BIOLOGY PH.D. PROGRAM REQUIREMENTS

OVERVIEW & LEARNING OUTCOMES

The Biology PhD program at Clark University trains students to become independent researchers and academic leaders in a broad range of biological subdisciplines. The program is research focused under the mentorship of a faculty member in Biology. This document outlines the timeline for completion of the program, program requirements, and policies regarding good standing in the program. It outlines the responsibilities of students in the program and of faculty.

Given the breadth of research interests in the department, the program's learning outcomes are general and cross-disciplinary as opposed to content-specific. There are four learning outcomes:

1. Ph.D. recipients will demonstrate a breadth of knowledge in biology, with expertise in a specific biological discipline.
2. Ph.D. recipients will demonstrate the ability to think critically and to design and execute original independent research.
3. Ph.D. recipients will communicate their research findings effectively to diverse audiences.
4. Ph.D. recipients will develop skills as science educators.

The program requirements map on to all of these learning outcomes.

TIMELINE

The basic timeline for the program follows. Each milestone is described in detail in the "PROGRAM REQUIREMENTS" section.

Year	Item	Notes
1	Initial Advisory Committee Meeting	Must be completed by end of 1st year in program
1 or 2	Biol 390: Science Careers & Effective Practice course	Must be taken in first two years of program
2	Qualifying Exam	
2	Recruit External Member to Advisory Committee	External member not required for Qualifying Exam, but is required for subsequent milestones
3	Departmental Seminar	Full length departmental seminar
3	Proposal Defense	
4-6	Annual Committee Meeting	There should be an annual committee meeting during years when other milestones are not done
4-6	Dissertation Defense and Submission of Dissertation to Graduate School	Results in Graduation
7	Time Limit for Completion	Students may petition the department for a one year extension

PROGRAM REQUIREMENTS

This section lists and describes all program requirements, including the milestones listed in the timeline.

Course Work

1. Students are required to complete at least 16 units of study in residence. The time necessary for the completion of the degree requirements means that students ultimately enroll in excess of this minimum.
2. Students must enroll in four units of study in each of the fall and spring semesters. They must enroll in:
    a. One unit of Biol 350 – Graduate Research Seminar[1]. This course comprises departmental seminars held approximately on alternating Wednesdays throughout the academic year. Each seminar is an hour-long talk given by invited researchers, department professors, and graduate students (third-year seminars). Students also participate in the Bumpus Symposium, which is a showcase of Biology graduate student research. Students are required to give either a poster or an oral presentation. The symposium is normally held the first Wednesday of the fall semester.
    b. One to three units (as necessary to result in a total of four units) of one of three PhD courses depending on where they are in their program: Biol 317 Research, Biol 385 Proposal Writing or Biol 394 Doctoral Dissertation[1]. Students should register in the section of these courses attached to their faculty advisor's name. Contact the Program Coordinator if this section is not available.
    c. Students may register for other graduate-level courses, in coordination with their faculty advisor.
    d. During one of the first two years of their program, student must register for Biol 390 Science Careers & Effective Practice[1], which is typically offered every other year during the Spring semester. Students with experience in grant writing and/or publication of manuscripts may request that the Biology Graduate Studies Committee waive this requirement.
3. Students register for three units of Biol 317 Research, Biol 385 Proposal Writing, or Biol 394 Doctoral Dissertation[1] during the summer, as an expectation of the program is that they work on their dissertation research during the summer.
4. All courses must be passed with a minimum of a B-. Grades lower than B- will not be counted toward the degree, and students who accumulate two grades lower than B- will not be allowed to continue in the program[2].

Teaching

- Students must serve as a teaching assistant for at least two semesters during their program.

[1] These courses are listed in Acalog, the academic catalog online at: https://catalog.clarku.edu/.

[2] University-wide policy available on pages 6-7 of the Graduate Student Handbook: https://www.clarku.edu/wp-content/uploads/2020/09/Graduate-Student-Handbook.pdf.

Faculty Advisor & Advisory Committee

- During their first year of study, students must assemble their advisory committee and have their first advisory committee meeting (see below).
- The student may elect to work with any member of the full-time, tenure-track Department faculty as their primary advisor, excluding adjunct and affiliate faculty.
- The committee must comprise the student's advisor (chair), plus two other faculty members in the Biology Department (including adjunct), and an external member (external to the University). The three members of the advisory committee from the Biology Department must have professional standing beyond the postdoctoral level. The external committee member must be beyond the PhD level. The external member should be selected during the second year of the program, does not need to participate in the qualifying exam, but does need to participate in the proposal defense and the dissertation defense. The external member should also attend any annual committee meetings after the second year (this may be done remotely, but attended synchronously). The advisor may invite additional scholars from within or external to the University to join the advisory committee, but three members of the Biology Department and one external member are a minimum.
- The advisor will communicate the composition of the Advisory Committee to the Chair of the Biology Graduate Studies Committee and the Graduate Studies Program Coordinator.
- A doctoral student is unable to continue in the program without a faculty advisor. In the event that a doctoral student lacks a faculty advisor, the period of transition between advisors is acceptable, but a new primary advisor should be selected as soon as possible, typically within three months. In the event that the student is unable to find a faculty advisor within those three months, the Chair of the Biology Graduate Studies Committee will convene a meeting of the department faculty to determine whether the student will be allowed to continue in the graduate program.

First Year Committee Meeting

- During the first year (12 months) of study, students must assemble their advisory committee and have their first advisory committee meeting.
- The student, in consultation with their primary advisor, should select committee members.
- To prepare for the meeting, students should write a one-page, single-spaced overview that describes their research interests and the directions that they would like to go with their PhD research. Prior discussions with their faculty mentor should guide these directions. It should also describe their experiences and knowledge base, including any areas they feel that they need to develop. **The document need not cite literature and is not evaluated.** Its purpose is to provide committee members context for what they might discuss during the meeting.
- The meeting should be 0.5-1 hour long.
- The meeting should be a conversation about the students' research interests, along with suggestions on things to consider and courses to take to develop knowledge and/or skills that the student will need for their PhD. If there is a strong view that the student must develop a particular area, it is appropriate for the committee to request that the student take a particular graduate-level course.
- There should also be discussion of the topics that the committee members will cover during the qualifying exam in the second year.
- There can also be discussion of who would make appropriate external committee members, as an external committee member must be recruited by the end of the second year of the program.
- Within three business days of the meeting, the student's primary advisor will communicate any suggestions from the committee and the topics proposed to be covered for the qualifying exam by e-mail to the student, the other committee members, the Chair of Biology Graduate Studies, and the Program Coordinator to serve as a record of this information.
- Over the following four months, each committee member should meet with the student to discuss assembling of readings for the qualifying exam. The faculty member may provide the student with some readings, but students should do a search for literature and provide each faculty member with a bibliography for feedback. The student should initiate these interactions.

Qualifying Assessment

- The qualifying assessment must be completed by the end of the second year in the program. It is assessed by the advisory committee without an external member.

- **The learning objectives of the qualifying assessment** are that students must:
  - Demonstrate a good knowledge of the scientific background in their field,
  - Understand the current literature in their specific area of interest,
  - Be familiar with the methods used in their specific area of interest,
  - Be able to synthesize information from the objectives above to formulate research questions and design studies to test their hypotheses,
  - Be able to demonstrate critical thinking, logical reasoning, and effective written and oral communication.

- **Assessment and reporting:**
  - The learning objectives above will be assessed using a department-wide rubric. Each advisory committee member will complete the rubric for the **written answers** to their questions and provide it to the student at least 5 business days before the oral assessment. The student's faculty mentor will complete a single rubric for the **oral component** of the assessment, with feedback from the other committee members.
  - The rubric will allow rating of each qualifying assessment learning objective (listed above) as **Excellent**, **Good**, or **Needs Improvement,** and is available in Appendix A.
  - Committee members should provide feedback to the student as part of the rubric in all cases to foster the student's professional and intellectual development.
  - Any areas that **Need Improvement** will be identified as a result of the written and oral assessment and will be discussed with the student at the conclusion of the oral assessment. A plan for strengthening or cultivating these areas will be developed by the primary advisor and student within five business days of the oral assessment, with input from other committee members and included in the e-mail described below.
  - Plans for developing areas that **Need Improvement** can include taking additional courses, doing additional readings, learning additional techniques, or other steps that the committee deems necessary. These areas will be reassessed during the proposal defense, for which the rubric has the same learning objectives, plus additional ones.
  - The student will be informed of the outcome (consisting of the rubrics, feedback of committee members and suggestions for development) of the qualifying assessment by their primary advisor at the end of the assessment. The outcome will also be communicated by e-mail to the student, the other committee members, the Chair of Biology Graduate Studies, and the Program Coordinator within five business days of the exam. This e-mail should include a summary of the outcome, including any additional requirements, the plan for developing areas that need improvement, as well as copies of the three completed rubrics for the written component and the rubric for the oral component.
  - Whatever the outcome of the qualifying assessment, a student may choose to complete and defend a terminal M.S. thesis at this point. A conversation between the advisory committee and the student about continuing in the PhD program versus completing a M.S. may be

warranted. A student that switches from the PhD program to completing a M.S. may not switch back to the PhD program at a later date.

- **Parameters of the qualifying assessment:**
  - Topics that advisory committee members will cover should be discussed during the first-year committee meeting.
  - A reading list should be collaboratively compiled by the student with input from each advisory committee member within four months of the first-year committee meeting and no later than first month of the second year in program.
  - When a student is ready to proceed with the assessment during the second year, the student should contact advisory committee members to set up a meeting with each to obtain and discuss the questions. The order in which faculty members provide questions should be mutually agreed upon.
  - Each committee member should provide up to three questions for the student to answer, and the student should be given three days to complete the questions for each committee member. Answers for each question should be 3-6 pages double-spaced (1" margins, standard font and font size). Answers should cite the literature appropriately and each answer should have a literature cited section. If a committee member wishes to deviate from these parameters, then they must discuss this with the student at least a month in advance of providing questions, and this should be by mutual agreement.
  - Committee member questions should address aspects of the learning objectives for the qualifying assessment. It is recommended that questions are selected such that they set the student up for writing the proposal defense. For example, some answers might later be developed into background, hypothesis, or research approach sections.
  - Committee member questions need not be answered back to back – a student may take a few days off between questions from different committee members, but at least one committee member's questions should be answered during each of three consecutive weeks. Faculty should provide the student (copying their faculty mentor) with the completed rubric for the written questions within five business days of receiving the answers. The oral component should be scheduled within fifteen business days of completion of the last written component.
- The oral component should not exceed two hours in length, and a presentation by the student is not required. Committee members should take turns asking the student questions related to their written questions or to general biology, as long as the questions are relevant to the student's work. A student may be asked to explain and draw things on the board. Questions continue until committee members are satisfied or the **two hour limit** elapses (whichever comes first).

Departmental Seminar

- Candidates are required to present their research in a Biology departmental seminar by the end of the third year in the program.
- This is a full length, one-hour long seminar, usually 45-50 minutes long to leave time for questions from the audience.
- The subject should be the student's research. Preliminary data/results are encouraged but not required. The proposal defense may be done in conjunction with the departmental seminar, but this is not required. The seminar can be done before or after the proposal defense.
- The departmental seminar is not an examination and is not graded, but is intended to provide the student an opportunity to develop their communication skills and receive feedback on their research from a broader audience.
- Advisory committee members should provide written feedback to the student with at least one aspect of the seminar that they felt the student did particularly well on and at least one aspect that would benefit from improvement. These evaluations should be handed to the student at the end of the seminar. The student's primary advisor should remind committee members to do this and may hand them index cards to do so.

Proposal Defense

- The proposal defense must be completed by the end of the third year in the program, and is assessed by the advisory committee including an external member.

- The **learning objectives of the proposal defense** are the same as for the qualifying assessment with emphasis on synthesis, but additionally the students must:
  - Demonstrate the ability to logically develop their research in terms of fitting into a broader context, justifying its significance, posing testable hypotheses, and describing how those hypotheses will be tested. This objective replaces the one about designing a study from the qualifying assessment.
  - Demonstrate independence of scientific thought in developing their proposal. To this end, although a student should obtain feedback from their faculty mentor on the proposal, the proposal should be their own work.
  - If there are specific areas identified during the qualifying assessment, these can be added to the proposal defense rubric.

- **Assessment and reporting:**
  - The learning objectives of the proposal defense will be assessed using a department-wide rubric. The rubric will have additional space for evaluating any specific areas that were identified as needing development during the qualifying assessment. Each committee member will evaluate the written proposal separately on the rubric. The student's faculty mentor will complete a single rubric for the oral component of the assessment, with feedback from the other committee members. The rubric for the proposal defense is in Appendix B.
  - If the student scores **Needs Improvement** on any of the learning objectives, then the student must meet with the committee to discuss areas of deficiency, and must revise the proposal to address them.
  - If, after revision, objectives remain evaluated as **Need Improvement** by the advisory committee, then the student will be required to leave the program.
  - The oral defense will be evaluated using a department-wide rubric.
  - If the written proposal is acceptable, but the oral defense has objectives that **Need Improvement**, then the student will be allowed to repeat the oral defense. If the second oral defense is still has objectives deemed to **Need Improvement**, then the student will be required to leave the program.
  - Whether the written or oral portion of the proposal defense are deemed to **Need Improvement**, the student should work with their primary advisor and the advisory committee to understand what needs to be improved and how to do it before the second attempt is made.
  - The student will be informed of the outcome of the proposal defense by their primary advisor at the end of the exam. The outcome will also be communicated by e-mail to the student, the other committee members, the Chair of Biology Graduate Studies, and the Program Coordinator within three business days of the exam. This e-mail should include a summary of the outcome, as well as copies of the three completed rubrics for the written component and the rubric for the oral component.

- Whatever the outcome of the proposal defense, a student may choose to complete and defend a terminal M.S. thesis at this point. A conversation between the advisory committee and the student about continuing in the PhD program versus completing a M.S. may be warranted.

- **Parameters of the proposal defense:**
- *Timeline:*
  - The written proposal must be given to the advisory committee a minimum of 15 business days prior to the scheduled oral defense.
  - Advisory committee members must return the grading rubrics for the written proposal a minimum of 5 business days prior to the scheduled oral defense. At this time, if a majority of the advisory committee evaluates an objective as **Needs Improvement**, then the student must revise the proposal.
  - The oral defense should not exceed two hours in length, and a presentation by the student is not required. Committee members should take turns asking the student questions related to the proposal. Questions continue until committee members are satisfied or the two hour limit elapses (whichever comes first).
- *Proposal Expectations. The proposal should include the following:*
  - **Title page** with a descriptive title for the dissertation and the student's name.
  - **Areas That Needed Improvement** is a section that should only be included if there were areas identified during the qualifying exam that needed improvement. It should describe how the student addressed these areas to strengthen them. This section should not exceed one page and this page does not count toward the page limit of the proposal.
  - **Introduction** section that puts the entire dissertation into a broader context and shows evidence of familiarity with broader area of biology. This section should also address the significance of the research including the outstanding questions or gaps in knowledge that the research addresses.
  - Sections for three data chapters that will be included in the dissertation with descriptive section headings. If a student plans more than three data chapters, they should choose three to feature in the proposal.
    - **Background** or **Rationale** section that provides the specific background to each data chapter and explains the rationale behind doing it (why is this important?).
    - **Hypotheses/Questions and Expected Outcomes** section that provides explicitly testable hypotheses or questions that will be tested in the chapter. Predictions and/or expected outcomes of for each hypothesis or question should also be included in this section.
    - **Preliminary results** are encouraged, but *not* required.
    - **Research Approach** section that explains how each hypothesis/question will be tested. The focus should be experimental design, including what will be done and how, sampling, and how the data will be analyzed. Minute technical details of methods should not be included.
    - **Limitations** or **Potential Problems** or **Alternate Approaches** section that critically evaluates what the proposed research may not be able to address or that might not go according to plan.

- **Timeline** should be a short section that briefly explains what the student has accomplished to date and what remains to be done. Can be in table format.
- **Literature Cited** section is required and primary literature should be cited in all of the sections above. Citations should be cited in a consistent format that is up to the student.
- Proposals should be a maximum of 10 pages single spaced or 20 pages double spaced, excluding title page, the optional section on areas that need improvement, and literature cited, but including any figures and tables.
- Proposals should have 1" margins and be in 11 or 12 point Times New Roman, Arial, or Calibri font.
- Proposals should be in complete sentences and paragraphs. They should include the section headings listed above.

Annual Advisory Committee Meetings

- It is expected that the student schedule an annual Advisory Committee meeting to discuss progress toward milestones and completion of the program.
- An annual meeting is not required in years when other milestones are completed. The qualifying exam and proposal defense serve in lieu of the annual committee meeting.
- Within three business days of the meeting, the primary advisor will inform the Chair of Biology Graduate Studies and the Program Coordinator by e-mail, with a copy sent to the student and the other committee members, that the annual Advisory Committee meeting has taken place.

Dissertation & Defense

- A written dissertation and oral defense, including a public seminar, must be completed by the end of the seventh year in the program.
- The dissertation is written under the supervision of the student's primary advisor and is based on the student's original research.
- The public seminar is a full-length, one hour seminar that is usually 45-50 minutes long to leave time for questions from the audience.
- The oral defense is closed to the public, consisting of the student and their Advisory Committee.
- A copy of the dissertation in final format must be approved by the student's primary advisor and submitted to each member of the Advisory Committee a minimum of 15 business days before the scheduled defense.
- The dissertation defense must be done at least six months after the proposal defense.
- The Advisory Committee will decide whether the student passes or fails. No second attempts to defend a Ph.D. are allowed.
- The student should be informed of the outcome of the dissertation defense by their primary advisor at the end of the defense. The outcome should also be communicated by e-mail to the student, the other committee members, the Chair of Biology Graduate Studies, and the Program Coordinator within three business days of the exam.
- Students who fail the Dissertation Defense may revise their Ph.D. dissertation to serve as a M.S. thesis and be awarded a M.S. degree at this point, with the approval of their Advisory Committee.

POLICIES REGARDING ACADEMIC STANDING

Maintaining good standing

- A student will be considered in good academic standing if all milestones and requirements are completed by August 31 of the specified year in their program, or December 31 for students who start in January.
- If the student does not complete the milestones and requirements by the end of the specified year, the student will receive an **academic warning** in the form of a letter from the Chair of Biology Graduate Studies that outlines requirements that are past due and instructions on how to proceed and catch up. The academic warning period lasts for one year from the date on the letter or until the student completes the outstanding requirements.
- If a student does not complete the outstanding milestones during the one year academic warning period, then the student's good standing[3] will lapse.

Evaluation of standing

- A letter will be sent to students at the end of each year from when they started, normally at the beginning of September (or else February), indicating their standing. This letter will indicate whether the student is in good standing, is receiving an academic warning, or if their good standing has lapsed. The letter will describe the implications of this and how good standing may be regained.

Implications of an academic warning

- The student will not be eligible for departmental funds to support graduate student research.
- The student will not be eligible for departmental graduate student conference travel awards.
- It is required that the missed milestone be completed by the end of the year of academic warning (one year after the original milestone deadline). However, this does not then extend the timeline on subsequent milestones.
- Students that started the program off-cycle are given the same amount of time as other students to satisfy milestones.
- A milestone that is not completed by one year after the milestone deadline (when the student is on academic warning) results in loss of good standing and dismissal from the Ph.D. program, although an extension may be granted by a petition (see "Petitions" section below).
- When an academic warning is issued, students and their primary faculty advisors must set up a meeting of the advisory committee within one month of the annual progress letter to formulate a plan for progress towards completing the outstanding milestone.
- The primary faculty advisor must send an e-mail to the student, the other members of the advisory committee, the Chair of the Biology Graduate Studies Committee, and the Graduate Studies Program Coordinator describing the plan to catch up within three business days of the meeting.

[3] University-wide policy available on page 7 of the Graduate Student Handbook: https://www.clarku.edu/wp-content/uploads/2020/09/Graduate-Student-Handbook.pdf.

Petitions

- Students can petition the Biology Graduate Studies Committee in writing to maintain eligibility for departmental funds. The petition must describe extenuating circumstances leading to the academic warning, and provide a timeline for completion or the outstanding milestones.
- Students can also petition the Biology Graduate Studies Committee in writing to stay in the PhD Program if they lose good standing or if seven years in the program have elapsed. In this case, the petition must describe the plan formulated with the Advisory Committee for re-establishing and maintaining good standing and completion of milestone(s).
- Petitions to stay in the PhD program or receive an extension beyond seven years must be sent to the Chair of the Biology Graduate Studies Committee at least 20 business days before the start of the semester when good standing would lapse or an eighth year would begin. It is the student's responsibility to provide this petition in advance.
- The faculty members on the Graduate Studies Committee will decide upon petitions. If a petition contains sensitive information that the student wishes to remain confidential, the student may contact either the Chair of the Graduate Studies Committee or the Chair of the Department to discuss a plan to limit access to the information in the petition. However, decisions on petitions should be made by at least two faculty members, one of which is either the Chair of Biology Graduate Studies or the Chair of the Department.

Dismissal from the PhD Program

- Students that lose good standing, and who have not successfully petitioned the Biology Graduate Studies Committee for an extension, will be dismissed from the program.
- Dismissal may include the conferral of a M.S. degree, pending satisfactory completion and defense of an M.S. thesis.
- The advisor and Advisory Committee are not obligated to accept work for a M.S. degree.
- Appeals against dismissal should be addressed to the Dean of Research and Graduate Studies[4].
- Students who pursue a M.S. degree are normally not eligible for TA support (via a "TA line") or departmental research or conference travel funds.
- Students who pursue a M.S. degree must complete it by the second University submission deadline following their switch to an M.S. degree. These deadlines are April 1, August 1, and December 1. For example, if a student is dismissed from the Ph.D. program on February 25 but allowed to complete a M.S. degree, then they have until August 1 to complete all requirements for the M.S. degree.

[4] University-wide policy available on page 7 of the Graduate Student Handbook: https://www.clarku.edu/wp-content/uploads/2020/09/Graduate-Student-Handbook.pdf.

TIME LIMITS

- Students must complete the requirements within seven years of enrollment in the Ph.D. program. Approved leaves of absence do not count against the time limit, but time spent in non-resident status does.
- Students who do not finish the degree requirements within the time allotted may petition for an extension of time to complete the degree requirements.
- Such requests normally will be for no more than one academic year.
- Petitions should include a timeline for completion of the degree requirements and must be approved by the primary faculty advisor and the department before submission to the Dean of Research and Graduate Studies for final approval[5].
- Typically, only one extension of time will be granted. In extenuating circumstances, a second extension may be approved following the same procedure as the first.
- Family, medical, or other personal leave does not negatively impact a student's standing[6]. If a student takes leave, the timeline for milestone completion is extended accordingly. In these cases, students must be proactive in requesting and taking leave as appropriate. Retroactive leaves will not be granted.

International students need to fill out a Graduate Student Program Extension form if remaining after five years (see link: https://www.clarku.edu/offices/isso/resources/forms-for-students-scholars/). It is their responsibility to remain in compliance with the conditions of their visas, and are encouraged to communicate with the International Students and Scholars Office (ISSO) regarding visa topics.

[5] See Graduate Academic Catalog online under "Time Limits for Degrees": https://catalog.clarku.edu/content.php?catoid=28&navoid=2369#time-limits-for-degrees.

[6] Leave policies, including "Parental reassignment of duty" are University-wide and details are available on pages 7-9 of the Graduate Student Handbook: https://www.clarku.edu/wp-content/uploads/2020/09/Graduate-Student-Handbook.pdf.

FACULTY RESPONSIBILITIES

Faculty play a key role in mentoring Ph.D. students, and this includes facilitating timely completion of milestones and maintaining transparent communication between the Advisory Committee and both the student and Biology Graduate Studies Committee.

Communicating with student and Graduate Studies Committee

- After each milestone (with the exception of the departmental seminar, which is public) is completed, the primary faculty advisor will compose an e-mail describing the outcome of the milestone and send it to the student, the other members of the Advisory Committee, the Chair of the Biology Graduate Studies Committee, and the Graduate Studies Program Coordinator.
- The e-mail should identify the milestone, date of completion, the outcome, and any recommendations made by the Advisory Committee for the student. Recommendations might include conditional passes, requirement to take a course, further assignments, suggestions for succeeding with future milestones, etc.
- This e-mail must be sent within three business days of the completion of the milestone.
- Importantly, this e-mail serves as a record for the student, faculty advisor, Advisory Committee and department of expectations, successes and challenges going forward.

Facilitate scheduling of milestones

- Ensuring on-time completion of milestones is a shared responsibility of Ph.D. student and faculty advisor.
- Faculty advisors should facilitate the completion of milestones through effective mentoring and support in scheduling Advisory Committee meetings. Faculty advisors are also expected to mentor the student in finding an external committee member in the student's second year of the Ph.D. program.
- Faculty serving on Advisory Committees have a responsibility to facilitate completion of milestones by making time for scheduling of milestones and Advisory Committee meetings.
    - Faculty should reply to student requests within a reasonable amount of time, usually less than five business days.
    - Faculty must provide feedback on qualifying exam essays and proposals within 10 business days of receiving them, including whether any responses need to be revised.
    - Faculty must allow for scheduling of Advisory Committee meetings, including those about academic warnings, qualifying oral exams, proposal defenses, and dissertation defenses within 20 business days of receiving the request, or 30 business days in the summer or while on leave if they remain on an Advisory Committee.
    - It is reasonable, based on discussions between the Ph.D. student and primary faculty advisor, to replace an Advisory Committee member that is on leave or unable to schedule milestone meetings within a reasonable amount of time. In such an event, the Chair of the Biology Graduate Studies Committee and Graduate Studies Program Coordinator should be notified of the change in Advisory Committee membership.

Biology Department Policy on Graduate Teaching Assistant & Instructor of Record Responsibilities

This document is intended to provide guidance on reasonable Graduate Teaching Assistant (TA) responsibilities while working as a TA as well as setting boundaries for those responsibilities. It is important to keep in mind that TA responsibilities will vary by course because of the type of material covered and the activities conducted. There is broad latitude in what represents reasonable responsibilities and these are largely set by the Instructor of Record (IOR) for each course. As such, this document is not exhaustive. The TA and IOR share joint responsibility for ensuring that each understands expectations and responsibilities of one another and the division of work in running a course.

University policy dictates that the TA workload is an **average of not more than 20 hours per week over a 15-week semester**. Semesters are 14 weeks of scheduled class time, plus an examination period. TAs should be prepared to be available for TA meetings during the week prior to the start of classes, and should plan on being available until final grades are submitted. The 20 hour per week is an average, and so it is conceivable that some weeks the time required exceeds 20 hours, but then is less during other weeks. It is both the TA's responsibility to conduct their duties efficiently and the IOR's responsibility to design courses to allow for the completion of assigned tasks within these time limits.

Typical TA responsibilities include:

- Learning the material and techniques that are covered in the course
- Attending labs to which they are assigned
- Holding office hours each week
- Attending lectures, if required by the IOR
- Proctoring exams, including the final, if requested
- Attending TA meetings to prepare for upcoming labs
- Lab set up and clean up, including end of semester clean-up of lab spaces.
- Administering quizzes and assignments
- Grading quizzes, exams (including the final), and assignments in a timely manner, and providing feedback as appropriate
- Replying to student e-mails in a timely and professional manner, or forwarding them to the IOR as appropriate
- Attending and helping with field trips outside of class time. These should be scheduled at the beginning of the semester
- Preparing and delivering lab presentations to guide students through the lab
- Creating and managing a safe learning environment for students in the lab
- Approaching their teaching assignments seriously and professionally
- Teaching their students effectively and being invested in their students' success
- Discussing any problems or uncertainties that arise with the IOR
- Communicating in a timely and effective manner with IOR, other TAs, and students

Given that TAs are there to support the IOR in delivering an effective course, IORs also have responsibilities to TAs, including:

- Effective communication of expectations of the TA for the course
- Development of course curriculum and materials to allow the TA to fulfill those expectations
- Mentorship of the TA while they assist in teaching the course
- Ensuring uniform grading and evaluation of students by the TA and across TAs if a course has multiple TAs
- Ensuring that safety information & training is available, as well as any needed personal protective equipment
- Addressing any concerns or uncertainties that may arise for the TA, including resolving any concerns or conflicts brought up by students or the TA
- Providing an opportunity for students to evaluate the TA
- Evaluation of the TAs performance in the course

Finally, some clarifications to help address possible grey areas in responsibilities:

- The IOR is ultimately responsible for the entire course, including the curriculum, material development, evaluation, assessment, and addressing student complaints and concerns.
- Although a TA may be expected to help develop and implement some minor elements of course material, such as quizzes, the IOR is ultimately responsible for these curricular elements.
- It is generally not appropriate for a TA to be assigned curriculum or teaching material development, unless there is some prior explicit arrangement for this, such as if a TA would like additional experience in these areas to enhance their pedagogy. In these cases, such responsibilities should be voluntary, and the IOR should provide ample mentorship.
- Although an IOR may not be present at every lab session, what goes on in the lab and how it is run is the responsibility of the IOR.
- The continuation and renewal of teaching assistantships is contingent on satisfactory academic and teaching performance of TAs, as stated in the Clark University Graduate Student Handbook (page 13).
- The IOR is expected to provide a written evaluation of each TA working with them each semester, as stated in the Clark University Graduate Student Handbook (page 13).
- The Biology Department TA Evaluation form is available to meet some of these expectations. One strength of using this form is that it can be customized for each course and helps ensure that a TA has a transparent and complete understanding of what is expected of them at the start of the semester.

Any uncertainties or disagreements regarding TA responsibilities should be brought to the attention of the Biology Graduate Studies Committee.

Appendix A: Rubric for Qualifying Assessment

Rate each objective as Excellent, Good, or Needs Improvement. Feedback should be provided for each objective, irrespective of the rating. This rubric is to be used for the written and oral portions of the qualifying assessment, with the last objective interpreted accordingly.

Student Name:

Committee Member Name:

Written or Oral?

Objective	**Rating (E, G, NI)**	**Feedback**
Student demonstrates a good knowledge of the scientific background in their field		
Student understands the current literature in their specific area of interest		
Student is familiar with the methods used in their specific area of interest		
Student is able to synthesize information from the objectives above to formulate research questions and design studies to test their hypotheses		
Student is able to think critically and reason logically		
Student demonstrates effective written or oral communication		

Appendix B: Rubric for Proposal Defense

Rate each objective as Excellent, Good, or Needs Improvement. Feedback should be provided for each objective, irrespective of the rating. This rubric is to be used for the written and oral portions of the proposal defense, with the last objective interpreted accordingly.

Student Name:

Committee Member Name:

Written or Oral?

Objective	**Rating (E, G, NI)**	**Feedback**
Student demonstrates a good knowledge of the scientific background in their field		
Student understands the current literature in their specific area of interest		
Student is familiar with the methods used in their specific area of interest		
Student demonstrates the ability to logically develop their research in terms of fitting into a broader context & justifying its significance		
Student demonstrates the ability to pose testable hypotheses, and describe how those hypotheses will be tested.		
Student demonstrates independence of scientific thought in developing their proposal.		
Student is able to think critically and reason logically		
Student demonstrates effective written or oral communication		
Areas identified as needing improvement during qualifying assessment. **Please list here:**		