

GRADUATE STUDENT HANDBOOK
for CROP SCIENCE and SOIL SCIENCE PROGRAMS

DEPARTMENT OF CROP & SOIL SCIENCE
OREGON STATE UNIVERSITY

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1. WELCOME

Welcome to the Department of Crop and Soil Science (CSS). Your graduate experience is a unique opportunity in your career to learn scientific principles, techniques, make a contribution 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 to answer some of your questions as you work toward your degree. 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, but does provide information on departmental-specific graduate student policies and procedures.

University-level Graduate Learning Outcomes

University-wide Graduate Learning Outcomes for doctoral and master’s programs were proposed by the Graduate Council and approved by the Faculty Senate in 2011 (<http://gradschool.oregonstate.edu/faculty/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, and
- (c) be able to 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, and
- (b) demonstrate mastery of subject material, and
- (c) be able to 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 are to be carried out at the program level and reviewed periodically.”

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 highlighted.

Crop Science Degrees

Program-level Graduate Learning Outcomes (GLOs)

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 (PhD and MS): Evaluate the design and quality of relevant Crop Science research in journals.

PL2 (PhD and MS): Apply current research tools to field-based and laboratory-based research.

PL3 (PhD): Apply scientific method to independently developed and directed collaborative research;

PL3 (MS): Apply scientific method to independent research under PI’s direction.

PL4 (PhD and MS): Write and publish a peer-reviewed journal manuscript in the discipline and commodity specialty area.

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

Academic Disciplines

Areas of study leading to MS and PhD degrees in Crop Science include: crop breeding, genetics and cytogenetics (specific PBG option is available); 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 (specific ENT option is available).

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

Crop Science Degree Options:

- Agronomy option – currently no specific course requirements beyond those of the graduate school, those defined in section 9.6.1, and individual graduate committee recommendations
- PBG option – requires taking 12 PBG-related credits from a specific set of classes
- ENT option – requires taking 12 ENT-related credits from a specific set of classes

Soil Science Degree

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. Supporting coursework is chosen for each student from the basic sciences and other related fields.

Original research is an essential part of MS and PhD thesis programs. Each program is individually designed by the student and his or her 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.

2. IMPORTANT PEOPLE AND INFORMATION SOURCES

2.1 Your Major Advisor

Second only to yourself, the most important person in successfully navigating graduate school requirements is your Major Advisor. You will work with him/her to assemble a graduate committee, develop a program of study, outline and execute your research project(s), and negotiate your duties as a graduate research assistant (GRA) or graduate teaching assistant (GTA). Thus, it is important to carefully cultivate this relationship. Some guidelines for how to do this are provided in section VII.

2.2 Graduate Program Coordinators



Crop Science – David Hannaway (david.hannaway@oregonstate.edu)



Agronomy Option— Mike Flowers (mike.flowers@oregonstate.edu)



Plant Breeding and Genetics Option – John Henning
(john.henning@oregonstate.edu)



and Shaun Townsend (townsenm@oregonstate.edu)



Entomology Option – Sujaya Rao



Soil Science – Maria Dragila (maria.dragila@oregonstate.edu)

The above listed faculty members have been assigned to manage and coordinate CSS graduate programs. The faculty members assigned to these positions will change over time, but these faculty are available to address your questions about graduate school, CSS policies, or issues that cannot be addressed through interaction with your Major Advisor. These faculty are also available to receive comments or suggestions about ways that the Department can improve the graduate program. Feel free to talk 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 primary administrator of your official graduate enrollment and progress towards your degree. While your major professor and Graduate Program Coordinator can help you negotiate the Graduate School system, such as understanding the requirements for assembling a committee or a program of study, it often is best to obtain guidance directly from the Graduate School.

Program Assistant/Administrative Manager

Kristin Rifai

541-737-5854

Kristin.Rifai@oregonstate.edu

Following acceptance, Kristin handles all paperwork associated with graduate research assistantships (GRAs), graduate teaching assistantships (GTAs), and fellowships.



2.4 Graduate Program Assistant/Office Specialists

In addition to the Administrative Manager, there are two office specialists who are located in the main office.

Emmalie Goodwin

541-737-2821

Emmalie.Goodwin@oregonstate.edu

Emmalie is responsible for correspondence during the application process. She can help you with office/room assignments, getting your keys in the Crops Building, AV equipment sign-out, setting up purchasing and travel requests, reimbursements for expenses, day-to-day logistics (e.g. student ID), reserving meeting spaces, announcing your defense date, etc.



Tracy Mitzel

541-737-5712

Tracy.Mitzel@oregonstate.edu

Tracy is responsible for office/room assignments, obtaining keys for the ALS Building, and AV equipment sign-out. She also works with individuals paid as hourly workers.



2.5 Information Technology (IT) and Computer Support Group

Roots IT Support Group

541-737-2470

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

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. Stop by there to request assistance or send an email to: roots.support@oregonstate.edu.

2.6 Graduate School

Main website: http://oregonstate.edu/dept/grad_school/

Guide to success: http://oregonstate.edu/dept/grad_school/success.php

The Graduate School officiates your study program. It is the source and destination of all the documents and forms that you will need to 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: <http://cropandsoil.oregonstate.edu/content/graduate-students-0>

Refer to the Departmental website for policies and procedures for CSS graduate programs.

2.8 CSS Graduate Faculty

Crop Science Graduate Faculty: <http://cropandsoil.oregonstate.edu/content/graduate-faculty-crop-and-soil-science-department>

Soil Science Graduate Faculty: <http://cropandsoil.oregonstate.edu/content/graduate-faculty-crop-and-soil-science-department>

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 professors for CSS degrees or serve on student committees. Joining the graduate faculty is a formal process. Faculty members who are not currently graduate faculty may become members following petition to become members of the OSU Graduate Faculty and can thereafter serve on your committee. Faculty requesting graduate faculty status should have received information and an initial appointment. Check their website regularly and contact the office with any procedural questions.

2.9 International Programs Office

General website: <http://oregonstate.edu/international/atosu/students>

Information for new students: <http://oregonstate.edu/international/atosu/students/new>

The International Programs Office 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 arriving 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 aspectual interest in teaching, you should attend this training. Check the [Graduate School Calendar](#) for scheduling and registration information.

3.3 CSS Orientation Session

CSS new graduate student orientation session is held each fall during the first 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

<http://oregonstate.edu/international/atosu/students/new/orientation>

All newly-admitted international students are required to attend orientation and the immigration document check-in session. If you do not attend both, International Student Advising and Services will place a hold on your registration. 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 isas.advisor@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 fee will be charged automatically to your OSU student account. If you are on a state-funded assistantship (teaching or research) that receives tuition remission (a position where you do not have to pay tuition), this fee will be 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 is a celebration of OSU and initiates the new school year. Visit the expo to learn more about other departments across campus and resources. Usually there is a free lunch!

4. THINGS TO DO WHEN YOU FIRST ARRIVE

4.1 Check your admission status and degree.

Graduate students may be admitted as regular, conditional, provisional, or special (non-degree). Be certain that you understand your admission status and confirm that it is correctly listed. Students admitted under the special category may be considered for admission as a regular graduate student. Refer to the [OSU Graduate Catalog](#) for definitions of student status and reclassification requirements. You may be admitted into either the Master of Science (MS) or Doctor of Philosophy (PhD) programs. Confirm that your admission documents correspond with your desired degree.

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 room 103.

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

See the designated Office Specialist for your building (see section 2 above) for the following.

Keys

Check with your Major Advisor regarding keys needed, then obtain the appropriate key request cards from the responsible office specialist (Tracy Mitzel for ALS and Emmalie Goodwin for CrpS). Greenhouse key requests are handled by Greenhouse Operations (located in the East Greenhouse). Take the signed key request cards to the Key Shop (on the corner of SW Washington Way and SW 15th Street) to obtain your keys. Key shop hours are 11:00am - 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 (CrpS 107). United States and campus mail is 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 by other students.

4.4 Get a building use permit.

For authorization to be in buildings after working hours or on weekends you must obtain an After-Hours Work Permit from the Administrative Manager (Kristin Rifai).

4.5 Get connected.

Computing and Information Technology (IT) support in the department is coordinated through the Roots IT Support Group. Their website provides a wealth of information and the contact information for people who can provide assistance in a wide range of IT needs: <http://support.roots.oregonstate.edu/>.

In addition, general IT support across campus is coordinated through OSU online services: <http://oregonstate.edu/main/online-services>.

When you first applied to graduate school at OSU you were given an ONID account. This is your portal to a wide range of online services, including registering for classes, viewing transcripts, and checking your employment status. You have an email address associated with this account. You can also get a CSS specific address that you can link with your ONID account. Tina, within the Roots group, will set this up and will advise you on how to get started.

As a CSS-based Roots user, you have access to the following network sharepoint:

- **U Drive** → This is your home directory, i.e. personal space that only you can access. This directory has a limit of 14 GB and is backed up nightly.
- **R/S Drive** → This is the departmental share directory. It is used for labs to share files between fellow lab users and to house files that are shared among department users.

4.6 Set up your payroll.

If you are appointed to a graduate assistantship, see the Department Administrative Manager (Kristin Rifai) to fill out the appropriate forms. Do this *as soon as possible* to avoid a delay in receiving your first paycheck. Bring your original work authorization documents (listed on page 9 of the I-9 form) with you when meeting with Kristin.

Students who are on fellowships will have different paperwork and will often be paid in a different way than students on assistantships, but Kristin handles these appointments as well.

You will be asked to fill out forms regarding withholding a portion of your salary for tax purposes. Seek advice on taxes from your fellow students, payroll personnel, and tax booklets available at the library and <http://www.irs.gov/>.

4.7 Register for classes.

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

Eventually you, your Major Advisor, and your graduate committee will develop a comprehensive program of study (see section 9.4), but until then, you must enroll in classes your first term. You should talk with your Major Advisor to design an initial study plan. You should also consult the current Schedule of Classes for information and detailed instructions on registration. Asking a veteran graduate student for help with registration procedures can be very helpful.

Full time status for graduate students is 9 credits per term during regular school terms. Summer enrollment minimum is 3 credits. However, students on assistantships (0.20 to 0.49 FTE) must register for a minimum of 12 credits each regular term. These credits can be a combination of regular classes

and thesis credits. One of your primary tasks in graduate school is to produce a thesis or dissertation. Consequently, there are specifically designated thesis credits to give you course credit for the time that you are engaged in this core task. These credits are designated CROP/PBG/ENT/SOIL 503 for MS students and CROP/PBG/ENT/SOIL 603 for PhD students. You must enroll in the credits that are specifically assigned to your Major Advisor. If you have questions or don't see your major advisor's credits listed in the schedule, talk to them about having a designator created. After registering for regular classes in a term (at some point in your program of study you will have completed your regular classes requirements), you can use thesis credits to bring the total number to the required credit load (12). Note that although you can enroll in an unlimited number of thesis credits, MS students can only include a maximum of 12 credits in their official program of study. **Do not register for 501/601 - "Research" unless specifically instructed to do so** by your Major Advisor. 501/601 is a graded course, but 503/603 is not (see section 9.7 for a description of the use of research credits).

Do not register for Ecampus classes unless you have specific permission from your major professor. **Ecampus tuition is not covered by standard tuition remission policies**, so you or your major professor will need to cover the cost of any Ecampus classes that you take.

Be sure to register for the correct classes and to note the various registration deadlines listed on the OSU [Academic Calendar](#) since there are fees associated with late registration.

5. GRADUATE ASSISTANTSHIPS

Graduate School Description: http://oregonstate.edu/dept/grad_school/current/assistantships.html

5.1 Graduate Research Assistantships (GRA)

GRAs are part-time [0.20 to 0.49 Full Time Equivalent (FTE)] appointments that assist faculty in conducting research projects. ***There are no automatically recurring GRA positions in the department.*** Research project leaders or the Department Head may create GRA positions each year as funds permit and program priorities dictate. Such appointments are for terms of one year or less and are subject to renewal each year contingent upon work performance, academic performance, and availability of funds. GRA renewals are considered each spring and are normally made effective October 1. Major Advisors evaluate students based on coursework, progress on thesis research, and other contributions to the major professor's research program/project.

Whenever possible, assuming satisfactory performance and adequate budgetary support, the department will renew appointments of GRAs who have not completed their graduate study unless such appointments were for a fixed-term of one year or less. Advisors will provide termination notices at least one quarter in advance whenever possible. Prior to the beginning of the appointment, advisors will inform students about financial support for the upcoming fiscal year.

GRAs on 0.49 FTE appointments are expected to provide an average of 20 hours of service per week for the assistantship. This means that an average of 20 hours/week should be spent on non-thesis work. 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. Interpretation and implementation of this University policy varies with each Major Advisor. 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 are part-time [0.20 to 0.49 Full Time Equivalent (FTE)] appointments that assist faculty in designing and delivering undergraduate courses. Many of the GTA appointments in our department are associated with teaching SOIL 205 – an undergraduate class with ten labs each term. Other GTAs are associated with other lab classes and some Ecampus classes. As a GTA, you must master the course content and gain the ability to communicate ideas clearly (a skill that is central to success in your graduate studies and professional life). For many students planning a career in academia, a GTA position is an excellent training ground for issues of pedagogy, lesson planning, and classroom

culture. As with GRAs, *there are no automatically recurring GTA positions in the department*. Course instructors or the department may create GTA positions each year as funds permit and program priorities dictate. GTA appointments are typically for a term, although you may be offered multiple GTA appointments within a year or over your graduate tenure.

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, usually from 0.20 to 0.49 FTE. 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 available 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 0.20 FTE or greater receive tuition remission during the academic year as well as a portion of student fees. If this is your first term, OSU will also remit the matriculation fee (\$350) and also the International Orientation Fee for international students. Summer term appointments are often handled differently, because there is no tuition remission for summer assistantships. Many students may be placed on an hourly wage appointment if they will be working during the summer. Please discuss this with your Major Advisor. If you are defending your thesis and graduating in a summer term, the Graduate School has required that you register for 3 credits that term. The new policy is that all graduate degree candidates who are using university resources during summer term must register for a minimum of 3 credits (see section 6).

Ecampus tuition is not covered under remission policies. See section 4.7 for additional details.

Cost of attendance information, including tuition and fees can be found at the following link:

<http://gradschool.oregonstate.edu/admissions/cost>

5.4 Health Insurance

<http://studenthealth.oregonstate.edu/graduate-assistant>

All students who have graduate assistantships of an FTE of 0.20 to 0.49 are required to enroll in PacificSource insurance or file a waiver form indicating comparable insurance coverage to the Student Health Services Insurance.

http://studenthealth.oregonstate.edu/sites/studenthealth.oregonstate.edu/files/main/docs/grad_waiver_201516.pdf

Currently, OSU will pay 85% of the premium cost for Employee-only coverage while you are employed. Dependents can be added for an additional cost. You must pay 15% of this cost. See the above link for current details. During a summer term when you will be returning in the fall as a student, you can enroll in continued health insurance coverage at the same rate, with OSU paying 85% of the premium. You will need to fill out forms during spring term to enroll in this coverage. During a summer term when you are on an hourly wage appointment and will not be returning as a student in the fall, you may enroll in COBRA extension policy of the OSU student health insurance. Additional information about COBRA coverage can be obtained by calling PacificSource Administrators: 877-355-2760.

5.5 Coalition of Graduate Employees

<http://cge6069.org/>

The Coalition of Graduate Employees (CGE) is the collective voice of the graduate student employees of Oregon State University. The CGE is a labor union with the exclusive right to negotiate with OSU on behalf of its 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 depending on your status, you may be required to contribute what are called “fair-share” fees whether you are a member or not. The details are nuanced and continually a topic of negotiation between the CGE and the University. See the above link to the CGE web site for more information.

6. SUMMER ENROLLMENT AND EMPLOYMENT

University policy states that any graduate student who is doing work toward their degree during the summer and using University resources (office, library, lab, and/or faculty) must be enrolled in a minimum of 3 credits.

To address this need and to revitalize the department’s Central Analytical Laboratory into an educational resource and enhance the overall strength of our graduate programs, two 1-week, intensive soils methods short courses have been developed; one involving field methods (1-credit) and one focused on lab methods (2-credits). In addition, there is an intensive thesis writing course: <http://catalog.oregonstate.edu/CourseDetail.aspx?subjectcode=WR&coursenumber=599>.

Graduate students taking summer term courses with CSS, SOIL, or CROP designators may be eligible for educational travel funds. Educational travel funds are the fractional amount of summer tuition returned to the Department and held by the Department for use by the enrolled graduate student during the academic year following the summer term enrolled. For the academic year 2016-17, the amount available to eligible graduate students to apply is \$600 and is to be used for educational travel (e.g. professional society meeting, etc.).

Students will be responsible for summer tuition and fees. **There are no tuition or fee remissions available during the summer and there is no mechanism to pay your tuition or fees directly from grant or project funds held by your Major Advisor. Have a conversation with your Major Advisor or the graduate Program Coordinator to discuss strategies for meeting this university requirement.**

Similarly, there are typically no research or teaching assistantships offered by the Department in the summer. However, many students are employed during the summer to continue assisting in the research projects with which they are connected. This is a common source of summer employment for our students. In these cases, students are employed on an hourly basis at rates comparable to their school year assistantship during the summer. Talk with your Major Advisor about summer employment opportunities.

7. CULTIVATING THE RELATIONSHIP WITH YOUR MAJOR ADVISOR

Your interaction with your Major Advisor will significantly influence your graduate school experience. Ideally, it should be a mutually enriching relationship that not only results in you graduating, but also maximizes the rewards and benefits derived from your time here. Your Major Advisor can become one of the most significant people in your professional career. Likewise, the professionals they train are often the most significant legacy and impact a professor has during his/her 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 need to be close friends or socially compatible. What it does mean is that both of you need to develop open, honest, and frequent lines of communication. The sections that follow are meant to serve as a guide to topics that you should use to open a dialog with your Major Advisor. If not addressed, these topics can become sources of conflict if there are misunderstandings or different expectations.

The types and form of graduate-mentor relationships are as diverse and varied as the biological systems we study. Therefore, this guide does not offer many specific guidelines. The answers to these topics should be a discussion between you and your Major Advisor. Also, how this conversation takes place is negotiable. Many students and advisors find it valuable to write down specific expectations, responsibilities, and timelines. These documents can act as a sort of contract between you and your

advisor, or serve as a reference document to guide your progress or to refer to in case questions arise. Alternately, you and your advisor may prefer to cover this information verbally. If this is the case, it is still useful to write down questions or topics that you would like to cover during your next conversation with your advisor and also to take notes during your conversations.

In addition, there is a formal annual review of your progress that you and your advisor are required to complete (see section 12.1 and the forms provided at the end of this document). This will be useful in helping formulate expectations and desired outcomes.

7.1 Research Expectations

One of the main things you, your Major Advisor, and your committee need to discuss is research expectations. Much of this conversation will involve how to best approach the science; this is one of the main ways that you will learn how to do scientific research. However, there are also some important details to discuss. 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 your broader research assistantship responsibilities? What are the expectations of 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. <http://hms.harvard.edu/content/authorship-guidelines>), specifics vary from field to field and even within sub-disciplines of crop and soil science. You should have a conversation with your Major Advisor about how authorship will be assigned. Does your Major Advisor expect to be a co-author on the 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 in its own right, 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 shared? Many funding agencies require that data produced under grants be made publicly available. Indeed, there is a growing trend to make nearly all scientific data “open source.” For instance, see: <http://www.nceas.ucsb.edu/datapolicy>. In contrast, your work may be funded in part or wholly by private companies that can place restrictions on how and when you can communicate results. 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 a number of complex legal and patent related issues that can complicate how and when you can communicate your results. These are all issues that you should have a conversation with your advisor about. See also *being part of a team* section below (7.4).

Finally, there is the important issue of how to store and backup data. Many granting agencies require that detailed data management plans be included as part of proposals. Data management plans include the physical aspects of storing data in ways that minimize the chance for loss of data. You do not want to lose data because of an accident or negligence. But data management plans should also help prevent the more subtle and pernicious ways of losing data such as forgetting what those cryptic column headings in an Excel spreadsheet mean, 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. You can be surprised how inscrutable and opaque data can look (or how hard it is to find) after only a few weeks or months of inattention. Creating detailed metadata that describe the *what, where, how, and when* of data is in many ways just as important as collecting the data in the first place. It is also critically important when you share data among colleagues or archive data in publicly accessible repositories. Your data management plan should outline the specific manner in which data will be shared and archived. You should have a discussion with your advisor about what their general data management strategy is and any specific data management plans for your project.

7.3 Assistantship Expectations

For those with 0.49 FTE appointments, nearly half of your time will be devoted to your assistantship. What does this mean? What does it mean if your assistantship has a lower FTE? What are your specific expectations and job description? 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 put in more hours? Discuss these expectations with your Major Advisor and with other students in your group. Also, see the above “Research Expectations” section (7.1).

7.4 Being Part of a Team

As a graduate student, you now represent the State of Oregon, OSU, CSS, your lab group, and your advisor. This requires you to be ethical and professional at all times, but you should also consider that your actions and activities now reflect on a larger group, not just yourself. 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 keeping lab space clean and organized. 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 is intended to assist you. You should feel free to contact your advisor for assistance with any aspect of your graduate education. However, individuals differ in their work style and communication expectations. Early in your degree program you should discuss with your Major Advisor his/her expectations. Does he/she expect to receive weekly updates on your progress? Or 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? Incompatible 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 would like to keep each other informed. You and your advisor may never be completely aligned, but talking about this issue will allow you to reach an accommodation that satisfies both of your needs and personalities.

7.6 Completing Your Degree Program

Communication becomes particularly important when you are beginning to analyze your data and beginning to write your thesis or dissertation. This can be an enjoyable, intense, and stressful time, but good communication can help alleviate much of the stress and foster a productive collaboration between you and your advisor. One important item to explicitly develop is a realistic schedule for writing, revising, and defending your thesis or dissertation. It is easy to underestimate how much time this will take. In addition to producing early drafts, you will need to leave time to get meaningful feedback from your Major Advisor and other committee members, and to edit and revise your initial drafts. You will also need to coordinate your writing schedule with the scheduling requirements for your defense set by the Graduate School. Your schedule may also be influenced by associated issues such as the availability of funding. Early and frequent communication with your Major Advisor and the rest of your committee about this schedule is essential. Develop a timeline for your program at your first committee meeting and revise it periodically as you progress toward your degree.

The majority 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 and the general public through your thesis or dissertation and associated publications/products. You should talk with your Major Advisor about how each of you would like the mechanics of this critical interaction to work. Does your advisor expect you to consult with them about each analysis or figure you produce? Or, would they rather see a more polished selection of analyses? Would they like to see a more fully formed product such as a results section before providing feedback? What are your expectations and desires?

Whatever you decide, maintain a regular flow of information, feedback, and interaction. Having limited or no communication about data analysis, results, or review is unacceptable. Presenting your dissertation to your advisor for the first time just two weeks before you want to defend is an invitation for disaster.

8. RESPONSIBILITIES

In addition to negotiating the nuances of the relationship with your advisor described above, there are several broad expectations that 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.
- Demonstrate honesty in all aspects of their academic work.
- File a Graduate Program Checklist (see Appendices) with their Major Advisor and update this each term.
- Meet regularly with their Major Advisor to discuss progress or difficulties in research and coursework.
- Contact Graduate Committee members to schedule time and place of committee meetings.
- Submit appropriate Graduate School forms as required (see Graduate Program Checklist).
- Discuss serious difficulties with the Department Head or Graduate Program Coordinator.
- Engage willingly in advisor's research, teaching, and Extension programs.
- Maintain a GPA of at least 3.0 and strive for excellence in both coursework and research.
- Be familiar 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 their degree program.
- Maintain a clean and organized office and lab space during the program and prior to departure.
- Ensure that all research data has been archived and backed up with their Major Advisor.

8.2 Major Advisor Responsibilities

Major advisors are expected to:

- Responsibly advise and guide students in their graduate program development, coursework, and research.
- Instruct new students on departmental regulations and research facilities; introduce them to other graduate students, staff, and faculty members; and assist them in filling out the Graduate Program Checklist.
- Be particularly alert to 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.
- Help advisees develop course study programs that are consistent with their needs and career goals and requirements of the department and Graduate School.
- Keep informed of advisee's progress and difficulties in research and coursework.
- Attend and participate in department seminars and assist advisees in seminar preparation and practice.
- Assist in organizing and editing the thesis and ensure that it is in good form before it is given to other committee members.
- Encourage students to participate in CSS and other departmental seminars and in regional, national, and international scientific meetings. Assist them 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 your research, teaching, and/or Extension programs.
- Inform students if their performance is not satisfactory and terminate advising responsibilities if necessary.
- Conduct an annual review of all GRAs and GTAs and send 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 experiences to graduate students insofar as resources and opportunities permit.
- Encourage students to attend and present research at professional meetings by providing transportation 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. MAJOR COMPONENTS OF YOUR ACADEMIC PROGRAM

9.1 Preliminary Committee Meetings

During your first term you will likely have a number of informal meetings with your Major Advisor to start the process of developing your academic program and to identify potential members of your graduate committee. These early meetings do not need to include your official committee members, although it can be beneficial to include some of your committee members in these meetings. Once your committee is constituted (see Graduate Committee below), you should schedule a formal preliminary committee meeting. Ideally, this should be done before the completion of your first term, but at least no later than the completion of 18 credits for MS students. PhD students with a master's degree should have their preliminary committee meeting before completing 2 terms; those without a master's degree before completing 5 terms. Note that Graduate School regulations do not require that MS students have a preliminary committee meeting before filing their program of study, but we strongly encourage all CSS graduate students to do so. MS students are not required to include the graduate representative as part of the preliminary committee meeting, and may choose to wait until later in the program of study to identify a graduate representative.

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 that can greatly enhance the graduate experience and productivity, and preempt problems that may otherwise arise at a student's defense. The meeting should point out course, research, and career options and 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. A projected timetable of graduate study should be presented as well as a tentative list of courses to be taken in the proposed program. If a tentative thesis plan has been formulated, it should be presented.

Discussion of Program: The faculty advisors and the student plan together a tentative course program that is consistent with the candidate’s previous education, research area, goals, and interests. Suggestions may be made regarding course deficiencies and appropriateness of proposed courses. It is helpful if the following written information is provided to members of the Graduate Committee before the proposed meeting:

- Listing of prior courses taken (undergraduate and graduate) including course names, numbers, credits, grades, and institutions. Group courses logically into discipline and/or subject matter.
- A tentative list of courses to be taken in proposed program.
- A tentative timetable for the graduate study planned (use checklist).
- A brief statement of student’s professional goals and objectives.

9.2 Thesis Research Outline

The central part of MS and PhD degrees is active engagement in research. You will devote a considerable amount of time and effort in planning and executing your research project and communicating the results in various forms. Therefore, you should 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 such as the type you would submit to a granting agency like the USDA, or they might simply request that you write a brief 3-4 page outline. In either case, 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, maybe you shouldn’t take statistics, biochemistry, and soil physics during the spring term when you will also be establishing your research plots. The plan is also a very good way to facilitate meaningful discussion and obtain feedback on your research from your Graduate Committee. As such, it is helpful to be as specific and detailed as possible in your plan. Remember, this is a *plan*. Things will likely change, first as a result of the feedback you get from your committee and other peers, and later as a result of the unforeseen circumstances that challenge all research projects. Part of research involves active planning and reconfiguration as necessary.

9.3 Graduate Committee

The Graduate Committee is the formal body that guides, mentors, and evaluates your graduate experience. You and your Major Advisor should carefully consider its composition. Your Graduate Committee should 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, and indeed the distinction between a “major” and “minor” can be difficult to distinguish in a varied and interdisciplinary field such as CSS. However, you may declare a minor. The Graduate Committee is there to help you determine what constitutes the program of study for a minor, and the minor need not be restricted to one department and it may represent an integration of supporting courses from two or more departments. However, you should note that some programs may have specific requirements for a minor. Even if you do not officially declare a minor field, it is often desirable to include the equivalent of a “minor field” faculty member from outside of the CSS Department on your Graduate Committee. Also, your program of study will likely include a significant number of classes outside of those offered in CSS. Note that Crop Science and Soil Science degrees are separate programs and a soil science faculty member on a crop science graduate committee, or vice versa, is considered to be faculty from another degree program.

The Graduate School has a number of regulations on how Graduate Committees should be structured. Please read more online (http://oregonstate.edu/dept/grad_school/degreecommittee.php).

Table 1. Minimum Composition of Graduate Committees.

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
PhD (with minor)	2	1	1	1
PhD (without minor)	2	0	2	1

MS: *Non-Thesis*: The examining committee consists of three members of the graduate faculty—two in the major field and one in the minor field if a minor is included. When a minor is not included, the third member may be from the graduate faculty at large. ***Thesis*:** The examining committee consists of at least four members of the graduate faculty—two in the major field, one in the minor field if a minor is included, and a Graduate Council representative. When a minor is not included, the fourth member may be from the graduate faculty at large.

PhD: A minimum of five members of the Graduate Faculty, including two from the major department/program, one from each declared minor field, and a Graduate Council Representative are required. The major professor is one of the two members representing the major department/program.

Above text from: http://oregonstate.edu/dept/grad_school/degreecommittee.php

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 before completing two quarters and schedule a preliminary meeting of their committee.

All thesis MS and PhD students are required to have a Graduate Council Representative on their Graduate Committee. This person represents the graduate school, and it is their job to monitor the oral and thesis defense to ensure that a thorough examination occurred and that the student was treated fairly during the examination. To obtain a graduate representative you must ask the Graduate School for a list of potential graduate representatives. They generate a random list of professors from across the University who have agreed to serve in this capacity. You should consult with your Major Advisor before deciding on which professor to ask. Individuals on the list are not obliged to be on your committee and may decline to participate due to other commitments. You also are not obligated to accept any graduate representative on the list and can apply to the Graduate School for another list. The graduate representative is not required to read your thesis or participate in questioning the candidate. However, many graduate representatives do read the thesis and ask questions during the defense examination.

9.4 Program of Study

The Program of Study is the list of classes you have taken and plan to take to fulfill the requirements of your degree. You will develop it in collaboration with your Major Advisor and Graduate Committee. Your fellow students are also a valuable source of advice about classes and the intricacies of the regulations governing the program of study.

All MS students should complete and file their program of study before the completion of 18 hours, usually in the second term of residence. At the very latest, you need to submit an approved program of study at least 15 weeks before your Final Oral Examination.

All PhD students should complete and file their program of study before completing two terms if you already have a master's degree or five terms if you do not. 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 to ensure that it conforms to the general rules and regulations for your degree. You will need to file a revised program of study and obtain all the appropriate signatures each time your program changes. A common strategy for minimizing this inconvenience is to construct a program of study that meets the minimum requirements for graduation. You are not limited to your program of study and can take as much additional coursework (including thesis and blanket courses) as you and your Graduate Committee see fit. You do not have to list these additional classes on your official program of study.

The program of study for PhD students must be approved by the full Graduate Committee at a formal meeting (see Preliminary Committee Meeting section above; 9.1). The program of study for MS students only requires approval by the Major Advisor. However, CSS MS students should include their full committees in the development of the program. All study programs must be 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: http://oregonstate.edu/dept/grad_school/forms.php#program

Your program of study must also include training on the responsible conduct of research (RCR). 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.

9.5 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 their major professor. Faculty and students will complete seminar evaluation forms for student presentations. The Major Professor will discuss strengths and weaknesses of each seminar presentation with the student and develop a plan for improvements as needed.

Each MS student is required to present at least one seminar in addition to their thesis defense seminar and must sign up to take CROP/SOIL/ENT 507 the term they present unless other arrangements are made. The student is expected to select a thesis topic during the first year of graduate school and present a “research plan” seminar during spring term or other academic term if spring is not feasible. The seminar should be based on a comprehensive literature review and research plan.

Alternately, for MS degrees, students may give an oral presentation on their research at a professional meeting if permission is granted beforehand by the Major Advisor. A poster presentation does not meet this requirement. In addition, the student must give an advertised seminar in conjunction with their MS degree defense.

Each PhD student is to present at least two seminars during their study period and sign up for CROP/SOIL/ENT 607 when doing so. The student is expected to select a dissertation topic during the first year of graduate school, and present a “research plan” seminar in a spring seminar session or other session if spring term is not workable. The second seminar requirement may be fulfilled either by a departmental seminar presentation not related to the dissertation topic, on some phase of thesis work, or by an oral presentation of their research at a professional meeting if permission is granted beforehand by the major advisor. For PhD students, the second seminar should be given at least six months before thesis defense. In addition, each PhD student will give an advertised seminar in conjunction with their dissertation defense.

In addition to the above, PBG option MS or PhD students must give an additional seminar under the PBG 507/607 class designation. These seminars will be organized by the cross-department PBG faculty.

Guidelines for Seminar Development and Presentation

- Students should begin development of the seminar many weeks in advance of the presentation. Speakers will be expected to prepare their presentation well, deliver it in a professional manner, and be knowledgeable about the subject. Considerable background study on the topic is required.
- Students should work closely with the Major Professor in developing the seminar. Several practice presentations to other students and the Major Professor prior to the seminar are recommended.
- Visual aids should be prepared well before the seminar presentation so that revisions can be made, readability of charts can be tested, etc. Costs involved in preparation of visual aids should be approved by the Major Professor.
- A brief written biographical sketch should be provided via email by the student to the Seminar Committee chair on the Friday preceding the regularly scheduled Monday afternoon presentation.
- All 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 allotted for questions. The development of an awareness of timing is important and finishing on time is expected.
- The speaker should be prepared to respond to comments and questions raised during the discussion period but should feel free to involve members of the audience during the discussion period.

9.6 Required Courses

9.6.1 Crop Science Degree

In addition to the general requirements for the Program of Study established by the Graduate School, the Crop Science Graduate Program requires that you include the following courses:

1. CROP 507/607 Graduate Seminar (variable credits). See section 9.5 for details.
2. For MS thesis and PhD students, participate in a teaching activity for at least one term with simultaneous registration for CROP/PBG/ENT 509. Teaching activity is optional for non-thesis MS students.
3. All students who entered the program after January 1, 2014 must have Responsible Conduct of Research training. This requirement can be met in one of two ways:
 - 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 or other campus unit that specifically addresses responsible conduct of research/research ethics.

In addition, it is expected that individual research projects and research groups will have internal discussions about this topic.

4. All students who entered the program after January 1, 2015 must complete the following training modules and obtain completion certificates:
 - a. AlcoholEdu – High-Risk Alcohol Prevention
 - b. HAVEN – Sexual Violence Prevention

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

9.6.2 Crop Science Degree with PBG Option

In addition to the general requirements for programs of study established by the Graduate School and above for the Crop Science Degree, the Crop Science Graduate Program with a 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)

9.6.3 Crop Science Degree with ENT Option

In addition to the general requirements for programs of study established by the Graduate School and above for the crop science degree, the Crop Science Graduate Program with an 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)

9.6.1 Soil Science Degree

In addition to the general requirements for programs of study established by the Graduate School, the Soil Science Graduate Program requires that you include the following courses:

1. SOIL 507/607 Graduate Seminar (variable credits). See section 9.5 for details.
2. For MS thesis and PhD students, participate in a teaching activity for at least one term with simultaneous registration for SOIL 509. Teaching activity is optional for non-thesis MS students.
3. All students who enter the program after January 1, 2014 must have responsible conduct of research training. This requirement can be met in one of two ways:
 - 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 or other campus unit that specifically addresses responsible conduct of research/research ethics.

In addition, it is expected that individual research projects and research groups will have internal discussions about this topic.

4. All students who entered the program after January 1, 2015 must complete the following training modules and obtain completion certificates:
 - a. AlcoholEdu – High-Risk Alcohol Prevention
 - b. HAVEN – Sexual Violence Prevention

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

9.7 Blanket Courses

Blanket-numbered courses have a zero middle digit, and serve the purpose of providing you course credit for the many activities that are part of your program but don't fit neatly into a traditional course structure. You can repeat these courses up to the maximum totals described for each degree program of study. Blanket courses in CSS include the following:

- **Thesis** (CROP/PBG/ENT/SOIL 503 for MS students or CROP/PBG/ENT/SOIL 603 for PhD students). These credits are used to reflect your effort in conducting your thesis or dissertation research and writing. You will likely make liberal use of these credits since research and writing will take up a considerable amount of your effort. Note that there is a limit to the number of thesis credits that can appear on the official MS program of study filed with the graduate school. However, you should feel free to use thesis credits to ensure that you are taking a full credit load. It is not uncommon for students to take as many as 16 credits of thesis during terms when they are writing their thesis or during intensive periods of data collection. When enrolling in 503/603, you should enroll using the course registration number (CRN) specific to your Major Advisor. If you do not see this number when enrolling, ask your advisor to obtain a CRN. 503/603 classes are pass/fail and do not affect your GPA.
- **Research** (CROP/PBG/ENT/SOIL 501/601). These credits are used for research projects that are not related to your thesis research. *Do not confuse this designation with thesis credits.* It is unlikely that you will need to enroll in 501/601 as a thesis MS or PhD student, but an example might be doing a project in a lab to gain experience with a technique or an approach. 501/601 is commonly taken as part of a non-thesis MS degree. Note that in contrast to thesis credits, *research credits are graded* and will affect your GPA.
- **Reading and Conference** (CROP/PBG/ENT/SOIL 505). These credits are used for special coursework not given under a formal course number. A number of different types of courses can fall under this category. For one, it can be a way to teach a class to only a few students or for a faculty member to have you read the body of literature on a certain topic and to have a regular discussion about it. As such, sometimes these reading and conference courses are not widely advertised beyond a professor's lab group. They often arise because students suggest a topic to their Major Advisor. Faculty will also use 505 credits to offer new or experimental courses on a trial basis before going through the formal course approval process. Since these courses are not regularly scheduled, they are often advertised on relatively short notice, sometimes just prior to the term in which they will be offered.
- **Seminar** (CROP/PBG/ENT/SOIL 507). See required courses above.
- **Teaching Practicum** (CROP/PBG/ENT/SOIL 509). This is used to reflect effort in activities related to teaching. See specific requirement under each degree/option.

9.8 Teaching Experience

For MS thesis and PhD students, participation in a teaching activity is required for at least one term with simultaneous registration for CROP/PBG/ENT/SOIL 509. Teaching activity is optional for non-thesis MS students. Your Graduate Committee has wide discretion in designing the most appropriate form of teaching experience given your background and career goals. Potential teaching experiences include assisting in an undergraduate course or assisting in the presentation of an Extension program, field day, or other event. Ideally, the teaching experience should include some direct contact with students such as preparing and presenting one or more lectures or Extension programs or being available for questions during labs and recitations. Your committee, Major Advisor, or the supervisor of your teaching experience will determine an appropriate number of 509 credits that should be included on your official program of study. Typically, assisting in an assigned undergraduate course equates to 3-4 credits of 509. Given career plans, some students may take additional 509 classes. Given financial need, some students may seek paid GTAs. 509 credits cannot be taken in association with a paid GTA.

9.9 Responsible Conduct of Research

“The Responsible Conduct of Research (RCR) Program at Oregon State University 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 submitted on or due after January 4, 2010. 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 of and facilitate the practice of responsible research.” <http://research.oregonstate.edu/osp/responsible-conduct-research>

See OSU Research Office CITI requirement under programs of study in section 9.6

9.10 Thesis, Dissertation, or Project

The work that you do in graduate school will have the greatest impact and contribute a lasting legacy if it is peer-reviewed and made widely available for others to use, interpret, and evaluate. At its core, scientific research involves the application of the scientific method to generate information, the synthesis and analysis of that information, and the vetting of that synthesis and analysis by peers. The MS and PhD programs are designed to give you practical training and experience in each of these elements, culminating in the publication of the thesis or dissertation.

While your thesis or dissertation itself will have been peer reviewed by your committee and it will be accessible to anyone who chooses to look for it, the process of writing a thesis or dissertation does not fully reflect the same amount of rigor in review as journal articles. Most scientific knowledge is discussed, disseminated, and archived in the form of peer reviewed research journal articles. Consequently, we encourage students to write MS and PhD theses in the form of one or more scientific journal articles that are otherwise ready to submit to a journal, following that journal’s form and style.

The department recommends the scientific paper format because it provides a “real-life” writing experience, speeds publication of thesis results by eliminating re-writing of the traditional “long form” of a thesis, and because it encourages organized compartmentalization of thesis research planning into publishable segments. The department requires a review of the literature section in all theses. It also encourages the use of appendices, especially as a place to put results of preliminary experiments and data that do not seem appropriate to any of the journal articles and may not be published elsewhere. Another extremely valuable use of appendices is to make data available in more raw form (instead of synthesized in tables and figures) so that it can be more readily used by other researchers in meta-analyses or other studies.

The Graduate School has compiled a useful resource guide for the preparation and formatting of the thesis: <http://gradschool.oregonstate.edu/success/thesis-guide>.

While the Graduate School no longer requires you to submit a paper copy of your thesis/dissertation, the department requests two traditionally bound copies for departmental use. Please confer with office staff about where to have copies made. The department will pay for these two copies. You may also have two copies printed at no charge at the Student Multi-media Services, located on the 2nd floor of the Valley Library. However, their binding process is not high quality.

10. DEGREE CREDIT REQUIREMENTS

Be sure to note the general degree and credit requirements for all graduate programs:

<http://catalog.oregonstate.edu/ChapterDetail.aspx?key=38>

All graduate study programs must consist of a minimum of 50% graduate stand-alone courses.

The remaining credits may be the 500 component of 400/500 slash courses.

Also, all programs require training in the Responsible Conduct of Research (see above section 9.9).

10.1 Master of Science (MS)

See the graduate catalog for the formal list of requirements:

<http://catalog.oregonstate.edu/ChapterDetail.aspx?key=39>

- A minimum of 45 graduate credits is required. If a minor field is identified, approximately two-thirds of the coursework (30 credits) must be in the major and one-third (15 credits) in the minor field. A minor is not required. Major courses may be selected from those in CSS as well as from those offered by many other departments.
- At least one credit of seminar (CROP/SOIL/PBG/ENT 507), two if PBG
- 3-4 teaching practicum credits (CROP/SOIL/PBG/ENT 509)
- 6-12 thesis credits (CROP/SOIL/PBG/ENT 503)
- A maximum of 15 credits of graduate work completed at another accredited institution, or in the Division of Continuing Education of the Oregon University System, may be transferred, provided that: 1) the work fits into a logical program for the degree, 2) the transfer is approved by the student's committee and by the Graduate School, and 3) grades of A or B have been earned. 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 such are not acceptable.
- No more than 9 credits of blanket-numbered courses, **excluding thesis** (CROP/SOIL/PBG/ENT 503), may be applied toward the minimum 45-credit MS degree.
- Thesis and non-thesis tracks are offered and subject to the approval of Major Professor and Graduate Committee.
- ***A Program of Study for the degree must be filed in the Graduate School before the completion of 18 hours of graduate coursework***, usually before the end of the second term. The appropriate form is available from the Graduate School website:
http://oregonstate.edu/dept/grad_school/forms.php
- All work for an MS degree must be completed within seven years, including transferred credits, coursework, thesis, and all examinations.

10.2 Doctor of Philosophy (PhD)

See the graduate catalog for the formal list of requirements:

<http://catalog.oregonstate.edu/ChapterDetail.aspx?key=40>

- There is no rigid credit requirement, but the equivalent of at least three years of full-time work beyond the baccalaureate is required. Three years of graduate work roughly translates into:
 $3 \text{ years} \times 3 \text{ terms per year} \times 12 \text{ credits per term} = 108 \text{ hours}$.
- A minimum of 36 credits completed in residence at Oregon State University and at least three terms of full-time graduate academic work (at least 9 credits per term) completed on campus or at an off-campus site approved by the Graduate School. The latter requirement of three terms of full-time enrollment does not have to take place in consecutive terms.
- At least two credits of seminar (CROP/SOIL/PBG/ENT 607), three for PBG
- 3-4 teaching practicum credits (CROP/SOIL/PBG/ENT 609)
- At least 36 thesis credits (CROP/SOIL/PBG/ENT 603)
- No more than 15 blanket-numbered credits, excluding thesis, may be applied toward the minimum 108-credit doctoral program.
- If a minor is declared, it must consist of at least 18 credits (15 credits for an integrated minor).
- ***A program of study must be filed by the end of one calendar year of enrollment as a PhD student*** for those who hold an MS degree and by the end of the fifth quarter for those who do not hold an MS degree. The final plan of study must be submitted to the Graduate School six weeks before the student's oral preliminary examination.

- Students who wish to include courses previously taken outside of OSU within their programs of study must submit a [Transfer Credit Request form](#) before the end of their first year of study. Graduate courses to be transferred to a doctoral degree program can be courses that were used to satisfy the graduate course requirements for a graduate certificate or a master's degree (or equivalent). Selected 700-level courses that have been deemed equivalent to graduate-level learning may be used on doctoral programs of study upon approval of the student's graduate committee. There is no limit on transfer credit toward the doctoral degree as long as the doctoral residence requirement is satisfied. See the Graduate Catalog for a complete description of rules and procedures regarding transfer credits.

11. EXAMINATION REQUIREMENTS

In addition to the elements and requirements of your program described above, your graduate program consists of formal examinations. The nature and timing of these examinations are largely prescribed by the Graduate School: http://oregonstate.edu/dept/grad_school/finalexams.php. Students must follow Graduate School guidelines for scheduling exams.

11.1. Soil Science

- 1) Examinations for Soil Science MS Candidates
 - a) Soil Science Master of Science (MS) degree candidates are not required to take a written exam; however, major professors may use a written examination to prepare students for their oral examination or as another means of student assessment if agreeable to the student's graduate advisory committee.
 - b) Final Oral Examination for the MS Degree in Soils
 - i) The thesis/research paper and coursework examinations are combined into one examination for MS degree candidates. The candidate should expect to be examined on both parts.
 - ii) The formal oral presentation by the candidate is open to all interested—the examination is restricted to the graduate faculty, usually just the candidate's committee. The student and major professor should publicize the presentation.
- 2) Written Preliminary Examination for the PhD Degree in Soils
 - a) The Soil Science graduate faculty requires that a student pass a written departmental examination before taking the oral preliminary examination for the PhD degree. The written examination tests the student's ability to integrate knowledge from different subject areas, to reason, and to apply principles to solutions of problems relating to soil science. It is typically taken towards the end of the second year of study.
 - b) The student's major professor is responsible for arranging the written part of the preliminary examination. The examination will consist of two questions in each of the following areas:
 - i) Soil Chemistry
 - ii) Soil Genesis, Morphology and Classification
 - iii) Soil Biology and Biochemistry
 - iv) Soil Physics

In addition, there can be two or more questions from the student's graduate committee members whose discipline is not soil science. When appropriate for the student, questions on larger scales (nutrient cycling at ecosystem level, watershed water dynamics, etc.) or practical applications (nutrient, water or tillage management, etc.) should be arranged.
 - c) The authors of the questions must indicate which questions are open book or closed book and approximately how much time should be allotted to answer the questions (1-2 hours, typically, for each question). Open-book questions can be answered using text, library or web resources if the student so desires.
 - d) The answers will be returned by the major professor to the authors of the questions, who will indicate to the major professor whether the student passes their question(s). All questions should be evaluated within two weeks of the test date. If a student does not pass one or more

sections of the examination, they will have one opportunity to be re-examined and successfully pass those sections. Additional coursework may be suggested by the graduate committee as a result of this examination, or the student may be encouraged to work towards an MS rather than PhD degree.

- e) 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.

3) Oral Preliminary Examination for PhD in Soil Science

- a) After passing the written examination, the PhD student will then take the oral preliminary examination within six months. In preparation for the oral exam, the student will prepare a research proposal that is not directly related to his/her thesis topic. The intent of this 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. Practically, the document could and has served as the basis for a postdoctoral fellowship proposal. Exceptions to this timeline must be approved by the student's graduate committee and the soils graduate faculty.
- b) The oral preliminary examination is intended to evaluate a PhD student's ability to utilize scientific literature, to think critically, to write creatively, to articulate ideas, and to demonstrate understanding of general and specific fields of study. This examination 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 will be evaluated. The preliminary examination will consist of two parts:

i) Written Research Proposal:

- (1) Before the time of the oral preliminary exam, the PhD student must submit a one-page abstract/outline on a topic for a research proposal to his/her graduate program committee for approval.
 - (a) The topic of the proposal must be different from the student's thesis research project.
 - (b) The topic of the proposal must be reviewed and accepted or rejected within one week of submission. The committee may accept a topic with one dissenting vote.
 - (c) A research proposal on the approved topic is then written and must include the following sections: introduction, objectives, rationale and significance, research design and methods, timeline, literature cited, budget with justification, and personnel required to achieve the objectives.
 - (d) The written research proposal should be 10-15 single-spaced pages (references, budget, and personnel information will not be included in the page count).
 - (e) The written proposal and a written proposal checklist and approval form (see Checklists and Timetables section for the form) must be submitted to the PhD student's committee at least six weeks prior to the anticipated date for the oral exam.
- (2) Within one week of submission, the committee must vote to approve the proposal as suitable for the exam.
- (3) In the event that the proposal is not approved by two or more members of the committee, the student will have two weeks to modify and re-submit the proposal to the committee for a second decision.
- (4) Within one week of re-submission, the committee must vote to approve the revised proposal.
- (5) A PhD student will fail the oral examination if the revised proposal is not approved by two or more members of the committee.

- c) Soils Oral Examination Procedures
 - i) The examination will start with a 20-minute presentation of the proposal (open to all interested) followed by an examination by graduate committee. This examination is comprehensive (not just on the proposal), and evaluates the student’s general knowledge and ability to convey and discuss scientific ideas, theories, and techniques. It is the responsibility of the student to have the appropriate pre-examination Graduate School paperwork completed and to schedule the exam.
 - ii) A Written Proposal Checklist and Approval Form (see Checklists and Timetables section for the form) should be attached to the written proposal when submitted for review by the student’s committee. Upon review, the student’s committee members should return the written proposal, review comments, and a completed form to the student.
- 4) Final Oral Examination for the PhD Degree in Soils
 - a) At least one complete academic term must elapse between the preliminary oral and the final examination.
 - b) The formal oral presentation by the candidate is open to all interested persons. The student and major professor should publicize it.
 - c) Examination of the candidate and final deliberation will be conducted by only the graduate committee.
 - d) The examination normally concentrates on the thesis.
 - e) It is the responsibility of the student to follow OSU Graduate School guidelines with regards to scheduling and pre-examination forms.

11.2 Crop Science

- 1) Crop Science Master of Science Candidate Exams (including PBG and ENT options)
 - a) Crop Science MS candidates are not required to take a written exam; however, major professors may use a written examination to prepare students for their oral examination or as another means of student assessment if agreeable to the student’s graduate advisory committee.
 - b) Final Oral Examination for the MS Degree in Crops
 - i) The thesis/research paper and coursework examinations are combined into one examination for MS degree candidates. The candidate should expect to be examined on both parts.
 - ii) The formal oral presentation by the candidate is open to all interested—the examination is restricted to the graduate faculty, usually just the candidate’s committee. The student and major professor should publicize the presentation.
- 2) Written Examinations for PhD Candidates in Crop Science (including PBG and ENT options)

A written comprehensive examination must be taken by all PhD candidates in accordance with OSU guidelines (the examination must be completed before the oral preliminary examination, which must be completed one term before the final oral, and copies of the written examination must be given to doctoral committee members at least one week before the oral prelim). The written examination may be taken using one of two formats. One format follows the conventional question and answer format. The other option is the written research proposal format.

 - a) Conventional Written Exam/Oral Exam Format in Crop Science
 - i) The conventional question and answer examination is developed by the student’s Major Professor with input from the student’s doctoral advisory committee. The examination must:
 - (1) address the breadth of knowledge expected of PhD candidates specializing in the candidate’s specific area of study, hence examinations will be different for agronomists vs. geneticists vs. seed physiologists;

- (2) be structured to require four hours of work on each of two consecutive days. This will generally entail four questions or sets of questions each day;
 - (3) be approved by a member of the CSS Graduate Faculty Committee. The committee member will not evaluate the examination for specific content but for evidence of questions requiring breadth, depth, and synthesis of knowledge. He/she also will assess time requirement (not too long or too short).
- ii) It is recommended but not required that major professors use the following procedure to develop the exam:
- (1) ask each doctoral committee member to submit a question or questions that will require one hour's time to answer. The graduate council representative may submit a question if he/she so desires;
 - (2) ask other faculty members to develop one-hour questions;
 - (3) the Major Professor has final authority in developing examination content;
 - (4) each examination question will be graded by the individual submitting the question.
- b) Preliminary Oral Examination in Traditional Format
- i) The preliminary oral examination is normally about two hours in length, and is intended to cover coursework and related subject matter. This examination is comprehensive and evaluates the student's general knowledge and ability to convey and discuss scientific ideas, theories, and techniques.
 - (1) The Major Professor will officiate the exam and ensure that all committee members have adequate time to ask questions.
 - (2) The Graduate Council Representative will also ensure that all committee members have adequate time for questioning and that the student is treated fairly in the exam process.
 - (3) It is the responsibility of the student to have the appropriate pre-examination Graduate School paperwork completed and to schedule the exam.
- c) Guidelines for PhD Preliminary Examinations Following the Written Proposal Format in Crop Science

The written research proposal followed by an oral defense and examination is an alternative option to the standard written and oral preliminary examinations described above. This examination is intended to evaluate a PhD student's ability to utilize scientific literature, to think critically, to write creatively, to articulate ideas, and to demonstrate understanding of general and specific fields of study. This examination 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 will be evaluated.

The preliminary examination will consist of two parts:

- i) Written Research Proposal:
 - (1) Before the end of his/her third year of study, a PhD student must submit a one-page abstract/outline on a topic for a research proposal to his/her graduate program committee for approval.
 - (2) The topic of the proposal must be different from the student's thesis research project.
 - (3) The topic of the proposal must be reviewed and accepted or rejected within one week of submission. The committee may accept a topic with one dissenting vote.
 - (4) A research proposal on the approved topic is then written and must include the following sections: introduction, objectives, rationale and significance, research design and methods, timeline, literature cited, and personnel required to achieve the objectives.
 - (5) The written research proposal is limited to 10 single-spaced pages (references, timeline, and personnel information will not be included in the page count).

- (6) The written proposal and a written proposal checklist and approval form (see Checklists and Timetables section for the form) must be submitted to the PhD student's committee not more than four weeks after the committee has approved the topic.
 - (7) The committee must vote to pass the proposal within one week of submission.
 - (8) In the event of a no-pass decision by two or more members of the committee, the student will have two weeks to modify and re-submit the proposal to the committee for a second decision.
 - (9) The committee must vote to pass the revised proposal within one week of re-submission.
 - (10) A PhD student will fail the written examination if the revised proposal receives a no-pass decision by two or more members of the committee.
 - (11) The student must set a date for his/her oral examination within three weeks of the decision to pass the proposal.
- ii) Preliminary Oral Defense and Examination in Crop Science Following the Written Proposal Format
- The oral examination will consist of two parts:
- (1) A one-hour defense of the written proposal. The defense of the proposal will include an introduction of the proposal by the student followed by questions from the committee members.
 - (2) A one-hour general oral examination not restricted to the proposal. The open questions may include anything related to science or training of the student that the committee members deem relevant. The decision to pass is made according to the rules of the Graduate School, which gives the committee the options to pass, not to pass and to terminate the student's work, not to pass and allow a re-examination or to recess and re-convene within two weeks.
- 3) Final Oral Examination for the PhD Degree in Crop Science (including PBG and ENT options)
- a) At least one complete academic term must elapse between the preliminary oral and the final examination.
 - b) The formal oral presentation by the candidate is open to all interested persons. The student and major professor should publicize it.
 - c) Examination of the candidate and final deliberation will be conducted by only the graduate committee.
 - d) The examination normally concentrates on the thesis.
 - e) It is the responsibility of the student to follow OSU Graduate School guidelines with regards to scheduling and pre-examination forms.

11.3 Thesis Copies

The Graduate School no longer requires you to submit a paper copy of your thesis/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.

You may have two personal or departmental thesis copies printed at no charge at the [Student Multimedia Services](#), located on the 2nd floor of the Valley Library. These copies are not suitable for departmental library use. The department will pay to have two, high-quality, bound thesis copies made. Talk with the office staff about where to have this work done.

12. KEEPING ON TRACK

12.1 Evaluation of Progress

Once per year, you and your Major Advisor are required to evaluate your performance and progress towards your degree. This is a formal process that is in addition to the regular lines of communication that you should develop with your Major Advisor (see section 7). The evaluation process and record should point out strengths, successes, and areas where improvement is needed. It offers a more formal method to receive feedback and constructive criticism. It is intended to provide suggestions for advancing you as a scientist and professional. This is also a great opportunity to have a comprehensive and reflective conversation with your Major Advisor about your program, and develop opportunities and activities to enhance your program for the coming year.

It is the responsibility of your Major Advisor to make an appointment with you and to complete the evaluation by the end of the fall term. You and your Major Advisor can choose the best time to conduct the yearly evaluation, but it must be completed before the end of the fall term. The evaluation should include a face-to-face meeting and follow the guidelines described in the **CSS Graduate Student Evaluation Form** (see below). 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.

12.2 Graduate Program Checklist

Checklists can be a helpful tool as you and your Graduate Committee organize and monitor your progress. 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: http://oregonstate.edu/dept/grad_school/deadlines.php.

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 \$250 per meeting. Application deadlines are March 31, June 30, September 30, and December 31 for the following three-month period. See Emmalie Goodwin for application materials.

Any additional trip costs are either borne by you or by your major professor. You should follow Departmental travel procedures (see section 14.7 below). In your pre-approval request, indicate that you are also requesting a travel award and specify the type and purpose.

In addition, the Graduate School also offers competitive travel awards. Information on their program can be found at: http://oregonstate.edu/dept/grad_school/travel.php. We may only submit one nomination from the department per award period. If you are interested in applying, please provide the Department Head with the requested information two weeks before the Graduate School deadlines for each term.

Eligible students are encouraged to use summer-term educational travel funds first, before requesting from other sources.

13.2 Department Administered Scholarships for Continuing Students

The CSS Department administers several 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 in the endowments during any given year. Awards are given annually. Students interested in scholarship funding must use the College of Agricultural Sciences (CAS) scholarship application process including meeting deadlines for the CAS application.

- *Larry Burrill Memorial Scholarship* - The Larry C. Burrill Memorial Scholarship was established in 2008 by donations from the family and friends of Larry C. Burrill, former faculty member of the Department of Crop and Soil Science. The scholarship is available to undergraduate or graduate students with an interest in weed science.
- *J. Ritchie Cowan Memorial Scholarship* - Ruth Cowan established the J. Ritchie Cowan Memorial Scholarship in memory of her late husband. He served as Head of the OSU Crop Science Department from 1959 to 1976. This scholarship is open to international graduate students with financial need whose interest is in Agronomy and who have a Crop or Soil Science major. Preference is given to students from Asia.
- *John and Jean Krautscheid Scholarship* - Mr. Krautscheid attended OSU when it was known as Oregon State College and he was a past president of the Crop Science Club. John was the first in his family of ten children to get a college degree. He appreciated the scholarships that enabled him to graduate debt free. The Krautscheids established this scholarship to support undergraduate or graduate students in the field of Crop and Soil Science.
- *Sheldon Ladd Memorial Scholarship* – Sheldon Ladd was Department Head of Crop and Soil Science from 1985-2000. He died unexpectedly that year. In recognition of his many contributions to the Department of Crop and Soil Science and Oregon State University, a memorial fund was established in his name. It is for graduate or undergraduate majors in Crop and Soil Science. Well-rounded individuals involved in community and educational pursuits are preferred.

13.3 Awards Administered by the Graduate School

The graduate school administers several fellowships and scholarships that can be found here:

http://oregonstate.edu/dept/grad_school/fellowships.php

You may not apply for these scholarships directly, but instead must be nominated by the Department. Awards have varied submission deadlines during winter term. Crop Science and Soil Science Graduate Program Coordinators will call for nomination requests early during the winter term.

13.5 External Scholarships

There are a number of scholarships available from external sources. The Graduate School has compiled a list of some of these here: http://oregonstate.edu/dept/grad_school/externalfellowships.php.

14. POLICIES, PROCEDURES, AND REGULATIONS

14.1 Use of State Vehicles

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

See <http://motorpool.oregonstate.edu/> for information on reserving a vehicle, rates, and regulations.

Graduate students must request permission to drive a state vehicle. The request must be signed by the Department Manager or Department Head and submitted to Transportation Services at least three working days before the time of travel. **Drivers must have a valid U.S. driver's license.** International driver's licenses are not acceptable. Drivers are encouraged to enroll in the SAIF driver class. Drivers are responsible for following all university and state regulations pertaining to use and operation of state vehicles.

Under no conditions should state vehicles be used for personal purposes. In rare cases, a spouse may accompany a staff member in a state car, but only after receiving permission from the Department Head. Under no situation should children or pets be transported in a state vehicle.

OSU has a vehicle rental contract with Enterprise. Contact Emmalie Goodwin for information about making reservations.

14.2 Laboratory and Facilities Policy

1. The department has an open lab and facilities policy. Authorized departmental personnel are provided with keys to appropriate areas. Key requests are authorized by the Major Advisor and approved by the Department Administrative Manager or Department Head.
2. There is a designated faculty supervisor for all rooms, labs, greenhouse sections, and special facilities.
3. Supervisors are responsible for coordinating and supervising the use of facilities for which they have been assigned responsibility and for accommodating the needs of our total program and personnel insofar as possible. They are responsible for developing facilities and space use policies and for the basic maintenance of the facilities and equipment. They are not responsible for providing expendable supplies and chemicals, for the costs of such supplies used by others, or for repair costs resulting from unauthorized or negligent use of equipment.
4. It is the responsibility of persons wishing to use facilities, space, or equipment to clear their requests with the appropriate supervisor and to respect and comply with the use policies. Specifically, they should provide their own expendable supplies or arrange with the supervisor to borrow and replace expendables or some other mutually agreeable trade-off. Graduate students and technicians should consult with their project leader or Major Advisor about cost commitments. They must comply with check-out list policies, clean-up and glassware washing policies, equipment operation training requirements, and with times assigned for use of facilities that require scheduling because of heavy use.
5. Except for equipment purchased on certain types of active federal grants, all departmental facilities and equipment are the property of the University and the Department—not of individual project leaders or supervisors. In scheduling use, however, the program of the responsible supervisor normally has priority over other departmental or cooperating department programs.
6. Individuals who do not respect or comply with established procedures and policies may be denied use of facilities. Use denial recommendations are made by facilities supervisors and subject to approval by the Department Head.

14.3 Safety

Potential dangers exist in most labs, university research farms, greenhouses, and remote field sites. You should familiarize yourself with the safety procedures and regulations of each work environment. If you will be working at any University Research and Experiment Station properties, research farms, or greenhouses *you are required to take initial safety training before beginning work* as well as periodic refresher courses. Information on CSS safety policies and procedures and training modules can be found at <http://cropandsoil.oregonstate.edu/content/crop-and-soil-science-safety-program>.

Additional training may be required for use of some equipment and facilities. Check with your supervisor on specific training needs.

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 Telephone Use

Phones are located in some graduate offices. Since there is only one phone in each graduate office, please be courteous and limit conversation time. Long distance calls should be made only with approval of a student's Major Advisor and charged, by using the appropriate code, to their account. Notices of phone calls to graduate students received in the main office are placed in the student's mailbox.

14.5 Copy Machine Use

The Department has copy machines in each administrative office that are available for faculty and students to use for copying related to teaching, research, and Extension projects. First priority use of the copy machine in the office is by office staff. Please act responsibly and with consideration for others in matters concerning use of copy machines.

There are assigned access codes for the copy machine in the main office. See the Office Specialist if you do not have an access code. Personal copying is not allowed when using a faculty member's access code. If you need help determining whether a copy job is personal or otherwise, check with the office staff.

The number of copies made on each code is recorded by the copier and reviewed monthly. The departmental copy machine is designed to do low-volume copying. Large copy jobs or multiple copies of documents (over 100 pages) should be sent to *Printing Services* (<http://printmail.oregonstate.edu/>); you can request an estimate of the print job cost before sending to Printing Services). We are billed at a fixed rate for each individual copy on the department copier. At Printing Services, costs are reduced as the number of copies increases. Therefore, when preparing materials for meetings, programs, large classes, etc. please utilize Printing Services.

Since publicly-owned resources are for official use only, the following guidelines apply to graduate student use of copy machines:

- That portion of a graduate students activities that contribute directly to the teaching, Extension, and research programs of the Department (or University) are of an official nature. This includes preparation of materials for class by a Teaching Assistant, reproducing abstracts for distribution to seminar participants, preparation of manuscripts for publication (even though they may be included as a part of a student's thesis), etc.
- Not included are duplicating materials as a part of a class assignment, copying thesis material not being submitted for publication in a journal (i.e. for distribution to committee members), or copying journal articles, etc. for the student's files, etc.

14.6 Poster Printing Policy and Procedure

When preparing posters for academic presentations, be sure to follow the current policies. They are outlined in detail at the IT Website (<http://support.roots.oregonstate.edu/content/printing-posters>).

1. Send an email to Roots Support one week or more in advance to ensure someone will be available to plot your poster, and that the plotter is operational.
2. Submit your poster 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, so one dimension of your poster should be one of those two sizes.

The plotter will not print all of the way to the edge of the paper, so be sure to leave a margin between the edge of your paper and where you want the poster content to begin. A one-inch margin is recommended.

Save your finished poster as a PDF document so that embedded fonts and images aren't lost.

Other Poster Printing Options

1. OSU Printing and Mailing Services (<http://printmail.oregonstate.edu/>) also can plot posters. Contact them for more information.
2. 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>.

14.7 Travel Procedure

Pre-authorization is required for all out-of-state travel and travel for which you will be requesting a professional meeting travel award.

The following sequence is required:

1. Obtain pre-approval for travel from your Major Advisor or grant Principal Investigator and the Department Head. Information required is provided in the email template provided on the next page. (For international travel on grant funds, Office of Sponsored Research and Award (OSRAA) must also approve the trip.)
2. Azumano or Teel's are the contract travel agencies. You are no longer required to get a quote from the contract agency before purchasing a ticket online. If you use one of these contract agencies, have the agent send your itinerary to Emmalie for "authorization to purchase." If you are driving instead of flying, then you must get a quote from one of the travel agencies to justify that driving is cheaper.
 - HUT Shuttle to PDX can be booked through the travel agency at the same time as your airline ticket.
 - Alternately, a rental car can be booked through the travel agency at the same time as your airline ticket for transportation to PDX or at your destination.

Azumano Corvallis

(541) 757-9792

(800) 334-2929

Fax: (541) 758-1631

azcorvallis@azumano.com

Teel's Travel Planners

728 NW Kings Blvd

Corvallis, OR 97330

(541) 758-0808

(800) 233-3225

Fax: (541) 758-0814

travel@travel-planners.com

3. Conference registrations and abstract submission fees can be charged to the department credit card through the office specialist. You can send the information by email to one of the office specialists or they can come to your computer and enter the credit card number.
4. Hotels, taxis and shuttles at your destination need to be paid by you (put on your own credit card) until reimbursement. Keep all receipts for hotel, taxi, shuttle, etc. Hotel rates are covered up to current per diem rates. Contact Emmalie for current per diem rates in the cities you are travelling (or check online through: <http://www.gsa.gov/portal/category/100120>).
5. The Department approves reimbursement for per diem meals, so you do not need to keep all meal receipts. Note that depending on the source and amount of funding per diem for meals and incidentals may not be covered or they may be covered at a lower rate than the prescribed OSU maximums. Be sure to consult your Major Advisor or the entity providing travel funds before planning travel and submitting reimbursement requests.
6. If you will be gone 5 days or more, you are entitled to a travel advance:
<https://oscar.oregonstate.edu/Resources/SubNav.aspx?NavPage=13&submenu=T13>.

Pre-approval travel email template:

Please submit your pre-approvals for travel via email to the grant's Principal Investigator, your Major Advisor, and the Department Head with a "cc" to the office specialist (Emmalie Goodwin) providing the following information:

Subject line: pre-approval for travel

Traveler's name

Destination

Date of departure

Date of return

Index

Activity code (if applicable)

Reason for travel

Estimated cost of trip, include:

Transportation

Registration fees

Meals

Lodging

Other

Total

The Department Head will then pre-approve your travel using the "reply all" feature.

Note: Please include Emmalie Goodwin in the "cc" list of the request to avoid the need of forwarding the pre-approval email to her.

If you have any questions, please contact Emmalie: 541-737-5093; emmalie.goodwin@oregonstate.edu.

15. RESEARCH SUPPORT FACILITIES

15.1 On-campus

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, albeit 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 located in 109 Crop Science. There is a satellite office for the soils unit 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 located in all three buildings.

Greenhouses

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

There are two major greenhouse complexes on campus that are available 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). The total combined growing space of these two units is approximately 100,000 sq. ft. of glass greenhouse.

All new users (graduate students, faculty, and staff) are required to complete an initial orientation and safety training **before starting work in the greenhouse**. 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 who are assigned space through their respective department. These project leaders/primary users can make short-term space assignments to secondary users. Users are responsible to the Manager to coordinate use or any modification of the facilities.

Research Farms

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

Department faculty use three research farms: (1) Hyslop Field Lab, (2) Vegetable Farm, and (3) Lewis Brown Farm. 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 (contact Dan Curry: <http://cropandsoil.oregonstate.edu/content/dan-curry>). These written requests must be made in advance and include materials, methods, and timing.

Center for Genome Research and Biocomputing (CGRB)

3021 Agriculture and Life Sciences Building

<http://www.cgrb.oregonstate.edu/>

The CGRB provide services, technical expertise, collaborative functions and share-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. A professional staff of six provides service in four areas:

- *Genomics* – DNA sequencing, high throughput sequencing, genotyping, and fragment analysis
- *Functional Genomics* – microarray services for analysis of global gene expression patterns in all types of organisms
- *Biocomputing and Bioinformatics* – advanced computational resources for data mining, data analysis, and database development
- *Imaging and Image Analysis* – a confocal laser scanning microscope facility for high resolution analysis of wide variety of specimens

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

CSS Central Analytical Laboratory; 3079 Agriculture and Life Sciences Building

<http://cropandsoil.oregonstate.edu/content/central-analytical-laboratory-cal>

The Central Analytical Laboratory (CAL) provides fee-based analytical services to OSU scientists and cooperating investigators. The CAL 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

<http://cropandsoil.oregonstate.edu/content/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 seed certification policies and procedures on local, regional, national, and international levels.

The OSU Herbarium; 2082 Cordley Hall

<http://oregonstate.edu/dept/botany/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 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. They have extensive seed testing facilities that can be used when doing cooperative research work.

The Oregon State Arthropod Collection; 3029 Cordley Hall

<http://osac.oregonstate.edu/>

This is a research collection of nearly 3 million preserved insect specimens. Begun in the 1870s as a reference tool for early entomology classes at OSU, the collection is now amongst the largest of university-owned insect collections in the country and 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 Research Office regularly notifies via e-mail and provides pertinent information to OSU research 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 encouraged to interact with a consultant at 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 [Cliff Pereira (541-737-1984)]. Fee-based consulting can be arranged.

15.2 Off-Campus

Off-campus facilities and resources also are available to graduate students in the program. These resources include the following.

[HJ 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. Through the 1970s, the site was part of the International Biological Programme-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 and in 1980 the site

became a charter member of the National Science Foundation's Long-Term Ecological Research (LTER) Program.

Branch Experiment Stations

OSU AES branch experiment station faculty and staff work with CSS-related research, extension, and teaching programs. Graduate students are encouraged to visit these locations to view the research plots and learn about the applied research needs of the crop, soil and forestry industries in these areas.

- 1) [Central Oregon Agricultural Research Center](#): Located in central Oregon at the Madras site (850 NW Dogwood, Madras, OR 97741) and the Powell Butte site (8215 SW 126, Powell Butte, OR 97753). Research is conducted on potatoes, mint, and sugar beets.
- 2) [Columbia Basin Agricultural Research Center](#) (CBARC): Include locations outside Pendleton and Moro (48037 Tubbs Ranch Road, P.O. Box 370 Pendleton, OR 97801; 66365 Lone Rock Road, Moro, OR 97039). Field research at both Pendleton and Moro emphasizes the production of wheat and rotational crops such as barley, legumes, and canola. Scientists at the Columbia Basin Center specialize in research and extension work important to the production of field crops on 2 million acres in north-central and northeastern Oregon. Wheat and barley in this region generate more than \$300 million annually.
- 3) [Eastern Oregon Agricultural Experiment Station](#): Located in Union (372 S 10th St.), research includes forage and rangeland and beef cattle production.
- 4) [Hermiston Agricultural Research and Extension Center](#): Located on 2121 South First Street, Hermiston, OR 97838. Research is conducted on high value irrigated crops.
- 5) [Klamath Basin Research & Extension Center \(KBREC\)](#). Located on 86 acres of mineral soil 3 miles south of Klamath Falls and 20 miles north of the California border (6941 Washburn Way, Klamath Falls). Research concentrates on potatoes, cereals, forages, and alternative crops.
- 6) [Malheur Experiment Station \(MES\)](#): The MES is located on 117 acres of row crop land midway between Ontario, Vale, and Nyssa in the Cairo area (595 Onion Avenue, Ontario). Scientists at the Malheur Station specialize in research on onions, sugar beets, potatoes, small grains, alfalfa, alternative crops, weed control, precise irrigation and nutrient management, watershed stewardship, and native plants.
- 7) [North Willamette Research and Extension Center](#) (NWREC): Located just off Interstate 5, south of Portland in the Wilsonville area (15210 NE Miley Road, Aurora). Research and Extension outreach focuses on small fruits, vegetables, specialty seed crops, nursery, greenhouse crops, Christmas trees, hazelnuts, pesticide registration research, and small farm/niche crops. About 1/3 of Oregon's entire farm gate value is produced within a 40 mile radius of NWREC—the area of agriculture served by the Center.
- 8) [Southern Oregon Research and Extension Center \(SOREC\)](#): SOREC is located in between the cities of Medford, Central Point, and Jacksonville in Jackson County, at 569 Hanley Road (Central Point). The center was formed in 1994 when the Southern Oregon Experiment Station was combined with the Jackson County Extension Service, and provides research and Extension services to Jackson, Josephine, and Douglas counties in SW Oregon. Thirteen faculty and five support staff members work in the Extension Unit (some are part-time). Three scientists, working in entomology, plant pathology and viticulture, along with four support staff, are located in the Research Unit.

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, which is part of the National Plant Germplasm System, is located adjacent to the Lewis Brown research farm on Peoria Road, Corvallis, OR. This unit is concerned with the collection, maintenance, evaluation, and distribution of selected clonally propagated crops: pear, hazelnut (filbert), hardy kiwifruit, strawberry, blueberry, cranberry, raspberry, blackberry, gooseberry, currant, hop, mint, and other minor specialty crops. Plants are maintained in the field and/or in large insect-proof screen houses and in greenhouses. The facility houses four scientists: (1) Kim Hummer is the Research Leader/Small Fruit Curator, (2)

Barbara Reed is the Plant Physiologist in charge of *in vitro* culture and cryopreservation, (3) Joseph Postman is the Plant Pathologist/Pear Curator, and (4) Nahla Bassil is the Molecular Geneticist in charge of DNA marker 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 have many cooperative projects with CSS faculty. The lab has specialized facilities that can be used on 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 (ORPMC) provides plant solutions for northwestern California, western Oregon, and western Washington. The Center's service area includes the northern Pacific Coast Range, Willamette Valley and Puget Sound, as well as Olympic, Cascade, and Siskiyou Mountains of western Washington and Oregon. 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.

USEPA –Western Ecology Division (Corvallis Environmental Research Laboratory)

<http://www.epa.gov/wed/>

This EPA research facility has three organizational sections: (1) air pollution effects, (2) terrestrial/pesticides, and (3) hazardous waste/water. Research areas of special concern to plant scientists include air pollution effects on plants, uptake and effects of pesticides on plants, and acid rain effects on crop plants. This is a well-equipped facility. Of particular interest is a unique system to study the uptake and translocation of chemicals by whole plants. The plant's aerial and root environments are continuously assessed and controlled, and transpiration and photosynthesis monitored.

16. LIFE BALANCE

Your research can be so engaging and fulfilling that it is easy to devote nearly all of 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/>) including free [weekly lunchtime concerts in the MU](#) 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 [OSU Craft Center](#); join a [sports club](#); see some of [Oregon's natural beauty](#); [volunteer for university or community programs](#), a [cultural night](#) sponsored by the many international associations.

The various demands of graduate school can also cause stress, anxiety, as well as more serious and debilitating mental illness. The University offers a number of resources to help. A good place to start is Counseling and Psychological Services (CAPS): <http://oregonstate.edu/counsel/>.

One important service that CAPS offers is after-hours crisis counseling. **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: <http://oregonstate.edu/counsel/mind-spa>.

APPENDICIES

TIMETABLE FOR MS THESIS STUDENTS

(See the Graduate School’s *Graduate Student Guide to Success* for additional information)

Year	Activities	Date Completed
1	_____ Choose major professor(s)	_____
	_____ Choose committee members and declare minor (if desired)	_____
	_____ Send Program of Study Statement to 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	_____ Before scheduling thesis, file the “Approval to Proceed with Final Defense” Form with Graduate School, which includes thesis title 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	_____

TIMETABLE FOR PHD STUDENTS

(See the Graduate School’s *Graduate Student Guide to Success* for additional information)

Year	Activities	Date Completed
1	Choose major professor(s)	_____
	Choose committee members including Graduate Council Representative and declare minor (if desired)	_____
	Send Program Statement to Graduate Faculty by end of first term	_____
	File official OSU Program of Study form with Graduate School by the end of first year	_____
	Give first of two seminars (departmental or professional)	_____
2	Take departmental written preliminary exams	_____
	Take oral preliminary examination (schedule with Graduate School)	_____
	Give second of two seminars (departmental or professional)	_____
3-5	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	_____
	Two weeks prior to final exam, schedule examination with Graduate School and submit an examination 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.	_____
	Give thesis seminar and take final oral exam	_____
	Submit final thesis materials 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		

Date _____
 Program Year _____

**Crop and Soil Science
 MS Graduate Student Annual Review Form**

Name of Graduate Student _____
 Degree Program _____
 Program Start Date _____
 Expected Completion Date _____

MILESTONE	CIRCLE ONE	DATE
Coursework	Completed/Scheduled/Anticipated	_____
Program Meeting	Completed/Scheduled/Anticipated	_____
Official Program Approved and Filed	Completed/Scheduled/Anticipated	_____
Teaching	Completed/Scheduled/Anticipated	_____
Non-Thesis Topic Seminar	Completed/Scheduled/Anticipated	_____
Ethics training	Completed/Scheduled/Anticipated	_____
Oral Exam and Thesis Defense	Completed/Scheduled/Anticipated	_____
Thesis Submitted to Grad Committee	Completed/Scheduled/Anticipated	_____

THESIS OR PROJECT

Progress made:

Goals for upcoming year:

Graduate Student’s Endorsement:

I have completed an annual review with my major professor 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:

This certifies that I completed an annual review with this graduate student.

 Major Professor’s Signature

 Date

Date _____
 Program Year _____

**Crop and Soil Science
 PhD Graduate Student Annual Review Form**

Name of Graduate Student _____
 Degree Program _____
 Program Start Date _____
 Expected Completion Date _____

MILESTONE	CIRCLE ONE	DATE
Coursework	Completed/Scheduled/Anticipated	_____
Program Meeting	Completed/Scheduled/Anticipated	_____
Program filed with Graduate School	Completed/Scheduled/Anticipated	_____
Written Preliminary Exam	Completed/Scheduled/Anticipated	_____
Oral Preliminary Exam	Completed/Scheduled/Anticipated	_____
Teaching	Completed/Scheduled/Anticipated	_____
First Seminar	Completed/Scheduled/Anticipated	_____
Second Seminar	Completed/Scheduled/Anticipated	_____
Ethics Training	Completed/Scheduled/Anticipated	_____
Thesis Defense Seminar	Completed/Scheduled/Anticipated	_____
Thesis	Completed/Scheduled/Anticipated	_____

THESIS OR PROJECT

Progress made:

Goals for upcoming year:

Graduate Student’s Endorsement:

I have completed an annual review with my major professor 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:

This certifies that I completed an annual review with this graduate student.

 Major Professor’s Signature

 Date

CSS PhD Written Exam / Research Format Proposal Checklist and Approval Form

Name of Student: _____

Major Professor: _____

Committee Member: _____

A written research proposal is part of the PhD preliminary examination in the Department of Crop and Soil Science. The proposal format should conform to the established guidelines.

The proposal must be approved by the PhD student’s 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:

	Date
a. Thesis topic approved by committee	_____
b. Student submits proposal to his/her committee at least six weeks before the scheduled date of the exam.	_____
c. Committee members vote to approve the proposal, with any suggested requirements or revisions of the proposal (seven days after submission of the proposal). If the proposal is not approved by two or more members of the committee, the student has two weeks to submit a revised proposal.	_____
Vote for the original proposal:	
_____ Pass _____ No Pass	_____
Vote for the revised proposal:	
_____ Pass _____ No Pass	_____

Committee Member’s Signature

The committee member 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):