

Revised and Approved by Faculty Vote May 5, 2019
Effective Summer 2019



THE UNIVERSITY OF OKLAHOMA

DEPARTMENT OF
MICROBIOLOGY & PLANT BIOLOGY
GRADUATE STUDENT MANUAL



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This manual incorporates various advisories, information items, and policy statements relevant to the Department of Microbiology and Plant Biology graduate students. This should not be considered a complete or final listing of pertinent items but is compiled to facilitate acclimatization of new students and to serve as a source of useful information during their tenure.

The information listed herein reflects Department policy and is subject to change.

This manual is published for informational purposes and should not be construed as the basis of a contract between a student and the University of Oklahoma. **It is the responsibility of the student to know and follow all rules, guidelines, and deadlines of the Department of Microbiology and Plant Biology and of the Graduate College.** Every effort is made to provide information that is accurate at the time the manual is issued. The University of Oklahoma reserves the right at all times to discontinue, modify, or change its degree programs when it determines it is in the best interest of the university to do so.

The Procedures and Policies of the Graduate College, the Department of Microbiology and Plant Biology, and other University units remain the final official statements under which graduate work is pursued. Graduate students are expected to be familiar with pertinent portions of the University of Oklahoma Graduate College Bulletin and reference website.

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REQUIREMENTS

One of the first questions that might be raised by a new graduate student is: "What do I have to do to get the degree? The answer is that each degree program is an individual matter between the student, with their own specific goals, and the advisory committee representing the Department and the Graduate College. It requires the successful completion of pertinent course work and research leading to a successful defense for a degree. This manual is not intended to be a complete outline of the graduate program, but rather a guide of essential steps to be taken during the program.

I. **STUDENT RECORDS.** To ensure appropriate internal advising support, all graduate student records are maintained in the department office. A copy of all forms and correspondence to other administrative offices, especially the Graduate College, must be submitted to the department.

II. **COURSEWORK LIMITATIONS.** Refer to the Graduate College website for further information.

A. Grade.

An average of 3.0 GPA overall must be maintained in all courses taken for major credit.

B. Pass/Fail or Audit Courses.

Courses taken under the pass-fail or audit option cannot be used to fulfill deficiencies, since they do not carry graduate credit.

C. Undergraduate Courses.

A maximum of 12 hours of 3000 or 4000-level courses (post-baccalaureate) carrying graduate credits may be counted toward degree programs; with a maximum of nine hours of 4000-level courses from the Department of Microbiology & Plant Biology. Our own departmental 3000-level courses cannot be counted towards graduate programs in the Microbiology and Plant Biology department.

D. Degree Completion.

Except for the non-thesis Master's degree option, satisfactory completion of a thesis/dissertation is required.

III. **ENROLLMENT LIMITATIONS.** Enrollment is generally limited to no more than 16 hours per Fall or Spring semester nor more than nine hours per summer session without the permission of the Dean of the Graduate College. To obtain permission the student's committee chair must petition the Graduate Dean and this petition must be endorsed by the Departmental Graduate Liaison.

A. Fall/Spring Semester Enrollment. Students must enroll in a minimum of five credit hours in Fall and Spring Semesters and the department discourages enrollment in greater than ten hours except for students enrolled in dissertation hours.

B. Summer Enrollment. Generally, Summer Enrollment is not necessary unless a defense is scheduled (in which case a minimum of 2 hours of Thesis/Dissertation Research is required). In addition, a minimum credit hour enrollment requirement may be stipulated by an outside funding agency, International Student Services, or the Graduate College, so checking with the units is advisable.

1. Important information regarding FICA and summer enrollment.

Be aware that if you are not enrolled in the summer semester you will be subject to FICA taxes on your summer paychecks.

- IV. **PUBLICATION.** It is the expectation of the department that the student's research be published in the leading archival, peer-reviewed journals in the respective areas. These expectations should be discussed with your major professor and your committee early in your degree program.
- V. **GRADUATE SEMINAR (5971).** All graduate students **must attend** their respective major graduate seminar **regardless of whether or not they are receiving credit** for the course. Attendance will be taken for all students, and those with excessive absences will have additional seminar requirements to complete and should consult with the faculty member in charge of seminar to determine those requirements. In cases in which a required course meets at the same time of the weekly MPBIO graduate seminar, a student may be excused from attending the seminar for the semester they are enrolled in that required course. In such cases, the student must make a request in advance to the department graduate liaison and/or chair, then once approved the seminar instructor will be notified. Depending on the nature of that required course, attendance at an alternative seminar series may be required. International students that enroll in seminar must make sure that they will be presenting to ensure their minimum enrollment restrictions (an *Incomplete* grade may reduce their full-time status). For more information, refer to the section pertaining to your degree program in this manual.
- VI. **ANNUAL STUDENT EVALUATION.** The Department must conduct an annual review and evaluation of our graduate students' academic progress in meeting degree requirements. The review will be overseen by the department's Graduate Program Committee in consultation with the student's thesis/dissertation advisor and committee members. Members of the graduate faculty within the department shall conduct this review, unless receiving prior written approval of the graduate college dean. All aspects of the student's performance will be evaluated, including but not limited to progress made in completing course work, applicable comprehensive examination, research/creative activity, and writing of the thesis. The review may also encompass the student's broader scholarly capabilities and professional development. Since the evaluation should not include an assessment of the student's performance as a graduate teaching assistant, the department graduate program committee will request separate evaluations from GTA supervisors on a semester basis.
- A. **Notification of Evaluation Result.** Each student will receive a copy of their performance evaluation survey. If there are deficient areas and a marginally satisfactory rating is warranted, the evaluation survey will clearly indicate areas where the student should make improvements to receive a satisfactory evaluation. In the event of an overall unsatisfactory evaluation, the student will be notified by formal letter which will also be provided to the Graduate College. In the case of unsatisfactory progress or performance, the department is responsible for monitoring the student's efforts and shall conduct a second review by a designated date. The Graduate College and the student will be notified in writing of the result and conditions for a second review.
- B. **Second Evaluation.** Should a second review be required for the same evaluation year, the department's Graduate Program Committee shall re-evaluate the student for progress by the date stipulated. Based on the second review, the Department will submit a recommendation to the Graduate College to remove the student from probation, deny further enrollment, or extend enrollment with probation for an additional period. A student who receives an unsatisfactory evaluation for the third time will be denied further enrollment.

VII. ADVISORY COMMITTEE AND ADVISORY CONFERENCE. In consultation with their major professor and/or advisor, students shall establish an advisory committee after the initial enrollment into the graduate program that must be endorsed by the department Graduate Liaison. An Advisory Committee Conference must be held with this committee as soon as a major interest area is chosen, but in no case later than the end of the second semester in residence. For more information, refer to the section pertaining to your degree program in this manual.

A. Advisory/Doctoral Committees. The advisory committee for students in the Ph.D. program must consist of at least four members of the graduate faculty listed on the Graduate College website. Three of the committee members must hold an M2 or M3 graduate faculty appointment through the MPBIO department. The fourth member is a Graduate College Representative that holds M2 or M3 standing outside of the student's academic unit but within the university. The Graduate College Representative should not be a co-PI or collaborator on the student's research project. Faculty or Research Professors with a special member (SM) status cannot be included amongst the aforementioned four members, and SM graduate faculty must be familiar with the rules, regulations, policies and quality standards of the Norman campus Graduate College. A student who wishes to include a faculty member with SM status or a faculty member from another academic unit (e.g. co-PIs and project collaborators) in addition to the Graduate College representative (formerly referred to as outside member) may form a committee with five members. A special member may not serve as the chair or Graduate College Representative of an advisory committee. Students are encouraged to discuss the advantages of additional committee members with their major professor. Ecology and Evolutionary Biology students will require five-member committees as the program requires an EEB faculty member outside of the student's home department serve on the committee as a regular member.

B. Function of the Advisory Committee. In consultation with the student, the advisory committee's role is to plan the degree program and to oversee the student's research progress for a successful degree completion.

C. Advisory Conference. Students are responsible for coordinating their advisory conference (the department has rooms available to reserve). The conference meeting will include formulating a program study plan to be completed within a time frame, indicating specific coursework required and recommended for the degree program. After the advisory conference is held, the student must file an official report of the advisory conference outlining a study plan. This study plan report is used to monitor coursework completion toward a degree program in a timely manner.

VIII. THESIS/DISSERTATION FORMAT. The Thesis/Dissertation may be prepared in any format acceptable to the Department and Committee with the exceptions indicated in the Graduate College information packet. Retrieve the most current detailed information and template documents from the Graduate College website.

IX. PETITIONS. As students move forward into their degree program, it may become necessary to make unforeseen changes on forms or make special requests for specific conditions. Petitions requests may be made in writing by the student's major professor and/or advisory committee. The petition should be forwarded to the Graduate Liaison for endorsement. Once endorsed, the Graduate Liaison will forward the petition to the

appropriate parties in the Graduate College. Petitions may not be from the student under any circumstance.

- X. CONTINUED ENROLLMENT.** If a student does not complete their degree program by the deadline stipulated by the Graduate College, an enrollment hold will be enforced. A student who has been placed on probation must fulfill the requirements set forth by the Graduate College, or be denied further enrollment. Any student not on probation who fails to maintain an overall 3.0 GPA average in their graduate work will be placed on probation. Failure to bring the grade point average up to 3.0 after completing two semesters and an additional summer of further enrollment, will result in denial of subsequent enrollment. The department Graduate Program Committee will review each student's progress each year and recommend continuation or withdrawal from the graduate program.
- XI. ELECTRONIC OR REMOTE PARTICIPATION.** Advances in electronic media have made it possible for meetings to be held without the presence of every member at the same location. Nevertheless, the integrity and significance of the oral examination process must not be compromised by the absence of a sound committee. At a minimum, the student, the committee chair, and the outside member must be physically present at the same location. In extraordinary circumstances the committee chair can petition the Graduate College for remote participation of a committee member during a general examination or defense. Additionally, the Graduate College will make arrangements for signature acceptance.

REQUIREMENTS FOR MASTER'S of SCIENCE DEGREE

For a Master's degree program in Microbiology or Plant Biology certain *general statements* can be made. The following paragraphs outline those general requirements.

- I. Summary of M.S. Degree Requirements.** The thesis-based M.S. degree requires 30 hours of graduate-level coursework.
- A. Thesis Research (5980). A maximum of six credit hours of thesis research may be counted toward the degree program. Following initial enrollment in at least two hours in 5980, each student must maintain continuous enrollment in a minimum of two hours of 5980 during each enrolled semester (including the summer sessions if enrolled), until all requirements for the degree are completed or the degree candidacy is discontinued. **Thesis hours cannot be taken until all coursework has been completed (with the exception of having completed at least 1 hour of the 2-hour seminar requirement).**
- B. Graduate Seminar (5971). Two of the 30 credit hours must consist of Seminar in Plant Biology or Microbiology (students must attend the weekly seminar every semester regardless of whether or not they are receiving credit for the course).
- C. Outside Credits. At least 3 hours carrying graduate credit must be taken in an "outside" department or area. Plant Biology graduate students may use courses in Microbiology (and vice versa) as their outside hours, as long as these courses are not cross-listed between Plant Biology and Microbiology.
- D. Transfer Credits. A maximum of 8 hours transfer credit may be applied toward the Master's degree.
- E. Master's Advisory Committee and Conference. The student's program of graduate study will be determined by an advisory committee approved by the Graduate Liaison and/or Chairperson of the Department. The committee will be guided by the student's statement of goals and by discussions with the student's major advisor as well as other faculty members.

- (1) The committee will consist of at least three faculty members, one of whom will be from the student's major area of interest (the major professor).
 - (2) The major professor will be the major advisor and will serve as chair of the student's graduate committee.
 - (3) Students will be provided a *Department Advisory Committee Approval Form* by end of their first semester of initial enrollment in the graduate program.
 - (4) Once an advisory committee has been approved, students will be instructed to set up an advisory conference to formulate their study plan. A *Department Advisory Conference Report* (study plan) is filed with the department student's records used to monitor the completion of coursework.
- F. M.S. degree while working on Ph.D. degree. To add a Master's degree program to a doctoral degree program, students must consult their major professor in advance. A *Change of Program* would be required with a fee. Refer to the Graduate College Bulletin for the most current information.

II. Requirements of Specific Programs

In addition to the general requirements of the Graduate College and the Department, the following requirements must be met for a Master's degree.

A. M.S. in Microbiology

- (1) The student must present undergraduate credit in at least 12 hours of Microbiology plus the following courses or their equivalents: Physics 2414 and 2424; Chemistry 1315, 1415, 3053, 3153, and 3152; Math 1823.
- (2) Before graduation, an oral examination will be given to test the student's mastery of their thesis topic and their comprehensive knowledge of Microbiology.

B. M.S. in Plant Biology

- (1) A student must present undergraduate credit in General Botany or equivalent plus 20 additional hours of Biology, and Chemistry courses through organic chemistry.
- (2) Before graduation, an oral examination will be given to test the student's mastery of their thesis and of subject matter in three of the following areas: Ecology, Genetics, Structural Botany, Physiology, and Systematics.

III. Check List for Master's (M.S.) Program

It is the responsibility of the student to stay advised of all university academic calendar deadlines along with graduate college deadlines.

- _____ 1. M.S. Advisory Conference. As soon as a major interest area can be chosen, establish an advisory committee, and hold an advisory conference to formulate a study plan. From the conference, a *Department Advisory Conference Report* form shall be submitted to the department **no later than the end of the second semester in residence.**
- _____ 2. M.S. Candidacy. File for candidacy by completing a *Program of Study* form before reaching accumulated 20 hours of your program. For Thesis students, no later than the semester in which you plan to start your thesis, select a thesis topic in conjunction with your advisor. In the **semester BEFORE you defend**, you must file for candidacy to be authorized to enroll in Master's Thesis Research hours (5980). The *Program of Study* and the *Master's Thesis Topic & Committee Membership* forms must be submitted at the same time to the Graduate College. If a change in thesis title or coursework becomes necessary as research

progresses, a petition for the change(s) must be submitted by your Advisory Committee.

- _____ 3. Master's Continuous Enrollment. For Thesis students, following the *initial* enrollment of at least two hours in Research for Master's Thesis (5980), each student must maintain continuous enrollment on the home campus at the University of Oklahoma in at least two hours of 5980 for the entire semester during each semester enrolled until requirements for the degree are completed or candidacy is discontinued. For more information, refer to the Graduate College Bulletin (under Special Requirements for Enrolling in Research for Master's Thesis).
- _____ 4. Thesis Instruction Packet. In the beginning of their graduating semester, students are strongly encouraged to review their program Instruction Packet that is available on the Graduate College website. Provide well in advance a complete draft of your thesis to EACH member of your advisory committee for review before applying for the oral defense, revisions of the thesis may be required by the examining committee before the Final Examination
- _____ 5. Defense/Examination and Graduation Applications. In the semester you plan to graduate, apply for graduation online according to the deadline indicated on the Academic Calendar. At least five business days before your defense, submit the *Request for Authority for Thesis Defense* form available on the Graduate College website, and any other required attachments if applicable (i.e. Animal Research Use, etc.). A reading copy of your thesis must be provided to your committee five business days before your defense. The department has a 3-year embargo available for theses/dissertations. Be sure to indicate on the *Request for Authority for Thesis Defense* form whether you wish to take advantage of this option. You should discuss this with your committee chair.
- _____ 6. Authorization to Defend. You are not authorized to defend or take your examination until you receive the *Authority Report Form* from the Graduate College. Within *72 hours* after the final examination is held the *Authority Report Form* must be returned to the Graduate College Office with the results and signatures of *all* committee members. Only one attempt is afforded the candidate in defending the thesis. If a majority vote "unsatisfactory", then the exam will be judged unsatisfactory.
- _____ 7. Thesis Completion. Assuming all other deadlines and course requirements have been met, an appointment is necessary through "iAdvise" to deposit your thesis. Please refer to the Thesis/Dissertation Instruction Packet available on the Graduate College website that contains important information about research-related issues, copyright, and tools to make sure your document meets the Graduate College formatting requirements.

REQUIREMENTS FOR NON-THESIS MASTER'S of SCIENCE DEGREE

The non-thesis M.S. is the coursework degree generally selected by those students interested in obtaining an advanced degree without research specialization. The course requirements are flexible and will be determined by the Graduate Liaison after discussions with each student. The flexibility allows personalization of the degree program to match each student's interests and future needs.

I. Summary of non-thesis M.S. Degree Requirements.

- A. Coursework. The non-thesis M.S. degree requires 32 hours of graduate-level coursework.
- Courses must mainly be at the 5000-6000 level. No more than 6 hours in courses carrying graduate credit below this level can be applied toward the degree.
 - Students may use courses outside the specialization area (non-MBIO/PBIO courses) towards the degree. The courses must be approved by the Graduate Liaison.
 - No more than 15 hours of S/U graded courses may be applied to the degree.
 - A minimum of 15 credit hours must come from MBIO or PBIO courses.
- B. Graduate Seminar (5971). One of the 32 credit hours must consist of seminar in Plant Biology or Microbiology (students must attend the weekly seminar every semester regardless of whether or not they are receiving credit for the course).
- C. Non-Thesis Examination. The non-thesis 24-hour take home comprehensive written examination is one of the requirements of the program and cannot be waived. Because the non-thesis is comprehensive, a student should complete all required courses on their *Program of Study* form (study plan) before taking the exam. Each student will have an assigned examination committee consisting of three faculty members from the department. For MBIO students, two of those committee members must be MBIO faculty and for PBIO students, two of those committee members must be PBIO faculty members. Upon completion of the examination by the student, the committee will evaluate the student's work, and determine whether it is satisfactory. If the student's work is unsatisfactory then the student may, at the discretion of the committee, repeat the examination in the following semester. The comprehensive examination may not be taken a third time.
- D. Non-Thesis M.S. degree based on the results of the General Exam. A Ph.D. student may obtain a non-thesis Master's degree upon completion of the general exam. There is a small window of opportunity to pursue this. You should be advised by your Major Professor/Committee Chair and the Graduate Liaison before proceeding.

II. Check List for Non-Thesis Master's (M.S.) Program

It is the responsibility of the student to stay advised of all university academic calendar deadlines along with graduate college deadlines.

1. Non-thesis M.S. Examining Committee. As soon as a major interest area can be chosen, establish an examining committee, and hold an advisory conference to formulate a study plan. From the conference, a *Department Advisory Conference Report* form shall be submitted to the department **no later than the end of the second semester in residence**.
2. Non-thesis M.S. Candidacy. File for candidacy by completing a *Program of Study* form before reaching accumulated 20 hours of your program. You should indicate "non-thesis" in writing at the top of the form. The *Program of Study* form must be up to date and approved by the Graduate College to be admitted to candidacy. Note your Program of Study must be approved at least half way through the semester before you intend to complete your degree. A student must enroll in at least two graduate credit hours for the entire semester at the University of Oklahoma in the semester in which the non-thesis examination is taken. For more information, refer to the Graduate College Bulletin (under Special Requirements for Enrolling in Research for Master's Thesis).

- _____ 4. Non-Thesis Instruction Packet. In the beginning of their graduating semester, students are strongly encouraged to review their program Instruction Packet that is available on the Graduate College website. Non-Thesis students should meet with their examining committee for preparation, as this will allow them ample time to prepare for the comprehensive examination.
- _____ 5. Graduation Applications and Examination. In the semester you plan to graduate, apply for graduation online according to the deadline indicated on the Academic Calendar. The Graduate Liaison will need to request authority for your examination from the Graduate Dean five business days in advance. Please coordinate with your examining committee a date for your exam and communicate this information to the Graduate Liaison. Note the exam must be completed no later than the Friday of pre-finals week.
- _____ 6. Authority Report Form. The *Authority Report Form* must be returned to the Graduate College within one week of the decision. If a majority of members vote “unsatisfactory”, then the exam will be judged unsatisfactory.

REQUIREMENTS FOR THE DOCTORAL (PH.D.) DEGREE

Listed below are major requirements for the Ph.D. degree, which should be completed by the student with the advice of the major professor and the advisory committee representing the department. The candidate should be familiar with the requirements as specified regarding: (1) University requirements for full graduate standing; (2) General requirements for the Degree of Doctor of Philosophy; and (3) Department prerequisites for full graduate standing. To obtain a Ph.D. degree, the student must successfully complete pertinent course work, pass the General Examination, and successfully defend the Ph.D. dissertation.

- I. **Summary of the Ph.D. Degree Requirements.** A graduate student with/without a Master’s degree has the option of enrolling in a Ph.D. program with the approval of the research advisor and the Graduate College. The student **must complete 90 credit hours of graduate level work** beyond a Bachelor’s degree.
 - A. Dissertation Research (6980). After the initial enrollment in 6980 for at least two credit hours, continuous enrollment in at least two credits per semester is required until all requirements are completed for the Ph.D. degree. Dissertation hours cannot be taken until all coursework has been completed (except for having completed at least 2 hours of the 3-hour seminar requirement if necessary. Additionally, the student must be scheduled to take the general exam in the semester they begin enrolling in dissertation hours.
 - B. Graduate Seminar (5971). Doctoral students are required to complete three credit hours in their discipline-specific seminar course, and attend seminar every semester regardless of whether or not they are receiving credit for the course (EEB students will be under the direction of a MBIO or PBIO faculty member and should attend the respective seminar series).
 - C. Outside Credits. Ph.D. students will usually be recommended to take up to 6
 - D. hours of graduate level credit in courses outside of the Department. A minimum of 3 outside hours is required.
 - E. Tools of Research. Every doctoral student must take or present credit from an accredited college two courses that enhance the written and oral communication skills such as technical writing, foreign language, communication, etc., and/or the quantitative skills such as computer programming or statistics.
 - F. Transfer Credits. Regardless of the age of the hours, the total number of hours applied or transferred may not exceed 49 percent (44 credit hours) of the hours required for the

doctoral degree. Transfer credit for thesis research from a completed master's degree may be applied to a doctoral degree but is limited to the total thesis hours required for the equivalent master's degree at OU (6 hours).

- G. In Residence. The Graduate College requires the student must be in residence at the University of Oklahoma at least two consecutive full semesters (excluding summer sessions) and be engaged in coursework and research activities prescribed by the Department. However, the nature of our department's degrees requires a more stringent requirement for students to be on the OU Norman campus engaged in their research program for the majority of their degree program. If a particular situation or research project warrants a deviation from this policy, permission must be obtained from the Department Chair, Department Graduate Committee and the student's Graduate Committee. In such a situation, a memo of understanding outlining the conditions of such an agreement would be provided to all parties.
- H. Dissertation Advisory Committee. Students are required to establish their advisory committee by the end of the first semester of initial enrollment in the graduate program. The department will provide a *Departmental Advisory Committee Approval Form* requesting the committee member's name. The advisory committee must consist of at least five graduate faculty members (majority consisting of the student's major, and holding an M2 or M3 graduate faculty appointment). The committee must have a committee chair, an outside member from another department at the University of Oklahoma, and at least three other members of the graduate faculty. The Graduate Liaison will approve the committee if the committee is balanced and it meets Graduate College policies. The Graduate College will be advised of your committee composition upon submission of the Advisory Conference Report.
- I. Advisory Conference. Once the Dissertation Advisory Committee has been approved, students will be instructed to set up an advisory conference to formulate their study plan. An *Advisory Conference Report (ACR/study plan)*, signed by all members of the Dissertation Committee and Department Liaison, is filed with the Graduate College and used to monitor the completion of coursework. Should any changes become necessary on the *Advisory Conference Report*, including the membership of the permanent Dissertation Committee, a *Request for Change in Doctoral Advisory Conference Report* form must be approved by the student's Dissertation Committee, submitted and approved by the Graduate College Dean. If a change in the membership of the Doctoral Committee is contemplated, well in advance the student must secure the approval of all original committee members and the department Graduate Liaison before requesting a change allowing the new member to consult with student. In addition, no change in the membership of the Doctoral Committee is permitted within thirty days of the dissertation defense, unless otherwise stipulated by the Graduate College. To prevent heavy paperwork loads the Graduate College requests that ACR changes to update coursework be done only the semester before applying to take the general exam and prior to submitting a degree check for graduation. The forms are available on the Graduate College website, as well as a *Checklist for Completion of Doctoral Degree* to be used as a guide.
- J. General Exam. The dissertation advisory committee will administer the general examination. The student is expected to complete all required coursework in the first four semesters (Fall/Spring semesters only) and take their general exam in the 5th semester. Full details of the general exam are explained in [Section III](#) and [Appendix II](#).

To facilitate this process, department paperwork deadlines are as follows:

- Semester 1: Department Advisory Conference Membership form must be submitted by Dec 1st or May 1st for those that enter in Fall and Spring semesters, respectively.
- Semester 2: 1st Committee Meeting and ACR submitted to the Graduate College
- Semester 4: Any ACR updates needed prior to the General Exam must be submitted to the Graduate College
- Semester 5: The Application for the General Exam is due to the department by the end of the 1st week of the semester.

II. Requirements of Specific Programs

A. Ph.D. in Microbiology

1. Dissertation Research (6980). A minimum of 30 of the last 60 semester hours must be taken in Dissertation Research.
2. Teaching. It is recommended that every graduate student obtain experience in teaching.

B. Ph.D. in Plant Biology

1. Dissertation Research (6980). 30 to 45 of the 90 hours usually consist of the research course BOT/PBIO 6980, and approximately one-half of the last 60 hours should be in research.
2. Teaching. As part of their training, each student is recommended to instruct or assist in either a lecture or laboratory, or serve in classroom preparation for a minimum of one semester. The student's performance in the classroom will be evaluated by the instructor in charge of the course.
3. Outside Credits. Each student must have either a minor or a related field with a minimum of 6 hours.

C. Ph.D. in Ecology and Evolutionary Biology

The graduate program in Ecology and Evolutionary Biology spans over 40 faculty across campus guiding students from the Departments of Microbiology & Plant Biology and Biology at the University of Oklahoma.

In addition to the requirements for either a Plant Biology or a Microbiology Ph.D. degree, students seeking a Ph.D. in EEB must take:

- Seminar in Botany/Plant Biology or Microbiology,
- BOT/PBIO or MBIO 5453 (Advanced Ecology and Evolutionary Biology),
- BOT/PBIO or MBIO 5471 (Seminar in Ecology and Evolutionary Biology).

Statistics intensive courses are strongly recommended, including Quantitative Biology (BIOL 4913), Multivariate Analysis (BIOL 5943), Advanced Applied Statistics (MATH 5793), and Psychological Statistics I and II (PSY 5003 and 5013). Coding intensive courses such as Programming in R for Biology (BIOL 5923) will also suffice.

Further information pertaining to the EEB Ph.D. program can be found at www.ou.edu/eeb.

III. The General Exam

This section summarizes the departmental expectations, requirements and guidelines for the General Exam. These are in addition to those of the Graduate College, which are outlined in [Section 8.5 of the Graduate College Bulletin](#).

A. Goals of the General Exam

- To ascertain the student's fundamental knowledge base in their general field of study (PBIO, EEB, MBIO)
- To ascertain the student's knowledge of their respective research area (e.g. core knowledge necessary to successfully carry out their research project)
- To ascertain the ability of the student to formulate scientific questions and adequately articulate those questions to an audience (in written and oral form)
- To ascertain the student's ability to formulate hypotheses and develop objectives/aims that adequately test those hypotheses
- To ascertain the student's ability to design experiments and incorporate appropriate controls
- To ascertain the student's ability to critically analyze and interpret experimental data
- To evaluate the student's capacity to understand the broader impacts/bigger picture associated with a research question

B. Written Exam

Upon receiving authorization from the Graduate College to proceed with the General Exam, the student may begin work on the written portion of the exam. The written portion of the exam will consist of a research proposal on the same topic as the student's dissertation research project. Specific formatting and content information for the components of the written portion is provided in [Appendix II](#).

1. Phase 1 – [Specific Aims Page](#): No later than the 4th week of the 5th semester, the student will circulate a Specific Aims page to their advisory committee for general feedback. Individual committee members have one week to provide comments/feedback to the student. The student is expected to address this feedback when developing their full written proposal.
2. Phase 2 – [Full Proposal](#): Once feedback is received, the student will have up to two months to write a full research proposal based on their proposed aims. **The student is encouraged to consult with his/her major advisor and all committee members during the preparation of the research proposal.** However, committee members including the committee chair will not serve as editors of the proposal prior to its submission. The role of the committee and committee chair is to point out significant problems/concerns that the student should address before final submission. Students may also seek input on a proposal draft from their peers and senior lab members (postdoctoral and research scientists). The expectation is that the final submitted proposal represents the individual work of the student.
3. Evaluation of the written exam: Within two weeks of receipt of the written proposal, the committee will confer and make a determination as to whether these materials are satisfactory i.e., whether the proposal is of sufficient quality that it can be orally defended. If the committee has any hesitations/concerns on the proposal it must convene an in-person meeting to discuss the outcome. The committee will review the research proposal according to the following criteria:
 - i. adequate review of the literature, delineating the relation of the proposed work to the state-of-knowledge in the field
 - ii. clearly defined objectives (specific aims)
 - iii. significance of the proposed work
 - iv. general plan of work and alternative approaches to the problem

- v. the ability of the student to apply his/her knowledge in their field of study and related areas to a particular problem.
- Per Graduate College policy, the following outcomes can be rendered for the written exam:
 - i. **Acceptable:** The student may schedule an oral defense to take place no later than the Friday of pre-finals week. *To facilitate scheduling, a "save the date" can be done for the oral exam but under no circumstances should the oral exam be planned for the same time the advisory committee is set to render a decision on the written portion.* The authority report form is marked satisfactory for the written portion and the committee chair maintains possession of the form until the oral exam is complete.
 - ii. **Marginal Pass:** For a marginal pass, the proposal must be scientifically sound and the committee must agree that the student can address the committee's concerns without extensive rewrites. Any rewrites must be completed in a two-week time frame. The committee will petition for an abeyance of the written exam as detailed in Appendix III. *Under no circumstances should the student proceed to the oral portion of the exam at this time.* The authority report form is not returned at this stage.
 - iii. **Fail:** The authority report form is marked "unsatisfactory" for the written portion, the oral portion is left blank and all committee members sign. *Under no circumstances should the student proceed to the oral portion of the exam.* The student submits the form to the Graduate College and applies to take the exam in the following semester. If the second attempt is unsuccessful the student is dismissed from the Ph.D. program but has the option to finish a Master's degree.

C. Oral Exam

Once the written exam is deemed acceptable, the student may begin preparing for the oral exam. The oral exam will include an oral defense of the written exam as well as general background questions in the student's area of study (EEB, MBIO, PBIO). The student will prepare an ~30-minute presentation of their proposal materials. The student should be prepared for interruptions and questions throughout their oral presentation. Once the committee feels the questioning has been exhausted (or 3 hours have passed), the committee must render one of the following outcomes per Graduate College policy:

- i. **Acceptable:** The committee marks the authority form with acceptable for the written and oral portions, signs the form and the student returns the form to the Graduate College. The student will be admitted to candidacy.
- ii. **Marginal Pass:** The committee will petition for an abeyance of the oral portion as detailed in Appendix III. The concerns should be addressed no later than the third week of the semester following the abeyance request.
- iii. **Failure of Oral:** The committee marks the authority report form "satisfactory" for the written portion and "unsatisfactory" for the oral portion and signs. The student submits the form to the Graduate College and applies to take the exam in the following semester. Even though the written portion was passed the student has to retake both portions of the exam. If the second attempt is unsuccessful the student is dismissed from the Ph.D. program but has the option to finish a Master's degree.

D. Authorization for Deviation from Schedule

Extensions to the timeline for the General Exam will only be granted in specific circumstances. Such circumstances include:

- i. If a student takes an official leave of absence approved by the Graduate College
- ii. If a student entered the program with coursework deficiencies (e.g. was not a biology major as an undergraduate) and requires additional foundational coursework
- iii. National Guard Duty or military deployment
- iv. Students that participated in the rotation program during their first semester may be permitted a one semester extension if the Advisory Committee feels it is necessary

Students requesting extensions must formally petition the Department Graduate Committee with the approval of their Advisory Committee Chair.

IV. Checklist for Ph.D. Degree Program

It is the responsibility of the student to stay advised of all university academic calendar deadlines along with graduate college deadlines.

- _____ 1. Advisory Committee. **No later than eight weeks after initial enrollment** in the doctoral program, the student should make an appointment with their major professor to begin to establish a dissertation advisory committee, and arrange an advisory conference to formulate a study plan.
- _____ 2. Advisory Conference. It is the student's responsibility to arrange an advisory conference meeting with the Dissertation Committee. The advisory conference must be held with the Dissertation Committee as soon as a major interest area is chosen, but in no case later than the end of the second semester in residence. After the conference, the student must file a completed *Advisory Conference Report* (ACR) with the Graduate College. The report must be signed by the Dissertation Committee and the Graduate Liaison. This will include the requirements to be met for the degree as specified by the Committee during the conference, including any specific skills or tools that are to be a part of the program. The report will be submitted to the Graduate College Dean, with copies to the student, each member of the committee, and the Departmental Office.
With the approval of all members of the Dissertation Committee, should any changes in the Report of Advisory Conference (ACR) or in the membership of the permanent Doctoral Committee become necessary, a *Request for Change in Doctoral Advisory Conference Report* must be filed with and approved by the Graduate College Dean. If a change in the membership of the Doctoral Committee is contemplated, the student must secure the approval of all original Dissertation Committee members. No change in the membership of the Dissertation Committee is permitted within thirty days of the general exam or the dissertation defense.
- _____ 3. Doctoral Seminar. Each Candidate for the Doctor of Philosophy degree in Microbiology or Plant Biology is required to present a seminar based on their dissertation research. This shall be open to the public, and it shall be presented before the final oral examination. Since the candidate has a right to expect comments/questions from the general audience, time will be allowed for questions

immediately following the presentation. After this, the final oral examination with only the student and graduate committee will convene.

- _____ 4. *Application for General Examination.* Each student is expected to take their general exam by the end of the fifth semester in the program. Before making application, the student also must have made up all deficiencies. When coursework has been completed, the prospective candidate must file with the Graduate College a completed *Application for General Examination for the Doctoral Degree* form. Applications are available on the Graduate College website with the filing deadline. The examination should not be scheduled during final examination periods or when the Doctoral Committee cannot be assembled. Additionally, the summer semester does not provide adequate time for the general exam process and faculty are not available.

After the examination is authorized by the Graduate College Dean, the student should arrange a time and place for the examination with their Doctoral Committee. All Ph.D. students in the department will be examined over the areas of their respective disciplines listed previously in this manual. The Dissertation Committee will administer the examination for all Ph.D. students in their respective disciplines.

- _____ 5. *Graduation Application.* Students must apply online for the appropriate degree early in the semester in which they propose to graduate. A form indicating the student's name exactly as it is to appear on the diploma and giving the exact degree for which the student has been admitted to candidacy must be completed by the date indicated on the Graduate College Academic Calendar.

- _____ 6. *Admission to Candidacy.* After the general examination is completed, the major professor will complete the *Authority Report Form for the Dissertation Defense* provided by the Graduate College indicating whether the candidate has passed or failed and what further work they must do. If the student has passed, the Graduate Council will admit them to candidacy for the Doctoral degree. If all or any portion of the general examination is failed, a report must be submitted to the Graduate College Dean indicating a failure on the examination. At the discretion of the Committee, the student may seek authority from the Graduate College to repeat those portions of the examination failed the first time. If a student fails any portion of the general examination on the second attempt, they will be terminated from the doctoral program. No portion of the examination may be taken the third time. If a student's performance is marginal, but not failing, and the examining committee wishes the student to do further readings, coursework, investigations, etc. in a set time, the results of the examination can be held in abeyance with the approval of the Graduate College Dean. At the end of the time limit (usually no more than one semester) the committee must file the report with the Graduate College.

Any report received in the Graduate College without a unanimous vote will be investigated by the Graduate College Dean. The Dean may choose to confer with the dissenting member(s), with the committee chair, or with the entire committee. The course of action taken will be dictated by each individual case.

The Graduate College provides authorization for a student to sit for the general examination and must receive a report on the outcome of each general examination. If the examination was not held, a report indicating the reasons why it was postponed must be submitted.

- _____ 7. *Reading Copy of Dissertation.* The doctoral candidate should prepare and distribute reading copies of the dissertation to each doctoral committee member. The reading copy should be in an acceptable dissertation format and must include all figures and tables, numbered pages, and a complete bibliography. It should not contain grammatical or spelling errors. Printed instructions for the preparation of

the dissertation are available on the Graduate College website. When the reading copy has received preliminary approval of the major professor the student should forward it to the remainder of the committee. A reading copy of your thesis must be provided to your committee ten business days before your defense.

At least five members of the Dissertation Advisory committee must read and determine whether the dissertation demonstrates the student's ability to conduct original research and makes a significant contribution to the student's discipline. They may accept or reject it. If they reject it, the student will be given another opportunity to submit an acceptable dissertation to the committee. If they accept it, they may require changes and corrections. When the dissertation is acceptable and a degree check indicates that the student has completed all course work with acceptable grades, the student may schedule the final oral examination.

- _____ 8. Final Oral Examination. At least four weeks before the defense, a *Request for Degree Check* must be submitted to the Graduate College. Once approved, the candidate may apply for the final oral examination by submitting the *Request for Authority for Dissertation Defense* form provided on the Graduate Office website. The department has a 3-year embargo available for theses/dissertations. Be sure to indicate on the *Request for Authority for Thesis Defense* form whether you wish to take advantage of this option. You should discuss this with your committee chair. The initial portion (research presentation) of the final oral examination is open to the public, after which the examination enters executive session comprising the student and the doctoral examining committee.
- _____ 9. Final Dissertation Advisory Committee Report. At least four members of the Doctoral Committee must be present to conduct the examination, including the major professor and the outside member of the committee. After the oral examination and within 72 hours of the examination, the committee will report its decision to the Graduate Dean on the authority form provided by the Graduate College.
- _____ 10. Post-Examination. Following successful defense of the dissertation, the candidate should make an appointment to deposit your dissertation by visiting [iAdvise](#) online. One (1) unbound copy of your dissertation is due to the Graduate College no later than 60 calendar days after your defense. At the time you deposit your dissertation, you must also print, complete, and submit the *Entry Form for Dissertation Title on Student's Academic Record* and the *Certificate of Completion of the Survey of Earned Doctorate Questionnaire* to the Graduate College provided online (Graduate College website).
- _____ 11. Electronic Dissertation Submission (SHAREOK). The student must also electronically submit the final dissertation to the SHAREOK institutional repository, according to the instructions provided by the Graduate College in the email authorizing the dissertation defense. The electronic dissertation must meet all Graduate College formatting requirements and must be identical to the final printed dissertation, with the exception that it should not include committee signatures. A student may not graduate until all degree requirements, including the printed and electronic dissertation deposit, have been completed. SHAREOK is the institutional repository for the OU Library. Digital assets placed in the repository are available to a global audience, and search engine optimization techniques are used to increase their visibility to researchers and thus their impact on the global community. The department has a 3-year embargo available that prevents release of theses/dissertations even though they are deposited with SHAREOK. Be sure to indicate on the *Request for Authority for Thesis Defense* form whether you wish

to take advantage of this option. You should discuss this with your committee chair.

____ 12. *Student Responsibilities*. It is the responsibility of the student to know and follow all rules, guidelines, and deadlines of the Department of Microbiology and Plant Biology and of the Graduate College. Failure to satisfactorily complete any of the following four requirements will result in the student being dismissed from the Ph.D. program.

- (1) Have an advisory committee conference
- (2) Complete the required courses with satisfactory grades
- (3) Pass the general examination
- (4) Successfully complete and defend research dissertation

FACILITY PRIVILEGES AND RESPONSIBILITIES

I. Library

Most of the volumes in the Bizzell library are on open shelves, available to students and faculty. Graduate students have certain privileges not enjoyed by undergraduates, but graduate students are subject to fines.

II. Equipment and Supplies

Materials that are routinely stocked in the stockroom may be withdrawn by the student with permission from the major professor. These materials must be signed out properly and charged to the proper account. Supervisors will provide their graduate teaching assistants with a copier code to use for course papers. Check with the Department stockroom. No supplies will be furnished for personal use.

III. Microscopes

Microscopes will be checked out to individual students only with the approval of a faculty member who is supervising their study. This approval must be in the form of a written memo to the Chairperson with a copy to the stockroom.

IV. Responsible use of Facilities and Equipment

Use of facilities such as the Noble EM lab, plant growth facilities and department greenhouses, and the Bebb Herbarium, as well as equipment such as refrigerators, ovens, incubators, centrifuges, balances, spectrophotometers, etc., located in various laboratories are contingent upon approval of the faculty member in charge of the respective facility or item. Autoclave use requires appropriate training and passwords. Please contact [Dorian Small](#) to receive the appropriate training. All building and building equipment maintenance requests need to be submitted to Dorian Small via the building request form on the MPBIO website (<http://mpbio.ou.edu/building-requests>). **It is the responsibility of the graduate student to follow all relevant rules and regulations that apply to equipment and facility use.** All graduate students are expected to fulfill necessary safety training. Please consult your major advisor to determine which training sessions are necessary for you.

V. Department Keys

Full-time graduate students who is currently enrolled in the department may be authorized a key to the room in which they are assigned a desk space and the outside door of their office/lab building (students with office outside of GLC Hall should contact their major professor). For Graduate Teaching Assistants teaching in the GLC Hall, keys may also be authorized for the room(s) for which their course is being taught. For key request, the

faculty/administrative staff in charge of a room in GLC Hall should complete the *Key Request Form* provided on the MPBIO department website. Authorization for issuance of keys will be obtained from the Department Chairperson, and taken to the Facilities Management Department where they may be obtained. All doors, both inside and outside, should be kept locked after normal hours of use. Keys must be returned to the department when the student completes their degree or are terminated from the graduate program.

Students should note that in the Fall 2017 semester George Lynn Cross Hall will be undergoing a rekeying project. Once complete, a new key policy will be in place. Students will be notified of the new policy once it is available.

VI. Department Mail Boxes and Notices

The student's Lab Mailbox located in GLCH 137 should be checked daily for general notices, mail, notes from staff members, etc. **University address may not be used for personal mail (bank statements, insurance, etc).** The large bulletin board outside the main office usually carries announcements of fellowships and grants, information relating to graduate study at various institutions, announcements of summer stations positions available to majors, etc. For fellowships and grants, refer to the Graduate College website concerning opportunities for such support that is available to you, as well as those listed on the university website for funding opportunities.

VII. E-Mail

Graduate students should ensure that e-mails to their "OU email address" are forwarded to their preferred email mailbox through the OU email account management, and check emails regularly. The Graduate College and all OU offices will use the university assigned e-mail address to contact you on all matters. When acting as a teaching assistant all student contact should be made using your official OU email address or through the Canvas Learning Management System.

VIII. Student Health Insurance

It is the responsibility of the student to contact the OU Human Resource Benefits Office at 405/325-2961 to ensure coverage and eligibility. For Graduate Assistants to be eligible for the Student Health Plan, you must meet the following enrollment requirements:

1. Must be enrolled in at least 5 credit hours during the fall or spring semesters, or 3 credit hours in the summer semester for summer only coverage.
2. Be appointed to a .5 FTE or greater position. If you are in your last semester before thesis or dissertation and you need fewer than five hours, you may continue to have coverage (you have this option only once during your attendance at OU), but please contact the OU Human Resource Benefits Office for your case.

IX. Department Graduate Assistants

A. Duties

Each assistant is expected to spend an average of 20 hours per week working for the Department. This work will consist primarily of:

1. Assisting classes to which they are assigned. Assistants should attend lectures and/or other relevant components of the courses in which they are assisting for the first time.
2. Holding regular scheduled office hours.
3. Grading papers for sections of courses in which they assist, and turning in grade reports in a timely manner.

4. Preparing teaching aids (outlines, drawings, test, etc.) for sections of courses in which they assist. Assistants who have not fulfilled all their hourly obligations by the end of the semester may be asked to do additional tasks by the instructor or by the Department.

B. Time Records

Written weekly time records are to be kept by each assistant of their time spent working for the Department. Students are required to report monthly assistantship hours to the University. You will receive instructions via email on when and how to report these hours.

C. Good Standing

All graduate assistants must maintain a grade average of 3.0 in conformity with the Graduate College regulations on academic standards and must perform assigned research and teaching duties in a manner satisfactory to the Department, Graduate College and the University of Oklahoma.

1. **Graduate Teaching Assistantships (GTAs)**

- (a) Statement of Intent. A statement of intent will be due mid-semester regarding an assistantship for the following semester.
- (b) Satisfactory Progress. Students must have an annual evaluation rating stating they are making satisfactory progress towards their degree to be eligible for a GTA position. GTAs will be available to those making marginally satisfactory progress at the discretion of the Department Chair.
- (c) Limitations on GTA Eligibility. The department reserves the right to revoke /limit/lower priority of a student's GTA eligibility in response to (i) poor teaching performance based on student and/or supervisor evaluations, (ii) prolonged time to degree (~3 years for M.S. and ~6 years for Ph.D.), (iii) student misconduct.

2. **Graduate Research Assistantships (GRAs)**. The length of time a student is employed on a research assistantship will be left to the discretion of the professor under whom the student is employed.

D. Tuition Waiver

In the spring or fall semester, a student may be eligible for a waiver of up to the total number of hours remaining toward the degree provided that they enroll in 5 or more credit hours and hold a graduate assistantship of at least .50 FTE. In the summer, a student's eligibility for a waiver is based on whether they held or will hold a qualifying appointment in the preceding spring or following fall semester.

A student's maximum total waiver over the course of a single degree program is the number of hours remaining toward the degree when they first receive a tuition waiver (30 hours for Master's degree and 90 hours for a Ph.D. degree). If a student in the final semester of the degree program is only eligible for 1-4 hours, they may receive an additional waiver of up to the minimum enrollment required to qualify for a waiver.

Qualified students who wish **to receive a tuition waiver must complete** the Professional Ethics Training–Responsible Conduct of Research (PET-RCR) workshop. PET-RCR registration is available on the Graduate College website.

SPECIAL REGULATIONS FOR GRADUATE ASSISTANTS

- I. **Definition.** A graduate assistant is defined as any graduate student appointed as a graduate teaching or research assistant, or graduate teaching or research associate.
- II. **Workload.** Because one of the primary purposes of a graduate assistant appointment is to aid the student in the successful completion of a graduate program, graduate assistants may not be appointed for more than one-half (0.5 FTE) employment without special permission of the Graduate College Dean. The Department must submit a written justification with all appointments greater than 0.5 FTE. A 0.5 FTE graduate teaching assistant would normally involve twenty hours per week. This would include time spent in the classroom or laboratory, preparations, office hours, etc. In no case is a graduate student permitted to be appointed to greater than a combined 0.7 FTE.
- III. **Enrollment Load.** The graduate assistant's academic course load for each term should ensure that they are making satisfactory progress toward the degree. However, the minimum enrollment for fall and spring semesters must be **five credit hours**, unless otherwise stipulated by the Graduate College.
- IV. **Professional Ethics Training – Responsible Conduct of Research (PET-RCR).** All graduate assistants (GRAs and GTAs) who wish to receive the Qualified Graduate Assistant tuition waiver must complete a two-day Professional Ethics Training – Responsible Conduct of Research (PET-RCR) workshop. Students are encouraged to complete the training as early as possible but must complete the training before the start of the third semester of enrollment, otherwise, a tuition waiver will be withheld.
- V. **English Proficiency for International Graduate Assistants.** The State of Oklahoma requires certification for any non-native speaker of English who has contact with students in an *instructional capacity*. To meet this requirement at the University of Oklahoma, the English Training and Certification Services administers language proficiency training and support services leading to Certification of Proficiency in English. Assessment and services are administered by the University's English Training and Certification Services located in Robertson Hall 213 (731 Elm Avenue). For further information refer to the ETCS website or contact their office at (405) 325-1838.
- VI. **Outside Employment.** To comply with university regulations, some of which are bound by State law, a graduate assistant may not accept additional employment. Students are cautioned that specific funding agencies may have different policies. Students with specific questions should contact the Graduate College, Payroll Services, Financial Aid Services, and other appropriate offices for complete information.

If you have any questions about your degree program, please contact your major professor or the department Graduate Liaison. For further information not covered in this manual, please refer to the **Graduate College website**: www.ou.edu/gradweb.

APPENDIX

Appendix I: Graduate Certificate in Microscopic Imaging & Technology

The Certificate Program in Microscopic Imaging and Technology is designed for graduate students with a strong interest in the investigation of using advanced imaging technology to characterize biological, materials and physical science specimens at a range of resolutions that

can reach to a near atomic level. Students who may be interested with this certificate come from a wide range of interests (e.g., Biology, Microbiology, Plant Biology, Biomedical Engineering, Biotechnology, Chemistry, Biochemistry, Materials Sciences, Nanotechnology, Physics).

A. Requirements:

Complete twelve hours of *core microscopy courses*:

BIOL/MBIO/PBIO 5364 Transmission Electron Microscopy (4 credits)

BIOL/MBIO/PBIO 5374 Scanning Electron Microscopy (4 credits)

BIOL/MBIO/PBIO 5394 Advanced Light Microscopy (4 credits)

Complete three hours of *independent research* in which student demonstrates research skills in microscopy as part of their graduate research:

To fulfill this requirement, students will enroll in three hours of graduate research courses selected from an approved list maintained by the Department of Microbiology and Plant Biology.

B. College Limitations:

All courses must be taken at OU; No transfer credit will apply; Cannot be more than five years old *as of the semester* the graduate certificate is awarded; GPA of 3.0 or higher *on all coursework applied* to the graduate certificate; At least 50 percent of the inclusive courses must be coded at the 5000 level or higher.

Students must submit a separate application to the certificate program on the [Graduate College Website](#). Once admitted students will submit the [Graduate Program Certificate Report](#) with the signature of the Department of Microbiology and Plant Biology Graduate Liaison regardless of their home degree program.

Contact Information

- For questions on Microscopy coursework contact
 - Director of Samuel Roberts Noble Microscopy Lab, [Dr. Scott Russell](#), 325-4391
- For administrative information contact
 - Graduate Liaison, [Dr. Liz Karr](#), 325-5133
 - Graduate Program Administrator, [Mr. Joseph Kirt](#), 325-4322

Appendix II: General Exam Proposal Format

The written portion of the General Exam consists of two sections: A) Specific Aims Page and B) Project Description. As per Section III.B.1 above, the Specific Aims Page must be completed and circulated to the advisory committee for feedback prior to developing the Project Description. The expected formatting and content for each section is described below.

A. Specific Aims Page

- Formatting
 - Limited to 1 Page
 - Single-spaced
 - 1 inch margins
 - Arial, Times or similar font of 11 pt or larger
 - No figures

- Content
 - Key background information (max 1 paragraph)
 - Statement of gap in knowledge in the field
 - Statement of Significance
 - An overall objective of the proposed work
 - Central hypothesis
 - Rationale
 - Specific Aims/Objectives list with
 - Include brief (one to two sentences) statements on approach
 - More defined hypothesis (working hypotheses for each aim)

B. Project Description

- Formatting
 - 15 pages maximum-including figures and tables, does not include references
 - Single-spaced
 - 1 inch margins
 - Arial, Times or similar font of 11 pt or larger (9 pt for figure legends)
- Content
 - Overview and Objectives
 - The majority of this information should come from your specific aims page but can be expanded (fleshed-out) up to two pages
 - Significance and statement of what knowledge successful completion of the proposed aims will bring about (1 to 2 paragraphs)
 - Background (3 to 5 pages)
 - Review of Relevant Literature
 - This should not be an exhaustive review but contain enough information for the reader to determine what is known in the field and set you up for identifying where key information is missing
 - Preliminary Data (this should be any data you have generated towards your project)
 - Relationship to Work in Progress (1 to 2 paragraphs)
 - In your lab
 - At the university
 - In the field
 - Research Plan (3 to 5 pages)
 - For Each Aim
 - Brief intro including working hypothesis, rationale, justification
 - Experimental Approach including appropriate controls
 - Expected Outcomes
 - Potential Pitfalls/Alternative Approaches
 - Timeline
 - Long-term Implications (1 to 2 paragraphs)
 - What new knowledge is expected

Appendix II: Abeyances of the General Exam

In circumstances where either the written or oral portion of the exam are considered a marginal pass, the committee can request to hold the result of the exam in abeyance while the student works to remedy the issues. In such a case, the advisory committee chair drafts a petition addressed to the Dean of the Graduate College. The committee must be in agreement that if these issues are addressed then the students' performance would be considered a pass. Additionally, the expectations of work and time must be discussed with the student before submission of the petition.

The petition must include the following information:

- Department Letterhead
- Student Name and ID number
- Reason for abeyance
- Detailed list of expectations to bring performance to a passing level
- Time frame for resolution of the issues
 - For the Written Portion two weeks should be permitted
 - For the Oral Portion the abeyance should be resolved no later than the third week of the semester (Fall & Spring only) following the abeyance request.
- Signature of the Committee Chair
- Endorsing signature of the Graduate Liaison