulfill		
	_____ Program requirements	_____
	_____ Teaching requirements	_____
	_____ Seminar requirements	_____
	_____ Ethics training/certificate	_____
	Schedule exit interview with department head	_____



Department of Crop and Soil Science
Annual Review Form MS Graduate Students

Name of Graduate Student: _____

Name of Major Advisor: _____

Degree Program: _____ **MS Thesis:** _____ **MS Non-thesis:** _____

Program Start Date: _____ **Expected Completion Date:** _____

Date of Evaluation: _____

Activity		Circle one			Date
Coursework	Completed	Scheduled	Anticipated	N/A	
Program Committee Meeting	Completed	Scheduled	Anticipated	N/A	
Official Program Approval	Completed	Scheduled	Anticipated	N/A	
Thesis/Non-thesis Topic Seminar	Completed	Scheduled	Anticipated	N/A	
Teaching requirement (if applicable)	Completed	Scheduled	Anticipated	N/A	
Ethics course/training	Completed	Scheduled	Anticipated	N/A	
Thesis submitted to Grad Comm.	Completed	Scheduled	Anticipated	N/A	
Oral Exam/Thesis Defense	Completed	Scheduled	Anticipated	N/A	

Progress made in Thesis or Project: _____

Goals for Upcoming Year: _____

Graduate Student's Endorsement: I have completed an annual review with my major advisor and understand that I have the right to discuss this evaluation with the department head. Furthermore, I understand that I can attach any comments, explanations, and rebuttals to this review.

Graduate Student's Signature: _____ **Date:** _____

Major Professor's Endorsement: I certify that I completed the evaluation form with the graduate student.

Major Professor Signature _____ **Date:** _____



Oregon State
University

Department of Crop and Soil Science

Timetable - Checklist for Ph.D. Students

See the Graduate School's Student Guide to Success for additional information at: <https://gradschool.oregonstate.edu/promotion/359>

Program Start Date: _____

Expected Completion Date: _____

Today's date: _____

Year	Activities	Date Completed
1	<input type="checkbox"/> Choose major advisor(s) <input type="checkbox"/> Choose committee members, including Graduate Council Representative and declare minor (if desired) <input type="checkbox"/> Send Program Statement to Graduate Faculty by end of first term <input type="checkbox"/> File official OSU Graduate Program of Study form with Graduate School by end of first year <input type="checkbox"/> Give first of two seminars (departmental or professional)	
2	<input type="checkbox"/> Take departmental written preliminary exams <input type="checkbox"/> Take oral preliminary exam (schedule with Graduate School) <input type="checkbox"/> Give second of two seminars (departmental or professional)	
3	<input type="checkbox"/> Before Scheduling the Thesis defense, file the Approval to Proceed with Final Defense of Thesis" form with Graduate School, which includes approval of thesis title <input type="checkbox"/> Two weeks prior to final exam, schedule exam with Graduate School and submit an exam copy of your thesis to Graduate School and your committee. You must provide your graduate committee a copy of your thesis at least two weeks before the thesis defense date. <input type="checkbox"/> Give thesis seminar and take final oral exam <input type="checkbox"/> Submit final thesis materials to Graduate School no later than six weeks after exam.	
Before graduating, be sure to fulfill		
	<input type="checkbox"/> Program requirements	_____
	<input type="checkbox"/> Teaching requirements	_____
	<input type="checkbox"/> Seminar requirements	_____
	<input type="checkbox"/> Ethics training/certificate	_____
	Schedule exit interview with department head	_____



Department of Crop and Soil Science
Annual Review Form Ph.D. Graduate Students

Name of Graduate Student: _____

Name of Major Advisor: _____

Degree Program: _____

MS Thesis: _____ **MS Non-thesis:** _____

Program Start Date: _____

Expected Completion Date: _____

Date of Evaluation: _____

Activity		Circle one		Date
Coursework	Completed	Scheduled	Anticipated	N/A
Program Committee Meeting	Completed	Scheduled	Anticipated	N/A
Program filed in Grad. School	Completed	Scheduled	Anticipated	N/A
Written Prelim. Exam/Res. Proposal	Completed	Scheduled	Anticipated	N/A
Oral Prelim. Exam	Completed	Scheduled	Anticipated	N/A
Teaching requirement	Completed	Scheduled	Anticipated	N/A
First Seminar	Completed	Scheduled	Anticipated	N/A
Second Seminar	Completed	Scheduled	Anticipated	N/A
Ethics course/training	Completed	Scheduled	Anticipated	N/A
Thesis submitted to Grad Comm.	Completed	Scheduled	Anticipated	N/A
Oral Exam/Thesis Defense	Completed	Scheduled	Anticipated	N/A

Progress made in Thesis Project:

Goals for Upcoming Year:

Graduate Student's Endorsement: I have completed an annual review with my major advisor and understand that I have the right to discuss this evaluation with the department head. Furthermore, I understand that I can attach any comments, explanations, and rebuttals to this review.

Graduate Student's Signature:

Date:

Major Professor's Endorsement: I certify that I completed the evaluation form with the graduate student.

Major Professor Signature

Date:



Department of Crop and Soil Science

Annual Assessment of Graduate Students Academic Progress

Assessment of Progress (To be filled out by the major professor)		
Major professor(s): Please discuss your responses with your student.		
YES	NO	QUESTION
		Student is making satisfactory progress in completing his/her course work.
		Student is making satisfactory progress in research
		Student is making satisfactory progress in writing of his/her thesis.
		Student has participated in professional and/or career development opportunities.

Signatures

I have reviewed the student's schedule of event for completing the degree and self-assessment narrative, that completed the major professor assessment of progress (left) and explained my responses to the student.

Major Professor Signature(s)

Date

Committee Member Signature(s) (optional)

Date

I understand my major professor(s)' assessment of my progress (left) and am now submitting this fully completed form to the Graduate Coordinator with my self-assessment narrative attached.

Student Signature

Date

If 'No' has been checked, you must attach a written summary of indicators the reasons that led to this conclusion and an academic performance improvement plan.

Academic Performance Improvement Plan

When a student receives an unsatisfactory review (as identified on the Satisfactory Progress Assessment form), the major professor, in consultation with the student, develops a performance improvement plan.

Date _____

Student _____

Major Professor _____

1. Specific deficiencies

- a.
- b.
- c.

2. Plan to address deficiencies

- a.
- b.
- c.

3. Timeline

4. Consequences if deficiencies are not rectified in the specified timeline

5. Signatures

Student Signature

Date

Major Professor Signature

Date

Major Professor Signature (if applicable)

Date

School Head/Program Director Signature

Date



Department of Crop and Soil Science

Approval Form of Ph.D. Written Exam, Oral Exam, and Research Proposal

Name of Student: _____

Major Professor: _____

Committee Member: _____

A written research proposal is part of the Ph.D. preliminary examination in the CSS Department. The proposal format should conform to the established guidelines. The proposal must be approved by the PhD student's Graduate committee prior to the oral examination (one dissenting vote is allowed). To evaluate the written proposal in a timely manner and to allow time for the student to respond to comments, the following schedule should be followed:

- a. Thesis topic approved by committee: _____ Date: _____
- b. Student submits proposal to the Graduate committee at least four weeks before the scheduled date of the exam. _____ Date: _____
- c. Committee members vote to approve the proposal. If the proposal is not approved by two or more members of the committee, the student has 14 days to submit a revised proposal. _____

Vote for the original proposal: _____ **Pass** _____ **No Pass**

Vote for the revised proposal: _____ **Pass** _____ **No Pass**

Vote for the Oral Exam : _____ **Pass** _____ **No Pass**

Vote for the written Exam : _____ **Pass** _____ **No Pass**

Committee Member's Signatures

The committee members should sign the Approval Form when giving a final approval of the proposal. The student should return this completed form to his/her Major Professor prior to scheduling the oral examination.

Comments (attached additional pages if necessary):



Department of Crop and Soil Sciences

Assessment Form of Graduate Learning Outcomes (GLO) for MS/PhD Students for MS thesis defense, PhD preliminary, and final examination

(To be filled by the graduate committee after completing the prelim exam or MS/PhD thesis defense)

Student's name: _____ Date: _____ MS or Ph.D. _____

Graduate committee member name: _____

Thesis Title: _____

Check one: _____ Prelim exam: _____ Defense: _____ M.S. exam: _____

For each learning outcomes below, please choose the score which best reflect the student's level:

Meet expectation, exceed expectation, and does not meet expectation.

Learning Outcome	Meet	Exceed	Does not meet
1. Knowledge of Field. Demonstrated adequate depth of knowledge associated with the discipline.			
2. Research ability. Appropriately designs, conducts, analyzes, and interprets research effectively in the discipline.			
a. Reviews the literature demonstrated knowledge of previous & current research in the field of study.			
b. Defining the Problem. Identified questions of his/her research.			
c. Methodology and Data Collection. Designed and implemented appropriate research experiments to test the hypothesis and solve problem.			
d. Data Analysis and Interpretation. Analyzed and interpreted research data appropriately.			
e. Conclusions and Recommendations. Presented conclusions and recommendations that are accurate, linked to data presented.			
3. Application. Demonstrated potential ability to apply research findings to lab and/or field settings in actual situations. Ability to make original/significant contribution to the discipline.			
4. Communication. Communicated effectively to a diverse group of people with various methods.			

Comments: Program-Level Target: Meet Expectation for M.S. and PH.D students.

Rubrics

1. KNOWLEDGE OF FIELD associated with the student's discipline.

Exceed Expectation	Meet Expectation	Does not Meet Expectation
Clearly understood most the concepts associated with the discipline & the challenges & embedded issues.	Understood the key concepts associated with the discipline.	Does not understand, or minimal understanding of the key concepts, challenges or issues associated with the discipline
Demonstrated accurate language, definitions, and terms appropriate to the audience.	Use of technical language, definitions, and terms accurately and appropriately.	Misused technical terms and concepts or relies on layperson's language.
Demonstrated appropriate depth of knowledge associated with the discipline.	Demonstrated appropriate knowledge associated with the discipline, but lacks depth	Demonstrated limited depth of knowledge associated with the discipline.
Comments: Program-Level Target: Meet Expectation for M.S. and PH.D students.		

2. Research. Designs, conducts, analyzes, and interprets research data related to their discipline.

2a. Literature: Search, Selection & Review.

Exceed Expectation	Meet Expectation	Does not Meet Expectation
Uses appropriate, relevant, good number and current sources/references.	Uses moderate numbers of references that cover the research subject. Some sources may be irrelevant, out of date, or do not address key area(s) of the research.	Minimal or no evidence of search, or evaluation skills.
Evaluated all or most sources for quality, relevance, and currency.	Evaluates sources minimally for quality, relevance, and currency	No evaluation of info sources is present.
Identified gaps in the literature. Good knowledge of previous and current research in their discipline.	Identify some gaps in previous and/or current references in their discipline.	Does not identify info gaps in references. Limited knowledge of previous or current research in their discipline.
Comments: Program-Level Target: Meet Expectation for M.S. and PH.D students.		

2b. Defining the Problem.

Exceed Expectation	Meet Expectation	Does not Meet Expectation
Identifies a focused, unique, original problem that is challenging and well defined.	Identifies a somewhat focused problem but not particularly challenging or is simplistic. OR the problem is not well defined.	The problem, if identified, is confused or simplistic.
Potential for significant contribution to the research/body of science in their discipline.	Limited potential contribution to the research/body of science in their discipline.	Contribution to the research/body of science in their discipline is not clear.
Comments: Program-Level Target: Meet Expectation for M.S. and PH.D students.		

2c. Methodology.

Exceed Expectation	Meet Expectation	Does not Meet Expectation
<p>Approach and methodology are complete, appropriate for the problem. Has knowledge of emerging methodologies in their discipline.</p> <p>Data collected and presented demonstrated a clear understanding of the problem/research.</p> <p>Data presented, graphs and tables are complete, accurate, relevant, and contain appropriate headings, descriptors, and significant figures. Used appropriate statistics and Interpretations; presentations are accurate.</p>	<p>Approach and methodology are related to, but do not fully address the problems or uses inappropriate approach. Has limited knowledge of emerging methodologies in their discipline.</p> <p>Data collected and presented adequately. Relationship of the data to the problem are not entirely clear.</p> <p>Data presented are generally appropriate-Graphs and/or tables contain relevant headings, but some details may be missing or unclear, such as units and figures. Statistical analysis is generally understood and interpreted correctly.</p>	<p>Poor/inappropriate methodology related to the research. Has no knowledge of emerging methodologies in their discipline.</p> <p>Limited data collected demonstrate little attention to or understanding of the problem.</p> <p>Data presentation are incomplete, poorly labeled, confusing, or missing all together.</p>

Comments: Program-Level Target: Meet Expectation for M.S. and PH.D students.

2d. Data Analysis and Interpretation.

Exceed Expectation	Meet Expectation	Does not Meet Expectation
<p>Use and interpretation of data are accurate and thorough, including data in graphs and tables, as well as the overall results and conclusions.</p> <p>Logical and highly insightful inferences from the info presented. Excellent job in integrating literature and data in creative ways. Analysis demonstrates firm understanding of data. Data are discussed appropriately in detail.</p>	<p>Accurately uses interpretation, including data in graphs and tables, results, and conclusions. One or more minor points may be overlooked or misinterpreted.</p> <p>Generally, makes logical inferences, with few or minor mistakes. Demonstrates a basic understanding of the data and some ability to connect literature and data, but analysis is confusing in some spots or contains inaccuracies.</p>	<p>Little or no interpretation of data, and/or ideas found elsewhere. Misunderstands or misrepresents info given in their sources.</p> <p>Limited or no logical inferences from the info presented. Does not appear to understand the data/info.</p>

Comments: Program-Level Target: Meet Expectation for M.S. and PH.D students.

2e. Conclusions and Recommendations.

Exceed Expectation	Meet Expectation	Does not Meet Expectation
<p>Conclusions are accurate, appropriate, and clearly linked to problem and data presented.</p> <p>Conclusions and recommendations are balanced. Students consider uncertainties in the data or other limitations of the conclusions.</p>	<p>Conclusions are reasonable but may not take into account all critical factors.</p> <p>In a limited way, students consider uncertainties or other limitations of the conclusions...</p>	<p>Conclusions are inaccurate and/or unreasonable, do not reflect the data presented, or are merely a simplistic summary not tied to the original problem.</p> <p>Conclusions and recommendations do not reflect the research data.</p>

- 3. Application.** Demonstrates potential ability to apply research findings in real situations and make original/significant contribution to their discipline.

Exceed Expectation	Meet Expectation	Does not Meet Expectation
Research demonstrated excellent potential for original contribution to their discipline. Research is unique, well organized, complete, and statistically sound.	Research demonstrated some potential for original contribution to their discipline. Research is unique but contains flaws in interpretation, organization, and/or statistics.	Research contains serious flaws that would make it unpublishable. Not unique.
Research prepares student for further productive research beyond graduate school.	Research prepares student for limited research beyond graduate school	Limited or no potential for student to do further research in this area.

Comments: Program-Level Target: Meet Expectation for M.S. and PH.D students.

- 4. Communication:** communicate effectively to diverse group of people using appropriate traditional and emerging technological media.

Exceed Expectation	Meet Expectation	Does not Meet Expectation
Captures and communicates the intended idea(s) accurately and clearly.	Captures and communicates the intended idea(s) accurately, but parts are not clear.	Inadequately/inaccurately captures and communicates the intended idea(s).
Main points connect with the audience and are smoothly tied together.	Generally easy to identify main points and transitions are usually smooth.	Difficult to identify main points. Transitions may be rough.
Compellingly conveys why the issue matters.	Background and context sufficient to indicate the issue is important.	Limited background info and context so not at all clear why issue matters.
Visuals (graphs, tables, diagrams) are clear, concise, and relevant.	Visuals (graphs, tables, diagrams) generally support the written component, but some overly complex, or redundant.	Not clear how the visuals (graphs, tables, diagrams) add credibility to the topic.
Polished, error-free, and engaging. Professional.	Contains errors, but errors do not distract from or misrepresent content and ideas.	Multiple errors in grammar, syntax, punctuation, etc., that obscure and/or misrepresents the content.

Comments: Program-Level Target: Meet Expectation for M.S. and PH.D students.



Department of Crop and Soil Science

Evaluation Form for MS/PhD Graduate Research/Teaching Assistants

GRA/GTA (Employee) Name:			Satisfactory Academic Progress <input type="checkbox"/> Meets Expectations <input type="checkbox"/> Does NOT Meet Expectations
Department:			
Major Professor name:			
Signature:			
Evaluation Period			Date of Evaluation
Supervisor			
Position Number C6	Appt. % (FTE)	Appt. Basis (term; 9 mo.; or 12 mo.)	Job Location

Position Duties:

Primary Duties (taken from the position description):

Overall Evaluation (required)

The supervisor provides comments substantiating the **overall** performance rating. If there are areas in which the Graduate Assistant is expected to improve his/her performance, they should be noted in this section.

☐ Exceeds Expectations (5-6) ☐ Meets Expectations (4-3) ☐ Does NOT Meet Expectations (2-1)

Comments: (example, replace or add as necessary)

- a) Overall [Graduate Assistant] exceeds the general responsibilities outlined in the position description.
- b) [Graduate Assistant] meets the general responsibilities outlined in the position description, but [Supervisor] would like to see more self-started initiative related to finding ways to improve the [research tasks/teaching assignments].
- c) [Graduate Assistant]'s attitude towards responsibilities laid out in the position description, is not congruent with the expectations of a graduate level appointment.
- d) [Supervisor] is committed to exploring mechanisms for creating a valuable and manageable experience for [Graduate Assistant] and the department.

THE FOLLOWING SECTIONS ARE OPTIONAL, BUT CAN BE USED TO OFFER FURTHER DETAIL TO THE GRADUATE EMPLOYEE

Evaluation of Major Job Responsibilities (position description duties) (optional)

☐ Exceeds Expectations ☐ Meets Expectations ☐ Does NOT Meet Expectations

Comments: (example, replace or add as necessary)

- a) [Graduate Assistant] meets many of the responsibilities outlined in the PD. [Graduate Assistant] assists in supporting student learning, offers regular office hours and responds to inquiries regarding labs
 - b) Is making good progress on assigned laboratory work, takes initiative, and keeps a clean and safe working environment.
 - c) With respect to K-12 outreach efforts, [Graduate Assistant] is not currently doing much of this. This is considered a professional development opportunity, and [Supervisor]'s instructions are to prioritize other activities over this duty.
-

General Expectations (optional)

A) JOB KNOWLEDGE/TECHNICAL COMPETENCE. Possesses and demonstrates technical, general, or other specific knowledge and skills required to perform job duties and accomplish stated objectives.

☐ Exceeds Expectations ☐ Meets Expectations ☐ Does NOT Meet Expectations

Comments: (example text in italics, replace as necessary)

- a) Generally, [Graduate Assistant] displays knowledge necessary to deliver the basic duties of a teaching assistant.
- b) If [Graduate Assistant] is unaware of how to complete a technical task, he appropriately seeks out [Supervisor] for help.

B) QUALITY. Demonstrates a commitment to providing quality work. Work performed is of high standard. Is not satisfied with producing work that is "just good enough."

☐ Exceeds Expectations ☐ Meets Expectations ☐ Does NOT Meet Expectations

Comments: (example text in italics, replace as necessary)

- a) Research tasks are performed at the highest standard, with great attention to detail, and execution.
- b) Office hours are conducted with great thought in terms of pedagogy and in a manner that provides for a welcoming environment to students that makes the encounter conducive to learning
- c) [Graduate Assistant] does not hold office hours at scheduled times, and does not respond to student inquiries in a timely manner

C) WORKING RELATIONSHIPS AND COMMUNICATION. Establishes and maintains cooperative working relationships with co-workers and supervisor. Responds actively and effectively to needs of undergraduate students and colleagues. Respects abilities, decisions and motives of co-workers, internal stakeholders, and partners. Speaks and acts ethically, fairly, and consistently. Practices timely concise and relevant communication.

☐ Exceeds Expectations ☐ Meets Expectations ☐ Does NOT Meet Expectations

Comments: (example, replace or add as necessary)

[Graduate Assistant] appears to have a good working relationship with the undergraduate students that he is serving. This is an important quality of the successful graduate student working in this role.

D) INTEREST AND INITIATIVE. Displays enthusiasm, dedication and interest in duties and responsibilities. Is a self-starter and proactive in approach to job? Demonstrates willingness to work beyond the usual or ordinary requirements of job when needed. Shows initiative and flexibility in meeting challenges. Capable of acting independently when circumstances warrant.

☐ Exceeds Expectations ☐ Meets Expectations ☐ Does NOT Meet Expectations

Comments: (example, replace or add as necessary)

a) [Graduate Assistant] takes the initiative to ensure that program activities that she is assigned are implemented and performs her duties with acceptable quality.

b) Draft journal manuscript was produced and submitted by agreed upon deadline and the quality of the manuscript was satisfactory (with respect to content, formatting, spell-checking etc.)

E) JUDGEMENT. Demonstrates ability to analyze available data or circumstances, consider alternatives, and make well-reasoned, timely decisions that favorably affect performance and organizational goals. Acts reliably and responsibly, keeping supervisor informed and aware of potential issues or areas that need attention.

☐ Exceeds Expectations ☐ Meets Expectations ☐ Does NOT Meet Expectations

Comments: (example, replace or add as necessary)

a) [Graduate Assistant] needs to improve ability to apply sound judgment and follow protocols for how data should be handled and shared (in accordance with university IRB/IACUC and RCR policies)

b) [Graduate Assistant] performs work in accordance with health and safety protocols, and helps keep various laboratory H&S records up to date

c) [Graduate Assistant]'s lack of ability to manage time and delegate work to the undergraduate worker is partially responsible for difficulty in managing the assigned work.

It should be noted that [Supervisor] has attempted to coach [Graduate Assistant] on multiple occasions on delegating more of his work to the undergraduate worker, whom [Graduate Assistant] oversees.

Goals for the Next Evaluation Period (If Applicable (Optional))

Goals: (example, replace or add as necessary)

- a) [Graduate Assistant] and [Supervisor] will create a list of goals and primary tasks (attached) to facilitate better evaluation of accomplishments for the next evaluation period,
- b) [Graduate Assistant] will log his time weekly to determine how he is meeting the .49 FTE commitment.

Additional goals/areas of improvement/excellence discussed are (can include written input provided by students, clients or others who have direct knowledge of the employee’s performance (Article 15, Section 2):

GRA/TRA Signature

Date

Employee signature confirms *receipt* of the evaluation. Graduate Assistants may submit a written rebuttal for inclusion into the personnel record within 30 days of receipt of the evaluation (Art. 15, Sec.4).

Supervisor Signature

Date