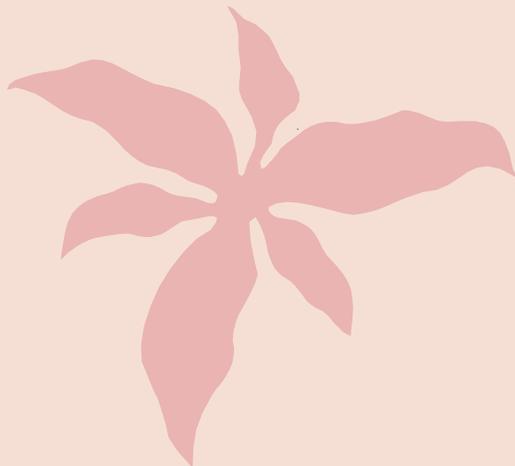
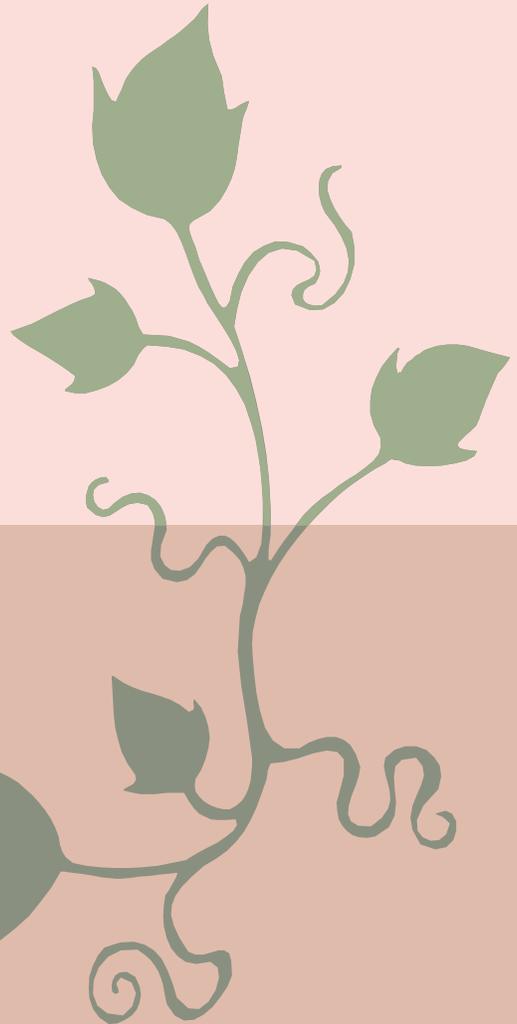


Handbook for Current Graduate Students in Horticulture



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PREFACE

We welcome you to Washington State University and the Department of Horticulture and Landscape Architecture, a part of the College of Agricultural, Human, and Natural Resource Sciences.

While at WSU we encourage you to take advantage of the great horticultural experience that can be yours in the Pacific Northwest. Outside of the required graduate student tour, the areas and industries of the state are yours to explore. The growers and people of related enterprises of horticulture will be pleased to visit with you and help you to learn about Washington horticulture. Please take advantage of the opportunity to accompany faculty members into the state for extension or research meetings; we assure you that they will be glad to have you accompany them. Once your program and research project are in progress, you may be asked to present your findings to the industry. Such presentations will benefit both you and our industry.

As you start Graduate School here, we welcome you as members of our teaching and research faculty. You are now an integral part of what we do and what we stand for. Your success will enhance our department and as a result provide you with an even better education. Each of you will have the chance to improve your skills in the classroom and the laboratory, while many will become field knowledgeable as well. We encourage each of you to attempt to broaden your knowledge base to become more marketable upon degree completion.

We have an outstanding faculty and you should visit with them frequently, for much can be gained from interaction with those that you will encounter in and out of the classroom. We welcome every opportunity to visit with graduate students and to share your successes as well as your problems. We are proud of our department and our state and want you to experience some of the reasons we have developed this feeling.

We congratulate each of you on your achievements to this point in your education and trust that when you finish your work at WSU you will be glad you made the choice to study with us. We wish you the best in your classes and your research. You will be as successful as the effort you expend in each. We hope that your experiences at WSU in the next few years will exceed your expectations, personally and professionally.

The information that follows is intended to acquaint you with the department and to inform you of policies and procedures that must be followed to obtain your graduate degree. Please keep this information handy and refer to it to help guide you through your education.

INTRODUCTION

It is well accepted that the most important aspect of a university's research effort is its graduate program. The Department of Horticulture and Landscape Architecture wholeheartedly supports this viewpoint. It is our aim to ensure the best graduate education possible—not only in the classroom and in your research, but also in the many informal experiences involved during your tenure as a graduate student.

Policies and procedures regarding graduate education are set at three levels, namely university, college and department. Thus, at times, it may be difficult or confusing to find the official policy. The WSU Graduate Study Bulletin and the Graduate School Policies and Procedures contain most of the general policies on admission and programs; these are available from the Graduate School and the Academic Coordinator keeps current copies. Individual departments often maintain more specific requirements. This handbook is intended to inform you of departmental policies and procedures that you need to follow in obtaining your graduate degree in horticulture at WSU.

PROFESSIONAL AND ACADEMIC INTEGRITY

The Department of Horticulture and Landscape Architecture is committed to the creation and promotion of an atmosphere of free inquiry and freedom of expression by all members of our community. The department recognizes and adheres to the tenet that integrity in scientific research and academic programs is vital to the advancement of knowledge within the scientific and public community. Integrity in scientific research and academic matters is first a very important matter for individual conscience and commitment, but also is a collective commitment of the university as set forth in various documents (Faculty Manual, Standards of Conduct for Students in the Student Handbook, and The Graduate Student Code at <http://www.gradsch.wsu.edu/code.htm>). Cases of scientific fraud, plagiarism, falsification of data, failure to comply with federal, state or university requirements, inappropriate use of research funds and facilities, and incorrect authorship are examples that can damage the credibility of research and must be avoided.

GRADUATE PROGRAM ADMINISTRATION

Departmental Graduate Steering Committee

It is the goal of the Graduate Steering Committee (GSC) to maintain high standards of graduate education in horticulture. The GSC consists of three or four faculty/staff representatives, one graduate student representative, and the Graduate Coordinator as Chair. The department chair appoints faculty and staff representatives. The graduate students elect the graduate student representative. The Academic Coordinator maintains a list of current members.

The GSC recommends departmental graduate policies and curriculum to the chair of the department and ensures adherence to them. The GSC reviews the progress of each student and attempts to avert irregularities that might develop. The GSC is available to meet with graduate students, as a group or individually, to discuss graduate education. GSC members are available for discussing any problems that might affect your program. A student may discuss problems with members of the GSC, file a written report, or meet with the GSC. If you have questions regarding policy or problems that you wish to discuss with someone other than your advisor, PLEASE feel free to contact the Graduate Coordinator or any member of the GSC.

Other duties/responsibilities of the GSC include: a) screening applications and making recommendations to the department faculty for admission of applicants to the graduate program in horticulture; b) arranging

for Major Advisors for each incoming graduate student and for on-campus advisors when needed; c) making recommendations to the department chair for the assignment of research assistants and teaching assistants; d) meeting at least twice each year to evaluate the progress of each graduate student and making recommendations to the department chair for orderly progress of students in the graduate program; and e) serving as a recognized grievance committee to mediate problems which arise in the normal graduate student/Major Advisor relationship when requested by either party. Implementation of recommendations would proceed after consultation and approval by the department chair.

Departmental Graduate Coordinator

The Graduate Coordinator's responsibilities are to: a) direct the GSC in carrying out its functions, b) serve as a contact person with the Graduate School regarding policies and activities, c) be responsible for an initial orientation meeting with new students to explain departmental policies and procedures, and d) actively recruit prospective students and arrange for initial contacts.

Departmental Academic Coordinator

The Academic Coordinator (Johnson Hall 153) is responsible for handling graduate records and scheduling and administering certain aspects of the department's graduate program, as detailed herein. The Academic Coordinator is available to answer many questions regarding the implementation of policies.

Student's Major Advisor(s)

Each graduate student is assigned a Major Advisor before being accepted into the department. The advisor is the student's main contact for information regarding graduate education. The advisor, in consultation with the student, will set the tone for the student's activities while enrolled at WSU. The Major Advisor will serve as the chair of the graduate student's Graduate Advisory Committee.

Some students may have an advisor who is located at a facility other than the WSU main campus in Pullman. It is departmental policy that students working with an off-campus advisor have an on-campus advisor located in Pullman to help with the student's program during the coursework phase of a student's degree, or when the student is in Pullman. In most cases, the on-campus advisor will serve as a member of the student's Graduate Advisory Committee.

Some students may have 2 faculty members jointly serve as Major Advisors and as co-chairs of the Graduate Advisory Committee. An on-campus advisor, for example, may also serve as a co-chair if the project and people involved feel that it is appropriate. When the student's graduate program is turned into the Graduate School, a letter justifying the status of co-chairs and a statement clarifying whether either or both must sign appropriate paperwork must be included.

Occasionally, a student may wish to change Major Advisors. It is the student's responsibility to find a new faculty member willing to take over the role of Major Advisor and to request a change after consulting with the department chair. When a student needs to change a Major Advisor because a faculty member is leaving WSU, the GSC will work with the student and other faculty to find the best alternative Major Advisor.

Student's Graduate Advisory Committee

The graduate student's Graduate Advisory Committee will be responsible for setting, assessing, and maintaining standards for each student. Requirements set by the Graduate Advisory Committee may be in whatever form they feel is most appropriate and will include courses and independent research. This will allow each student's program to be individualized for that student's particular needs and interests. It is the ultimate responsibility of the Major Advisor and the student to form the Graduate Advisory Committee.

Members of the student's Graduate Advisory Committee are selected by the Major Advisor in consultation with the graduate student. Committee members must be approved by the Department Chair as well as the Graduate School [see Appendices 1 (M.S.) and 2 (Ph.D.) for examples of program forms to report committee membership, proposed coursework, and general thesis topic]. Committee members should be selected for their abilities and qualifications to assist the student in completing a graduate program and preparing for post-graduate activities. A student's Graduate Advisory Committee can be changed at any time, subject to approval by the department chair and the members of the new Committee (see Appendix 3 for an example of the change form).

M.S. Student's Graduate Advisory Committee shall consist of a minimum of three faculty members, including the Major Advisor as Chair. The student's Major Advisor must be tenured or tenure-track Horticulture faculty, or USDA-ARS adjunct faculty, if a tenured or tenure-track Horticulture faculty member serves on the committee as co-advisor or academic advisor. The Graduate Advisory Committee shall consist of at least two members who are tenure-track or research/clinical faculty. Other committee members may have adjunct or affiliate faculty status. At least one member shall be from outside of the department, which may include adjunct or affiliate faculty.

Ph.D. Student's Graduate Advisory Committee shall consist of a minimum of four faculty members including the Major Advisor as Chair. The student's Major Advisor must be tenured or tenure-track Horticulture faculty, or USDA-ARS adjunct faculty, if a tenured or tenure-track Horticulture faculty member serves on the committee as co-advisor or academic advisor. The Graduate Advisory Committee shall consist of at least two members who are tenure-track or research/clinical faculty. Other members may have adjunct faculty status. At least one member shall be from outside of the department, which may include adjunct faculty.

The graduate student should meet each semester with all Graduate Advisory Committee members, either individually or in a committee meeting (as appropriate), to apprise them of progress on degree-related activities and to receive advice regarding graduate work and input on student progress.

DEPARTMENTAL REQUIREMENTS

Degree Options (General)

The Department offers two graduate degrees or major options. The appropriate option is determined by the student in consultation with the Major Advisor and Graduate Advisory Committee members, all of whom must approve the selection. These options are described briefly below. See the sections on "Graduate Coursework" and "Thesis and Special Problems Research" for more information about each option.

The non-thesis option to the M. S. in Horticulture is no longer available. If you are interested in a non-thesis option with a horticulture emphasis, please consider the M.S. in Agriculture, in which faculty in Horticulture can serve as major advisors. The M.S. Agriculture is offered through the CAHNRS and as a Distance Degree Program or on-campus degree.

M.S. Thesis Option: The thesis M.S. degree program is research-based, involving a formal, major research project. The objectives of this option are to train students in the experimental scientific method and to prepare students for handling major projects after graduation or for entering a doctoral program. This is the option selected by most master's candidates.

Ph.D. Option: All doctoral candidates must conduct independent research leading to a doctoral dissertation and publication of peer-reviewed research papers, with the objective of making a major contribution to the body of scientific knowledge in horticulture. Students in this degree option are expected to have completed a research-based master's degree or to have equivalent research

experience prior to enrolling in the doctoral program. **[Note: elsewhere in this document, 'thesis' refers to both thesis and dissertation.]**

For all graduate students in Horticulture, a Graduate Program Learning Outcomes Assessment plan will be followed (see Appendix 14).

Departmental and Professional Stewardship

All graduate students are considered to be training for professional positions and are expected to take advantage of opportunities to prepare themselves for all aspects of professional life. In addition to learning about conducting research and taking courses to improve their individual knowledge, students are expected to:

- * interact professionally with local and international members of the academic community, horticultural industries, and the public,
- * promote the professional development and growth of other students,
- * contribute to the academic functioning and governance of WSU and other appropriate professional bodies, for example, by providing exemplary service on committees.

Graduate students have a voice in university governance, and they are expected to exercise their opportunities to be represented. The Hort and LA graduate student body is expected to select student representatives for the following: Horticulture Graduate Steering Committee, Hort and LA Departmental Advisory Committee, Hort and LA Faculty meetings, Hort and LA Safety Committee, and the WSU Graduate and Professional Student Association. Other opportunities are also available for interested students.

Graduate Orientation Tour

To provide students with an overview of the breadth of our departmental resources and the diverse horticultural industries in the state and to acquaint students with our statewide Hort and LA faculty, staff, and students in our program, all incoming graduate students are required to attend the Graduate Student Orientation Tour at their earliest opportunity. Students who complete a master's degree in our department and enroll in our doctoral program, will be invited (but not required) to attend the tour twice.

Review of Graduate Student Progress

To assist the student in the timely completion of all major degree requirements, the GSC and the Department Chair will review the progress of all enrolled M.S. graduate students twice each year and Ph.D. students once a year. The graduate student should not rely upon this review to remind the student of all requirements. **IT IS THE STUDENT'S RESPONSIBILITY TO COMPLY WITH ALL REGULATIONS AND MEET ALL DEADLINES, AS SET FORTH IN THE WSU GRADUATE SCHOOL BULLETIN AND HEREIN.**

1. Twice each year (usually in December and April for M. S. students) and once each year (usually in April for Ph.D. student), a Progress Review form (see Appendix 4) will be sent to each graduate student for information regarding progress. It is the responsibility of the student to see that the form is properly filled out.
2. The Major Advisor marks the graduate student's progress as satisfactory or unsatisfactory. The advisor may also make comments regarding the student's progress.
3. The GSC reviews each progress report and makes its recommendations to the department chair regarding the student's progress.

4. The Department Chair notifies each student as to his/her progress, and makes recommendations to the student, Major Advisor or the Graduate School to correct any deficiencies in the student's program to date. If a student's progress is determined to be unacceptable, a copy of the notification memorandum will be sent to the Graduate School.

5. If two unacceptable evaluations are received, the student may be dismissed from the horticulture graduate program. **FAILURE TO MEET THESE REQUIREMENTS AFTER REVIEW BY THE GSC MAY RESULT IN RESTRICTIONS AGAINST STUDENT REGISTRATION THE FOLLOWING SEMESTER.**

Teaching Experience

All candidates for advanced degrees in horticulture are expected to participate in teaching activities, as well as research activities, while at WSU. M.S. and Ph.D. candidates are required to satisfy departmental teaching requirements for each degree separately, regardless of previous teaching experience. The teaching experience requirement can be met by completing **one or an equivalent combination** of the following teaching duties at some time during the candidate's graduate program:

1. Prepare and present at least **three** 50-minute **lectures in person** at the undergraduate or graduate level in courses offered at any WSU campus.
2. Conduct at least **eight tutorial sessions** involving at least three students at each meeting.
3. Assist with the preparation and conduct of at least **six** two-hour or three-hour **laboratory periods**.
4. Prepare and present **three asynchronous presentations**, each equivalent to one 50-minute lecture, for possible use later in departmental programs. Topics and presentation format must be approved by his/her advisor. For example, the student might arrange to have slide presentations taped by Information Technology (IT) or might prepare computer-assisted learning modules.
5. Perform required teaching duties on a **Teaching Assistantship for one semester**.

It is the responsibility of the student and the Major Advisor to arrange for the teaching experience to be completed and to assume the responsibility for certifying that this requirement has been met prior to setting the date for the student's final oral examination. It is the responsibility of the Major Advisor or the instructor of the course in which the teaching activities will occur to assist the graduate student with learning and applying appropriate educational techniques in fulfilling this requirement.

Exit Interview

All students are required to meet with the chair of the department for an exit interview. This meeting should be scheduled by the student prior to leaving WSU. It may be most convenient to schedule this appointment for immediately following the final exam, although it may be easier for the student or the chair if the meeting is scheduled earlier or later than that time. This meeting will allow the student an opportunity to reflect on their time at WSU and to provide formal feedback and recommendations to the department regarding our graduate program. Students are also asked to complete a written evaluation at this time (Appendix 5).

GRADUATE COURSEWORK

A graduate degree in Horticulture requires a broad understanding of a large body of knowledge in horticulture, coupled with a specialization within that body of knowledge. The following degree requirements are meant to reflect a balance between these two goals—assuring a knowledge of horticulture while preserving the Graduate Advisory Committee's freedom to design a program suited to each graduate student's area of specialization. Appropriate academic standards must be achieved in both

areas, and will be administered as stated below. Regulation as to time limits, residence, etc. are found in the Graduate Study Bulletin.

Minimum Course Requirements

To assure a broad understanding of what constitutes the field of horticulture, all students will be required to complete courses from each of the groups listed below. These requirements are set as the minimum that will be acceptable for a graduate degree in Horticulture. These requirements are set in addition to all other requirements set by the Graduate School and the Department.

GROUP 1: Applied Plant Sciences: Courses fulfilling this group must be junior undergraduate level or above. Examples of courses in the applied plant sciences include, but are not limited to, Viticulture and Small Fruits (Hort 313), Olericulture (Hort 320), Fruit Crops Management (Hort 521), Ornamental Plant Production (Hort 539).

GROUP 2: Basic Plant Sciences: Courses fulfilling this group must be junior undergraduate level or above. Examples of courses in the basic plant sciences include, but are not limited to, Plant Biotechnology (Biol 325), Plant Anatomy (Biol 509), Stress Physiology of Plants (Biol 517), Advanced Horticultural Crop Physiology (Hort 516), Post Harvest Biology and Technology (Hort 518), Chemistry and Biochemistry of Fruit and Wine (Hort 535).

GROUP 3: Research Foundation: Courses fulfilling this group must be junior undergraduate level or above. Examples of courses that contribute to an understanding of the research foundation (analysis, methodology, or techniques) for graduate study include, but are not limited to, Biometry (Stat 412), Environmental Biophysics (Soils 414-5), Experimental Methods in Plant Physiology (Biol 504), Experimental Design (Stat 507), Analysis of Variance of Designed Experiments (Stat 512), Microtechnique (EMic 506).

GROUP 4: Supporting Areas: Courses fulfilling this group can be introductory level or above. Examples of courses that contribute to an understanding of the agricultural disciplines that directly support undergraduate horticulture degrees include, but are not limited to, Introductory Soil: A Living System (Soils 201), Agricultural Entomology (Ent 340), Systems of Integrated Pest Management (IPM 462), General Plant Pathology (PIP 529), Field Analysis of Sustainable Food Systems (Soils 545).

Table of Minimum Departmental Course Requirements:

<u>Group</u>	<u>Masters</u>	<u>Doctoral</u>
<u>1 – Applied</u>	<u>6 hours</u>	<u>6 hours</u>
<u>2 – Basic</u>	<u>3 hours</u>	<u>6 hours</u>
<u>3 – Foundation</u>	<u>3 hours</u>	<u>6 hours</u>
<u>4 – Supporting</u>	<u>3 hours</u>	<u>3 hours</u>

Fulfillment of these requirements may occur before admission to our graduate program or while enrolled in our program. The GSC will determine which of these minimum group requirements have been met prior to enrollment and will inform the graduate student and the student's advisor of any remaining deficiencies. The graduate student's Graduate Advisory Committee will advise the student regarding possible ways to fulfill remaining minimum requirements. The Committee will also determine which of the courses taken to fulfill these minimum departmental requirements, if any, may also be included in the student's graduate program of study.

Degree Options (Graduate Program Coursework)

The Graduate Program is a list of all classes that a student will apply towards a graduate degree, a list of the members of the Graduate Advisory Committee who will oversee the degree, and a research topic. Soon after arriving at WSU, students should consult with their Major Advisors about a program of study (for an example of the M.S. and Ph.D. forms, see Appendix 1 or 2) and possible committee members. The student, the Major Advisor, and the Graduate Advisory Committee will develop the graduate program to be submitted to the Graduate School. Preparation of the program form is the responsibility of the student. The completed program form is then submitted to the Graduate School for approval, and a copy is placed on file with the Academic Coordinator.

M.S. Thesis Program: Students must submit a Program to the graduate school by the end of the first semester of graduate work. Students must complete a minimum of 30 hours of credit, including 21 hours of graded coursework (with at least 15 hours at the 500-level including 2 hours of Hort 510) and 4 hours of Hort 700. Up to 6 hours of graded, non-graduate coursework at the 300- or 400- level may be included.

Ph.D. Program: Students must submit a Program to the graduate school by the end of the second semester of graduate work. Students must complete a minimum of 72 hours of credit, including 34 hours of graded coursework (with at least 25 hours at the 500-level including 2 hours of Hort 510) and 20 hours of Hort 800. Up to 9 hours of graded, non-graduate coursework at the 300- or 400- level may be included.

For additional information on approved coursework for either M.S. or Ph.D. degrees see the current WSU booklet titled: *Graduate School Policies and Procedures*. Every effort should be made to prepare graduate programs so that they can be carried to completion as initially submitted; however, because situations, interests, and courses do change, provisions have been made to allow the amending of these documents, subject to the approval of the student's Graduate Advisory Committee and the department chair. See Appendices 6 and 7 for examples of the forms to file for changes in programs. All changes are subject to review by the Graduate School.

Transfer Credits (allowance of Master's degree credits for Ph.D. program)

For Ph.D. candidates who have a Master's degree, the department has established that a **minimum of 12 graded credits at the 500 level** must be taken in residence at WSU. Graded, graduate-level coursework taken as part of a Master's degree can count toward the 21-credit requirement if approved by a student's Graduate Advisory Committee. See the Graduate Bulletin for transfer credits and time resolutions.

Seminar

All graduate students are expected to **attend** all Horticulture Seminars, including those scheduled outside of the regular seminar series, whenever they have no class conflicts. Students residing at off-campus locations are expected to participate in the Horticulture seminars via distance delivery technology and to attend seminars given at their respective stations whenever possible. While working toward a graduate degree in Horticulture, students are required to sign up for Hort 509 or Hort 510 every fall and spring semester during which they have no course conflicts. Usually, students will register for Hort 509, graded P/F. During any seminar in which a graduate student will be presenting a graded seminar, the student should register for Hort 510, which is graded, in place of Hort 509.

Both M.S. and Ph.D. candidates are required to **present** two seminars during their program of study. The intent of this requirement is: 1) to provide experience in presenting research seminars in particular and in public speaking generally, 2) to encourage prompt consideration and development of a research topic, and 3) to provide opportunities to inform the department on research activities.

The first seminar presentation, which must be graded and presented as part of Hort 510, will provide an overview of the student's proposed research project. Normally, this first seminar includes a problem statement and research justification, a review of related scientific work, and a summary of proposed research or project methodology. If the student's research emphasis changes from the topic presented, the student will not be required to present a new seminar.

M.S. Students: must present their first seminar before the end of the second semester at WSU.

Ph.D. Students: must present their first seminar before the end of the third semester at WSU.

The second seminar presentation, which must be graded and presented as part of Hort 510, will summarize the project's results and implications. It should be presented near the time of the final thesis defense. Students must schedule the final seminar through the Academic Coordinator and may present the seminar during the hour before the final defense, during a regularly scheduled seminar time, or at another appropriate time before the final exam. No more than two final seminars may be presented in the Department in the same day, and none may be scheduled concurrently.

Students normally register for their second credit of Hort 510 during their final semester at WSU. If they are unable to complete the thesis during the semester in which they have registered for Hort 510, they should still present their seminars as scheduled. Students should not request a grade of "Incomplete" unless circumstances beyond their control, such as a major illness, occur. If a student presents a seminar more than two weeks before their final defense, the student's Major Advisor and Graduate Advisory Committee will determine whether the student should present an additional, ungraded seminar immediately prior to the defense.

THESIS AND SPECIAL PROBLEMS RESEARCH

Degree Options

All candidates for an advanced degree in horticulture shall include some type of research in their graduate program. The nature of the research is typically individualized, based on the needs of the student and the Major Advisor, and will be performed as part of one of the following degree options.

M.S. Thesis Option: Students sign up for Hort 700 (Master's Research) during each semester of enrollment. Hort 700 requires that a thesis be submitted to the student's Major Advisor, Graduate Advisory Committee, the Department, and the Graduate School.

Ph.D. Dissertation Research: Students sign up for Hort 800 (Doctoral Research) each semester of enrollment. Hort 800 requires that a thesis be submitted to the student's Major Advisor, Graduate Advisory Committee, the Department, and the Graduate School.

Research Proposals

In addition to the graduate program, all graduate students are required to submit a written research proposal to their Graduate Advisory Committee members and the Academic Coordinator, **prior to the end of their first year**. Generally, research proposals should be **five to ten pages in length** and contain a literature review, a clear statement of the objectives and hypothesis to be tested, and materials and methods. The latter should include a discussion of procedures to be followed, an estimate of facilities and equipment that will be needed, and an estimate of the time and costs necessary to conduct the research. The research proposal aids the student in clarifying specific goals of his/her research, serves as a focus for advice and suggestions from Graduate Advisory Committee members, and helps prepare the student for presenting an oral "research proposal" in the form of a seminar in Hort 510 (Graduate Seminar). Every effort should be made to prepare the research proposal so that it can be carried to completion as initially written; however this document should be viewed as a guide, not a contract. Research results and opportunities cannot always be predicted, and students must be prepared to be flexible in terms of

committee expectations to get the most from their education. If the research proposal cannot be followed as written, the Graduate Advisory Committee may require that the student write a new proposal, but the department does not require a new proposal.

Journal Articles in Lieu of Thesis

It is increasingly common that students publish articles in refereed journals prior to finishing a thesis. These publications cannot be compiled and submitted to the Graduate School in lieu of a thesis, but **depending on a student's Graduate Advisory Committee**, typed manuscripts, in the style of the journal to which the paper was submitted for publication, can be compiled and submitted as a part of a thesis. Each manuscript thus comprising the thesis must be internally consistent in form, and the overall format must still comply with thesis format (see Appendix 8) regarding margins, pagination, etc. Final decisions on the format and content of a student's thesis must be approved by his/her Graduate Advisory Committee. Students are urged to consult their Graduate Advisory Committee members early on in their program to discuss these options.

Expenses

Expenses involved in the conduct of research and availability of equipment should be decided upon at the time of the approval of the thesis problem. The department may pay for certain costs incurred during the course of the thesis research with prior arrangements and approval of the department chair in writing at the time of approval. All drawings, graphs, lettering, and other artwork are the responsibility of the student. Students are also responsible for costs involved in typing all thesis material and other graphic help needed in the development of the thesis.

Research Involving Humans

All projects involving human subjects must be reviewed by the WSU Human Subjects Institutional Review Board before the research is conducted. For example, if people will taste samples of a product or if people will be asked to fill out a questionnaire, then the project must be reviewed and approved before any data are collected. The process may require a few weeks or a few months, depending on the complexity of the project and the invasiveness of the activities, so plan ahead. For more information on the process, contact the Office of Grant and Research Development.

MAJOR EXAMS

Preliminary Exam (Ph.D.)

Before the end of the second year of graduate work after admission into the doctoral program or soon after the majority of the course requirements have been fulfilled, students should complete the preliminary examination. This examination is both written and oral and follows guidelines established by the Graduate School in the *Graduate School Policies and Procedures* bulletin. The written examination is administered by the Academic Coordinator and consists of questions submitted by all members of the student's Graduate Advisory Committee. The examining committee for the oral portion of the preliminary exam is made up of the student's Graduate Advisory Committee and a representative appointed by the Graduate School.

Students will be allowed up to 30 calendar days from the start of the first written exam until the completion of the oral exam. Students will work with the Academic Coordinator to determine the complete schedule for all written and oral portions of the exam before commencing on any one portion.

Examination questions include, but are not limited to, topics covered in the coursework outlined in the student's program of study and coursework prerequisites to the required coursework. Successful

completion of the coursework outlined in the program of study does not guarantee successful passage of written or oral examinations. Unsatisfactory performance by a student on the written portion of the preliminary exam may postpone taking the oral exam and/or affect the decision of individual committee members regarding satisfactory or unsatisfactory completion of the entire preliminary exam.

Procedure for Preliminary Examinations:

1. **Student** obtains Schedule of Preliminary Examination form from the Graduate School.
2. **Student** consults with Major Advisor and Graduate Advisory Committee members to determine dates and times of written and oral examinations and the order of the written ones. Student fills out the form, obtains signatures of the committee members, and informs committee members of the schedule. Student submits form to the Academic Coordinator in main office.
3. **Academic Coordinator** obtains the signature of chair, copies the form for student's file, and sees that the form is sent to the Graduate School.
4. **Academic Coordinator** coordinates the scheduling of the exam with the student. Academic Coordinator posts one copy of the approved exam schedule from the graduate school in the department, distributes copies in faculty mailboxes, and posts information to the department electronically.
5. **Academic Coordinator** sends out requests to Graduate Advisory Committee members for written questions indicating date questions are due back to the Academic Coordinator (*allow at least one week*).
6. **Graduate Advisory Committee Members** submit questions and complete examination instructions (see: Written Exam Options, below) to the Academic Coordinator. If questions require typing, they must be submitted at least three full working days prior to the date on which they are to be administered.
7. **Academic Coordinator** will administer written questions (one set at a time), according to the instructions provided with the questions, at either 8 a.m. or 1 p.m. Questions and answers are due back to the Academic Coordinator at either 12 noon or 5 p.m. (except during summer hours). If the exams are held at a location other than Pullman, the Academic Coordinator will coordinate proctoring the exams with a representative at the off-campus location.
8. After each written set is completed, the **Academic Coordinator** will provide a copy of the questions to the student, route the answers to authors of questions, and keep a copy in the student's file.
9. **Authors of questions**, after grading, will return questions and answers to the Major Advisor.
10. **Major Advisor** is responsible for discussing written exams with student prior to oral exam.

Written Preliminary Exam Options:

Each faculty member submitting questions for a written preliminary exam will also submit instructions specifying, within each of the following sets of options, the conditions under which the exam should be administered. The number of questions in each set is unspecified as long as the complete set submitted by each committee member can reasonably be answered in the specified time. The details of the specific selected options (such as which computer may be used) should be discussed with the Academic Coordinator as appropriate.

1. Exam Length Options:

- a. Up to 4 hours, to begin at 8 a.m. and end by 12 noon or to begin 1 p.m. and end by 5 p.m., except for summer hours,
- b. Up to 8 hours, to begin at 8 a.m. and end by 5 p.m., except for summer hours.

2. Exam Monitoring Options:

- a. Exam monitored by the Academic Coordinator or an examiner-designated alternate selected by the Major Advisor under the following conditions. The student may bring something to drink to the exam. If the student needs to leave the room during the exam, all items (including pens and extra clothing) must be left in the room. Student must check in and out with the exam monitor, who will monitor the break as closely as possible. No foreign materials may be brought back into the exam room. The exam monitor will ask for the answers ten minutes before the end of the exam period, and the student will have five additional minutes to finish the exam. If the student completes the exam before the exam period is over, the student should check in with the exam monitor.
- b. Self-monitored exam, or
- c. Examiner-monitored exam.

3. Exam Materials Options:

- a. Student brings nothing; exam monitor provides a pad of paper, pencil(s), pen(s), and eraser(s), or
- b. Examiner-approved computer, disks, and printer.

4. Exam Resources Options:

- a. No resources other than those in the student's mind (i.e. closed book),
- b. A few resources, specifically listed by the examining faculty,
- c. Unlimited non-human resources (this might mean going to the library), or
- d. Unlimited resources (this includes discussing questions with other people).

Thesis Defense: Final Exam

When approaching the completion of a degree program, a student should consult the Graduate Study Bulletin to be certain that they are aware of the dates of four important deadlines. These deadlines are set for every semester and are: a) the last day to apply for a graduate degree; b) the last day to schedule final oral exams; c) the last day to take final oral exams; and d) thesis due date (see academic calendar Appendices 9 and 10). **These deadlines are the student's responsibility** and approval must be obtained for any extenuating circumstances. Extensions will NOT be given due to poor planning or oversight on the part of the student, i.e., if you miss a deadline it may cost you an extra semester's worth of tuition. Plan ahead!

All M.S. and Ph.D. candidates must defend their thesis. This consists of two parts: 1) a seminar and 2) a thesis defense to be scheduled immediately following or soon after the seminar. The thesis defense will be evaluated by the student's graduate committee using the rubric in the Thesis Defense Assessment form (see Appendix 15). See Academic Coordinator to schedule a room and to have the time and date approved. No final exams or seminars may be scheduled concurrently in the Department and no more

than two may be scheduled for the same day. Priority will be given to the first person scheduled, so plan ahead. The seminar is open to the public and questions to the candidate are encouraged. The thesis defense oral exam is restricted to permanent faculty, as outlined in the Graduate Study Bulletin. (See: Information Sheet for Committee Members and Students Planning Final Exams, Appendix 11, and Instructions for Completing Final Exams for M.S. or Ph.D. Degrees, Appendices 12 and 13 respectively.) You will need to refer to the most up-to-date procedures.

For scheduling the thesis defense, the student should refer to the guidelines given in Appendices 9, 10, and 14. Note that for both M.S. (thesis option) and Ph.D. candidates, the following are requirements and there are NO exceptions.

More than ten working days prior to the thesis defense:

The student must present a draft of the thesis that has been approved by the Major Advisor to all Graduate Advisory Committee members for review. The student should consult with committee members to determine how much review time each will require and to determine their availability to review the draft when the student plans to have the draft completed. The student may not be able to complete the next step (Scheduling) as planned if the Graduate Advisory Committee members have not had sufficient time to suggest changes to the thesis and to approve those changes.

At least ten working days prior to the thesis defense:

A signed copy of the Thesis Acceptance/Final Examination Scheduling Form, signed by each of the student's Graduate Advisory Committee members and the Department Chair, must be turned in to the Graduate School. The Academic Coordinator **must** have a copy of this completed and signed form.

NOTE: When the Graduate Advisory Committee members sign the form, they are agreeing that a "final typed draft, suitable in content and format for submission to the library, has been given preliminary approval."

This means that they have reviewed a draft of the student's thesis that is essentially complete, requiring only minor revisions that could easily be made within a five-day period.

If approval by the Human or Animal Subjects Review Boards was required for the study, copies of the approval forms must be included with the Scheduling Form.

The Graduate School also requires that a copy of the thesis be presented for format, not content, approval. This copy does not stay in the Graduate School and is used to check copyright approvals and margins, for example. Copies of any human subject or animal approval forms must also be turned in at this time.

Five working days prior to the thesis defense:

1. Copies of the thesis be presented to the Graduate Studies Representative and the student's Graduate Advisory Committee.
2. An unbound, final-form copy of the thesis be deposited with the Academic Coordinator for perusal by the Department.
3. An abstract must be filed with the Agricultural Science Library.

Failure to comply with these deadlines will require re-scheduling of the exam (and possible extra tuition dollars to you!).

The department has a library housing all student theses and dissertations. These can be checked out for student use, but must have prior approval of the Academic Coordinator.

After the thesis defense, the student has **five** working days to submit the final signed copy of his/her thesis to the Graduate School. The Department requires that the student submit one final signed unbound copy to the Academic Coordinator for Department use. The Departmental copy does not have to be on 100% cotton.

GRADUATE ASSISTANTSHIPS

Assignment of Graduate Assistantship Appointments

Appointments to research assistantships and teaching assistantships shall be made on the basis of student qualifications and recommendations of the Graduate Steering Committee to the Department Chair. Current students may request that changes in their assistantship status be considered by writing to the Department Chair or the Graduate Coordinator. For example, a student with no appointment may request consideration for a future semester, or a student with a teaching appointment might request reassignment to a research appointment. Such requests will be considered along with requests from incoming students and will be assigned on a competitive basis. Foreign students may be eligible for research assistantships and teaching assistantships after at least one year's enrollment at WSU. All students supported on assistantships must reside in Washington.

Reappointment or Termination of Graduate Assistantships

For most students, the length of the appointment to a graduate assistantship is determined at the time of the initial appointment. Students with graduate assistantships are expected to perform their assistantship duties in a professional manner and to maintain acceptable progress toward their graduate degrees. Unusual circumstances, including lack of performance or severe budget constraints, could result in appointment termination.

M.S. students: The maximum time period students can be supported with state-funded assistantships is two years.

Ph.D. students: The maximum time period students can be supported with state-funded assistantships is four years.

Graduate Assistantship Duties

Assignments of **assistantship duties** will also be made on the basis of qualifications and recommendations of the Graduate Steering Committee to the Department Chair and will be reviewed every year. In most cases, the faculty member with whom the student will be working as a research assistant will also be the student's Major Advisor and will determine appropriate duties. In some cases, the student will be assigned activities that may also relate to a graduate research project, while in other cases, the student may work on projects that are unrelated to graduate work.

Tentative teaching assignments are determined after registration figures are available, and consider class needs, faculty needs, graduate students' schedules, and graduate students' interests. In some cases, these tentative assignments must be changed due to scheduling conflicts, unexpected changes in class enrollments, or other unanticipated factors. The professor of the respective class must approve general typing and copying requests for course material for which students are TAs before being submitted to the Main Office.

Courseloads for Graduate Assistants

The Department requires students on half-time appointments to enroll for 18 credit hours every fall and spring semester. Students supplement their formal coursework credit hours by adding an appropriate number of credits of Hort 700, Hort 702, or Hort 800.

Establishing Residency

Students on graduate assistantships, except foreign students, are expected to apply for residency in the state of Washington. This helps to defray the high costs of non-resident tuition waivers. While residency cannot be established until the end of your first year in Washington State, students must begin compiling documents, such as a copy of a housing lease and rent receipts, as soon as they arrive. Driver's license and vehicle registration must be obtained immediately upon arrival. If you live out of state for the summer, you will not be able to establish residency.

These requirements are explained in the flier called "Instructions for Completing Residence Questionnaire" that is available in the Office of Student Affairs and at <http://www.wsu.edu/future-students/admission/residency.html>. Please visit this website to make sure you are in compliance.

Payroll Deduction of Tuition

For details on how to arrange for automatic deduction of tuition from your paychecks, check with the Academic Coordinator for current information.

SAFETY

Safety at WSU is monitored by the State Department of Industrial Safety and Health and OSHA. A safe and healthy working environment is to be maintained at all times.

It is the responsibility of each graduate student to become familiar with safety policies and to follow safe procedures. Departmental policies and procedures regarding safety are detailed in the WSU Safety Policies and Procedures Manual (available at <http://www.wsu.edu:8080/~forms/manuals.html>), while policies and procedures specific to individual labs are detailed in the Laboratory Safety Manual located in each lab. Information regarding all chemicals is available on Material Safety Data Sheets (MSDS) in the mailroom as well.

The Department Safety Committee, which includes a representative of the graduate students, handles all departmental safety-related issues, except for radioisotope use, which is handled by the Campus Radiation Office. Students are required to attend an informational safety meeting in the fall semester of their first year, and if using radioisotopes, attend a radiation protection safety course. Many departmental employees have received first aid training, and first aid training is available to all graduate students.

FACILITIES

Office Space

The Department will assign all graduate students an office and desk, with priority in the following order: Teaching Assistants, Research Assistants, other graduate students. Check with the Administrative Manager regarding any questions about desk or office assignments. Any desk or office changes must have prior approval of the Administrative Manager.

Computers

Microcomputers are available for graduate student use. These are located in Johnson 29. A microcomputer lab is also available within the College in Hulbert Hall. Similar facilities are available to students in the Computer Center.

Presentation Equipment

The Department maintains modern media presentation equipment, such as a portable computer, slide duplicator, cameras, VCR's, and projectors, for student use. The student must pay for film and other graphic materials, unless the Major Advisor authorizes payment from his/her project funds.

Laboratory Facilities

1. The individual faculty member assigned to each lab supervises departmental laboratory facilities. Check with the appropriate supervisor before commencing work in or removing items from any of the department laboratories.
2. Specific guidelines and rules may vary between labs (faculty supervisors); however, some general guidelines are required for all labs:
 - a. Utilize standard, safe lab procedures, including wearing appropriate safety gear.
 - b. Do not remove anything from a lab without first checking with the faculty member in charge. Then follow appropriate sign-out procedures.
 - c. Maintain clean and orderly work areas.
 - d. Sandals are not to be worn when working in the lab.
 - e. The individual laboratory user is responsible for procuring and cleaning his/her own glassware, securing chemicals or other reagents, special equipment, etc.
 - f. Rinse the exterior of acid bottles before returning to the shelf or storage space to avoid fumes by acid drips on the outside of bottles.
 - g. All chemicals must be labeled and dated when received.
 - h. Special procedures must be used in ordering or using radioactive materials. The order should include: that the order is radioactive, the amount of radioactivity, and the isotope involved.
 - i. Adhere to WSU Safety Division guidelines for disposal of hazardous chemical wastes.
 - j. Children are not allowed in laboratories.
3. Flammable liquids are restricted to one-gallon quantities or less in laboratories. Larger quantities must be stored in the Flammable Storage Room on the northeast corner of Johnson Hall.
 - a. Do not store flammable solvents with acids or salts.
 - b. Do not store nitric acid and acetic acid together.
4. Maintain a log of chemical use (chemicals, solvents, etc.) at all fume hoods and especially record all spillage's.

5. Report all accidents and any injuries, however minor, to the Main Office and prepare an accident report.

Cold Storage Rooms

A complex of cold storage rooms is located at the west end of the ground level of Johnson Hall. A range of temperatures is available for research and teaching purposes. Each room is supervised by individual faculty (check the card posted by each door) and overall supervision handled by one faculty member (consult the committee roster in the Main Office). Students must check with the person in charge before placing materials in these storage rooms, especially if a large amount of space is required. All materials must be labeled with the student's name, and date. Once a year these rooms are cleaned and organized, and all unlabeled materials are discarded.

Greenhouses, Growth Rooms, and Growth Chambers

Greenhouses and growth chambers are available in the greenhouse complex and are administered by the College of Agricultural, Human, and Natural Resource Sciences. All requests for space must be approved by your Major Advisor and submitted to the College Greenhouse Manager on the required space allocation forms.

Field Research Facilities

1. Areas. Orchards and land area are available for field research on the Tukey Horticulture and Landscape Architecture Farm located on Airport Road. These areas are also utilized for teaching purposes. The farm is administered by the department's Farm Committee, with direct supervision by the Farm Manager. Graduate students should discuss field research plans with their Major Advisor and then request land and/or orchard needs through the farm manager and the Farm Committee before March 1 by filling out the required forms.

Additional land area is available at the Central Ferry Station (administered by the Plant Introduction Station), and the Othello Research Unit. Land requests must be submitted to the Prosser Land Committee as early as possible, but definitely before March 1. A planning session is held in early March each year on the WSU main campus with the Prosser Farm Manager, and the Othello Farm Supervisors to discuss summer field research plans.

Land and/or orchards are available and administered at each of the individual WSU research stations. Graduate students expecting to conduct any of their research at these stations should discuss plans with their Major Advisor and follow the established procedures of the respective station.

2. Care of research plots. The farm crew usually performs general land preparation and routine maintenance operations. However, prior arrangement must be made, generally at the time the request for land space is made, for the actual care of the experimental area. The researcher must perform all practices directly involving the experimental area or variables thereof.

3. Equipment. Departmental tools and equipment are for use by all members of the department; however, check them out from the Farm Manager. Return all tools cleaned and in good working order to their proper place as soon as you finish using them. If your project calls for prolonged use of a particular tool, consult your Major Advisor regarding its possible purchase.

POLICIES

Keys

All offices and labs **must be kept locked** when not occupied. Theft on the campus is a problem. The submaster key issued to graduate students allows access to individual offices, outside doors of Johnson Hall and some department labs. Keys must be checked out in the Main Office.

Keys to farm gates, cold rooms, etc., must be obtained separately. Farm gate keys issued to anyone in the department will require the Farm Manager's approval. The charges for lost keys of any type are \$10 per key with NO EXCEPTIONS!

E-Mail

Students must obtain e-mail addresses and keep the Program Coordinator informed of the current address. The Department maintains an electronic distribution list of faculty, staff, and graduate students for circulating important notices. All graduate students will be placed on this distribution list.

Mail

Students will be assigned a mailbox in Johnson 152. Mail sent and received at the university should be official correspondence only. Personal mail should be delivered to private residences. Business correspondence can be left in the Main Office for mailing. Letters should not be stamped, and must have the departmental return address with the + 4 Zip Code (6414).

Telephones

Telephones are available for local calls-phones are "restricted" so long distance calls cannot be made. There is a phone in almost every grad office or one available nearby. An authorization code is required to make long distance calls. Students should consult their Major Advisor and the Administrative Manager regarding approval for this authorization code.

Copying

A copy machine is located in the Department's Main Office for official copying. Each student will be assigned his/her own authorization code. Each student is allowed 100 copies per month. A separate code will be issued to TAs for classes they are teaching.

Theses will not be copied on the Department's machine. Copy machines are available in the Fischer Agricultural Sciences Library (Johnson C-2) and the other libraries as well as the CUB and the Pullman business area.

Supplies

All materials and supplies needed for a student's project must be approved by the student's Major Advisor. Central Stores has a large inventory of most office, laboratory, and chemical supplies. Other items may be ordered through the Department's Main Office. Forms are located in Johnson 152. The form should be completed, approved by the student's Major Advisor and turned in to the office for processing.

Typing

Departmental secretaries are not authorized to type materials for students. Students are expected to type their own materials related to their graduate studies. If you are also an employee, the office may be

available to type materials related to your job activities. Check for appropriateness with your supervisor or your advisor before submitting work to the main office.

Travel

Students must file travel authority and justification forms before making any trip (other than local) on Department business. Travel Authority forms are available in room 152 and should be filled out and submitted to the Main Office at least 5-7 days ahead of the proposed travel. When motels are authorized, the motel receipt must be submitted to be reimbursed. For travel expenses that are to be paid by the university, an advance may be arranged. Check with your advisor and the main office for information on how to do this.

A variety of vehicles is available from the University Motor Pool for use on official university business. Charges associated with using the Motor Pool vehicles must be borne by the respective project; therefore, check with your Major Advisor before reserving or using any vehicle. A Vehicle Release Form must be completed and signed in the Department's Main Office and taken to the Motor Pool when a car is picked up.

Check-out

When students have completed their graduate work, they must consult with the Main Office on all the necessary checkout procedures. An exit interview with the Department Chair must be scheduled. The following items need to be turned in before departure:

- * keys
- * desk assignment
- * theses/dissertation
- * forwarding address
- * diskettes (copies of any papers in progress).

TABLE OF APPENDICES

<u>Number</u>	<u>Appendix Topic</u>
1	Graduate School Form for Master's Degree Program and Committee
2	Graduate School Form for Doctoral Degree Program and Committee
3	Graduate School Change of Committee Form
4	Departmental Progress Evaluation Form
5	Departmental Exit Evaluation Form
6	Graduate School Form for Change of Program for Master's Degree
7	Graduate School Form for Change of Program for Doctoral Degree
8	Graduate School Tabular Summary of Procedures for Master's Degree
9	Graduate School Tabular Summary of Procedures for Doctoral Degree
10	Graduate School Application for M.S. Degree
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12	Information Sheet for Committee Members and Students Planning Final Examinations and Manuscript Format for Thesis/Dissertation
13	Procedures for Processing Theses/Dissertations and Scheduling of Final Exam
14	Department of Horticulture and Landscape Architecture Graduate Program Learning Outcomes Assessment, M.S. and Ph.D. in Horticulture
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