

GRADUATE STUDENT HANDBOOK

DEPARTMENT of BIOLOGY

Last approved revision June 7th, 2023

Please visit <https://biology.wvu.edu/students/graduate-students> for useful information about our program.

Major revision approved on May 11, 2007 by the graduate faculty by a vote of 15 for and 0 opposed.
Revision concerning seminar hours approved on May 15, 2009 by the graduate faculty by a vote of 14 for and 0 opposed.
Reorganization, clarification, and corrections in order to comply with University policy made May 18, 2009 (faculty approval not required).
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Revision of spring graduate seminar approved on April 19, 2012 by the graduate faculty by a vote of 9 for, 4 opposed, and 1 abstention.
Reorganization, clarification, and corrections were made by Drs. Peterjohn and Rio on January 23, 2013 (faculty approval not required).
Revision of Professional Development and Graduate Seminar (Biol. 796) made by KCD were approved by majority Faculty vote (Dec. 3rd 2015).
Minor update revisions by KCD August 2016 (faculty approval not required).
Revision of written preliminary exam format options and Appendix D. made by KCD were approved by unanimous Faculty vote (Feb. 16th 2017).
Minor update reflecting changes required by ECAS: Biol 799 dropped and Biol 794 used instead (Feb. 28 2018).
Revision in wording to state that MS students are not required to serve as a teaching assistant (T.A.) but can do so if they wish; approved by unanimous Faculty vote (Sept. 29th 2020).
All graduate students entering the program after these dates must follow the material contained in the appropriate revision of this handbook.
Major revision approved unanimously on November 17th, 2022 by the graduate faculty.
Revision to add onsite advisor policy approved unanimously on June 7th, 2023 by the graduate faculty.
Revision to credit requirements to MSc approved unanimously on October 19th, 2023 by the graduate faculty.
Clarifying language added to course selection added to prof. devel. section to match language in graduate catalog.
Revision to professional development credit requirements to increase PhD credits from 6-7 as required by ECAS (April 29th, 2024)

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INTRODUCTION

Welcome to the Department of Biology at WVU! The Department of Biology's Graduate Program is dedicated to scholarship in academics and research. The objectives of the program are to empower students to: 1) recognize important biological problems; 2) design, execute, and analyze experiments aimed at solving important problems; and 3) communicate their findings in oral and written form. In addition, the program hopes to foster an awareness of the social and political issues of the day related to biology, and a desire to continue independent study after graduation. Importantly, we are dedicated to supporting you through the successful completion of your degree. In addition to the departmental procedures described in this handbook, below is a list of helpful resources to guide through your graduate experience:

Programmatic resources:

Graduate catalog: <http://catalog.wvu.edu/graduate/eberlycollegeofartsandsciences/biology/>

Graduate education and life: <https://graduateeducation.wvu.edu/>

Forms and Processes: <https://eberly.wvu.edu/students/graduate/graduation-forms-and-process>

Degree Regulations: http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/

General resources for Graduate Students:

<https://graduateeducation.wvu.edu/current-students/student-resources>

<https://studentengagement.wvu.edu/the-rack-student-food-pantry>

<https://carruth.wvu.edu/resources/talkspace>

<https://biology.wvu.edu/resources/self-care>

The Department of Biology offers graduate courses and research that lead to M.S. and Ph.D. degrees in Biology. These degrees share many programmatic details, but differences will be indicated throughout the handbook.

Steps for the MS Degree Student:

(<http://catalog.wvu.edu/graduate/eberlycollegeofartsandsciences/biology/ms/>)

Steps for the Ph.D. student:

(<http://catalog.wvu.edu/graduate/eberlycollegeofartsandsciences/biology/Ph.D./>)

Step 1: Rotation: Selection of an Advisor (MS and Ph.D. students).

Note: Students who enter knowing who their advisor will be (by mutual consent of the student and faculty member), please skip to Step 2.

Choosing a faculty advisor is one of the most important decisions a student makes. Students may have identified more than one Advisor willing to support them and would like to spend time working with each advisor before making a decision. In this case, a student can take part in a formal process called 'rotation'. During this time the Associate Chair for Graduate Studies serves as the temporary advisor for the graduate student and the Graduate Committee will act as the student's committee, should committee input be required on any issue.

Purpose: Rotation among laboratories serves both students and faculty. The intention of this activity is to acquaint the incoming student with research opportunities in the laboratories of their potential advisors and to give the student the information needed to make an informed choice. The student's activities will be directed by the faculty and may include informal discussions, assigned readings followed by discussions, lab tours, field trips, assisting graduate students, technicians, or postdoctoral associates with experiments, or other activities deemed appropriate within the time constraints of the rotation. For faculty, the rotation allows them to assess the existence of a good match for a mentor-student relationship in their laboratory. The goal by the end of the semester is for the student to select a consenting professor to be their permanent Advisor. If at the end of the rotation period the student does not wish to join either lab or no faculty member wishes to have the student join the lab, the student will have the next semester to find a faculty advisor willing to support them. During this time, the student will be supported by a graduate teaching assistantship. If they cannot find a faculty advisor, they will be dismissed from the program.

Student responsibilities: Students in consultation with the potential advisors will set the rotation order. After these arrangements are made, they must be communicated, in writing, to the Associate Chair for Graduate Studies within the 1st two weeks of their first semester. Students are expected to do all assignments on time and keep appointments with potential faculty advisors. The student is expected to spend 3 - 4 hours per week per credit hour of BIOL 797 on rotation-related activities.

Faculty role: Faculty participating in a rotation will coordinate rotation activities in their lab. If the student selects an advisor prior to rotating in another faculty member's lab, that faculty member may choose to 'opt out' of the rotation. Opting out may occur at the faculty member's prerogative but is not a choice the student may make once the rotation is underway. Faculty will jointly help the student generate a 797 workload plan for the rotation semester.

Duration: The whole rotation will last for one semester. The duration in each person's lab will be either 1 mo. (for a 3-lab rotation) or 1.5 mo. (for a 2-lab rotation). By the end of the rotation semester, students must select a faculty advisor.

Credit: The student must sign up for a minimum of 2 credits of Biol. 797.

Step 2: Selection of an Advisory Committee (for MS and Ph.D. students).

The Advisory Committee must be formed by the start of the first Spring semester. Before the end of the first Spring semester the Advisory Committee must have reviewed and approved the student's Program of Study (POS). It is the job of the Advisory Committee to meet with the student to plan coursework, discuss the student's research project, approve the POS, provide feedback and advice as a result of progress reports on the research and career goals, and conduct the thesis defense. The faculty advisor is the Chairperson of the Advisory Committee and must be a member of the Biology Department. Exceptions to this rule may be granted in individual cases by the Biology Graduate Committee. Additional committee members from West Virginia University must be members of the Graduate Faculty (as defined [here](#)). Committee members who are not members of West Virginia University, or are otherwise not a member of the Graduate Faculty, may be requested to submit their qualifications to the Biology Graduate Committee for approval.

The committee is expected to meet with the student at least once per year after the student and advisor complete the annual Individualized Development Plan (IDP). Each Spring, the student and advisor will respond to a departmentally provided series of questions evaluating the student's progress in the technical aspects of their development as a researcher and the professional aspects of their development as an academic. Student and advisor will then meet to discuss both assessments and provide a summary of student strengths and areas for development. The student will then have their annual committee meeting the second week of the fall semester. The student will first meet with the advisory committee to discuss their general progress without their advisor present and then the advisor will meet with the advisory committee without the student present. This will then be followed by a short presentation on research progress, future research directions for the next year and discussion of any missed benchmarks.

In the **M.S. degree program**, the Advisory Committee consists of at least three people; the Chairperson (the student's faculty advisor) and at least two additional members who are chosen by the student in consultation with their advisor. One of the additional members may be (but does not have to be) from outside the Department of Biology. No more than one person may be a non-member of the graduate faculty at WVU.

In the **Ph.D. program**, the Advisory Committee consists of four or more people: The Chairperson (Advisor) and three or more additional members chosen by the student in consultation with the Advisor. One, but not more than two, of the additional members must be from outside the Department of Biology. No more than one person may be a non-member of the graduate faculty at WVU.

University guidance on committee composition can be found here:

http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/#committeestext

Step 3: Program of Study (for MS and Ph.D. students).

For an M.S. student, the POS is a written document consisting of two parts: 1) an outline of past, present, and future course work for their graduate student career; and 2) a written plan of a student's proposed research project. **A written POS must be approved by an M.S. student's Advisory Committee no later than two semesters after entering the program. Students are required to take BIOL 681 (Research Project Development) which ensures that students complete this benchmark as scheduled. Students starting in the Summer semester may complete the POS by the end of the Spring semester so that they can take BIOL 681.**

A student's plan for future coursework will be based on expected course offerings in the coming years, but if those courses are not offered, or the timing is different than proposed, then changes/adjustments to the POS can be submitted to the student's committee for approval. The coursework summary must follow a standard format (See Appendix C), and any changes/adjustments to the planned course schedule must be approved by the Advisory Committee and then submitted to the Associate Chair for Graduate Studies.

The Research Plan contained in the POS is intended to enable students to begin their research in a timely fashion with the benefit of input from the Advisory Committee. The research plan must be no more than 5 single-spaced pages in length and follow a standard format (See Appendix C). It must be written by the student and approved by the student's Advisory Committee. A student's research project is selected according to their interests and goals through consultation with the student's faculty Advisor and Advisory Committee. The Research Plan in the POS, however, is separate from the Ph.D. Research Proposal (see below).

Upon approval of the entire POS by the student's Advisory Committee, a signed copy is e-mailed by the Research Advisor to the Associate Chair for Graduate Studies, the Student and the Advisory Committee to be placed on file.

Late Programs of Study are detrimental for both students and their committees. If you fall behind, you will be asked to complete this task within a prescribed time or you will need to provide a letter of explanation to the Graduate Committee at least two weeks before the end of the semester which (a) outlines the reasons you believe this goal is unattainable, and (b) proposes an alternative timeline. The Graduate Committee will then make a decision, and may, at its option, grant a 1-semester grace period. Alternatively, the Graduate Committee will call for a meeting with you and your advisor to discuss your future in the graduate program. Secondary appeals of such decisions to the Departmental Chair will be possible.

Purpose: The POS ensures that the student receives guidance on their course work and research project as early as possible and that the student's committee becomes actively involved in guiding their education.

Timing: The POS should be completed by the end of the 2nd semester and approved by the student's advisory committee at the first meeting of the committee with the student.

Criteria for Approval: The student meets course-credit expectations, and their advisory committee approves the student's coursework plan. The coursework plan should adequately support the student's research and career-development goals.

Step 4: Curriculum Requirements for M.S. students

M.S students are required to complete a minimum of 27 graduate credits at the 400 level or above. Only 6 credits at the 400 level may be used. Students must be registered for 9 credits each semester (i.e. be considered "full-time") to hold an assistantship in the Fall and Spring. Number of credits required for the Summer semester depend upon the situation of the individual student (student loans, international vs. domestic).

Curriculum requirements & constraints for an M.S. student include the following:

- **Coursework:** Students are required to complete a minimum of **12 credit hours of graduate coursework at the 400 level or above**. Only coursework where the grade earned is A, B, C, P, or S can be counted, and only 6 credits of coursework at the 400 level may be used (50% of the 12 hours required). M.S. students will enroll in courses in any area that the Advisory Committee feels that the student is deficient or any courses necessary to further the knowledge of the student in their chosen field of study. Teaching practicum credit cannot be used towards the 12 credit hours of coursework. However, credit for teaching practicums may be used to

count towards up to 2 hours of the 3 needed for Professional Development.

- Thesis Research: **Six (6) credit hours of thesis research credit** (BIOL 797) are required for the 27 graduate credits needed. Grades of satisfactory (S) or unsatisfactory (U) for BIOL 797 will be assigned by the student's faculty advisor. Students and their advisor must provide a workload plan for each semester in which their student is enrolled in BIOL 797 (Please see Appendix F).
- Graduate Seminar & Professional Development Seminars
 - Graduate Seminar: All M.S. students must register for, and attend, the graduate seminar (BIOL 796) every Fall semester while they are in residence. A minimum of **2 credit hours of BIOL 796** is required for the 27 graduate credits needed. The Fall Graduate Student Seminar will consist of one section coordinated by a single faculty member. This seminar is run as a mini conference where every student presents their research to the department and will receive feedback on their presentation. This seminar is intended to enhance the professional presentation skills of our graduate students.
 - Professional Development: All M.S. students are **required to take BMS 700 (Scientific Integrity) for 1 credit hour**, or a like course. All M.S. students must also take **BIOL 681 (Research Project Development)** for 1 credit hour in the Spring semester of their first year in residence. This course gives guidance on developing their POS document. In addition, all M.S. students must take a **minimum of 1 additional credit hours of professional development from the approved list** (see Appendix D) or equivalent course approved by the student's committee. BIOL 588 and GRAD 710 are listed as options in the graduate catalog, but any course approved by the student's committee can suffice. Teaching Practicum (BIOL 790) can be used for this purpose.
- Departmental Seminars/Colloquium: To become acquainted with research being conducted within and outside the department, **M.S. students are required to take 3 semesters (3 credits) of BIOL 788** (the Departmental Seminars/Colloquia). When taking BIOL 788 for course-credit, more than two unexcused absences will result in a failing grade. None of the credit hours for Departmental Colloquium (BIOL 788 Seminar) can be counted towards the 12 credit hours coursework requirement.
- Students must earn a minimum overall GPA of a 2.75, and a minimum GPA of 3.00 in coursework applied to their graduate program. A student who fails to maintain this average is expected to make up the grade point deficiency in the following semester in order to continue in the program. The summer term is not considered as a semester in the above requirements. If a second semester (at any time) with a substandard cumulative grade point average occurs, the Graduate Committee will call for a meeting with you and your advisor to discuss your future in the graduate program. A grade of "D" or "F" in any course will not be counted as fulfilling graduate degree requirements but will be used in calculating the graduate grade point average.
- M.S. students are not required to serve as a teaching assistant (T.A.) but can do so if they wish or if their advisor does not have sufficient funds to cover their stipend.

Summary:

Coursework	12 credit hours (6 credit hours max. at 400 level)
Research (BIOL797)	6 credit hours
Prof. Development	
BMS 700 & BIOL 681	2 credit hours (1 credit hour each)
Other	2 credit hour
Grad Fall Seminar (BIOL 796)	2 credit hours
Dept. Colloquium (BIOL 788)	3 credit hours
	=====
Total =	27 credit hours

Example semester: Fall: BIOL 796 (1cr), BIOL 788 (1cr), BMS 700 (1cr), BIOL 420 (3cr), GEN 521 (3cr) = 9cr.

Step 4: Curriculum Requirements for Ph.D. students

A Ph.D. student must enroll in courses that the Advisory Committee feels are needed to adequately prepare the student for their research and career-development goals. Additionally, the Advisory Committee may recommend courses to further the knowledge of the student in their chosen field of study. Ph.D. students are required to complete a minimum of 37 graduate credit hours in Biology and/or related areas at the 400 level or above. Only 8 credits at the 400 level may be used. Students must be registered for 9 credits each semester (i.e. be considered “full-time”) to hold an assistantship in the Fall and Spring. Number of credits required for the Summer semester depend upon the situation of the individual student (student loans, international vs. domestic).

Curriculum requirements & constraints for a Ph.D. student include the following:

- **Coursework:** Students are required to complete a **minimum of 18 credit hours** of graduate coursework at the 400 level or above. Only coursework where the grade earned is A, B, C, P, or S can be counted, and only 8 credits of coursework at the 400 level may be used (44% of the 18 hours required).

If considered applicable by the Advisory Committee, courses taken within the past 5 years for an M.S. degree (8-hour maximum; 44% of the 18 hours required) may be counted towards the Ph.D. degree.

- **Dissertation Research:** **Six (6) credit hours of satisfactory thesis research (Biol. 797) are required** for the 37 graduate credit hours needed. Grades of satisfactory (S) or unsatisfactory (U) for Bio. 797 will be assigned by the student’s faculty advisor.

- **Professional Development & Graduate Seminars**

Professional Development: All Ph.D. students are **required to take BMS 700 (Scientific Integrity) for 1 credit hour, or a like course that is clearly related to scientific ethics/integrity.** All Ph.D students must also take **BIOL 681 (Research Project Development)** for 1 credit hour in the Spring semester of their first year in residence. This course gives guidance on developing their POS document. **In addition**, all Ph.D. students must take a **minimum of 1 additional credit hours of professional development** from the approved list (see Appendix D) or an equivalent course approved by the student’s committee. BIOL 588 and GRAD 710 are listed as options in the graduate catalog, but any course approved by the student’s committee can suffice. **Total = 3 credit hours** counted towards the total of 37 credits needed.

Graduate Seminar: All Ph.D. students must register for, and attend, the graduate seminar (Biol. 796) every **Fall semester** while they are in residence. **Three (3) hours of Biol. 796 are required for the 37 graduate credits needed.** The Fall Graduate Student Seminar will consist of one section coordinated by a single faculty member. This seminar is run as a mini-conference and every student who has been in the program for ≥ 1 year will present their research to the department and will receive feedback on their presentation. This seminar is intended to enhance the professional presentation skills of our graduate students.

- **Departmental Seminars/Colloquium:** To become acquainted with research being conducted within and outside the department, Ph.D. students are **required to take 5 semesters (5 credits) of Biol. 788 (the Departmental Seminars/Colloquia)** that will be counted towards the total of 37 credits needed. When taking Biol. 788 for course credit, more than two unexcused absences will result in a failing grade. None of the hours for the Departmental Colloquium (Biol. 788 Seminar) can be counted towards the 18-hour coursework requirement.

- **Teaching Practicum:** Ph.D. students are required to serve a **minimum of two semesters as a teaching assistant (T.A.) and register during those semesters for teaching practicum credit.** A maximum of 2 credit hours of Teaching Practicum (Biol 690/790) are required to count towards your total of 37 graduate credits.

- Students must earn a minimum overall GPA of 2.75, and a minimum GPA of 3.00 in coursework applied to their graduate program. A student who fails to maintain this average is expected to make up the grade point deficiency in the following semester in order to continue in the program. The summer term is not considered as a semester in the above requirements. If a second semester (at any time) with a substandard cumulative grade point average occurs, the

Graduate Committee will call for a meeting with you and your advisor to discuss your future in the graduate program. A grade of "D" in any course will not be counted as fulfilling graduate degree requirements but will be used in calculating the graduate grade point average.

Summary:

Coursework	18 credit hours (8 credit hours max. at 400 level)
Research	6 credit hours
Prof. Development	
BMS 700 & BIOL 681	2 credit hours (1 credit hour each)
Other	1 credit hour
Grad Fall Seminar	3 credit hours
Dept. seminar/Colloquium	5 credit hours
Teaching Practicum	2 credit hours (two separate semesters)
	=====
Total =	37 credit hours

Step 5: Directed Readings. (For Ph.D. students ONLY)

Once a student's advisory committee has been formed (no later than the end of the 2nd semester), each committee member will provide the student with 5-10 critical readings (chapters or papers) that will serve as the basis for the Preliminary Written & Oral Examination. This is the milestone that advances a student to doctoral candidacy and can be taken in one of two formats (see below).

Course Credit: During the semester of the Written and Oral Examination (Semester 3), students should sign up for at least 3 credits of Biol. 797 (Graduate Research) which will be used to prepare for this examination. The student will schedule meetings with each faculty member on their committee to discuss questions concerning the assigned readings. The student's faculty advisor will assign grades based on data provided by the student regarding their time spent studying and the students' meetings with their committee members.

Step 6: The Preliminary Examination & Promotion to Candidacy. (For Ph.D. students ONLY)

The Preliminary Exam (or qualifying exam) is considered as one exam, with two parts. The information in the readings provided by the committee members will serve as the basis for the 2-part Preliminary Exam, both of which must be passed before moving on to Step 7.

All members of the Advisory Committee must be present at the examinations. However, special arrangements for conference calls or videoconferencing are allowable in special cases, such as a committee member being out-of-town and/or on sabbatical.

The Advisor will communicate the results of the Preliminary Examination e-mail to the Associate Chair for Graduate Studies and the Associate Dean for Graduate Studies in the College of Arts and Sciences.

The Written Exam (Part 1)

Purpose: The Written Qualifying Examination determines whether a student understands various biological processes and abstractions covered in the readings provided by the student's committee members and whether they are able to solve problems based on these concepts. Each member of the Advisory Committee will contribute a component of the written test. The precise format of the exam is to be determined and agreed upon by the Advisory Committee prior to administering the exam. The standard practice is that the exam is given over a period of 5 days with the exams from each committee member being given on separate days. In this case the entire exam must be completed within a one-week (7-day) period.

Alternatively, rather than the standard written and oral examination, the student and committee may elect to have the student write a review article of sufficient quality that could be submitted to a peer-reviewed journal. In this case the entire committee must agree *a priori* on the scope of the review, identify the target journal and its formatting

requirements, and contribute guidance in readings. While it is not required to submit the manuscript, prior to the oral exam, the committee must nevertheless be provided a completed and “ready for submission” manuscript formatted for a target journal for internal review prior to scheduling of the oral defense. As with the standard practice, the writing must be exclusively the student’s own, and not a collaboration between any of the committee members or other outside individuals. In either case, the approach taken for the written portion of the exam must be determined during the plan of study meeting so that in the event a review article option is chosen, the student will have adequate time.

Timing: This exam will occur by the end of the fifth semester (which includes summer as one semester).

The Oral Exam (Part 2)

Purpose: The Oral Qualifying Examination tests the student’s understanding of the literature and fundamental concepts in their area of research emphasis. Mastery of this basic knowledge indicates a readiness of the student to proceed with original research. Normally, the Oral Exam will last 3 hours. All members of the Advisory Committee must be present at the examination (note: special arrangements for conference call presence or videoconferencing are allowable in special cases, such as a committee member being out of town and/or on sabbatical).

Timing: This exam will occur within 1 week of completing the Written Exam.

Criteria for Passing

For both portions of the exam (written & oral), students must demonstrate a working knowledge of their area of research emphasis, and an ability to respond appropriately to questions in a logical and poised manner. After the oral examination the student will leave the examination room and the committee members will vote on whether the student has passed the entire exam. Two or more negative vote constitutes failure of the exam (http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/#requirementstext).

Failure of the Preliminary Exam

If a student fails the Preliminary Exam, they must repeat the examination in the next academic semester. The Advisory Committee may, at its own discretion, choose to re-administer either the entire exam (both the entire written & entire oral exams) or only the entire oral exam. WVU policies on repeating the candidacy exam can be found at http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/#requirementstext

Failure of the Preliminary examination a second time constitutes a dismissal of the student’s Ph.D. program. The student then may, at the discretion of the Graduate Committee, pursue a thesis-based MS degree.

Promotion to Candidacy

Promotion to candidacy is awarded by the student’s Advisory Committee. Candidacy is dependent upon having an approved POS and passing the Preliminary Exam. When a doctoral student is approved as a candidate, the student must complete the Eberly College Doctoral Candidacy Form (<https://eberly.wvu.edu/students/graduate/graduation-forms-and-process>) and send it to the Associate Chair for Graduate Studies. The completed form is then submitted to the Eberly College Director of Graduate Studies within two business days following formal admission to candidacy. Any changes to the committee after the Doctoral Candidacy Form has been accepted require college approval. **Once promotion to candidacy is awarded, doctoral students have no more than five years in which to complete the remaining degree requirements.**

Step 7: The Proposal Examination. (For Ph.D. students ONLY)

The Proposal Exam consists of two parts; the written proposal and the oral presentation.

All five members of the Advisory Committee must be present at the examinations. However, special arrangements for conference calls or videoconferencing are allowable in special cases, such as a committee member being out-of-town and/or on sabbatical. The Advisor will communicate the results of the Proposal Examination by e-mail to the Associate Chair for Graduate Studies.

The Written Proposal: The Written Proposal is a written plan of the student's proposed research project. A student's research project is selected in accordance with their interests and goals through consultation with the Advisor and the Advisory Committee. The Written Proposal is to be prepared with the assistance and guidance of the faculty Advisor. It should be written in a format comparable to that of a proposal to the NIH or NSF and include: a statement of the problem to be researched, background information (including references to pertinent literature), proposed experiments (even if some of these have already been completed), proposed methods of data analysis, and the expected significance of the work.

Purpose: The Written Proposal determines whether a student can formulate a coherent, convincing research plan.

Timing: The Written Proposal should be completed by the end of the 7th semester (including summer semesters) and **the final version must be submitted to the student's Advisory Committee no later than two weeks prior to the date of the oral presentation.**

The Oral Presentation: The Oral component of the Proposal Examination is a presentation of the student's research dissertation proposal as a seminar to the Biology faculty and graduate students. The student's Advisory Committee must be present, and the Advisor is expected to remain silent during the public seminar. Following the public seminar, the student will meet with their advisory committee and answer questions concerning the proposed research.

Purpose: To determine whether the student can present and defend a research proposal before a group of scientists.

Duration: The seminar should last 50 minutes. The defense of the proposal to the advisory committee, following the seminar, should last 1-2 hours.

Timing: The seminar and its defense should take place within two weeks of submitting the written proposal to the Advisory Committee.

Criteria for Passing

The Written Proposal must be suitable for submission to an extramural fellowship such as the NIH as an F31 proposal or a fellowship program offered by other Federal funding institutions. The written proposal will be judged based on the student's understanding of the problem, its possible solutions, and its biological significance. If the proposal is funded by an agency equivalent to NIH (as determined by the Advisory Committee) prior to being evaluated by the student's committee, then this portion of this exam will be waived.

The oral presentation must be a competent professional presentation of the written proposal and the student must demonstrate a clear understanding of the research problem and its significance in the field as judged by responses to questions from the audience at the seminar and questions of the Advisory Committee after the seminar.

The student's Advisory Committee votes to determine if the student passes or fails. Two or more negative vote constitutes failure of the examination.

Failure of the Proposal Exam

If a student fails the Proposal Exam, they must repeat the examination in the next academic semester and are given an extra semester to complete the examination sequence without penalty. The Advisory Committee may, at its own discretion, choose to re-administer the entire exam or only one portion (the written proposal or the oral presentation).

Failure of the proposal examination a second time constitutes termination of the student's Ph.D. program. The student then may, at the discretion of the Graduate Committee, pursue a thesis-based MS degree (see section on changing degree programs below).

Step 8: Writing an MS Thesis or Ph.D. Dissertation.

The MS thesis or Ph.D. dissertation must demonstrate an ability to carry out independent research. Research chapters of either the thesis or dissertation must meet the standards required for publication in a reputable biological journal. Both should include a short (2-10 page) Introductory chapter that provides an overview of the research chapters. Following the chapters, a Conclusions chapter (also 2 - 10 pages) should summarize overall findings of the student's work and synthesize the conclusions from each research chapter in a broader context. A MS thesis typically consists of an introductory chapter, a single research chapter and a conclusions chapter. A Ph.D. dissertation typically consists of an introductory chapter, 2-3 research chapters and a conclusions chapter. The format of the thesis should be discussed with the advisory committee before it is written. If any of the chapters are published, they can be included in the thesis following journal-specific guidelines for inclusion.

The thesis or dissertation is expected to be revised from the first writing and may require several revisions before it is acceptable to the Advisor. **The draft approved by the Advisor must be given to the members of the Advisory Committee at least three weeks before the thesis defense for MS students and four weeks before the dissertation defense for Ph.D. students.** If more than one committee member believes the thesis or dissertation is not ready for the defense at the scheduled date, then the defense must be rescheduled for a later date. Additional revisions may be required following the defense.

The final document must follow the Electronic Thesis and Dissertations (ETD) policy guidelines regarding the format and organization of the thesis or dissertation. Complete program policy and collection access information are available online at <https://etd.lib.wvu.edu>. Within the University's constraints on format, students are encouraged to format chapters of their thesis or dissertation for submission to peer-reviewed journals.

Step 9: The Thesis or Dissertation Defense

The thesis/dissertation defense is the final examination given by the Advisory Committee after all other requirements have been satisfied. All forms and procedures for defending a thesis/dissertation and applying to graduate can be found at <https://eberly.wvu.edu/students/graduate/graduation-forms-and-process>. Students must apply to graduate at the start of the semester in which they plan to defend and can do so (as well as find semester deadlines) at <https://registrar.wvu.edu/graduation-diploma>. Once a student has applied to graduate, they must fill out the "Eberly College thesis and dissertation defense date declaration form" which they will then submit to the Associate Chair for Graduate Studies, who will, in turn, submit the form to the ECAS office of graduate studies. The announcement of thesis or dissertation defenses must be posted on the WVU events calendar (<https://cal.wvu.edu/>) at least two weeks before the defense date.

The student must be registered for at least one credit hour in the semester of graduation (whether on- or off-campus). If the student has an assistantship in that final semester, they must be registered as a full-time student in order to receive a tuition waiver. If the student is an international student, they should consult with International Students and Scholars Services (<https://iss.wvu.edu/>) as the number of credits required may vary based on visa type and semester.

The thesis or dissertation defense must be held prior to the college deadlines that are announced every semester. The defense consists of two parts: 1) a public seminar in which the student gives an oral presentation of their research thesis or dissertation and responds to questions from those attending; and 2) a closed meeting with the student's Advisory Committee during which the student addresses any questions and concerns the committee members may have. All members of the Advisory Committee must be present, although videoconferencing can be substituted if necessary and in emergency situations, a faculty member from the Biology Department can substitute for Advisory Committee members. To better evaluate the student's understanding of their own research, the faculty Advisor is expected to be silent during the public portion of the thesis defense.

The Advisory Committee evaluates the final examination performance and makes the recommendation to pass or fail the student. More than one unfavorable vote from the Advisory Committee constitutes failure, and all voting is done without the student present after the committee has discussed the student's performance. In the event that the student fails, they must re-take and pass the final examination before being awarded the degree. Re-examination may not be scheduled without approval of the Associate Dean for Graduate Studies (http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/%23thesisdissertationtext).

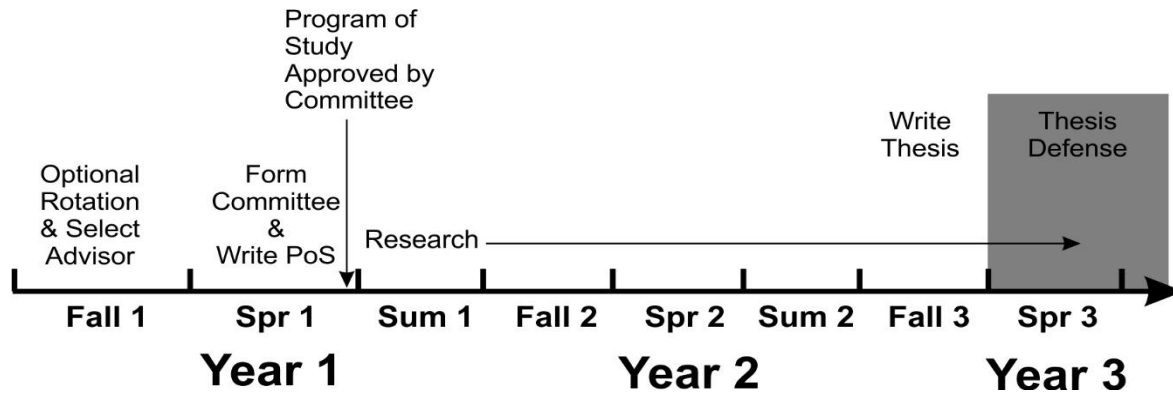
At the end of a thesis defense, the Research advisor should ensure that the Advisory Committee members sign the Eberly Thesis and Dissertation Oral Defense Form and then send the Oral defense form to the Associate Chair for Graduate Studies. The Associate Chair for Graduate Studies must then send the signed Oral defense form to the Associate Dean for Graduate Studies in the College of Arts and Sciences within 48 hours of the defense. The appropriate form can be found at: <https://eberly.wvu.edu/students/graduate/graduation-forms-and-process>. There may be corrections needed for the thesis and so all members of the Advisory Committee should also sign the ETD signature page required by the library (<https://etd.lib.wvu.edu/>). This signature page should be held by the student's advisor until all corrections to the dissertation have been made to the satisfaction of their committee members.

Once all corrections have been completed, the signed signature page for the ETD must be submitted to the library at <https://etd.lib.wvu.edu> and the Associate Chair for Graduate Studies notified.

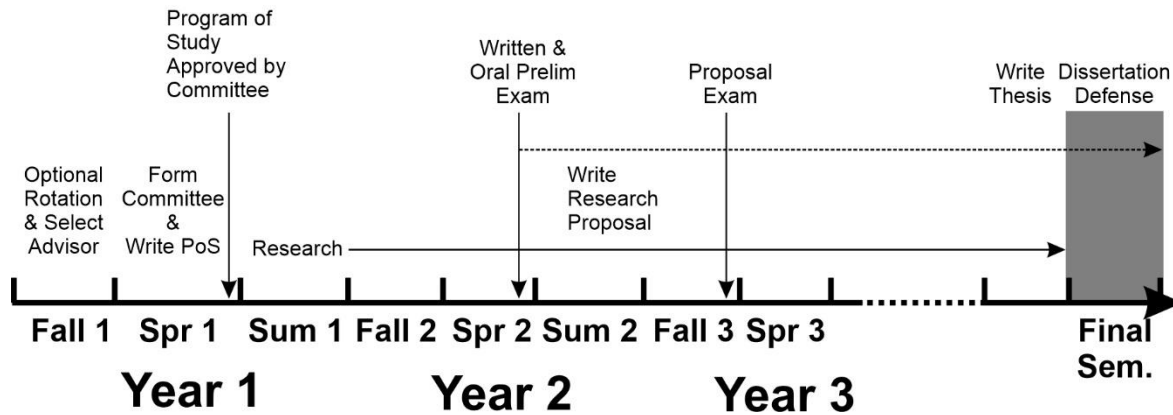
To participate in commencement please go to <https://eberly.wvu.edu/students/eberly-college-commencement>.

Students should also fill out the departmental exit survey which informs programmatic policy changes: <https://biology.wvu.edu/students/graduate-students/forms-and-policies>.

Master's Timeline



PhD Timeline



Time Limits and Residence

The expected time to complete an MS degree is 3-4 years and a Ph.D. is 5-6 years. Full-time students in our department are expected to complete all course and benchmark requirements for the program within four years, after which teaching assistantship support may be withdrawn. Appendix B (see below) provides a checklist for degree progression.

For University guidance on time limits see

http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/#timelimitstext.

For regulations governing leaves of absence while in an MS or Ph.D. program, see the University Graduate Catalog (http://catalog.wvu.edu/graduate/advisingcoursesdegrees/advising_and_evaluation/#enrollmentstext)

Students can check credit earned on DegreeWorks and should contact the Associate Chair for Graduate Studies if they have concerns of credits being listed as degree pursuant.

A graduate student who is not in residence on campus during the year must send an annual letter of intent electronically to remain in the graduate program to the Associate Chair for Graduate Studies. Two semesters of full-time association with the Biology Department Graduate Program in Morgantown are necessary to fulfill the departmental residency requirements. Exceptions to this would need to be reviewed, and approved, by the Graduate Committee.

Graduate Teaching, Research and Service Assistantships

Graduate students may be supported by a teaching, research or service assistantship (GTA, GRA or GSA respectively). Before the start of each semester, the Associate Chair for Graduate Studies will ask that students and their research advisors discuss whether the student will be on a research assistantship or a teaching/service assistantship. After this discussion in the Fall and Spring semesters, both the student and the advisor will fill out a survey stating how the student will be supported, and the student will be asked which of the available courses they would prefer to TA. The graduate committee will assign students to courses based on need but try to accommodate student preferences. There are fewer summer TAs available and these must be requested from the Chair of the Department of Biology.

Adherence to Timeline and Consequences for Delay

Missing required deadlines is costly for the student, faculty advisor, and graduate program. The timelines have been designed to move students through their graduate careers in a timely manner and to ensure that exams are rigorous and meaningful.

The Associate Chair for Graduate Studies will assess the progress of each student once per year, immediately following the beginning of the Fall semester. If this assessment reveals that a student is more than a year behind on completing a benchmark, the Associate Chair for Graduate Studies will inform the student and Advisor of this fact and provide the student with specific goals that must be completed within a specified time frame. If this goal cannot be met, the student and Advisor will each write a letter of explanation to the Graduate Committee at least two weeks before the end of the specified time frame which: a) outlines the reasons they believe this goal is unattainable, and b) proposes an alternative timeline. Upon receipt of these letters, the Graduate Committee will call for a meeting with the student and their advisor to discuss steps toward restoring the student's degree progress. The outcome of this meeting will be a one-semester plan for meeting the missed deadline. The second time a deadline is missed the same procedure will be followed as described above. The third time a student misses a required deadline, the Associate Chair for Graduate Studies will inform both the student and the Advisor of this fact and call a meeting for both with the Graduate Committee. At this meeting, the student's future in the graduate program will be discussed. Unless extenuating circumstances can be demonstrated, one of the following outcomes will be chosen: a) the student will be notified of their termination from the graduate program after one semester, or; b) the student will be given a hard deadline for graduation commensurate with their progress to date in their thesis work. Secondary appeals of Graduate Committee decisions may be made to the Departmental Chair. This process applies to full-time, 'part-time', and non-resident students in our Program.

Probation:

There are several reasons why a student may need to be placed on probation. These may include:

- 1) A documented violation of the student code of conduct (<https://studentresponsibility.wvu.edu/campus-student-code>). Depending on the nature of the violation, either probation or dismissal without a probationary period may be appropriate.
- 2) Receiving an "Unsatisfactory" in Biology 797 due to the failure to meet expectations established in the semester student workload plan (see "Biology 797; Independent Research").

If a student enters a probationary period, the student and their faculty advisor will work to ensure that the student has a reasonable opportunity for remediation. To accomplish this the student and faculty advisor must create a remediation plan for the probationary semester that describes benchmarks to be met by the student and the resources/support the faculty member will provide to ensure student success. The written remediation plan must be approved by the Biology Department's Graduate Committee prior to the beginning of the probationary semester. If the Graduate Committee does not approve the plan, it will be returned with an explanation of deficiencies and a revised version must be resubmitted for approval. In devising a remediation plan, the student and faculty member should consider the issues leading to the probationary period and the research/teaching/coursework responsibilities of the student. If either the faculty member no longer wishes to advise the student or the student no longer wishes to remain with their advisor, the student will need to find a new advisor (see below "Changing Advisors").

If the student does not meet the benchmarks contained in the remediation plan, and they have been provided with the resources and support promised in the remediation plan, then they may be given one semester to find a new faculty research advisor. During this semester the Department of Biology may be able to support the student financially as a

teaching assistant so long as teaching assistantships are available. Therefore, a student in a probationary semester must request a teaching assistantship in the subsequent semester. If a student is unable to identify a faculty member who is willing to serve as their research advisor during the semester after their probationary semester, they will need to be dismissed from the Department of Biology Graduate Program. For University guidance on probation including the appeal process please go to: <http://catalog.wvu.edu/graduate/enrollmentandregistration/#probationsuspensiontext>.

Changing Degree Programs from a MS to a Ph.D. Student.

Proposals to change from the MS program to the Ph.D. program will only be considered after completion of two semesters of coursework. Graduate students wishing to make this change must: 1) reach a mutual agreement with their faculty Advisor that this is appropriate and in the student's best interest; and 2) re-apply to the Biology Graduate Program as a new applicant.

Changing Degree Programs from a Ph.D. to a MS Student.

In general, the graduate program to which a student is admitted is committed to the training of that student through to the completion of their program, as long as the student performs satisfactorily. For numerous possible reasons, a student and their advisor may, by mutual consent, agree that it would be best for the student to change from the Ph.D. program to the MS program. To assure that such changes are implemented in a consistent and fair fashion, such changes are to be reviewed by the Graduate Committee and require: (1) a letter from the student, explaining why this change is being requested, and (2) a separate letter from the advisor, doing likewise. The Graduate Committee will review these letters, along with the student's file, before acting on such requests. If this decision is being considered by an international student, they should first consult with International Student and Scholar Services (<https://iss.wvu.edu/>).

Note: Changing from the Ph.D. to the MS program carries with it a decrease in pay grade which will be effective in the semester following approval of the request to switch from the Ph.D. to the MS program.

If a Ph.D. student does not pass their comprehensive exams or their proposal defense, or leaves their initial lab and cannot find a new advisor, they may leave the program with a non-thesis MS. Students must have completed the required coursework so that they meet the credit requirements for an MS.

Procedures for departure of a research advisor from WVU.

If a faculty member leaves the department of Biology, graduate students have 3 options:

- 1) The student can switch to a new advisor within the Biology department.
- 2) The student can apply to the graduate program at their research advisor's new institution (effectively leaving the WVU Biology Department).
- 3) The student can remain in our program under the mentorship of their research advisor (either remaining at WVU or moving to the new institution).

If the graduate student chooses to remain in our program under the mentorship of the departing faculty member (Option 3), the student must obtain the commitment of an "on-site" advisor, regardless of whether the student goes with the faculty member or stays at WVU. The on-site advisor is only expected to monitor degree progression and assist with administrative needs, rather than direct research efforts. The on-site advisor can provide technical guidance if appropriate, but the student should only be completing experiments in the service of their proposed thesis or dissertation. The on-site advisor will become the "Thesis/Dissertation Chair" and the old advisor should maintain an affiliate status with the department, such that the original composition of the committee (including an external member) does not need to change. If the affiliate status cannot be maintained, then the student and on-site advisor should consult with the Graduate Chair to determine how the committee structure must change.

The student, research mentor, and on-site advisor must develop and sign a training plan for the student before the faculty member leaves WVU. This training plan should detail 1) the educational, professional and research goals, 2) the resources (lab space, equipment, resources, assistantships) available to the student, and 3) the frequency and format of meetings or progress reports. The training plan must be sent to the Graduate Committee for approval and disputes over expectations between any of the parties should be brought to the Graduate Chair to resolve.

If the student chooses a new advisor within our department (Option 1), then an on-site advisor is not necessary, and every effort should be made to ensure that completed POS and comprehensive exams transfer with the student when they switch to the new advisor. Transfer of successful proposal defenses is at the discretion of the dissertation committee but must be approved by the Graduate Committee.

RESOLVING CONFLICT

Minimizing conflict through communication

There are many instances in which conflict can arise either between lab personnel or a student and their advisor. Conflict rarely develops overnight and typically arises when mutual expectations have not been clearly established. The most effective way to resolve conflict is to ensure that everyone has clear expectations of resource allocation, individual responsibilities and code of conduct. Every lab in the Department of Biology must have a “Lab Handbook” that clearly describes how data should be managed, expectations of work schedule, mentorship style, guidelines for authorship and other critical aspects of working in a laboratory setting. In addition, each mentor has a different mentorship style, and each student needs different forms of guidance for success. If mentors and students discuss mentorship styles and student needs early on in their degree, they can optimize communication to lessen the likelihood that conflict may occur. Students and mentors should establish how to have difficult conversations in a constructive manner *before* conflict arises so that all parties have expectations of how to address any breakdown in expectations or communication.

Changing Advisors

During the course of their graduate degree, a student may find that they wish to change their research advisor. If this occurs, the student should communicate their decision to their current advisor and establish a clear set of expectations to complete the semester. This includes how data and resources (reagents, tools, etc.) will be managed. They must inform the Associate Chair for Graduate Studies in the Department of Biology of their decision and the Associate Chair will send the student a letter of understanding re-stating the student’s decision and describing the procedure moving forward. The student will have the next semester to identify a new advisor within the Department of Biology during which time they will be supported in the form of a Graduate teaching assistantship. Please note that summer teaching assistantships are very limited and are not guaranteed. If a student cannot identify a new research advisor, they will be dismissed from the Biology Graduate program.

APPENDIX A. Roles of Personnel

Associate Chair for Graduate Studies – Appointed by the Departmental Chair

- 1) *As an administrative advisor, signs registration materials of ALL graduate students that have not yet chosen a faculty Advisor.*
- 2) *Advises students concerning requirements of the graduate degree programs and channels student communications to the Graduate Committee and the Director of Graduate Studies in the College of Arts and Sciences.*
- 3) *Receives and disseminates information from the Assistant Dean for Graduate Studies in the College of Arts and Sciences.*
- 4) *Maintains graduate student records and files in a shared departmental drive.*

Graduate Committee - appointed by the Departmental Chair

- 1) *Establishes, with departmental approval, criteria for selection and screening of graduate applications.*
- 2) *Admits applicants to the graduate program.*
- 3) *Maintains, reviews, and recommends to the Biology graduate faculty revisions of the graduate program.*
- 4) *Is empowered to waive the departmental rules upon written petition if circumstances warrant in specific instances.*
- 5) *Aids the incoming students in the choice of a faculty advisor.*
- 6) *May advise on first and second-semester registration.*
- 7) *Considers petitions and appeals from graduate students.*

Advisor (Major Professor) – the member of the Biology graduate faculty, must hold a Ph.D. In most instances, they will hold a primary affiliation in the Dept. of Biology at WVU.

- 1) *Prepares with the student the tentative POS for review and acceptance by the Advisory Committee during the second semester of residence as a regular student*
- 2) *Checks, along with the student, that graduate requirements are fulfilled*
- 3) *Directs research and the writing of the thesis or dissertation*
- 4) *Serves as chairperson of the Advisory Committee. With the approval of the Advisory Committee, the faculty Advisor:*
 - a) *Submits copies of the POS approved by the student's advisory committee to the Associate Chair for Graduate Studies.*
 - b) *Makes early judgment based on performance and initiative to determine if the student may continue in the program.*
 - c) *Conducts the preliminary examinations for their Ph.D. students.*
 - d) *Informs the Director of Graduate Studies in the College of Arts and Sciences, the Associate Chair for Graduate Studies, and the student of passing examination results and promotion to candidacy in the Ph.D. program.*
 - e) *Sends the Associate Chair for Graduate Studies the performance recommendations of the Advisory Committee*

in the M.S. and Ph.D. degree programs.

f) Sends the Associate Chair for Graduate Studies a copy of the signed Thesis and Dissertation Oral Defense Form.

Advisory Committee - *selected by mutual agreement of student and Advisor*

- 1) Works with the student to determine if the tentative POS is adequate; when acceptable, the Committee approves the program.*
- 2) Critically reviews the progress of the student periodically.*
- 3) Participates in the written and the oral examinations in the Ph.D. program.*
- 4) Promotes the student in the Ph.D. program to candidacy after all conditions are met.*
- 5) Participates in the proposal examinations in the Ph.D. program.*
- 6) Reviews critically the thesis or dissertation after it has been approved by the faculty Advisor. The thesis or dissertation must be explicitly approved by the advisory committee before the final examination can be scheduled.*
- 7) Participates in the Dissertation Defense and signs the Thesis and Dissertation Oral Defense Form and copies of the signature page for the thesis or dissertation.*

Graduate Students

Both M.S. and Ph.D. students are pursuing research-based degrees. Students are expected to make steady progress toward their degree goals in accordance with the timelines in this handbook. Early completion of any of the steps en route to this goal is encouraged, as is communicating to the advisor and committee any obstacles impeding their progress. Graduate students are expected to maintain the highest ethical standards in the conduct of their research. Furthermore, as employees, you represent West Virginia University and the Department of Biology, it is therefore expected that all graduate students act in a professional manner at all times. Please see the WVU Campus Student Code (<https://studentconduct.wvu.edu/campus-student-code>) for more information.

It is the responsibility of the student to be aware of and meet all required college and departmental deadlines. Students are responsible for making arrangements for the dissertation defense after the advisory committee has explicitly approved the thesis or dissertation. Students must also arrange for, and announce, the date, place, and time of the dissertation defense to the advisory committee and members of the department.

Assisting in the Department's teaching program is both a service to the department and training for a future career. The reputation of the department depends to a large extent on the activities of its teaching assistants. Thus, the teaching must be performed in a professional manner and the evaluation of students conducted fairly. The teaching assistant is considered a part of the teaching staff of the department. He/she is, therefore, subject to the same rules and ethics as the faculty.

The voice of the graduate students in departmental matters depends on the degree to which graduate students wish to be involved. The faculty welcome suggestions and recommendations from graduate students, especially when presented through a graduate student organization. These will receive serious consideration and attempts will be made to address problems. A graduate student representative is welcome at open faculty meetings and may be requested to serve on committees concerning graduate student affairs.

APPENDIX B. Checklist for Degree Progression

Information about degree progression can also be found at

<http://catalog.wvu.edu/graduate/eberlycollegeofartsandsciences/biology/>.

- Program of Study – Due by the end of the 1st Spring semester
 - Email a PDF of the entire POS document including the 1) 5-page research plan, 2) plan for coursework, and 3) signature sheet including signatures of all committee members to the Associate Chair for Graduate Studies within 48 hours of completion.

- Candidacy Exam (Ph.D. only) – Due by the end of the 5th semester - Upon successful completion, the student and/or research advisor fills out the Eberly College Doctoral Candidacy Form and sends it to the Associate Chair for Graduate Studies in the Biology Department for their signature. - The Associate Chair for Graduate Studies will then submit the signed form to ECAS Director of Graduate Studies, retaining a copy for the program. - The form must be submitted within two business days following formal admission to candidacy.

- Proposal defense (Ph.D. only) – Due by the end of the 7th semester
 - Upon successful completion, have your research advisor email the Associate Chair for Graduate Studies the date and time of your defense and the names of your committee members.

- Thesis/Dissertation defense – Due by the end of the 9th semester for MS and 18th semester for Ph.D.
 - In the semester prior to your defense meet with your committee for approval to write thesis or dissertation, agree upon formatting and set a defense date. Most, if not all, data collection and analysis should be complete, as should some of the writing.
 - Ensure that you are registered for at least one credit hour during the semester you plan to graduate. Confirm the appropriate number of credits with ISSS if you are an international student.
 - Ensure that all of your POS requirements have been met.
 - Check important dates for thesis/dissertation forms and fees.
 - Complete the application for graduation and diploma.
 - Submit your Thesis/Dissertation to your committee at least 3 (MS) or 4 (Ph.D.) weeks before the defense.
 - See the Biology office staff to schedule a room for your oral defense.
 - Complete and email the “Thesis and Dissertation Defense Date Declaration Form” to the Associate Chair for Graduate Studies before the college deadline and at least 2 weeks prior to the defense.
 - Ensure that your defense date and time are added to the University events calendar 2 weeks prior to the defense, and that your defense occurs before the college deadline.
 - Ensure that announcement flyers are posted. If you wish to have the Dept. of Biology Office Administrator assist with this, they will need your information at least 2 weeks in advance.
 - Deliver the signed paper copy of the “Thesis and Dissertation Oral Defense Form” to the Associate Chair for Graduate Studies within 24 hours of completion. Be sure to bring this form to your defense!
 - Once approved, submit the ETD signature page signed by all committee members. You will need to keep a scanned PDF copy for yourself. See the ETD website (below) for further instructions.
 - To be eligible to graduate the ETD must be submitted and accepted by the Library prior to their deadline (<https://etd.lib.wvu.edu>).
 - Have your research advisor email the Associate Chair for Graduate Studies the date and time of your oral defense within 24 hours of completion.
 - Ph.D. students should complete the Survey of Earned Doctorates Certificate (<https://etd.lib.wvu.edu>).
 - In consultation with their research faculty member, students should consider whether they wish to request an embargo on the posting of their thesis by the library (<https://etd.lib.wvu.edu>).
 - Students should complete the Dept. of Biology exit survey (<https://biology.wvu.edu/students/graduate-students/forms-and-policies>).

APPENDIX C. Format for Program of Study

Program of Study for M.S./Ph.D. in Biology

Name:

Student Number:

Date of Admission:

Probable date of degree:

Present Degree/University:

Local Address:

Local Phone:

Advisory Committee:

Chairperson:

Tentative Dissertation Title:

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Program of Study

Past College-Level Coursework at ??? University

Course	Title	Instructor	Year	Semester	Grade	Credit

WVU Graduate Courses (Taken & Planned)

Course	Title	Instructor	Year	Semester	Grade	Credit

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Research Proposal (5 pages single-spaced maximum); include Introduction, Methods, Data Analysis, Expected Results, Expected Significance, and References Cited. The references cited are not included in the 5-page limit

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This program of study for _____ has been approved by:

_____ date _____

Committee Member 1, Ph.D. from ??? University of

_____ date _____

Committee Member 2, Ph.D. from ??? University of

_____ date _____

Committee Member 3, Ph.D. from ??? University of

_____ date _____

Committee Member 4, Ph. D. from ??? University of

_____ date _____

Committee Member 5, Ph.D. from ??? University of

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APPENDIX D. Professional Development coursework options.

Below is a list of currently approved professional development course options. The Graduate Committee approves professional development courses. Students may petition the Graduate Committee for approval of additional courses. To petition, students must supply the Graduate Committee Chair, the course information including, Course name/number, CRN, a copy of the course syllabus and written approval from the instructor of record for the course. All materials must be submitted for consideration at least 6 weeks prior to the start date for the semester the student plans to take the course.

List of approved professional development courses. Please note that these may not be taught each semester and it is the student's responsibility to confirm that professional development courses listed in the POS are available in the semester proposed:

BMS 700: Discussions on Scientific Integrity 1 hr. (Note: different Fall and Spring courses offered).

BMS 701: Scientific Rigor and Ethics 1hr

BIOL 588: Professional Writing in STEM 3 hr

BIOL 690/790 (MS students only): Teaching Practicum 1 hr.

GRAD 710: Scholarly Teaching 3 hr.

GRAD 694B: Careers in Academia and Beyond. 2 hr.

GRAD 794: Scholarship of Teaching and Learning. 2 hr.

HIED 652: Assessment in Higher Education. 3 hr.

HIED 651: College Student Development 3 hr.

HIED 650: Higher Education Administration 3 hr.

HIED 750: Diversity Issues in Higher Education. 3 hr.

HIED 760: Curriculum Development-Higher Education 3 hr.

BADM 511. Managerial Economics. 3 hr.

BADM 535. Organizational Behavior. 3 hr.

BADM 543. Seminar on Leadership. 2 hr.

BADM 563. Essentials of Business. 2-4 hr.

C&I 501. Essential Topics for Teaching. 3 hr.

C&I 602. Curriculum and Teaching Principles. 3 hr.

C&I 605. Twenty-First Century Teaching and Learning. 3 hr.

C&I 639. Science Research and Technology Ethics. 3 hr.

C&I 789: Teaching in Higher Education 3 hr.

PUBA 610: Public Management Theory/Practice 3 hr.

APPENDIX E. Expectations for Graduate Teaching and Research Assistants

Most Biology graduate students serve as graduate teaching assistants (GTAs) for courses taught and supervised by Biology faculty. Doctoral students are required to serve as GTAs for at least two semesters. In contrast, M.S. students have no GTA requirement, but may wish to serve as GTAs. Some graduate students hold Graduate Research Assistant (GRA) positions to provide research support in funded laboratories.

GTAs are an essential part of the teaching mission of the Department of Biology. Nearly all laboratory sections are prepared, taught, tested, and graded by GTAs under the direct supervision of faculty and supervisory staff. For entry level courses (100 and 200 level), a course supervisor (typically a faculty member) holds weekly prep meetings that provide instructions for lecture delivery and the management of laboratory activities. In upper-level courses (300 and 400 level), the GTA is supervised by the faculty member teaching the course.

All GTAs are responsible for meeting job expectations in a professional manner. These responsibilities are typically specific to the course and may include but are not limited to:

- Preparing for laboratory exercises carefully and as instructed by the supervisor.
- Arriving on time for class, delivering a well-prepared lecture, and providing clear instructions to the students.
- Maintaining a positive and helpful demeanor with students and coworkers.
- Grading assignments and returning grades/assignments in a timely manner.

Similarly, GRAs are an essential part of the department's research mission, providing crucial scientific support to individual projects funded by research faculty. All GRAs are also held to professional standards for ethical conduct of research activities, including but not limited to:

- Conducting basic research:
 - Project conceptualization;
 - Experimental design and implementation;
 - Proper storage, analysis, interpretation and communication of data/results (i.e. presentations and publications).
- Maintaining research model stocks.
- Maintaining laboratory safety and hygiene.

Like all WVU students, GTAs and GRAs are held to the code of conduct found in the WVU Conduct Code and Discipline Procedure document (please see: <https://studentconduct.wvu.edu/campus-student-code>) and Board of Governors Rule 1.6 (<https://policies.wvu.edu/finalized-bog-rules/bog-governance-rule-1-6-rule>) which defines prohibited conduct and the procedures for determining whether disciplinary action is necessary and supersedes departmental policy. In addition, as paid employees of West Virginia University, all graduate students associated with the Department of Biology are expected to display professional behavior at all times.

Examples of unprofessional behavior from GTAs may include:

- Failing to prepare for the laboratory exercise or modifying it without approval of the supervisor.
- Failing to show up on time for class or for prep meetings.
- Altering earned student grades, failing to return graded material and/or post grades in a timely manner, or failing to submit grades by deadlines.
- Displaying rude, condescending, or disrespectful behavior towards undergraduate students, fellow GTAs, or the course supervisor.

Examples of unprofessional behavior from GRAs may include:

- Data fabrication/alteration/plagiarism.
- Taking credit for another person's research.
- Negligent or unsafe handling of equipment and materials.
- Failing to perform research according to appropriate protocols.
- Displaying rude, condescending, or disrespectful behavior to peers, staff, or lab supervisors.

Responsibilities of Supervisors and the Disciplinary Process:

All course and research supervisors are responsible for communicating job expectations and providing necessary

training and instruction. Supervisors are also responsible for providing timely feedback to allow graduate students to improve their job performance. Finally, in addition to the typical training related feedback described above, supervisors are required to document any disciplinary actions taken due to unacceptable (i.e. egregious) levels of performance and/or other unprofessional conduct.

Egregious or repeated instances of unprofessional behavior will be documented by the supervisor along with guidance to realign the student with expectations. This documentation will be communicated in writing to the graduate student, and a copy will be sent to the Associate Chair of Graduate Studies who will place a copy in the student's personnel file. The graduate student is expected to sign their copy accepting the document's contents or provide a written response challenging the claims within 5 working days. This response must be submitted to the Associate Chair of Graduate Studies. Without prejudice, the Graduate Committee will evaluate any counter claim and will provide a formal response. In cases of minor infractions, the supervisor may elect to internally document but not inform the department. This is appropriate for infractions within the range of "typical trainee" issues where single or isolated instances do not rise to the level of seriousness that would warrant the department considering terminating GTA support from the graduate student.

After a serious or multiple documented instances of concern that were either admitted to by the student or supported by the Graduate Committee after review, the supervisor must arrange a meeting to include the supervisor, the student, their faculty advisor, and the Department of Biology Graduate Committee. The Graduate Committee will then determine if, and under what circumstances, the student will be allowed to continue as a GTA/GRA. A written summary of the meeting outcome will be given to the student and a copy placed in their personnel file.

Should the student be allowed to continue as a GTA/GRA, any additional failure to meet the expectations associated with their position will result in the permanent loss of the GTA/GRA position with the Department of Biology. This does not imply that the student will be expelled from the program; rather, the student will be required to find alternate sources of financial support, either within or outside of the department. A letter summarizing this decision and the reasons for it will be given to the student by the Associate Chair of Graduate Studies, and a copy placed in the graduate student's personnel file.

Further guidance on WVU policy for probation can be found here:

<http://catalog.wvu.edu/graduate/enrollmentandregistration/#probationsuspensionstext>

APPENDIX F. Biology 797 Workload Plan (Independent Research)

Every semester, students must register for between 1-9 credits of BIOL797. Each student must submit a workload plan for the semester to their research advisor that lists a set of research goals as well as their teaching/service responsibilities and coursework. The plan must consist of a list of realistic goals (~3) that a student needs to complete in order to receive a grade of satisfactory in Biol. 797. A good approach is for the student to determine what research accomplishments they could reasonably achieve in one semester within the context of their other responsibilities and assuming that all goes according to plan, and then only propose half of these items. The intent here is to describe what would constitute “satisfactory” progress, not “superlative” progress.

The academic mentor for each student will review the proposed workload plan, suggest any modifications they feel are appropriate, and schedule a meeting with the student where they come to a final consensus on the student’s research-related goals for that semester. Research advisors should encourage their students to restrict their proposed goals to those that are essential to the advancement of their thesis. Research goals may include experiments or writing. Students and research advisors must sign and submit the final workload plan to the graduate chair by the end of the first two weeks of the semester. **The workload plan is not a contract.** It is a means by which students and advisors can establish mutual expectations as well as ensure steady degree progress.

If disagreements over the workload plan cannot be resolved by the student and mentor, then the plan should not be signed, and both the student and mentor must submit a statement of their concerns to the Associate Chair for Graduate Studies. The issue will then be reviewed and resolved by the Graduate Committee.

Since unforeseen challenges (both scientific and personal) to a student achieving the agreed upon goals for a semester can arise, justifiable deviations from the workload plan should be communicated in writing to the mentor and Associate Chair of Graduate Studies as soon as the challenge to meeting a goal becomes evident. Appropriate accommodations to address these challenges should be agreed upon between the student and their mentor, and a written copy of the agreed upon accommodations must be sent to the Associate Chair for Graduate Studies. If the appropriate, and agreed upon, accommodations are met, then the deviations from the original workload plan will not be held against the graduate student.

The graduate chair is the instructor of record for BIOL797, so at the end of the semester research faculty provide the graduate chair with a designation of “Satisfactory” or “Unsatisfactory” for each of their students. In assessing performance, faculty must consider the context of the students’ full responsibilities and unforeseen roadblocks, be they technical or personal in nature. For instance, a student may have proposed two experiments, but needed to troubleshoot a technical issue and thus completed neither. This would still be considered “Satisfactory”.

If a student receives a grade of “unsatisfactory” in Biol. 797 and they consider it to be unjustified, they are encouraged to follow the University’s grade appeal procedure that is found at:

<https://provost.wvu.edu/governance/academic-standards-resources/detailed-appeal-procedures/appeal-of-a-final-grade>

Workload Plan Template:

BIOL797 Student Workload Plan

Name:

Effective Semester and Year:

Degree (e.g. MS or Ph.D.):

Courseload (include credit hours for all courses)

Milestones that you plan to meet (e.g. POS, quals, etc.)

Teaching responsibilities (e.g. TAs, mentoring, guest lectures):

Scholarship: (Be Specific About Goals and Deadlines)

Experiments:

Conferences:

Fellowships:

Publications:

Resources needed:

Concerns or other issues to note:

Student Signature _____ **Date** _____

Faculty Signature _____ **Date** _____

APPENDIX G: Helpful Links and Resources

Graduate catalog: <http://catalog.wvu.edu/graduate/eberlycollegeofartsandsciences/biology/>

Graduate education and life: <https://graduateeducation.wvu.edu/>

Forms and Processes: <https://eberly.wvu.edu/students/graduate/graduation-forms-and-process>

Degree Regulations: http://catalog.wvu.edu/graduate/advisingcoursesdegrees/degree_regulations/

Adding defense date to University calendar: <https://graduateeducation.wvu.edu/current-students/dissertation-defense-calendar-submission-procedure>

ETD website: <https://etd.lib.wvu.edu/home>

ETD instructions: <https://etd.lib.wvu.edu/>

General resources for Graduate Student:

<https://graduateeducation.wvu.edu/current-students/student-resources>

<https://graduateeducation.wvu.edu/current-students/student-resources/community-resources>

<https://studentengagement.wvu.edu/the-rack-student-food-pantry>

<https://carruth.wvu.edu/resources/talkspace>

<https://careerservices.wvu.edu/home>

<https://careerservices.wvu.edu/students/build-a-resume>