



**2020-2021
Graduate Programs
Handbook**

Table of Contents

I.	Horticulture Graduate Programs Overview	1
	Graduate Programs Learning Objectives	1
	Graduate Student Responsibilities	1
	Graduate Program Components and Plan Options.....	2
	M.S. in Horticulture, Plan A	2
	M.S. in Horticulture, Plan B	2
	Ph.D. in Horticulture.....	2
	Interdepartmental and Cross-Departmental Graduate Programs	2
	Transfer from a M.S. to Ph.D. Program	3
	Direct Admission to Ph.D. without Completion of M.S.	3
II.	Selection and Role of the Faculty advisor	3
	Changing Faculty advisor.....	3
III.	Selection and Role of the Advisory Committee	3
IV.	Horticulture Graduate Degree Requirements	5
	Table of General Requirements and Completion Dates.....	5
	Students Admitted Provisionally.....	6
	Establishing the Program of Study.....	6
	Graduate Courses-Selected Graduate Courses	6
	Program of Study for M.S.	7
	Program of Study for Ph.D. (Report of Guidance Committee).....	8
	Submission of the Program of Study.....	8
	Transfer Credits.....	8
	Work in Absentia	9
	Departmental (Non-Credit) Seminars	9
	Deferred Grades (DF).....	9
	Readmission After Program Interruption	9
	Graduate Research Proposal.....	9
	The Seven Essential Elements of an M.S. & Ph.D. Research Proposal	10
	Responsible Conduct of Research.....	10
	Graduate Teaching Experience	12
	Graduate Career and Professional Development	12
V.	Thesis/Dissertation Preparation and Defenses,	
	Comprehensive and Final Oral Exam	13
	Publishing of Theses/Dissertations	13
	University Policy About Dissemination of Graduate Students' Research.	13
	Preparation of the Masters Thesis (Plan A)	14
	M.S. Final Oral Examination	14
	Ph.D. Comprehensive Examination	15
	Ph.D. Written Comprehensive Examination	15
	Ph.D. Oral Comprehensive Examination	15
	Ph.D. Oral Comprehensive Exam – Procedures.	16
	Conduct and Moderation	16
	Charge to the Exam Moderator.....	16
	Charge to the Advisory Committee.	16
	Charge to the Ph.D. Candidate.....	17
	General Flow of the Oral Exam.....	17

	Preparation of the Doctoral Dissertation	17
	Ph.D. Final Oral Examination (Dissertation Defense)	18
	Final Certification of Degree Requirements	18
VI.	Minimum Academic Standards for Continued Enrollment	19
	Semester Progress Reports	19
	Conflicts and Grievance Issues	19
VII.	Integrity and Safety in Academic and Research Activities	20
	Academic Integrity	20
	Reaffirmation of Commitment to Intellectual Honesty & Integrity	20
	Research Involving Human Subjects	21
	Research Involving Radiation, Chemicals, or Biological Agents	21
	Research Involving Animals	20
	Research Involving Travel or Transportation of Materials or Data	21
VIII.	Departmental Facilities and Services for Graduate Students	22
IX.	Financial Aid, Assistantships, and Fellowships	23
	Sources of Financial Assistance	23
	Graduate Research Assistantships	23
	Selection Procedure	23
	Research Assistantship Appointments	23
	Course Loads for Graduate Assistants	23
	Graduate Assistants' Responsibilities	23
	Graduate Research Fellowships and Grants	24
X.	Graduate Student Academic Grievance Hearing Procedures	24
XI.	University Resources	31
XII.	Graduate Programs Committee	
	Role of the Graduate Programs Committee (GPC)	32
	Responsibilities of the Graduate Program Director (GPC Chair)	32
	GPC Programs Assistant Responsibilities	33
	GPC Graduate Student (HOGS) Representative Responsibilities	33
	GPC Recruitment, Scholarship & Fellowship Subcommittee Responsibilities	33
	GPC Graduate Curriculum Subcommittee Responsibilities	34
XIII.	Appendices	35
	Responsible Conduct of Research Tracking form	1
	Advisory Committee form (appointing & changing)	2
	Graduate Student Exit Form	3
	Proposed Academic Program-Masters' (Program of Study approval form)	4
	Change in Academic Program Form	5
	Masters' Thesis (Plan A) Research Proposal Requirement	6
	Announcement of Final Oral Examination/Seminar-Masters'	7
	Report of Guidance Committee-Ph.D. (Program of Study Approval Form)	8
	Doctoral Dissertation Research Proposal Requirement	9
	Notice of Oral Comprehensive Examination	10
	Announcement of Final Oral Defense-Ph.D.	11

I. Horticulture Graduate Programs Overview

The Graduate Program in Horticulture at Michigan State University are of the oldest, largest, and most prestigious Horticulture graduate programs in North America, and are recognized internationally for scholarly development of research scientists, extension specialists, and horticultural business leaders in the economic plant sciences.

One of the strengths of the Horticulture Graduate Program is founded in the interdisciplinary and integrative nature of horticulture, allowing graduate students a great deal of flexibility in designing their individualized programs of study and research. Students have access to state-of-the-art research facilities, including laboratories, greenhouses, growth chambers, and both on- and off-campus field research stations. Horticulture faculty develop and procure funding for individual and multi-disciplinary team research projects, providing a wide range of opportunities for Masters and Doctoral students.

A graduate degree in the Horticulture Graduate Program draws upon the expertise of ~36 faculty members in the Department of Horticulture, as well as advisory expertise of many faculty from across campus in basic plant biology, pathology, entomology, forestry, agronomy, genetics, biochemistry, marketing, food science, health and nutrition, engineering, climatology, etc. At MSU, the work towards the graduate degree involves training and experience in research, teaching, and professional communications with peers, industry, and the public. It is the goal of the Horticulture Graduate Programs to produce the leaders of tomorrow who can integrate knowledge and resources from multiple disciplines to improve the performance, production, profitability, and environmental sustainability of high value crops.

Learning Outcomes Goals

The Horticulture Graduate Programs have several outcome goals for student learning. Upon graduation, students in the Horticulture Graduate Programs should be able to:

1. Understand the importance of relevant aspects of horticultural management, sustainability and social relevance, plant growth and development, and environmental systems
2. Acquire sufficient quantitative and qualitative analytical and critical thinking skills to be effective and self-motivated problem solvers. For the PhD program, develop testable ideas that contribute creatively to the body of knowledge in the field
3. Effectively communicate scientific concepts, principles, and problem solving in public, professional, and academic environments
4. Conduct a thorough scientific literature search and effectively synthesize the material, and write a properly cited literature review and a defensible proposal for a research project
5. Understand and participate in the process of responsible conduct of research, peer review, manuscript publication, and grant proposal writing
6. Engage in scholarly, independent and defensible research with the guidance of a faculty committee

Graduate Student Responsibilities

Learning, adhering to, and completing the graduate program requirements for the M.S. and/or Ph.D. degrees is the responsibility of the student, in partnership with guidance from the student's academic advisor, Advisory Committee, and the Horticulture Graduate Programs Committee (GPC). *The Horticulture Graduate Handbook summarizes the departmental policies, requirements,*

paperwork, and timelines related to graduate education. Graduate students should retain a copy (either electronic or printed) of the Handbook for guidance and reference throughout their graduate careers.

The graduate student should submit and maintain correct and up-to-date records with their faculty advisor and the Graduate Programs Assistant. The student, the faculty advisor and the Advisory Committee will plan the Program of Study as well as the M.S. Plan A thesis (or M.S. Plan B study) or Ph.D. dissertation research. The faculty advisor is the student's most important advisor in the graduate degree program, and should be kept informed of activities, progress, data, and challenges. Advisory Committee members serve a valuable function in guidance and research experience. Regular contact with the faculty advisor and Advisory Committee helps prevent miscommunications and/or mismatched expectations at a later date.

The Graduate Programs Committee and the Horticulture Organization of Graduate Students are jointly responsible for an annual Orientation program for all new students. This program is held prior to the beginning of each Fall semester (mid- to late-August), and attendance is **required** for all new students or continuing students who have not yet participated. Important departmental, college, and university policies, including those regarding program academic requirements, safety procedures, and ethical conduct of graduate research, are covered during the Orientation program.

Graduate Program Components and Plan Options

M.S. in Horticulture, Plan A

Graduate students in a Plan A Master's program must complete prescribed courses and conduct original research, under the supervision of the faculty advisor and the Advisory Committee, on a selected problem related to Horticulture. A review of the literature in the selected area of study and written research proposal should precede the experimental work. The data collected must be analyzed, interpreted, presented, submitted to, and accepted by the Graduate School according to their recommendations/format.

M.S. in Horticulture, Plan B

Graduate students in a Plan B Master's program must complete prescribed courses and conduct an in-depth study, under the supervision of the faculty advisor and the Advisory Committee, on a selected problem related to Horticulture. A review of the literature in the selected area of study should precede the development of a comprehensive research report, in lieu of an experimental research-based thesis. A Plan B Master's degree is expected to be a terminal degree, not suitable for students planning to continue their education in a doctoral program.

Ph.D. in Horticulture

Graduate students in a Doctoral program must complete prescribed courses and conduct original and innovative research, under the supervision of the faculty advisor and the Advisory Committee, on a selected problem related to Horticulture. A review of the literature in the selected area of study and written research proposal should precede the experimental work. The data collected must be analyzed, interpreted, presented, submitted to, and accepted by the Graduate School according to their recommendations/format.

Interdepartmental and Cross-Departmental Graduate Programs

Students in the Department of Horticulture may enroll in interdepartmental graduate programs, such as Plant Breeding, Genetics and Biotechnology (PBGB), Environmental Science and Policy (ESP), Ecology, Evolution and Behavior (EEB) or Molecular Plant Sciences (MPS). Students participating in such programs must satisfy all requirements for the Horticulture Graduate Program, but may also be subject to additional requirements for the specific interdepartmental graduate program.

Transfer from a M.S. to Ph.D. Program

A student who is participating in the MS program at MSU and desires admission to the PhD program should ask that their faculty advisor send a letter of acceptance, approved by the Department Chair and the Graduate Programs Director, to the Dean. This letter will constitute acceptance and will initiate the change in status on the student's record.

Direct Admission to Ph.D. without Completion of M.S.

Direct enrollment in a doctoral program by students who have only a bachelor's degree will be approved on a case-by-case basis during admissions by the GPC, with consideration given to the student's prior academic coursework, research experiences, and recommendation by their proposed faculty advisor.

II. Selection and Role of the Faculty advisor

Generally, the student's faculty advisor is determined before the student is admitted and enrolled in the graduate program, in accordance with the interests of the student and the availability and willingness of a faculty member to serve in that capacity. The faculty advisor will guide, challenge, mentor, and aid the student throughout all phases of the degree process. The faculty advisor should help in establishing the student's Advisory Committee (see below), the Program of Study (see below) and the topic of the graduate research project.

Changing faculty advisors

Should a situation arise in which the student feels compelled to change faculty advisors, before relations are severed with the initial academic advisor, the student must identify another faculty member who is willing to serve in that capacity. Any change must have the approval of the Department Chair, the Graduate Programs Director, and future academic advisor. Failure to do so may result in a request for the student to withdraw from graduate studies.

III. Selection and Role of the Advisory Committee

The role of the Advisory Committee is to provide expanded expertise and guidance to the graduate student in their academic preparations and conduct of original research. This committee assists the faculty advisor in advising the student regarding courses to be taken and research to be conducted; reviews and approves the student's thesis/dissertation research proposal (see below); and administers written and oral examinations to determine the student's level of competence. The faculty advisor serves as chair of the committee. For PhD students, a GPC member is Chair of the examining committee during comprehensive exams. **The Advisory Committee is responsible for ensuring the adequacy of the overall graduate training program.** Further information on the appropriate role of student-faculty mentoring and advisory relationships can be found in the MSU Research Integrity website (<http://grad.msu.edu/researchintegrity/>)

Committee members are chosen by the student with the approval of the faculty advisor. Proposed members must be submitted for approval on form (Appendix-2). The Advisory Committee for M.S. students shall comprise of three or more faculty members, including the academic advisor and at least one member from outside the Department of Horticulture. The Advisory Committee for PhD students shall be comprised of four or more faculty, with at least one member from outside the Department of Horticulture.

The Advisory Committee must be established during the first semester of enrollment (excluding summer semester) for M.S. students and during the first two semesters of enrollment (excluding summer semester) for Ph.D. students.

With the approval of the department chair, an exception may be granted to allow an Emeritus faculty member to serve as one of the four required faculty members on a doctoral student's Advisory Committee; in addition, an Emeritus faculty member may continue to serve as the chairperson of an Advisory Committee. Persons who are not MSU regular faculty who can contribute to the student's program also may serve as members of the Advisory Committee, with approval of the department chair and providing that the number of such persons does not exceed the number of regular faculty on the Committee. Contact the Graduate Programs Assisant for assistance.

A non-tenure stream faculty member can serve on the Advisory Committee upon approval by the Dean of the Graduate School. Requests should be made in writing and must include 1) a copy of the faculty member's vita along with a letter from the faculty member summarizing his/her background and qualifications to serve in this capacity and 2) a letter from the Department of Horticulture chair supporting the request to serve in this capacity, with a supporting signature from the Dean of the College of Agriculture and Natural Resources.

Once the guidance committee is designated, **the student has the responsibility to call all members to meet at least once to review and oversee the student's progress.** A graduate student may change the membership of the Advisory committee with the approval of the Graduate Programs Director. MS students should complete a Change in Committee Member form (Appendix-2) and for Ph.D. students update the committee form on Grad Plan and submit for approval. The unit also may change the Committee membership with the concurrence of the graduate student in accordance with University, College, and Departmental policies. The membership of the Committee may be changed as appropriate for changes in the dissertation topic. Advisory Committee members on leave shall provide for the necessary guidance of their advisees during their absence.

IV. Horticulture Graduate Degree Requirements

Table of Milestones and Timeframe for Graduate Program Completion Dates		
Requirement	MS Program Due:	Ph.D. Program Due:
Change of provisional admission status to regular enrollment.	No provisional admission except for international students – English language test scores	No provisional admission except for international students – English language test scores
Federal and University regulations and policies require that all research involving human or animal subjects must be approved.	Must be approved <u>before</u> the beginning of any research.	Must be approved <u>before</u> the beginning of any research.
Selection of Advisory Committee (Appendix-2).	During the 1 st semester of enrollment	During the 1 st or 2 nd semester of enrollment.
Schedule an Advisory Committee meeting to develop and submit the Program of Study .	By the end of the 1 st semester of enrollment (excluding Summer semester (Appendix-6)	By the end of the 2 nd semester of enrollment (excluding Summer semester-Appendix-10)
Prepare and submit research proposals to Advisory Committee and GPC.	Within one (1) year of initial enrollment (Appendix 8)	Within two (2) years of initial enrollment (Appendix 11)
Complete and submit 1 st year graduate student experience form (Appendix 4).	As early as possible in the 1 st year for new students	As early as possible in the 1 st year for new students
Prepare and submit Semester Progress Report	Before the end of each Spring and Fall semesters.	Before the end of each Spring and Fall semesters.
Complete written and oral comprehensive examinations. <i>Notification of oral exam needs to be given to Graduate Program Assistant at least 8 days prior to date of exam.</i>	N/A	No later than the end of the third year of enrollment
Announcement to all faculty of the comprehensive examination (Appendix-12).	N/A	At least 8 days before Oral Comprehensive Exam.
Thesis or dissertation defense	At least four weeks before the end of the semester. See Graduate Programs Assistant.	At least six weeks before the end of the semester. See Graduate Programs Assistant.
Submission to faculty advisor-approved comprehensive research report, thesis or dissertation to Advisory Committee for review.	At least 2 weeks before date of thesis defense/exam.	At least 2 weeks before date of dissertation defense.
File Final Examination form and abstract with Graduate Program Assistant	At least 8 days before defense. (Appendix-9)	At least 8 days before defense. (Appendix-13)
Submission of thesis or dissertation to Graduate School.	See Graduate Program Assistant for exact semester deadline.	See Graduate Program Assistant for exact deadline.
Completion of Masters or Doctoral Program.	Within 5 years from first enrollment in the M.S. program.	Within 8 years from first enrollment in the Ph.D. program.

Students Admitted Provisionally

International students admitted provisionally due to language deficiencies can be issued an I-20 for language studies only. This I-20 is limited to a maximum of 2 years. The student would need to be tested at the English Language Center upon arrival and begin studying in the English level determined by that test. Once the student meets the departmental requirements for language, the student may be issued a degree-seeking I-20. If the student has not met the stated language proficiency requirement for department/program admission at the end of two years, the student cannot continue to enroll for courses.

Establishing the Program of Study

The Program of Study consists of the prescribed course work and research to be performed by the student during the completion of the graduate degree (MS-Appendix-6 or PhD in GradPlan-Appendix 10). The programs of study are to be reviewed by the Graduate Programs Committee (GPC) prior to submission in GradPlan. Each program will vary considerably depending on the student's background, interests and areas of research. The Program of Study should be developed with two goals in mind:

- 1) to provide the necessary tools to carry out the thesis or dissertation research, as well as future professional and scientific endeavors;
- 2) to provide a strong background for the student's vocational interest.

A change in the Program of Study for MS students, requires completion and approval of an Academic Program Change form (Appendix-7). Ph.D students change of program needs be entered in GradPlan and approved.

Graduate Courses - Selected Graduate Courses

The Horticulture Graduate Program curriculum offers considerable flexibility in student course work. The Department recommends that, at minimum, all Horticulture MS and PhD students undertake graduate academic coursework or equivalent experiential learning related to (1) Production, storage and/or marketing of horticultural crops and (2) Plant growth, development and physiology. In addition, it is recommended that students are trained in approaches and methods in computational/quantitative biology, statistics, scientific communication, and research/analytical techniques. This training can take place while in the Program or from previous education. Other courses relevant to the student's research interests may be chosen in consultation with the guidance committee. Below is a list of courses that are most often taken by Horticulture graduate students. This list is not inclusive, as other courses are available in related disciplines. Additional courses often taken by Horticulture graduate students are listed in the Horticulture Graduate Programs website

Production, storage and/or marketing of horticultural crops courses

- HRT 403: HANDLING AND STORAGE OF HORTICULTURAL CROPS
- HRT 404: HORTICULTURAL MANAGEMENT
- HRT 405: SUSTAINABLE PRACTICES FOR HORTICULTURAL FOOD CROP PRODUCTION
- HRT 407: HORTICULTURE MARKETING
- HRT 411: LANDSCAPE CONTRACT MANAGEMENT
- HRT 430: EXPLORING WINES AND VINES
- CSS 424: SUSTAINABLE AGRICULTURE AND FOOD SYSTEMS: INTEGRATION AND SYNTHESIS
- CSS 431: INTERNATIONAL AGRICULTURAL SYSTEMS
- CSS 488: CROPPING SYSTEMS

Plant growth, development and physiology

- HRT 401: ADVANCED HORTICULTURAL CROP PHYSIOLOGY
- HRT 853: PLANT MINERAL NUTRITION
- HRT 863: ENVIRONMENTAL PLANT PHYS
- HRT 865: PLANT GROWTH AND DEVELOPMENT

- PLB 415: PLANT PHYSIOLOGY
- PLB 434: PLANT STRUCTURE & FUNCTION

Computational/quantitative biology

- HRT 841: FOUNDATIONS IN COMPUTATIONAL AND PLANT SCIENCES
- CMSE 890: SELECTED TOPICS IN COMPUTATIONAL MATHEMATICS, SCIENCE, AND ENGINEERING
- CSS 844: FRONTIERS IN COMPUTATIONAL AND PLANT SCIENCES
- PLB 400: INTRODUCTION TO BIOINFORMATICS
- PLB 810: THEORIES AND PRACTICES IN BIOINFORMATICS
- PLB 843: FORUM IN COMPUTATIONAL AND PLANT SCIENCES

Statistics

- ANS 824: RESEARCH METHODS OF QUANTITATIVE AND MOLECULAR GENETICS AND GENOMICS
- IBIO 830: STATISTICAL METHODS IN ECOLOGY AND EVOLUTION I
- IBIO 831: STATISTICAL METHODS IN ECOLOGY AND EVOLUTION II
- STT 464: STATISTICS FOR BIOLOGISTS
- STT 814: ADVANCED STATISTICS FOR BIOLOGISTS
- STT 855: INTRODUCTION TO STATISTICAL GENETICS

Scientific Communication

- HRT 860: SCIENTIFIC WRITING: WORKSHOP
- CSUS 433: GRANT WRITING AND FUND DEVELOPMENT

Research and Analytical Techniques

- HRT 812: LABORATORY RESEARCH TECHNIQUES
- NSC 810: LABORATORY- BIOLOGICAL SCIENCE TRANSMISSION ELECTRON MICROSCOPY
- NSC 820: LABORATORY- SCANNING ELECTRON MICROSCOPY AND ENERGY DISPERSIVE X-RAY MICROANALYSIS
- NSC 837: LABORATORY - LASER SCANNING CONFOCAL MICROSCOPY

Seminar Courses

- HRT 894: HORTICULTURE SEMINAR
- HRT 892: PLANT BREEDING AND GENETICS SEMINAR

Program of Study for M.S.

1. The Program of Study will be developed initially through consultation between the academic advisor and the student. Courses to be taken should fit into a unified plan aimed at providing the student with a comprehensive background in the chosen area of interest. Initiative in program design by the student is encouraged. The program should be presented at the initial meeting with the Advisory Committee.
2. Course and research credit requirements are as follows:
 - a. At least 30 credit hours beyond a B.S. degree.
 - b. More than half (16) of these credits must be in courses at the 800 or 900 level, including research.
 - c. A minimum of three (3) credit hours of 800 level courses in Horticulture (not including HRT 894 or HRT 899).
 - d. At least one (1) credit hour of Horticulture Seminar (HRT 894) or another graduate seminar approved by their advisory committee.

- e. Research credits for Plan A (HRT 899) may vary from six to ten (6 to 10) depending on the thesis problem selected. Research credits for Plan B (HRT 898) may vary from two to six (2 to 6).

Courses below 300 cannot fulfill the credit requirements stated under (2a) above; they may be taken as collateral courses to meet minimum requirements or background deficiencies. Courses numbered 300-399 are allowed only upon written permission from the Associate Dean of the College. For the M.S. degree, a minimum of six (6) credits must be earned in residence on campus. A year of residence consists of two semesters, involving completion of at least three (3) credits of graduate work each term.

Program of Study for Ph.D.

3. The Program of Study will be developed initially through consultation between the academic advisor and the student. Initiative in program design by the student is encouraged. It should be presented at the initial meeting with the Advisory Committee.
4. Course and research credit requirements are as follows:
 - a. The Advisory Committee will consider the background, research needs, and desires of each student to determine required coursework. All students using University services must be registered each semester for a minimum of one (1) credit hour of research (HRT 999).
 - b. At least two (2) credits of Horticulture Seminar (HRT 894) or another graduate seminar approved by their advisory committee.
 - c. A minimum of 24 and a maximum of 36 research credits (HRT 999).

For the PhD degree, one year of attendance on campus beyond the M.S. degree is required. A year of residence/attendance consists of two semesters, involving completion of at least three (3) credits of graduate work each term.

Submission of the Program of Study

Upon approval by the academic advisor and guidance committee, all students should submit the Program of Study to the Graduate Programs Committee for review and suggestions before formal submission to the Associate Dean for Academic and Student Affairs for approval. PhD students must upload their Program of Study to GradPlan. Approval by the Graduate Programs Director and the Associate Dean formalizes the student's Program of Study as a requirement for the degree.

The MS Program of Study must be submitted to the Horticulture GPC and approved by the Dean's office before the beginning of the second semester of enrollment (excluding summer semester). The PhD Program of Study must be submitted to the Horticulture GPC and approved through GradPlan by the end of the second semester (excluding summer). Ph.D. students need to complete the Advisory Committee form (appendix-2). GradPlan was developed for Ph.D. students to lay out their Ph.D. program of study, record faculty approval, and make notes on all the degree requirements as they are completed. **GradPlan is the only way final degree certification/degree audit will be conducted.** The Graduate School will certify the acceptance of each dissertation final format using GradAudit. The Graduate Secretary or other department or college level designee has the final GradAudit sign off. The Office of the Registrar and the department will access Degree Audit to complete degree certification once a student completes an application for graduation and all degree requirements are met. GradPlan, GradInfo and GradAudit help guides may be found at: <https://gradinfo.msu.edu/help.asp>. The student is responsible for determining that all necessary steps are completed by the appropriate date. **A hold will be placed on the student's registration if deadlines are not met.**

The academic advisor must submit, with Advisory Committee approval, any subsequent program changes in writing to the Associate Dean through the Horticulture Graduate Programs Director (Appendix-7).

Transfer Credits

Graduate credits earned at another institution may be transferred to Michigan State University for the M.S. (maximum of nine semester credits) or Ph.D. degree in partial fulfillment of the requirements. Credit acceptance is determined by the faculty advisor and Advisory Committee and must be approved by the Department and the CANR Associate Dean. The credits must be appropriate to the degree and earned within

the time limits given above. The credits must not have been used toward another degree. A "credit evaluation form" must be filed with the Program of Study. This evaluation may result in credits transferred being less than credits earned. (See University Graduate Studies Catalog).

Work in Absentia

Courses taken at MSU affiliated programs are of equal value to on-campus courses. Courses taken should have prior approval of the academic advisor, Department Chair and CANR Associate Dean. Courses taken without approval may or may not be accepted for credit. Work in absentia may be done with Advisory Committee approval.

Research may be performed at off-campus sites as well, ranging from affiliated sites such as experimental stations and farms to arrangements with private horticultural producers to research conducted in foreign countries. For graduate students traveling abroad for research or attendance at conferences, several travel-related MSU resources should be consulted for issues related to safety, health risks, immunizations, transport of university materials, etc. These include:

- MSU Travel Clinic (<http://travelclinic.msu.edu>)
- MSU International Studies and Programs:
(<http://oihs.isp.msu.edu/international-travelers/registration>)

Departmental (Non-Credit) Seminars

All students are expected to attend and participate in departmental seminars.

Deferred Grades (DF)

The required work must be completed and a grade reported within 6 months, with the option of a single six-month extension. If the required work is not completed within the time limit, the DF will become U (Unfinished) and will be changed to DF/U under the numerical and Pass-No Grade (P-N) grading systems, and to DF/NC under the Credit-No Credit (CR-NC) system. This rule does not apply to graduate thesis or dissertation work.

Readmission After Program Interruption

Graduate students whose enrollment at MSU is interrupted for any reason so that they have not been enrolled for three consecutive semesters, including the summer sessions, must apply for readmission via the web at <https://www.reg.msu.edu> at least two months prior to the first day of registration for the semester in which the student expects to resume graduate studies. Faculty will evaluate the application to determine admission. (<https://reg.msu.edu/StuForms/ReAdmission/Readmission.aspx>)

Graduate Research Proposal

All graduate students must conduct original research, under the supervision of the academic advisor and the Advisory Committee, on a selected problem related to Horticulture. The Department of Horticulture requires all MS and PhD students to write an acceptable Thesis/Dissertation Research Proposal as part of their graduate program. The research proposal must be approved by their committee and be submitted in pdf format to the Graduate Program Assistant along with the research proposal form signed by their committee (MS-appendix 8, PhD-appendix 11). Such proposals should include the Seven Essential Elements of a scientific research proposal (see below). The Research Proposal is not an exact blueprint of all research that may be conducted during the course of the doctoral program, since results from initial or preliminary experiments may dictate alteration of the hypothesis, methodology, or design. Rather, it must demonstrate a sufficient level of understanding of the researchable problem, the appropriate methodology, and scientific rationale to be approved by the student's Advisory Committee for scientific content and by the GPC for the Essential Elements (see Research Proposal Requirement forms). Failure to do so will result in an "unacceptable" evaluation on the semester report, and two consecutive such evaluations may result in

termination (see section VII – Minimum Academic Standards for Continued Enrollment). The experimental data collected must be analyzed, interpreted, and presented in the form of a bound thesis (M.S.) or dissertation (Ph.D.). (Candidates for the M.S., Plan B, must submit a research report in lieu of a thesis).

The Seven Essential Elements of a Masters or Ph.D of Science Research Proposal

A baseline expectation for all MS-Plan A and PhD students associated with the MSU Department of Horticulture is that they develop a brief research proposal that addresses each of the following elements pertinent to developing scientific research skills:

- 1) one or more testable hypotheses
- 2) clear research objectives
- 3) rationale for the proposed research, including a scientific literature review and, if available, preliminary data
- 4) feasible proposed research methodology
- 5) expected outcomes
- 6) potential impact
- 7) pertinent literature citations

The research proposal, to be developed in close consultation with the faculty advisor, should clearly identify each of the Seven Essential Elements. Students are encouraged to adopt a proposal format similar to that defined for actual research proposals to (e.g.,) NSF or NIFA. The Project Description should provide a clear statement of the work to be undertaken and must include: objectives for the period of the proposed work and expected significance; relation to longer-term goals of the PI's project; and relation to the present state of knowledge in the field, to work in progress by the PI under other support and to work in progress elsewhere. The Project Description should outline the general plan of work, including the broad design of activities to be undertaken, and, where appropriate, provide a clear description of experimental methods and procedures. Proposers should address what they want to do, why they want to do it, how they plan to do it, how they will know if they succeed, pitfalls and alternative strategies, time-line of proposed research aims and what benefits could accrue if the project is successful. The project activities may be based on previously established and/or innovative methods and approaches, but in either case must be well justified. These issues apply to both the technical aspects of the proposal and the way in which the project may make broader contributions.

The proposal should be reviewed and approved by the student's graduate advisory committee within one year of initial enrollment in the M.S. program and within 2 years of initial enrollment in the Ph.D. program. The Graduate Advisory Committee should assure that the above seven elements are addressed clearly and adequately in the submitted research proposal. Following Advisory Committee approval, the research proposal, should be submitted to the Graduate Programs Committee (see submission form in Appendix-11) for inclusion in the student's file records, at which time it also will be reviewed by the GPC solely to confirm that the essential elements have been addressed. If there is an omission or inadequacy in the essential elements, the GPC will return the proposal to the student and faculty advisor and identify the element that fails to adhere to departmental expectations. The student will be required to correct the proposal within a specified time in order to continue making adequate progress towards the completion of their graduate program.

Responsible Conduct of Research

Responsible conduct of research (RCR) is required for all those involved in research at Michigan State University. All graduate students currently in the Department of Horticulture, including those admitted prior to Spring 2017, are required to undergo formal RCR training. Departmental training requirements conform to University requirements, outlined at <https://grad.msu.edu/researchintegrity>:

Year 1: - All graduate students

All MS and PhD students complete four basic Collaborative Institutional Training Initiative (CITI) online modules within the first year of enrollment:

1. Introduction to the Responsible Conduct of Research
2. Authorship
3. Plagiarism
4. Research misconduct

The modules are included in the *Stage 1 - Basic Course* section of the CITI program. Access to CITI requires login through <https://grad.msu.edu/researchintegrity>. Completion of all CITI modules is tracked automatically using the SABA software system.

Year 2: All MS-Plan A and PhD students

Within the first two years of enrollment, MS-Plan A and PhD students complete three required CITI training modules.

1. Collaborative Research
2. Conflicts of Interest
3. Data Management

These are included in **Supplemental Modules** within the *CITI Stage 1-Basic Course* section.

Year 3 and subsequent years: PhD students

Beginning in the third year of study, PhD students complete three hours of 'annual refresher training'. Annual refresher training can include additional CITI modules within the ***Basic Course-Supplemental*** section (Financial Responsibility, Mentoring, and Peer Review), as well as modules within the online ***CITI Conflicts of Interest*** and ***Biomedical Researchers*** sections. Annual refresher training can also include 'Discussion-based training' (see below).

By completion of program: All graduate students

All graduate students must complete at least six hours of **discussion-based training** prior to graduation. This requirement can be satisfied at any point during the program. Discussion-based training is defined as any activity focusing on RCR issues that involves discussion between trainer(s) and trainee(s).

Examples of discussion-based training include:

- University- and Department-sponsored RCR seminars
- Lab meetings focusing on RCR issues
- Readings and discussions of RCR-related books
- RCR-focused courses

Discussion-based training is tracked through GradInfo. Students use the RCR Tracking form included in the semester progress report package to update RCR training history; this is then entered into GradInfo by the Graduate Programs assistant.

Graduate research experimental designs, original data, and analyses should be archived in a bound laboratory notebook plus computer files, as appropriate. **The faculty advisor should have established research group procedures and standards for recording, storing, and presenting data.** Students should routinely back up all data in both their personal files/computers and in a common file/computer of the faculty advisor's designation.

Students should discuss both raw and analyzed data at regular intervals with their faculty advisors. Regular discussion of data is vital to successful analysis, interpretation, and ultimately peer-reviewed publication of experimental research. **The original data, notebooks, and files from all graduate work remains the property of Michigan State University, although copies may be made for graduating students to retain when they leave MSU.**

Graduate Teaching and Extension Experience

The Department of Horticulture strongly recommends that graduate students participate in a meaningful teaching and/or extension experience as a part of their graduate program. The intent of a graduate teaching experience is to provide students with an academic and professional opportunity to prepare and deliver an educational program that will enhance their overall qualifications and preparation for career opportunities. A common method of gaining a teaching experience is to develop a mentoring relationship with a faculty member or members involved in the teaching of an organized course or in the delivery of the educational program at a major extension function during at least one academic semester. Students are responsible for contacting faculty members to arrange for development of this voluntary teaching experience, during which the student will work in conjunction with the faculty in all aspects pertaining to the organization, conduct and evaluation of the course or program. Another option is ISE 870 (Teaching College Science). Generally, the time spent in a teaching experience will vary depending upon a student's background, experience, and course or program requirements, as negotiated with the faculty mentor. The primary responsibility for determining how the teaching experience is to be fulfilled rests with the student and his/her major professor, subject to the opportunities available with teaching mentors during the student's graduate career. Students may develop multiple teaching experiences or mix different types of teaching experiences, such as enrolling in ISE 870, developing a classroom teaching experience, and/or developing an extension teaching experience.

The Graduate School offers a certification program in College Teaching (<https://grad.msu.edu/certification-college-teaching-institute>). It is designed to help graduate students organize and develop their teaching experience in a systematic and thoughtful way, with assistance from faculty and campus offices and programs, in a manner similar to that already in place for research experience. As part of this program, participants will develop a teaching portfolio to highlight, organize and reflect upon their teaching experiences. Upon completion of the program, the student will receive an MSU Certificate in College Teaching from the appropriate department or college. A transcript notation will also be provided. International students whose native language is not English and who develop a teaching experience involving classroom lectures or other verbal guidance to and/or oversight of students should arrange to take the SPEAK test (<http://elc.msu.edu>) at the MSU English Language Center. If a student fails to pass the minimum all-University standard of English proficiency, he/she may not teach classes without the approval of the English Language Center.

Graduate Career and Professional Development

Students in the MSU Department of Horticulture Graduate program are expected to develop professional and leadership skills for their post-graduate careers. The MSU Graduate School offers a variety of resources towards this end, including workshops, activities, web links and contact people to help graduate students organize a wealth of available information according to different phases of their graduate program (<http://grad.msu.edu/>). The **PREP** website (<http://grad.msu.edu/prep/>) focuses on four professional skills that are key to career and professional development: **planning** throughout the graduate career to identify and successfully achieve career goals; developing **resilience** and tenacity to thrive through personal and professional stages; practicing active **engagement** in making important life decisions and in acquiring the skills necessary to attain career goals; and attaining high standards of **professionalism** in research and teaching. Employing these skills at every stage of the graduate program helps students to maximize their opportunities for professional growth, discover a fulfilling career path, and enhance their professional success.

Graduate students who must travel outside the U.S. to conduct required thesis or dissertation research should visit the "Travel Funding" website (<http://grad.msu.edu/travel/>) before their trip. See also additional information about graduate research travel in the Handbook section on "Integrity and Safety in Academic and Research Activities - Research Involving Travel or Transportation of Materials or Data".

V. Thesis/Dissertation Preparation and Defenses, Comprehensive and Final Oral Examinations

Publishing of Theses/Dissertations

The instructions for electronic submissions of Thesis or Dissertation are available at the MSU Graduate School webpage under Thesis and Dissertation submissions (<https://grad.msu.edu/etd/>).

The date for the FINAL APPROVAL of an electronic Thesis or Dissertation to the Graduate School for graduating the semester of that submission is FIVE working days prior to the first day of classes for the next semester. Be aware that a submission via ProQuest does not mean that the document has been ACCEPTED. The review process is interactive and final approval can take anywhere from a few hours to weeks, depending upon the extent of the necessary revisions and how diligent the author is when making the necessary revisions.

Graduation on the semester of the electronic submission is only guaranteed if the document is APPROVED on or before the target date for that semester.

Exit Survey: There is a short online exit survey for all students graduating with a Plan A or Plan B Masters or with a Doctoral degree. Only students who have applied for graduation will have access to the survey. The survey asks questions about educational experiences in MSU graduate programs, as well as about immediate professional plans. The Graduate School uses data from this survey when reviewing graduate programs and to guide decisions about services and initiatives for graduate students.

The identity of all respondents will be kept confidential and only aggregate (group) information will be made available to faculty and administrators. The students will receive an e-mail message from the Dean of the Graduate School with a link to the survey. However, students do not need to wait for that e-mail message to complete the survey after applying for graduation. It takes about 5-10 minutes to complete the online survey. Below are the instructions for completing the survey and they are also available from <http://grad.msu.edu/etd/>.

Instructions for students:

- Access one of the following websites:
 - Doctoral Students: <https://www.egr.msu.edu/doctoral/survey/>
 - Master's Students: <https://www.egr.msu.edu/masters/survey/>
- Enter your MSU NetID (Login Name) and Password
- Complete all the items on the survey. When finished, click Submit.

If you cannot open this survey, please e-mail: exitsurvey@grd.msu.edu and include your name, student ID #, degree level (PhD, MA/MS) and semester of graduation. You will then be notified when you are able to complete the survey.

University Policy About Dissemination of Graduate Students' Research

In keeping with MSU's public mission, the University requires that theses, dissertations and abstracts will become public after the conferral of the degree; embargoes can only be pursued for a limited period (see [1] below). Results that are subject to restrictions for dissemination by funding agencies (see [2] below) cannot be part of any document submitted as a thesis or dissertation to the Graduate School.

1 - Hold/embargo on publication of documents submitted to ProQuest:

Students submitting a thesis/dissertation to ProQuest now can request a hold/embargo of publication by ProQuest by contacting the Graduate School at msuetds.approval@grd.msu.edu. In response to the request, the Graduate School will send directly to the student a form that needs to be completed and turned to the Graduate School prior to submission of the document to ProQuest. The form needs to be signed by the

student's faculty advisor and by the Associate Dean of the student's college. The request for the hold/embargo may be for six months, one year or two years. Requests for a period longer than six months must include a written justification for the length of the hold/embargo.

2 - Graduate students' participating in University Research Organization (URO; <https://uro.egr.msu.edu/>):

Graduate students involved in a URO project will receive both written documentation and a verbal explanation of any limitations or implications to their current or future academic progress prior to participating on the project. Students engaging in work for a URO project undergo a 2-step approval process before hiring: a consultation with a representative of the URO's office to explain the restrictions on the project, and an interview with the Graduate School Dean or Dean's designee to discuss the relationship, if any, between their work as graduate students and their participation in the project. Students must be informed that results that are subject to restrictions for dissemination cannot be part of any document submitted as a thesis or dissertation. As part of their degree program, all graduate students must have research options to ensure the generation of appropriate results to fulfill the degree requirements, and to have data for professional development activities that are integral to their graduate education (e.g., presentations at conferences and research seminars).

Preparation of the Master's Thesis (Plan A)

The Master's thesis is based on original research conducted in partial fulfillment of requirements for the M.S. degree and is prepared under the supervision of the academic advisor. It must be approved by the Advisory Committee. The thesis may be written either in journal paper format, with each chapter prepared as an independent manuscript, or in the "classical" chronological style. Guidance for writing may be found in the *Michigan State University FORMATTING GUIDE for Submission of Master's Theses and Doctoral Dissertations* (<https://grad.msu.edu/etd/formatting-guide>).

A draft copy of the thesis that has been reviewed and approved by the academic advisor is given to each member of the Advisory Committee for review. **The thesis defense (final oral examination, see below) may be scheduled no earlier than two weeks after the draft has been given to committee members.** Students should keep in mind that more than one review by the Committee may be needed prior to full Committee approval. An abstract, not exceeding 150 words should be prepared. The final draft must be prepared for electronic submission to the Graduate School according to regulations prescribed in the *Michigan State University FORMATTING GUIDE for Submission of Master's Theses and Doctoral Dissertations* noted above. Information on distribution of the thesis, uploading to ProQuest and copyrighting can be found in the same publication.

All masters' theses will be uploaded as a PDF through ProQuest and the abstracts published in Masters Abstracts or Dissertation Abstracts and made available online (<http://libguides.lib.msu.edu/dissertations>). Online posting is considered by the University to be a form of publication but does not preclude printing the thesis in whole or in part as a journal article or monograph.

M.S. Final Oral Examination (Plan A Thesis Defense or Plan B Exam)

Prior to scheduling of the Plan A thesis defense (final oral examination) or Plan B final oral examination, all changes to the student's Program of Study must be approved and any incomplete or deferred grades (except HRT 898 or 899) resolved. The defense/examination should be scheduled after the thesis or project report has been reviewed by all members of the Advisory Committee and their suggestions have been incorporated, and no later than five (5) weeks before the end of the semester in which the candidate expects to graduate. **Students must be registered for at least one (1) credit hour during the semester of the final oral examination.** Term break is considered part of the previous semester.

For Plan A programs, the thesis must conform to University format as directed in the *Michigan State University FORMATTING GUIDE for Submission of Master's Theses and Doctoral Dissertations* (<https://grad.msu.edu/etd/formatting-guide>), and should not be bound prior to the exam. A departmental seminar based on the student's thesis research will precede the examination. Upon scheduling the seminar, a "Final Examination" form and a copy of the thesis abstract must be filed with the Graduate Program

Assistant at least eight (8) days before the examination. Faculty will be notified by the Graduate Program Assistant at least seven (7) days prior to the seminar and examination. **The oral exam may cover any course work taken, seminars given in the Department, the research project selected, and any related work.**

All members of the Advisory Committee must be in attendance throughout the student's seminar and final examination. If a Committee member must be absent, his/her designated substitute (approved by the Graduate Program Director) must attend. The thesis and the student's performance on the final oral examination must be approved by a positive vote by at least three-fourths of the voting examiners and with not more than one dissenting vote from among the regular MSU faculty members of the Advisory Committee. Within 48 hours after the conclusion of the exam, the faculty advisor shall submit a final examination form to the Graduate Program Assistant. Following the final examination, the thesis shall be modified as directed by the Advisory Committee and submitted for distribution as outlined in the *Michigan State University FORMATTING GUIDE for Submission of Master's Theses and Doctoral Dissertations*.

In the case of a defense failure, a student may be required to repeat the examination, but must wait at least one full semester, but not more than two, before doing so. If the second exam is not passed, the student will be required to withdraw from graduate studies in the Department of Horticulture. There is a five (5) calendar year time limit, from initial enrollment, for completion of the M.S. degree requirements.

Ph.D. Comprehensive Examination

A comprehensive knowledge of the student's major and related fields must be demonstrated to the Advisory Committee by written and oral examination. The Comprehensive Examination must be completed successfully for the student to be advanced to candidacy for the doctoral degree and therefore eligible to schedule their dissertation defense. Students must be registered during the semester(s) in which they take the Comprehensive Exam; they should pass **the exam no later than the end of the third year of enrollment**. It is expected that PhD students admitted with a prior MS degree or equivalent will take the exam earlier than this in their course of study. Scheduling of the written and oral exams and reserving the examining room, via the Graduate Program Assistant, is the responsibility of the student.

Ph.D. Written Comprehensive Examination

The written Comprehensive Exam must be taken and passed **at least two weeks prior to the oral exam**. The length of, and procedures for, the written examination will be determined by the Advisory Committee.

Ph.D. Oral Comprehensive Examination

Announcement of the date and time of the oral Comprehensive Exam will be made to the Horticulture faculty in writing by the Graduate Programs Assistant **at least seven (7) days prior to the exam**. Oral exams should not be scheduled later than 2:00 p.m. The student must provide the necessary information for the announcement to the Graduate Programs Assistant at least eight (8) days prior to the exam (i.e., 24 hours before the announcement is due). **The announcement must include the following statement: "All members of the comprehensive committee, or their designated representatives, must be present during the entire examination."** An Advisory Committee member who is unable to attend will name his/her representative, who must have prior approval by the Graduate Program Director or GPC member who will serve as Moderator of the oral Comprehensive Exam.

The oral Comprehensive Exam will be chaired by a member of the Graduate Programs Committee external to the Advisory Committee; he/she does not have voting privileges but shall moderate the Exam, determining the procedures to be followed, appropriate duration and breaks, etc. (see Moderator's Guidelines below) to ensure that the student is given a fair examination. Other (non-Advisory Committee) faculty members may attend the Examination, question the candidate, and discuss student performance, but they will be excused immediately prior to voting by the Advisory Committee, which has the responsibility to determine the criteria for successful passage of the Exam.

The potential outcomes of the Exam are 1) unconditional pass, 2) pass with recommended additional preparations, 3) fail with the potential for re-taking the Exam, or 4) fail with no potential for re-taking the Exam (a recommendation of termination of the graduate program). The Comprehensive Exam must be

passed with a maximum of one dissenting vote of the Advisory Committee. If the student does not pass but is accorded the potential for re-taking the Exam, the re-examination must be rescheduled after a minimum of one, and a maximum of two, semesters of additional study. A student may petition the Graduate Programs Committee for an extension in time under extenuating circumstances. An extension must have approval of the Dean and the Graduate School. A student may repeat the Comprehensive Exam only once; failure to pass a second examination within the time limits shall constitute dismissal from the graduate program. The Moderator of the oral Comprehensive Exam shall submit the Examination Decision Form to the Graduate Programs Assistant within 24 hours of the beginning of the oral Exam.

For students who were enrolled in the Spring and plan to take **their Comprehensive Exams** during the immediately following Summer semester, the department can request a waiver of the requirement that the student be enrolled for at least one credit the semester of **the Comprehensive Exam**. These requests are to be directed to the Graduate School and must be endorsed by the student's department and college.

The following moderator's guidelines have been adopted by the Graduate Program Committee and are to be made available before the comprehensive examination takes place.

Ph.D. Oral Comprehensive Exam – Procedures

Conduct and Moderation

Upon the scheduling (as outlined in Section V of the Graduate Handbook) of the Comprehensive Examination by doctoral students with the Graduate Programs Assistant, a copy (paper or electronic) of these guidelines is to be provided by the Graduate Programs Assistant to 1) the doctoral student, 2) each of the Advisory Committee members, and 3) the Graduate Programs Committee member who will serve as oral Exam Moderator/Chair. Prior to the Oral Exam, the Graduate Programs Assistant will provide the Record of Comprehensive Examinations (exam decision) form to the Moderator for recording the outcome of the Exam.

Charge to the Exam Moderator:

The role of the Oral Exam Moderator is to conduct the flow of the exam, helping to assure rigor and to advocate fairness in the communications between the Advisory Committee and the student candidate. The Moderator shall determine the order of questioning, the reasonable duration of overall questioning as well as that by each Committee member (and any attending faculty who are not members of the Advisory Committee), when to take breaks during the exam, etc. The Moderator may also ask questions of the candidate. Once the period of questioning (which is open-ended) reaches its logical conclusion, the Moderator shall excuse the candidate to leave the room momentarily, and then shall facilitate the faculty discussion of the student's performance, culminating in each Advisory Committee member's vote for 1) unconditional pass, 2) pass with recommended additional preparations, 3) fail with the potential for re-taking the exam, or 4) fail with no potential for re-taking the exam (a *de facto* recommendation of termination of the graduate program). The Comprehensive Exam must be passed with no more than one dissenting vote of the Advisory Committee. For any of the four outcomes enumerated above, any Committee member casting a "fail" vote must provide a brief written statement (as an addendum to the Record of Comprehensive Examinations form) regarding their decision, including the major deficiency(-ies) in the performance and any advice for the student's preparation towards an exam re-take if appropriate. The Moderator shall submit the Record of Comprehensive Examinations form (and the addendum, if necessary) to the Graduate Programs Assistant within 24 hours of the beginning of the oral exam.

Charge to the Advisory Committee:

The student comes before you as a candidate for the Doctor of Philosophy - thus, not a doctorate of horticulture per se, or biochemistry, or molecular genetics, etc. To be sure, competency in the student's overall coursework and in their research area is of utmost importance and should be rigorously examined. However, competency in broader aspects and issues of the plant sciences, the sciences in general, and indeed, philosophy and matters of current events or importance to a global perspective are not only fair game, but can and should be rigorously explored as well. During the student's Oral Examination, their academic advisor's role is that of Advisory Committee member, not as Exam Moderator or Chair. Other faculty members may attend the Examination, question the candidate (adhering to the Moderator's conduct

of the Exam), and discuss student performance if desired, but such faculty guests will be excused by the Moderator immediately prior to voting by the Advisory Committee.

Charge to the Ph. D. Candidate:

The goal of the Doctoral Comprehensive Examination is to determine what you know and how much you know, including the limits to your knowledge. Thus, there may be times when you don't know an answer or, indeed, there may not be a clear-cut correct answer. In these cases, your Examining Committee will evaluate how you think, problem solve, put together a coherent train of thought to draw upon what information is available to you and move towards a state of greater knowledge, particularly when simple memorization of facts is not sufficient for arriving at your answer.

Thus, it is acceptable (and sometimes imperative) to acknowledge that you don't know an answer; yet, be prepared for the questioner to continue to have you pursue moving beyond your acknowledgment of having no ready answer. It is acceptable (and sometimes imperative) to rephrase the question back to the questioner, to be clear about what is being asked. It is acceptable to go to the blackboard as you or the Examining Committee deem necessary to work through a biochemical pathway, to graph a cause and effect response, or to sort out a logical flow of information.

General Flow of the Oral Exam:

The general flow of the Oral Exam is at the discretion of the Moderator. For example, the Moderator may ask the doctoral student for their preference of order for questioners. The order of questioning by Advisory Committee members should take precedence over that by any guest faculty members. Most Oral Exams are comprised of at least two rounds of questions by each Committee member - for example, each questioner can pursue their initial line of questions until they are satisfied or until the Moderator determines that it is time to move on. Any Committee member or guest faculty can join in the follow-up to questions even if they did not ask the original question. Generally, Moderators may attempt to go through the entire Committee's first round of questions before taking a break, but a break should be taken earlier if any Committee member or the student or the Moderator so desire. There will be a second opportunity, and more if needed, for each Committee member to pose additional questions beyond the "first round", until the entire Committee and the Moderator is satisfied with the rigor and content of the Exam.

Preparation of the Doctoral Dissertation

The Doctoral dissertation is based on original research conducted in partial fulfillment of requirements for the Ph.D. degree and is prepared under the supervision of the faculty advisor. It must be approved by the Advisory Committee. The dissertation may be written either in journal paper format, with each chapter prepared as an independent manuscript, or in the "classical" chronological style. Guidance for writing may be found in the *Graduate School Guide to the Preparation of Master's Theses and Doctoral Dissertations* (<https://grad.msu.edu/etd/formatting-guide>).

A copy of a draft of the dissertation that has been reviewed and approved by the faculty advisor is given to each member of the Advisory Committee. The dissertation defense (final oral examination, see below) **may be scheduled no earlier than two weeks after the draft has been given to committee members.** Students should keep in mind that more than one review by the Committee may be needed prior to full Committee approval. An abstract, not exceeding 350 words should be prepared. The final draft must be prepared for electronic submission to the Graduate School according to regulations prescribed in the *Michigan State University FORMATTING GUIDE for Submission of Master's Theses and Doctoral Dissertations* noted above.

All doctoral dissertations and masters theses will be uploaded as a PDF through ProQuest and the abstracts published in Masters Abstracts or Dissertation Abstracts and made available online (<http://libguides.lib.msu.edu/dissertations>). Online posting is considered by the University to be a form of publication but does not preclude printing the thesis in whole or in part as a journal article or monograph.

Definition of "Full Time Status" during dissertation research and preparation: A minimum of 1 credit per semester is necessary for doctoral students who: 1) have successfully completed all comprehensive examinations and are actively engaged in dissertation research or preparation, or 2) are doing department-approved off-campus fieldwork related to preparation of their dissertation.

Ph.D. Final Oral Examination (Dissertation Defense)

Prior to scheduling of the dissertation defense (final oral examination), all changes to the student's Program of Study must be approved and any incomplete or deferred grades (except HRT 898 or 999) resolved. The defense/examination should be scheduled after the dissertation has been reviewed by all members of the Advisory Committee and their suggestions have been incorporated, and no later than five (5) weeks before the end of the semester in which the candidate expects to graduate. Students must be registered for at least one (1) credit hour during the semester of the final oral, including Summer semester. Term break is considered part of the previous semester.

The dissertation must conform to University format as directed in the *Michigan State University FORMATTING GUIDE for Submission of Master's Theses and Doctoral Dissertations* (<https://grad.msu.edu/etd/formatting-guide>), and should not be bound prior to the exam. A departmental seminar based on the student's dissertation research will precede the examination. Upon scheduling the seminar, a "Final Examination" form and a copy of the dissertation abstract must be filed with the Graduate Program Assistant at least eight (8) days before the examination. Faculty will be notified by the Graduate Program Assistant at least seven (7) days prior to the seminar and examination. **The oral exam may cover any course work taken, seminars given in the Department, the research project selected, and any related work or issues pertinent to academia, science, and society as befits the earning of a Ph.D. (doctorate of philosophy).**

All members of the Advisory Committee must be in attendance throughout the student's seminar and final examination. If a Committee member must be absent, his/her designated substitute (approved by the Graduate Program Director) must attend. The dissertation and the student's performance on the final oral examination must be approved by a positive vote by at least three-fourths of the voting examiners and with not more than one dissenting vote from among the regular MSU faculty members of the Advisory Committee. Within 48 hours after the conclusion of the exam, the faculty advisor shall submit a final examination form to the Graduate Program Assistant. Following the final examination, the dissertation shall be modified as directed by the Advisory Committee and submitted for distribution as outlined in the *Michigan State University FORMATTING GUIDE for Submission of Master's Theses and Doctoral Dissertations*.

In the case of a defense failure, a student may be required to repeat the examination, but must wait at least one full semester, but not more than two, before doing so. If the second exam is not passed, the student will be required to withdraw from graduate studies in the Department of Horticulture. The time limit for completion of the Ph.D. degree is eight (8) calendar years from initial enrollment.

Final Certification of Degree Requirements

The candidate must indicate that he/she expects to complete their graduate degree requirements during registration for their anticipated final semester. For M.S. students, the Degree and Certification form is submitted to the Graduate Program Assistant, who will verify that all requirements are complete and return the form to the Degree Certification Office. Ph.D. students, the degree verification is done via GradPlan once the dissertation has been submitted and accepted by the Graduate School.

The following information is included on the final certification:

1. Names of Advisory Committee members (Ph.D. only)
2. Date of passing comprehensive examination (Ph.D. only)
3. Date of thesis or dissertation acceptance
4. Date of final examination
5. All courses, with grades, on the Program of Study, including grades for research credits for M.S. candidates

VI. Minimum Academic Standards for Continued Enrollment

Graduate program academic standards include grade point average (GPA); demonstrated ability for designing, conducting, and analyzing research; competency in major field of study; and rate of progress toward the degree. The minimum academic standard for course work (excluding research credits) is an overall GPA of 3.0. Courses in which a grade below 2.0 is earned must be repeated. **A graduate student whose GPA falls below a cumulative 3.0 for more than one semester may not hold an assistantship; students with a cumulative GPA below 3.0 for two consecutive semesters may be terminated (see next paragraph).** For graduation, a GPA of at least 3.0 in prescribed courses (the Program of Study), exclusive of collateral courses and research, is required.

Continued enrollment in a graduate degree program without suitable and necessary academic progress for retention is an expensive disservice to a student and the faculty. Judgment regarding semester progress (see below) is made by the faculty advisor, with additional input by the Advisory Committee, and is reported to the Graduate Programs Committee. **If minimum standards are not met, the GPC may recommend termination** (in writing, with a copy to the student and the student's faculty advisor) to the Department Chair, who will meet with the student and their faculty advisor to discuss circumstances and appropriate options. Such a recommendation from the GPC will serve as a written warning to the student prior to any formal dismissal actions, as required by MSU Graduate Student Rights and Responsibilities (GSRR 2.4.9). As warranted, the Department Chair may terminate the student or request their withdrawal (similarly subject to the appropriate procedures in accordance with the GSRR document, (<http://splife.studentlife.msu.edu/graduate-student-rights-and-responsibilities>)).

The student's departmental graduate file can be reviewed at any time by the student in the presence of the Graduate Programs Assistant but may not be removed from the Horticulture Graduate Office. Each student's file typically contains their admissions paperwork, their semester progress reports, their Program of Study and other forms relating their graduate program requirements including comprehensive and defense examinations, their semester grades, paperwork relating to assistantships and/or fellowships, awards, and all other communications pertinent to their graduate program and progress. Students have the right to challenge the accuracy of any materials held within the file by submitting a letter of challenge to be included in their file.

Semester Progress Reports

Semester progress reports are to document progress made toward the degree. A request for these reports and a template provided will be sent out at the end of each semester (Fall and Spring, not required for Summer).

Conflicts and Grievance Issues

Students experiencing conflicts with their faculty advisor, an instructor, a faculty or staff member, a fellow student, etc. should first attempt to meet with the party to discuss and resolve the issue in question. Participation in the periodic Conflict Resolution Workshops offered by the Graduate School and/or the MSU Ombudsperson (<https://ombud.msu.edu>) is also recommended for strategies to resolve or avoid conflicts. If resolution between parties is not achieved sufficiently, the student may then request a meeting with the Chair of the GPC, the Department Chair, or in appropriate cases, the Ombudsperson. If informal means do not settle a conflict, a formal grievance may be filed with the department chairperson who will then follow standard university grievance procedures. A formal grievance must be initiated by the midpoint of the semester following that semester in which the grievance is perceived.

VII. Integrity and Safety in Academic and Research Activities

Academic Integrity

The consequences of plagiarism, data fabrication and/or manipulation, and other forms of academic dishonesty are severe, ranging from failure of courses to termination of enrollment to revocation of degrees already issued (for further examples, see <https://www.msu.edu/unit/ombud/academic-integrity/index.html> or <https://grad.msu.edu/researchintegrity>). Vigilance with regard to academic integrity is ever more critical with the ubiquitous use of personal computers and the internet for information searches, file scanning, word processing, data entry and analysis, etc. While citation of sources of information remains essential, **it is also critical for students to interpret and re-state all cited information in their own words**; “blocking and pasting” in word processing programs and/or the changing of a few words in an otherwise original sentence constitute common, yet serious, forms of plagiarism. Research ideas often evolve from readings of literature that can be cited and/or discussions with faculty and graduate colleagues that can be acknowledged. **It is better to err on the side of magnanimously including other peers in the scientific evolution of your ideas and research approaches**, which will likely lead to increased recognition of your own intellectual collegiality and innovativeness, rather than risk omitting a peer scientist or colleague who has influenced your thoughts and experiments.

As noted earlier, maintaining a detailed and up-to-date bound research notebook provides an important component of the scientific method. Such notebooks are invaluable for documenting the evolution of ideas and hypotheses, the design of experiments, the acquisition of raw data, and the interpretation of analyzed data. **Students are advised to back-up their electronic data files regularly and must discuss archiving of their data with faculty advisor by end of each semester** (required on the Semester Progress evaluation form). If research notebooks are not retained at all times in the laboratory, students must be ready to present and review their notebooks with their faculty advisors at all times. Failure to do so can result in an unacceptable semester evaluation, with the due consequences outlined previously.

Reaffirmation of Commitment to Intellectual Honesty and Integrity

Below is an action taken by the University Graduate Council which appears in the minutes of the Council dated March 3, 1980. In order to make it more visible, it was requested by the MSU Council of Graduate Students (COGS) that this be distributed to deans and department chairs:

WHEREAS academic excellence requires intellectual honesty; and

WHEREAS the publication of someone else's intellectual efforts including that of graduate research assistants as one's own is intellectual dishonesty; and

WHEREAS the Academic Freedom Report, Section 2.1.2. states in part that the instructor "should avoid exploitation of students for private advantage and should acknowledge significant assistance from them. He/she should protect students' rights as defined herein";

BE IT RESOLVED that graduate students be recognized in material published by members of the University community according to the significance of their contributions;

BE IT FURTHER RESOLVED that the University Graduate Council urges those students who believe their rights to have been violated by intellectual dishonesty, to make use of existing University procedures including the existing grievance procedure;

BE IT FURTHER RESOLVED that members of the University community who are aware of intellectual dishonesty see that the evidence is presented to the appropriate department chairperson and, if necessary for the protection of the student, to the college dean;

BE IT FURTHER RESOLVED that the University Graduate Council urges the president to direct deans, directors and chairpersons to give complaints of intellectual dishonesty their most immediate attention so that they may be resolved quickly and fairly.

In 2010, the Academic Council and Academic Senate revised the Integrity of Scholarship and Grades Policy (see): <https://msu.edu/unit/ombud/academic-integrity/>

Research Involving Human Subjects

Any research that involves asking individuals questions in a systematic manner (including not only surveys but such activities as panels for tasting or rating of horticultural products, etc.) requires prior approval by the University Institutional Review Board (IRB). Examples include asking a group of growers the same questions, asking students questions, or asking other individuals the same questions as might be found on a survey. The process requires the completion of some university approval forms, and the review process can take from 2 to 4 weeks. The instructions and forms are found at (<http://hrpp.msu.edu/>). Approval must be made prior to any data collection. If, in the planning of the project, there are no techniques developed to identify the individual respondents or tie respondents to particular answers (e.g., resulting in anonymous data collection), the expected data can be classified as “de-identified”. This is important since data analysis is considered to be part of the research process. Approval enables the research applicant to conduct activities for one year before termination paperwork or extension paperwork must be submitted. However, analysis and publication writing can be conducted on de-identified data once the termination paperwork has been submitted.

Research Involving Radiation, Chemicals, or Biological Agents

Nearly all graduate research studies in horticulture frequently involve some use of chemical, and less frequently biological or radioactive, agents in the course of laboratory, greenhouse, or field studies. The MSU Office of Environment Health and Safety (EHS) (<http://www.ehs.msu.edu>) oversees appropriate and required programs for training and certification of all individuals involved in the safe use and disposal of such agents, many of which are regulated at the federal level. **The consequences to the individual, faculty advisor, department, and university for improper use, storage, and disposal of such agents can be severe.** All students are introduced to the departmental safety officer(s) and briefed on the processes for interacting with EHS during the new graduate student orientation prior to Fall semester.

Research Involving Animals

Any ownership or use of animals for research, teaching, testing, or public outreach by or for MSU must first be approved by the Institutional Animal Care and Use Committee (IACUC). This process takes from 2 to 4 weeks. The instructions and forms are found at (<https://animalcare.msu.edu/iacuc/forms-and-guides.html>).

Research Involving Travel or Transportation of Materials or Data

MSU Technologies (<http://www.technologies.msu.edu/>) and the Copyright Licensing Office facilitate the commercial development and public use of technologies and copyrightable materials developed by MSU faculty and staff, as well as process and track Confidential Disclosure Agreements, Material Transfer Agreements, and other documents relating to collaborative arrangements with non-MSU entities. Any research-related travel may require development of Material Transfer Agreements and/or Confidentiality Agreements (<http://www.technologies.msu.edu/researchers/forms>); these may apply to MSU research materials, software, biological materials, or data sets that are involved in movement to or from campus. If in doubt about upcoming travel, check with MSU Technologies to obtain an assurance or the appropriate paperwork that may be needed for any transport of MSU materials subject to inspection by the Transportation Security Administration in checked or carry-on luggage. Graduate students have been detained by airport TSA agents and denied boarding when research materials were found that lacked appropriate authorization paperwork.

When students appointed as RAs travel abroad for research or to collaborate with foreign investigators, the department or research grant supporting the work is required to pay for all needed vaccinations and/or medications (e.g., anti-malarials) as determined by the MSU Travel Clinic. Students may include those costs in applications for funds from the Research Enhancement or Travel Grant programs administered by the Graduate School.

VIII. Departmental Facilities and Services for Graduate Students

All facilities and services are for University and/or Department of Horticulture business - **NOT** for personal use.

1. Desk. If possible, a desk will be made available for each graduate student requesting one. Students who use their desks infrequently may be asked to make the space available to someone else.
 - a. Desk assignments will be made by Greta McKinney when enrollment materials are secured during the student's initial term or upon arrival between terms.
 - b. Only registered graduate students (exclusive of summer semester) may occupy desks.
 - c. A student may be assigned and occupy only one desk in the department regardless of location (laboratory or office).
 - d. Desks will be assigned on a seniority basis within the following priority groups:
 1. Graduate Assistants
 2. Non-university funded students
 Seniority will be based on the date of admission or readmission to graduate school. Desks will be assigned according to availability.
 - e. Desks will not be assigned for sole use as storage for books, data, etc. Such use will result in a request to surrender the assigned desk. Surrendering of desks will be the decision of the Graduate Programs Director.

2. Supplies. A limited variety of paper, pencils, markers, etc., are available from the main departmental office for University-supported research (not for coursework use). Laboratory chemicals and supplies are available from University Stores/Spartan Marketplace (<http://marketplace.msu.edu/buy/>). Supplies can be purchased using a University account number on-site at the University Stores office on Service Drive.

3. Copy Machine. Departmental use is limited to authorized teaching, research and extension requirements. A PIN copy code will be issued to each graduate student. There are 2 copy machines in room A285 PSSB. Personal use, with or without reimbursement to the Department, is prohibited by University policy.

4. Vehicles. Graduate assistants are authorized to drive University vehicles only for University business, such as carrying out research or other University projects. Students not on assistantship must obtain approval in writing from the Department Chairperson. Vehicles are never to be used for personal purposes. Other vehicles may be available by special arrangement with the Horticulture Teaching & Research Center Manager, the Main Office, or individual faculty members with assigned vehicles. In order to serve everyone, certain guidelines must be followed:
 - a. Complete (annually) the Employee Driver Certification Form. The form certifies that a person driving a University-owned vehicle has a valid unrestricted U.S. driver's license, with proper class and endorsements listed for the vehicle(s) to be operated and a satisfactory driving record. (Manual of Business Procedures, Section 35.III.B.1.). This form can be found at: <https://rmi.msu.edu/assets/rmidocuments/empdrivercert.pdf>
 - b. Fill out all the information on travel logs in the vehicles, which contain a space for comments or suggestions.
 - c. Always leave the gasoline tank at least 1/4 full. Fill the tank at the University Garage on Service Rd.
 - d. Park the vehicles in the designated areas near the PSSB Bldg. and promptly return the keys. If space is not available near PSSB, park in the Vet Clinic or CIPS lots.
 - e. Return vehicles in a clean condition! Remove all soil, trash, and other materials when you return the vehicle.

5. University property is not to be borrowed for personal use.

IX. Financial Aid, Assistantships, and Fellowships

Sources of Financial Assistance

Financial aid is available through a wide variety of sources. Research assistantships may be supported by funds from the University, Michigan AgBioResearch, or national and international research projects. Students on assistantships receive a tuition waiver equivalent to nine credits in Fall and Spring semesters and five credits in Summer semester, and are entitled to pay tuition at in-state resident rates for any additional credits.

College and University fellowships are available (see the Graduate School's Funding Opportunities website: <http://grad.msu.edu/funding/>). The MSU Distinguished Fellowship Program is a University-wide, competitive Ph.D. fellowship program open to entering graduate students with bachelor's or master's degrees who plan to pursue a Ph.D. The competition is open to U.S. citizens or permanent U.S. residents.

For additional fellowship and scholarship opportunities, see the Financial Aid search engine on the MSU website (<https://msu.academicworks.com/> and/or the Horticulture Graduate Program's Financial Aid website <http://www.canr.msu.edu/hrt/students/scholarships/>). Several national agencies, such as the National Science Foundation (<https://www.nsfgrfp.org/>), also award fellowships for graduate studies.

Graduate Research Assistantships

Selection Procedure

All candidates for research assistantships must satisfy the requirements for admission to regular or provisional status. Additional criteria include courses taken, performance as reflected in transcripts, practical experience in the specific area to be investigated, strength of recommendations, and GRE scores. Assistantships are awarded on the basis of availability, area of interest and ability without regard to race, sex, or religious preference, and are not transferable from one research program to another.

Research Assistantship Appointments

Graduate research assistantship appointments are for periods of one to three semesters per academic year. The stipend, activities, and course load are proportional to the percent of time designated by the assistantship. Assistantships established by use of university or research contract funds are at three levels:

- Level 1 Assistants beginning a M.S. program with a B.S. (or equivalent degree) and no graduate experience.
- Level 2 Assistants beginning a Ph.D. program with a M.S. (or equivalent degree), or a graduate assistant in a M.S. program having completed one full year appointment at a Level 1.
- Level 3 Ph.D. students, having passed the comprehensive exam. Each student supported by an assistantship is granted nine credits for fall and spring semesters and five credits for summer semester at no charge.

Course Loads for Graduate Assistants

Full-time course credit load for graduate research assistants varies with the time basis of appointment as noted in the Table (research credits are not limited):

Time Basis	Credits/Semester	
	Min.	Max
3	6	16
2	6	12
1	3	8

Graduate Assistants' Responsibilities

Each graduate research assistant is responsible to his/her faculty advisor and will have responsibilities for at least one research project. Therefore, expectations and responsibilities for assistantships, including hourly structuring of weekly work activities and annual leave/vacation periods, will vary by project and by faculty advisor, though in general a ½-time assistantship equates to about 20 hr. per week. Due to the seasonal nature of certain types of horticultural research, periods of research assistantship activity can vary dramatically. Enrollment in courses, credit load per

semester, training activity, etc., should be approved by the faculty advisor before registering. Likewise, plans to cover assistantship duties during participation in professional meetings should be developed jointly between the student and the faculty advisor.

A student must meet the requirements for Academic Standards and Guidelines for Retention to retain financial assistance. The faculty advisor is responsible for seeing that the assistantship appointment forms are filed in the Main Office in order for them to be ready upon arrival of the student. Late filing may result in the student having to pay out-of-state registration fees for one semester.

All issues related to outside (non-assistantship) work for pay should be discussed with the faculty advisor. International students should be aware that most visas have limitations on such work.

Graduate Research Fellowships and Grants

Receipt of externally funded fellowships by students who have written their own grant applications and are worth at least \$20,000 (direct costs) now makes the students eligible for the in-state tuition rate. The in-state tuition rate applies only to the semesters during which the student is supported by the fellowship. This policy applies only to grants funded through a competitive process by a US institution/agency/foundation. Funds obtained through non-competitive processes (e.g., need-based fellowships) or from international sources do not qualify the students for in-state tuition rates. For more information, contact the Graduate School in Chittenden Hall, 466 W. Circle Dr., 2nd floor.

Dissertation Completion Fellowships (DCF): Each semester (Spring, Summer, Fall), single semester fellowships are available to allow doctoral students to devote full time to completing the writing and revision of their dissertation. The goal is for the dissertation to be completed during the semester of the fellowship without having the distraction of assistantship duties, part-time jobs, etc. Other MSU financial support, held simultaneously with the fellowship, cannot exceed a one-half time assistantship or the equivalent. Application information and guidelines for writing a high impact application are available from the Horticulture GPC. Selection of DCF awardees will be made by the College of Agriculture and Natural Resources. The Fellowship awards will be dispensed by the Graduate School.

X. Graduate Student Academic Grievance Hearing Procedures

Each right of an individual places a reciprocal duty upon others: the duty to permit the individual to exercise the right. The student, as a member of the academic community, has both rights and duties. Within that community, the student's most essential right is the right to learn. The University has a duty to provide for the student those privileges, opportunities, and protections which best promote the learning process in all its aspects. The student also has duties to other members of the academic community, the most important of which is to refrain from interference with those rights of others which are equally essential to the purposes and processes of the University. (GSRR Article 1.2)

The *Michigan State University Student Rights and Responsibilities (SRR)* and the *Graduate Student Rights and Responsibilities (GSRR)* documents establish the rights and responsibilities of MSU students and prescribe procedures to resolve allegations of violations of those rights through formal grievance hearings. In accordance with the SRR and the GSRR, the **Department of Horticulture Graduate** Program has established the following Hearing Board procedures for adjudicating graduate student academic grievances and complaints. (See GSRR 5.4.)

A. JURISDICTION OF THE DEPARTMENT OF HORTICULTURE GRADUATE PROGRAM HEARING BOARD:

1. The Hearing Board serves as the initial Hearing Board for academic grievance hearings involving graduate students who allege violations of academic rights or seek to contest an allegation of academic misconduct (academic dishonesty, violations of professional standards or falsifying admission and academic records). (See GSRR 2.3 and 5.1.1.)
2. Students may not request an academic grievance hearing based on an allegation of incompetent instruction. (See GSRR 2.2.2)

B. COMPOSITION OF THE HEARING BOARD:

1. The Horticulture Department shall constitute a Hearing Board pool no later than the end of the tenth week of the spring semester according to established Horticulture Department procedures. Hearing Board members serve one year terms with reappointment possible. The Hearing Board pool should include both faculty and graduate students. (See GSRR 5.1.2 and 5.1.6.)
2. The Chair of the Hearing Board shall be the faculty member with rank who shall vote only in the event of a tie. In addition to the Chair, the Hearing Board shall include an equal number of voting graduate students and faculty. (See GSRR 5.1.2, and 5.1.5.)
3. The Horticulture Department will train hearing board members about these procedures and the applicable sections of the GSRR. (See GSRR 5.1.3.)

C. REFERRAL TO THE HEARING BOARD:

1. After consulting with the instructor and appropriate unit administrator, graduate students who remain dissatisfied with their attempt to resolve an allegation of a violation of student academic rights or an allegation of academic misconduct (academic dishonesty, violations of professional standards or falsifying admission and academic records) may request an academic grievance hearing. When appropriate, the Department Chair, in consultation with the Dean, may waive jurisdiction and refer the request for an initial hearing to the College Hearing Board. (See GSRR 5.3.6.2.)
2. At any time in the grievance process, either party may consult with the University Ombudsperson. (See GSRR 5.3.2.)
3. In cases of ambiguous jurisdiction, the Dean of The Graduate School will select the appropriate Hearing Board for cases involving graduate students. (See GSRR 5.3.5.)
4. Generally, the deadline for submitting the written request for a hearing is the middle of the next semester in which the student is enrolled (including Summer). In cases in which a student seeks to contest an allegation of academic misconduct and the student's dean has called for an academic disciplinary hearing, the student has **10** class days to request an academic grievance to contest the allegation. (See GSRR 5.3.6.1 and 5.5.2.2.)

5. If either the student (the complainant) or the respondent (usually, the instructor or an administrator) is absent from the university during that semester, or if other appropriate reasons emerge, the Hearing Board may grant an extension of this deadline. If the university no longer employs the respondent before the grievance hearing commences, the hearing may proceed. (See GSRR 5.4.9.)
6. A written request for an academic grievance hearing must (1) specify the specific bases for the grievance, including the alleged violation(s), (2) identify the individual against whom the grievance is filed (the respondent) and (3) state the desired redress. Anonymous grievances will not be accepted. (See GSRR 5.1 and 5.3.6.)

D. PRE-HEARING PROCEDURES

1. After receiving a graduate student's written request for a hearing, the Chair of the Department will promptly refer the grievance to the Chair of the Hearing Board. (See GSRR 5.3.2, 5.4.3.)
2. Within **5** class days, the Chair of the Hearing Board will:
 - a. forward the request for a hearing to the respondent and ask for a written response;
 - b. send the names of the Hearing Board members to both parties and, to avoid conflicts of interest between the two parties and the Hearing Board members, request written challenges, if any, within **3** class days of this notification. In addition to conflict of interest challenges, either party can challenge two hearing board members without cause (GSRR 5.1.7.c);
 - c. rule promptly on any challenges, impanel a Hearing Board and send each party the names of the Hearing Board members. If the Chair of the Hearing Board is the subject of a challenge, the challenge shall be filed with the Dean of the College, or designee (See GSRR 5.1.7.). Decisions by the Hearing Board chair or the College Dean (or designee) on conflict of interest challenges are final;
 - d. send the Hearing Board members a copy of the request for a hearing and the respondent's written response, and send all parties a copy of these procedures.
3. Within **5** class days of being established, the Hearing Board shall review the request, and, after considering all requested and submitted information:
 - a. accept the request, in full or in part, and promptly schedule a hearing.
 - b. reject the request and provide a written explanation to appropriate parties; e.g., lack of jurisdiction. (The student may appeal this decision.)
 - c. the GSRR allows the hearing board to invite the two parties to meet with the Hearing Board in an informal session to try to resolve the matter. Such a meeting does not preclude a later hearing. However, by the time a grievance is requested all informal methods of conflict resolution should have been exhausted so this option is rarely used. (See GSRR 5.4.6.)

4. If the Hearing Board calls for a hearing, the Chair of the Hearing Board shall promptly negotiate a hearing date, schedule an additional meeting only for the Hearing Board should additional deliberations on the findings become necessary, and request a written response to the grievance from the respondent.
5. At least **5** class days before the scheduled hearing, the Chair of the Hearing Board shall notify the respondent and the complainant in writing of the (1) time, date, and place of the hearing; (2) the names of the parties to the grievance; (3) a copy of the hearing request and the respondent's reply; and (4) the names of the Hearing Board members after any challenges. (See GSRR 5.4.7.)
6. At least **3** class days before the scheduled hearing, the parties must notify the Chair of the Hearing Board the names of their witnesses and advisor, if any, and request permission for the advisor to have voice at the hearing. The chair may grant or deny this request. The Chair will promptly forward the names given by the complainant to the respondent and vice versa. (See GSRR 5.4.7.1.)
7. The Chair of the Hearing Board may accept written statements from either party's witnesses at least **3** class days before the hearing. (See GSRR 5.4.9.)
8. In unusual circumstances and in lieu of a personal appearance, either party may request permission to submit a written statement to the Hearing Board or request permission to participate in the hearing through an electronic communication channel. Written statements must be submitted to the Hearing Board at least **3** class days before the scheduled hearing. (See GSRR 5.4.9c.)
9. Either party to the grievance hearing may request a postponement of the hearing. The Hearing Board may either grant or deny the request. (See GSRR 5.4.8.)
10. At its discretion, the Hearing Board may set a reasonable time limit for each party to present its case, and the Chair of the Hearing Board must inform the parties of such a time limit in the written notification of the hearing.
11. Hearings are closed unless the student requests an open hearing, which would be open to all members of the MSU community. The Hearing Board may close an open hearing to protect the confidentiality of information or to maintain order. (See GSRR 5.4.10.4.)
12. Members of the Hearing Board are expected to respect the confidentiality of the hearing process. (See GSRR 5.4.10.4.and 5.4.11.)

E. HEARING PROCEDURES:

1. The Hearing will proceed as follows:
 - a. Introductory remarks by the Chair of the Hearing Board: The Chair of the Hearing Board introduces hearing panel members, the complainant, the respondent and advisors, if any. The Chair reviews the hearing procedures, including announced time restraints for presentations by each party and the witnesses, and informs the parties if their advisors may have a voice in the hearings and if the proceedings are being recorded. Witnesses shall be excluded from the proceedings except when testifying. The Chair also explains:

- In academic grievance hearings in which a graduate student alleges a violation of academic rights, the student bears the burden of proof.
- In hearings in which a graduate student seeks to contest allegations of academic misconduct, the instructor bears the burden of proof.
- All Hearing Board decisions must be reached by a majority of the Hearing Board, based on a "clear and convincing evidence." (See GSRR 8.1.18.)

(See GSRR 5.4.10.1 and 8.1.18.) For various other definitions, see GSRR Article 8.)

- b. If the complainant fails to appear in person or via an electronic channel at a scheduled hearing, the Hearing Board may either postpone the hearing or dismiss the case for demonstrated cause. (See GSRR 5.4.9a.)
- c. If the respondent fails to appear in person or via an electronic channel at a scheduled hearing, the Hearing Board may postpone the hearing or, only in unusual circumstances, hear the case in his or her absence. (See GSRR 5.4.9-b.)
- d. If the respondent is absent from the University during the semester of the grievance hearing or no longer employed by the University before the grievance procedure concludes, the hearing process may still proceed. (See GSRR 5.3.6.1.)
- e. To assure orderly questioning, the Chair of the Hearing Board will recognize individuals before they speak. All parties have a right to speak without interruption. Each party has a right to question the other party and to rebut any oral or written statements submitted to the Hearing Board. (See GSRR 5.4.10.2.)
- f. Presentation by the Complainant: The Chair recognizes the complainant to present without interruption any statements relevant to the complainant's case, including the redress sought. The Chair then recognizes questions directed at the complainant by the Hearing Board, the respondent and the respondent's advisor, if any.
- g. Presentation by the Complainant's Witnesses: The Chair recognizes the complainant's witnesses, if any, to present, without interruption, any statement directly relevant to the complainant's case. The Chair then recognizes questions directed at the witnesses by the Hearing Board, the respondent, and the respondent's advisor, if any.
- h. Presentation by the Respondent: The Chair recognizes the respondent to present without interruption any statements relevant to the respondent's case. The Chair then recognizes questions directed at the respondent by the Hearing Board, the complainant, and the complainant's advisor, if any.
- i. Presentation by the Respondent's Witnesses: The Chair recognizes the respondent's witnesses, if any, to present, without interruption, and statement directly relevant to the respondent's case. The Chair then recognizes questions directed at the witnesses by the Hearing Board, the complainant, and the complainant's advisor, if any.

- j. Rebuttal and Closing Statement by Complainant: The complainant refutes statements by the respondent, the respondent's witnesses and advisor, if any, and presents a final summary statement.
- k. Rebuttal and Closing Statement by Respondent: The respondent refutes statements by the complainant, the complainant's witnesses and advisor, if any, and presents a final summary statement.
- l. Final questions by the Hearing Board: The Hearing Board asks questions of any of the participants in the hearing.

F. POST-HEARING PROCEDURES

1. Deliberation:

After all evidence has been presented, with full opportunity for explanations, questions and rebuttal, the Chair of the Hearing Board shall excuse all parties to the grievance and convene the Hearing Board to determine its findings in executive session. When possible, deliberations should take place directly following the hearing and/or at the previously scheduled follow-up meeting. (See Section IV.D above.)

2. Decision:

- a. In grievance (non-disciplinary) hearings involving graduate students in which a majority of the Hearing Board finds, based on "clear and convincing evidence," that a violation of the student's academic rights has occurred and that redress is possible, it shall recommend an appropriate remedy to the Department Chair. Upon receiving the Hearing Board's recommendation, the Department Chair shall implement an appropriate remedy, in consultation with the Hearing Board, within **3** class days. If the Hearing Board finds that no violation of academic rights has occurred, it shall so inform the Chair or Director. The Chair of the Hearing Board shall promptly forward copies of the final decision to parties and the University Ombudsperson. (See GSRR 5.4.11.)
- b. In grievance (non-disciplinary) hearings involving graduate students in which the Hearing Board serves as the initial hearing body to adjudicate an allegation of academic dishonesty and, based on "clear and convincing evidence," the Hearing Board finds for the student, the Hearing Board shall recommend to the Department Chair or School Director that the penalty grade be removed, the Academic Dishonesty Report be removed from the student's records and a "good faith judgment" of the student's academic performance in the course take place. If the Hearing Board finds for the instructor, the penalty grade shall stand and the Academic Dishonesty Report regarding the allegation will remain on file, pending an appeal, if any to the College Hearing Board within **5** class days of the Hearing Board's decision. If an academic disciplinary hearing is pending, and the Hearing Board decides for the instructor, the graduate student's disciplinary hearing before either the College Hearing Board or the Dean of The Graduate School would promptly follow, pending an appeal, if any, within **5** class days. (See GSRR 5.5.2.2 and 5.4.12.3)

3. Written Report:

The Chair of the Hearing Board shall prepare a written report of the Hearing Board's findings, including recommended redress or sanctions for the complainant, if applicable, and forward a copy of the decision to the appropriate unit administrator within **3** class days of the hearing. The report shall indicate the rationale for the decision and the major elements of evidence, or lack thereof, that support the Hearing Board's decision. The administrator, in consultation with the Hearing Board, shall then implement an appropriate remedy. The report also should inform the parties of the right to appeal within **5** class days following notice of the decision, or **5** class days if an academic disciplinary hearing is pending. The Chair shall forward copies of the Hearing Board's report and the administrator's redress, if applicable, to the parties involved, the responsible administrators, the University Ombudsperson and the Dean of The Graduate School. All recipients must respect the confidentiality of the report and of the hearing board's deliberations resulting in a decision. (See GSRR 5.4.12 and 5.5.2.2)

G. APPEAL OF THE HEARING BOARD DECISION:

1. Either party may appeal a decision by the Hearing Board to the College Hearing Board for cases involving (1) academic grievances alleging violations of student rights and (2) alleged violations of regulations involving academic misconduct (academic dishonesty, professional standards or falsification of admission and academic records.) (See GSRR 5.4.12.)
2. All appeals must be in writing, signed and submitted to the Chair of the College Hearing Board within **5** class days following notification of the Hearing Board's decision. While under appeal, the original decision of the Hearing Board will be held in abeyance. (See GSRR 5.4.12, 5.4.12.2 and 5.4.12.3.)
3. A request for an appeal of a Hearing Board decision to the College Hearing Board must allege, in sufficient particularity to justify a hearing that the initial Hearing Board failed to follow applicable procedures for adjudicating the hearing or that findings of the Hearing Board were not supported by "clear and convincing evidence." The request also must include the redress sought. Presentation of new evidence normally will be inappropriate. (See GSRR 5.4.12.1, 5.4.12.2 and 5.4.12.4.)

H. RECONSIDERATION:

1. If new evidence should arise, either party to a hearing may request the appropriate Hearing Board to reconsider the case within **30** days upon receipt of the hearing outcome. The written request for reconsideration is to be sent to the Chair of the Hearing Board, who shall promptly convene the Hearing Board to review the new material and render a decision on a new hearing. (See GSRR 5.4.13.)

I. FILE COPY:

1. The Chair of the Department shall file a copy of these procedures with the Office of the Ombudsperson and with the Dean of The Graduate School. (See GSRR 5.4.1.)

XI. University Resources

For additional information on graduate studies at Michigan State University, please see the following Web sites:

MSU Academic Programs Booklet (contains University Policy on Graduate Education)	http://www.reg.msu.edu/AcademicPrograms/
MSU Counseling Service (non-academic student counseling services)	https://caps.msu.edu/
MSU Council of Graduate Students (COGS)	http://www.cogs.msu.edu/
MSU Graduate Employee Union (GEU)	http://www.geuatmsu.org/
MSU Graduate School Career & Professional Development (doctoral and postdoc planning PREP model)	http://grad.msu.edu/prep/
MSU Graduate School Homepage	http://grad.msu.edu/
MSU Graduate Student Rights and Responsibilities	http://grad.msu.edu/gsrr/
MSU Graduate Student Travel	http://grad.msu.edu/travel/
MSU Grievances/Ombudsperson	http://www.msu.edu/unit/ombud/
MSU Guidelines for Graduate Student Advising and Mentoring Relationships	http://grad.msu.edu/researchintegrity/docs/guidelines.pdf
MSU Horticulture (home page)	http://www.hrt.msu.edu/
MSU Horticulture Graduate Program (homepage)	http://www.hrt.msu.edu/graduate-horticulture/
MSU Horticulture Organization of Graduate Students (HOGS)	https://www.canr.msu.edu/hrt/students/graduate_hort/hogs/index
MSU Institutional Review Boards (Human Research resource)	https://hrpp.msu.edu/institutional-review-board-staff
MSU Technologies	http://technologies.msu.edu
MSU Office for International Students and Scholars	http://www.oiss.msu.edu
MSU Office Environmental Health & Safety (EHS) (health, safety, environment and regulatory programs)	http://www.orcbs.msu.edu/
MSU Research and Scholarly Integrity	http://grad.msu.edu/researchintegrity/
MSU Research Integrity Office	http://www.rio.msu.edu
MSU Scholarships and Grants	http://finaid.msu.edu/sships.asp
MSU Scholarship Search	https://scholendow2.ais.msu.edu/Student/ScholSearch.asp
Michigan State University (homepage)	http://www.msu.edu/
MSU Surplus Store	http://surplus.msu.edu/
MSU Institutional Review Boards (IRBs)	http://hrpp.msu.edu
MSU Writing Center	http://writing.msu.edu/
MSU/GEU Contract	http://geuatmsu.org/
MSU Policy on Relationship Violence and Sexual Misconduct	http://www.hr.msu.edu/documents/uwidepolproc/RVSM_Policy.htm
MSU Anti-Discrimination Policy	https://hr.msu.edu/policies-procedures/university-wide/ADP_policy.html

XII. Graduate Programs Committee

Role of the Horticulture Graduate Programs Committee (GPC)

The purpose of the Horticulture Graduate Programs Committee (GPC) is to foster and maintain high standards of education and development for all graduate students in the MSU Department of Horticulture, whether enrolled in the Horticulture Graduate Program or enrolled in interdepartmental graduate programs. **The GPC develops and recommends departmental graduate policies to the Horticulture faculty and department chair, and monitors adherence to them. The GPC reviews graduate program applicants, awards departmental fellowships, and monitors the progress of each student to avert problems and irregularities that might develop during their graduate career.** The GPC is available to meet with all graduate students in the department, individually or collectively, to discuss any issues in their graduate preparation and careers that may arise. Students may also submit written inquiries or issues to the GPC. The GPC is composed of departmental faculty members appointed by the Department Chairperson, plus a graduate student representative selected by the Horticulture Organization of Graduate Students (HOGS). All GPC members have voting privileges.

Responsibilities of the Graduate Program Director (GPC Chair), Programs Assistant, Subcommittees, and HOGS Representative

Graduate Program Director (GPC Chair) Responsibilities

The Graduate Program Director (aka Graduate Program Committee (GPC) chairperson) shall serve the Horticulture faculty and students as the primary resource for Graduate Policy issues relevant to the successful completion of graduate degree programs in Horticulture. The Graduate Program Director serves for a 3-year term (1 July to 30 June); just prior to the end of the term, the Department of Horticulture Chair shall meet with and review the composition of the GPC, and consider reappointment or rotation of the Director position to another GPC committee member. Some of the specific responsibilities of the Graduate Program Director are as follows:

1. Conduct regular monthly meetings of the GPC (generally scheduled to be held before the monthly faculty meeting); on-going monthly issues should include (but are not limited to):
 - GPC review and approval of submitted M.S. and Ph.D. Programs of Study
 - reports by the Graduate Programs Assistant of any pending graduate student program deficiencies
 - reports by the GPC Recruitment & Fellowship Subcommittee
 - reports by the GPC Curriculum Subcommittee
 - reports by the Horticulture representative to the CANR Graduate Committee
 - discussion by the GPC of any College or University issues pertaining to graduate study
2. Review Recruitment & Fellowship Subcommittee recommendations on prospective graduate student applications and approve as “admitted”, “admitted provisionally”, or “declined”
3. Review graduate student Semester Progress Reports each semester to act on any problems (student- or faculty-related) in a timely and appropriately confidential manner
4. Upon notification by the Graduate Programs Assistant of a graduate student program deficiency, notify (in writing) the student and the student’s faculty advisor of the need for compliance and impose a “Hold” on the student’s registration until compliance is satisfactory
5. Attempt to resolve personnel conflicts pertaining to graduate student issues, in confidentiality but with consultation at higher administrative levels (Chair, Assistant/Associate Director, Dean, Ombudsperson, etc.) as required
6. Organize and conduct an in-depth new student orientation session each Fall, to include meetings with the Horticulture administration (Chair and pertinent office staff) and resource personnel (Graduate Program Director and Programs Assistant; gardens, greenhouse, and farm managers; safety officer; HOGS and COGS representatives; etc.); an information packet pertinent to topics covered during the orientation should be made available to new students who first enroll for Spring (rather than Summer or Fall) semester; and an annual pre-fall semester MSU Horticulture Field Station and Industry Orientation Tour for new graduate students (as department budgets permit)

7. Coordinate with the department's social committee on a Fall Picnic at which to introduce new graduate students to faculty, staff, and current graduate students
8. Initiate appropriate and timely updates of the Graduate Handbook and Horticulture Graduate Program website

GPC Program Assistant Responsibilities

The Graduate Programs Assistant shall serve the Horticulture faculty and students as the primary resource for Graduate Program paperwork relevant to the successful completion of graduate degree programs in Horticulture. Some of the specific responsibilities of the GPC Programs Assistant are as follows:

1. Attend all GPC meetings, record minutes of the meeting, circulate (electronically and in a timely fashion) a draft of the minutes for revision and approval by the GPC members, and upon approval of the minutes (as confirmed by the Graduate Program Director), circulate the approved minutes to Horticulture faculty and graduate students
2. Provide administrative assistance to the Graduate Program Director, the GPC Recruitment & Fellowship Subcommittee, and the GPC Curriculum Subcommittee as needed, with the exception of decision-making
3. Handle all departmental, college, and university administrative paperwork pertaining to the Graduate Program, including forwarding of departmental/college/university information relevant to graduate issues (e.g., fellowships, workshops, etc.).
4. Request and collate Semester Progress Reports from every Horticulture graduate student each semester for timely review by the Graduate Program Director
5. Notify graduate students of noncompliance issues (such as missing Semester Progress Reports) on a timely basis; should noncompliance continue, notify the Graduate Program Director and upon the Director's authorization, enact a "Hold" on the student's registration until compliance is satisfactory
6. Implement appropriate and timely updates of the Graduate Handbook, including a checklist of due dates for various forms; request and follow-up on requisite changes to be made to the Horticulture Graduate Program website by the departmental webmaster
7. Maintain dual documentation of GPC policies and forms, the current Graduate Handbook, committee member and subcommittee responsibilities lists, meeting minutes, etc. in both the GPC office and the Horticulture main office
8. Maintain and update the Horticulture graduate program's electronic applications file and review system on at least a weekly basis, for timely posting of new applicant documents for GPC and Horticulture faculty access. Assist in training new faculty in appropriate use of the system.

GPC Graduate Student (HOGS) Representative Responsibilities

The HOGS representative to the GPC shall serve the Horticulture students and faculty by providing the representative graduate student perspective on Graduate Policy issues relevant to the successful completion of graduate degree programs in Horticulture. Some of the specific responsibilities of the HOGS representative are as follows:

1. Attend the regular monthly meetings of the GPC and serve as a two-way relay of issues and feedback between the GPC and HOGS on a timely basis
2. Serve on the GPC Curriculum Subcommittee
3. Hold confidential information discussed at GPC meetings in full confidence, not for dissemination to HOGS, other faculty, or any other situation outside of the meeting

GPC Recruitment, Scholarship & Fellowship Subcommittee Responsibilities

The GPC Recruitment & Fellowship Subcommittee shall serve the Horticulture faculty and students as the primary resource for Graduate Program recruitment and fellowship/assistantship issues relevant to the successful completion of graduate degree programs in Horticulture. Composition:

At least one GPC member involved in applied/production research

At least one GPC member involved in basic/fundamental research

Some of the specific responsibilities of the Recruitment & Fellowship Subcommittee are as follows:

1. Collate fellowship/assistantship opportunities for students, and graduate program-related funding opportunities for faculty, to promote/facilitate recruitment and retention of new graduate students, including maintaining active liaisons with related graduate efforts at MSU such as interdepartmental recruitment efforts in Plant Science, Genetics, etc.

2. Develop, maintain, and update recruitment informational materials, such as the section of the Graduate Program website for prospective students (plus appropriate links to the website) and recruitment brochures
3. Develop, implement, and update strategies to advertise MSU Horticulture graduate study opportunities in a diverse set of relevant professional publications, email lists, etc.
4. Organize and coordinate interviews of potential Horticulture graduate students at regional/national scientific meetings
5. Report monthly to the GPC on recruitment activities and new opportunities, and provide an annual report (due by mid-semester in Fall) on the number of potential students recruited, the percentage that enrolled in the Horticulture graduate program, etc.
6. Regularly review graduate recruitment materials, efforts, assistantship levels, etc. at peer institutions for use in developing competitive strategies at MSU
7. Review prospective graduate student applications for recommendation to Graduate Program Director as “admitted”, “admitted provisionally”, or “declined”

GPC Graduate Curriculum Subcommittee Responsibilities

The GPC Graduate Curriculum Subcommittee shall serve the Horticulture faculty and students as the primary resource for Graduate Program curriculum issues relevant to the successful completion of graduate degree programs in Horticulture.

Composition:

Three GPC faculty members, at least two of which who have teaching responsibilities

The GPC member who is the HOGS representative

Some of the specific responsibilities of the GPC Graduate Curriculum Subcommittee are as follows:

1. Develop, implement, and update HRT graduate curriculum offerings, particularly with regard to modular courses (and their structure) to provide a diverse, relevant, and timely scientific curriculum critical for successful academic preparation of Horticulture graduate students
2. In conjunction with HOGS, plan, develop, and implement the annual HRT 894 seminar offerings within the Horticulture graduate curriculum
3. Resolve course-related issues such as evaluation of prerequisite course preparation/suitability for graduate program applicants and enrollees, Program of Study substitutions/alterations, problems with non-Horticulture course enrollment restrictions, evaluation of requests to include independent study courses on the Program of Study, etc. (many of these issues may be brought before the entire GPC)

XIII. Appendix

Records and Forms

A complete set of all records and actions is maintained by the Graduate Programs Assistant. Each student is responsible for keeping his/her file current and complete. Each phase of progress should be reported to the Graduate Programs Committee on the proper forms.

The following forms are used for graduate student records and all are available by email or online. Please see the Graduate Programs Assistant. The Graduate Programs Director will sign forms requiring Department Chair's approval.

I. General - All Graduate Students

1. Responsible Conduct Research Tracking form
2. Advisory Committee form (appointing and changing)
3. Graduate Student Exit Form

II. M.S. Candidates

4. Proposed Academic Program (Program of Study approval form)
5. Change in Academic Program form
6. Master's Thesis (Plan A) Research Proposal Requirement
7. Announcement of Final Oral Examination/Seminar

III. Ph.D. Candidates

All Ph.D. students must use the electronic GradPlan system. Website:
<http://grad.msu.edu/gradplan/>

8. Report of Guidance Committee (Program of Study approval form)
9. Doctoral Dissertation Research Proposal Requirement
10. Notice of Oral Comprehensive Examination
11. Announcement of Final Oral Defense



Responsible Conduct of Research Tracking

College of Agriculture and Natural Resources

General Information:

Name: _____ Department: _____
 PID: _____ Major: _____
 Semester Admitted: _____ Degree: M.S.-A M.S.-B Ph.D.

Year One Training (All graduate students)

- CITI Modules** (all 4 required; at <https://grad.msu.edu/researchintegrity>)
- Introduction to the Responsible Conduct of Research
 - Authorship
 - Plagiarism
 - Research Misconduct

Year Two Training (M.S. Plan A and Ph.D. students)

- Online Modules** (Any 3 of the following; check department requirements)
- CITI Collaborative Research <https://grad.msu.edu/researchintegrity>
 - CITI Conflicts of Interest <https://grad.msu.edu/researchintegrity>
 - CITI Data Management <https://grad.msu.edu/researchintegrity>
 - CITI Financial Responsibility <https://grad.msu.edu/researchintegrity>
 - Mentoring <https://grad.msu.edu/researchintegrity>
 - Peer Review <https://grad.msu.edu/researchintegrity>
 - IACUC Tutorial for Animal Care Training <http://train.ora.msu.edu>
 - Human Research Protection/IRB Certification <http://train.ora.msu.edu>
 - Rigor and Reproducibility In production

Discussion-Based Training (All graduate students; 6 hours before degree completion)

<u>Date</u>	<u>Number of Hours</u>	<u>Course (if appropriate)</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Annual Refresher Training (all doctoral students, 3 hours each year)

<u>Date</u>	<u>Number of Hours</u>	<u>Course (if appropriate)</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Approved:

Major Professor Date

Graduate Program Coordinator / Department Chair Date

Associate Dean: Kelly Millenbah Date



Graduate Committee

College of Agriculture and Natural Resources

Appointing Committee Changing Committee

General Information:

Name: _____ Department: _____
 PID: _____ Major: _____
 E-mail: _____ Degree: Plan A Plan B Other: _____

Member	Department	Role			MSU Status		If changing	
		Major Professor	Committee Chair	Member	Internal	External	Add	Remove
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Signatures:

Student	Date	Major Professor	Date
Graduate Program Coordinator	Date	Associate Dean	Date

GRADUATE STUDENT EXIT FORM

Name: _____

Major Professor: _____

PLEASE make sure you complete and submit this form to the Graduate Programs Assistant before leaving Campus:

- Make sure all vials, samples, test tubes, etc. are accurately labeled with both contents and date. Don't leave any unknown or unlabeled containers in the lab. Samples in liquid nitrogen or freezers should have information on the outside of the storage unit.
- Clean up your lab bench/storage space. Discuss with your major professor/advisor what he/she wants to do with any remaining research material. **Write up the summary of this discussion in your lab notebook.**
- Dispose of any/all radioactive, chemical, and biological wastes using ORCBS procedures. Check with you major professor if you have any questions.
- Original data supporting research, including consent forms, should be kept for at least 3 years. Any perishable items should be kept in proper storage.
- Make sure your major professor/advisor knows where your lab notebooks, other data, computer disks, negative/photos, and files are stored.
- Understand what you may or may not take from the lab.
- Understand what the expectations are for publication of your research.
- Turn in your key(s) and/or security cards.
- Schedule exit interview with Department Chairperson and Administrative Assistant.

Date of Thesis Defense:

Date to Terminate Assistantship:

Date Leaving MSU:

New Position:

New Address:

New Phone/Fax/E-mail
(if known)

Student's Signature

Date: _____

Major Professor's Signature

Date: _____

Department Chairperson

Date: _____

COLLEGE OF AGRICULTURE AND NATURAL RESOURCES
Master of Science Degree Proposed Academic Program

Name: _____ Department: _____
PID: _____ Major: _____
Semester _____
Admitted: _____ Degree: Plan A Plan B Other:

Tentative Thesis/Research Project Topic: _____

Program of Study *(Group courses alphabetically by Subject, then by Course # within the Subject.)*

Subject	Course #	Course Title	Credits
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Total Course Credits	_____
Plan A Research Credits (899) OR	_____
Plan B Research Credits (898)	_____
TOTAL PROGRAM CREDITS	_____

Collateral Courses

Subject	Course #	Course Title	Credits
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Signatures and Approvals

_____ Student	_____ Signature	_____ Date
_____ Major Professor	_____ Signature	_____ Date
_____ Committee Member	_____ Signature	_____ Date
_____ Committee Member	_____ Signature	_____ Date
_____ Committee Member	_____ Signature	_____ Date
_____ Coordinator, Chair or Director	_____ Signature	_____ Date
_____ Associate Dean	_____ Signature	_____ Date

(to be submitted during student's second semester at MSU.)



M.S. Academic Program Plan Change

College of Agriculture and Natural Resources

General Information:

Name: _____ Department: _____
 PID: _____ Major: _____
 Semester Admitted: _____ Degree: Plan A Plan B Other: _____

Change Program Level*

- from M.S. Plan A to M.S. Plan B Other:
 From Ph.D. to M.S. Plan A From Ph.D. to M.S. Plan B

**When changing plans, please submit a new academic program plan with change form.*

Add Following Courses *(Group courses alphabetically by Subject, then by Course # within the Subject.)*

Subject	Course #	Course Title	Credits
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Delete Following Courses *(Group courses alphabetically by Subject, then by Course # within Subject.)*

Subject	Course #	Course Title	Credits
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Approved:

 Major Professor Date

 Graduate Program Coordinator / Department Chair Date

 Associate Dean: Kelly Millenbah Date

Department of Horticulture - Michigan State University
Masters Thesis (Plan A) Research Proposal Requirement

The Department of Horticulture requires all Masters (Plan A) students to write an acceptable research proposal for their Thesis as part of their graduate program. This requirement must be fulfilled **within one year of initial enrollment in the Masters program**. A copy of the proposal must accompany this form.

(Student's Name)

(Student Number)

Proposal Title: _____

Semester submitted to committee members: _____ Semester, 20____

(Major Professor)

Date

(Committee Member)

Date

(Committee Member)

Date

Reviewed and approved by the GPC:

(Graduate Program Chair)

Date

cc: Major Professor.'Uwf gpv



Master's Degree Record of Program, Thesis and Oral Examination

College of Agriculture and Natural Resources

General Information:

Name: _____ Department: _____
 PID: _____ Major: _____
 E-mail: _____ Degree: Plan A Plan B Other: _____

Important Dates:

Term and Year of First Course Counted towards this Degree: _____
 Date of Oral Exam (Defense): _____
 Date Thesis Submitted to Graduate School: _____

Thesis or Project Title:

Signatures of Committee Members:

Name	Signature	Pass	Fail
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	<input type="checkbox"/>	<input type="checkbox"/>

Overall: Pass Fail Delay

Approved:

 Major Professor Date

 Graduate Program Coordinator / Department Chair Date

 Associate Dean: Kelly Millenbah Date

REPORT OF THE GUIDANCE COMMITTEE – DOCTORAL AND OTHER PROGRAMS

See the catalog (Academic Programs) regarding composition of guidance committee and deadlines for its formation and for filing this report listing all degree requirements.

Name _____ Student No. _____ Ph.D. _____ D.M.A. _____
Last First Middle Ed.D. _____ Ed.S. _____

First Semester in Doctoral Program _____ Dept. _____ Major _____
Semester Year

Bachelor of _____ Master of _____
Institution Year Major Institution Year Major

Tentative Dissertation Subject _____

Director _____ Languages or Course Substitutes _____

Will the student's research involve the use of
 human subjects of human materials? _____ Yes _____ No
 warm-blooded animals? _____ Yes _____ No
 or hazardous substances? _____ Yes _____ No

I understand it is necessary to obtain institutional review and approval prior to initiating any research involving the use of human or animal subjects or hazardous materials.

 (STUDENT'S SIGNATURE) Mo./Day/Yr.

DOCTORAL PROGRAM

PLEASE PRINT OR TYPE AND CLUSTER BY FIELD

Dept.	Course No.	Semester	Title	No. CR	Dept.	Course No.	Semester	Title	No. CR

Approved
 (Please TYPE guidance committee member's names below signatures)

Course Credits *(in addition to at least 24 credits of 999)*
 Comprehensive examination areas: _____

1. _____
Chairperson: _____ Mo./Day/Yr.
2. _____
3. _____
4. _____
5. _____
6. _____

The candidate expects to pass the Comprehensive Examination by _____ Semester, _____ Year.

Student Mo./Day/Yr.

Department Chairperson Mo./Day/Yr.

College Dean Mo./Day/Yr.

MSU is an affirmative action/ equal opportunity employer.

Department of Horticulture - Michigan State University
Doctoral Dissertation Research Proposal Requirement

The Department of Horticulture requires all Ph.D. students to write an acceptable research proposal for their Dissertation as part of their graduate program. This requirement must be fulfilled **within two years of initial enrollment in the Ph.D. program**. A copy of the proposal must accompany this form.

(Student's Name)

(Student Number)

Proposal Title: _____

Semester submitted to committee members: _____ Semester, 20____

(Major Professor)

Date

(Committee Member)

Date

(Committee Member)

Date

(Committee Member)

Date

Reviewed and approved by the GPC:

(Graduate Program Chair)

Date



Department of HORTICULTURE

Announcement of Oral Comprehensive Exam

Ph.D. Degree to Horticulture Faculty

Ph.D. Candidate: _____

Members of Examining Committee and their Departments:

Moderator:

All members of the comprehensive committee, or their designated representatives, must be present during the entire examination.



Department of Horticulture
Announcement of Final Oral Defense
PhD Degree to Horticulture Faculty

PhD Candidate:

Date:

Members of Examining Committee and their Departments:

Time:

Location:

The seminar will precede the examination, beginning at the time indicated above.