

**Master of Science Guidelines**  
**Department of Biological Sciences**

**Fall 2022**

## **1. INTRODUCTION**

This document outlines the requirements for earning a Master of Science (M.S.) degree in Biology from the Department of Biological Sciences at Fort Hays State University. We want all our graduate students to successfully reach their goals and therefore students should review these requirements with their mentor as they begin the program. Ultimately, it is the responsibility of the graduate students to understand and follow these requirements.

The faculty mentor is the primary source of information for navigating the M.S. degree and students should meet regularly with their mentor. Frequent communication with the mentor and committee is critical as they are given broad latitude in adding requirements to those listed in this document. For additional information and support, students may contact the department chair and Graduate School to verify progress towards their degree.

Graduate students are held to higher standards than undergraduate students. Graduate study is an opportunity to develop the skills needed to become a professional biologist, and, as such, students will be held to professional standards in their conduct and work.

## **2. ADMISSION**

Students should visit the Graduate School's admissions site (<https://www.fhsu.edu/academic/gradschl/admissions/>) for detailed application instructions. International students should also visit the Graduate School's international admissions site (<https://www.fhsu.edu/academic/gradschl/international-graduate-applicants/>).

All students must apply through the Graduate School's application portal. Please visit <https://www.fhsu.edu/academic/gradschl/admissions/> for more information.

The Graduate School will send the application to the Department of Biological Sciences where the graduate committee carefully reviews the following documents.

1. A personal statement that articulates and includes the following:
  - a. the students' future goals, and how earning a M.S. in Biology will help them achieve those goals.
  - b. previous experiences that prepared the student for graduate school, and/or their future careers.
  - c. a statement of who the student would like as a mentor and why (it is recommended that applicants reach out to potential mentors prior to applying to the program).
  - d. a statement that describes whether the student intends to pursue the thesis or non-thesis track (see Program Options below).
2. Two letters of recommendation from referees who can describe the candidate's potential as a graduate student.

### 3. Transcripts from all undergraduate coursework.

The Department of Biological Sciences does not require GRE scores.

Students will not be admitted to the program if no mentor is willing or available for the student.

The Department of Biological Sciences has opportunities to financially support graduate students. For more information, please visit <https://www.fhsu.edu/biology/biology-graduate-studies/>. Recommendations for financial support will be made by the department during the application process. Students receive a maximum of four semesters of financial support during the fall and spring semesters. Financial support is not guaranteed.

After evaluating the applicant's materials, the department's graduate committee sends their recommendation to the department chair. The department chair considers the graduate committee's recommendation and makes a recommendation to the graduate dean along with the name of the student's mentor, and the semester of admission. Enrollment may be deferred for three additional semesters (excluding intersession and summer). International applicants may defer for a maximum of two additional semesters. Students who have been denied admission and wish to appeal should contact the graduate school. Keep in mind, the appeals process is for applicants who have a serious and compelling reason they feel their application should be considered.

### 3. PREPARING FOR THE FIRST DAY

All students should work closely with the graduate school to ensure that their Workday onboarding and other tasks are completed prior to arriving on campus. This includes a background check which will be conducted by the graduate school.

International students should work closely with the Graduate School and International Student Services (<https://www.fhsu.edu/international/>). You will need to obtain a social security number before a background check can be completed. You must be in Hays before you can apply for a social security number. International Student Services can help you transition to the US and to Fort Hays State University.

#### Department Orientation

All graduate students are required to:

- arrive on campus 3-5 business days prior to the beginning of classes.
- attend all orientation meetings.
- complete training on sexual harassment each year.

Graduate Teaching Assistants (GTAs) will also assist with the preparations for upcoming classes.

### 4. PROGRAM OPTIONS

The Department of Biological Science offers two tracks for the completion of the Master of Science (Biology): Thesis and Non-thesis. In deciding between the options, students should keep in mind their educational and career goals and consult with their mentor.

Thesis and Non-thesis options require the following:

- Minimum completion of 30 graduate credit hours.
- Completion of BIOL 805 Professional Scientific Communication during their first fall semester.
- The student must pass a qualifying comprehensive examination (See EXAMINATIONS).

A. Thesis Option

1. At least 2 credit hours of BIOL 892 Research in Biology.
2. At least 2 credit hours of BIOL 899 Thesis in Biology.
3. The student must prepare a thesis acceptable to the student's graduate committee.
4. The student must orally present the results of their research to the public.

B. Non-thesis Option

1. At least 2 credit hours of BIOL 892 Research in Biology.
2. The student must prepare a written report as described by the student's mentor and graduate committee.

Students may switch from one program option to the other. Students changing program options must fulfill all the requirements of their new options. Agreement of the student's graduate committee will be required so that the student's program of study can be reviewed and possibly revised.

## 5. GRADUATE COMMITTEE

The graduate committee assists in the development of the program of study, approves the program of study, provides guidance, and supervises and approves the thesis or written product.

A. Faculty mentor (major advisor)

1. The faculty mentor works closely with the student to help develop a program of study, assists the student in the development of the thesis or written product, advises the student on the conduct of research, aids in the preparation of the thesis or written product, and approves the thesis for review by the student's graduate committee.
2. The mentor must be a member of the graduate faculty.
3. A student's mentor can be changed at any time during the student's program.
  - a. The change can be initiated by either the student or the mentor.
  - b. The student or mentor must notify the department chair informing them of the change of mentor.

B. Graduate Committee

1. Composition
  - a. A graduate committee will consist of a minimum of 3 members.
    - i. The faculty mentor will chair the committee.
    - ii. A minimum of two other members of the FHSU biology graduate faculty.
    - iii. One outside committee member (an individual from a different FHSU department, or an adjunct of the Department of Biological Sciences) can be included but is not required.

- iv. If the faculty mentor feels that the student's research project requires additional outside expertise, then outside members can be included on the graduate committee.
  - v. Outside members must have an earned M.S. or earned Ph.D. (or terminal degree) in an appropriate discipline.
2. Selection
    - a. The student selects the graduate committee after consultation with their mentor.
    - b. The student invites the potential committee members to serve on their graduate committee.
  3. Meetings
    - a. The graduate committee should be established and is required to meet in the first semester of the student's graduate studies to approve the program of study (See 6. PROGRAM OF STUDY).
    - b. If after two semesters of graduate study the student has not had a meeting of their graduate committee, or the graduate committee has not approved a program of study (See 6. PROGRAM OF STUDY) and a research proposal (See 8. RESEARCH), then the student will be ineligible for a graduate assistantship and subject to dismissal.

## **6. PROGRAM OF STUDY**

The basic M.S. thesis program of study is pre-loaded into Workday and can be found under each student's Academic Progress tab. There are three categories of requirements (see below) including, Core Courses, Electives, and Capstone. The faculty mentor and the student should determine the specific elective courses the student needs to complete. Non-thesis students do not complete the capstone. Instead, they complete an additional 2 credits of electives. All students must complete a minimum of 30 credit hours.

### **A. Content**

1. The thesis option program of study has three main requirements:
    - a. Core Course requirements.
      - Biol 805 (Professional Scientific Communication; 3 credits)
      - Minimum of 2 credits in Biol 892 (Research in Biology)
    - b. Electives
      - Minimum of 23 credits in graduate-level biology or closely related courses.
    - c. Capstone\*
      - Minimum of 2 credits in Biol 899 (Thesis in Biology)
- \*Non-thesis students do not take a capstone. Instead, they need 2 additional credits of elective courses.
2. No undergraduate courses (100-400 level courses) can apply toward the student's graduate program.

- B. All graduate-level courses must be taken for a letter grade.
- C. The student's graduate committee might require the student to complete more courses than the minimum 30 hours required to earn an M.S.
- D. Only 10 hours of graduate credit transferred from another university can be applied to the program of study.
- E. Changes in the Program of Study
  - 1. The faculty mentor can request overrides to the program of study requirements in Workday. Such overrides should only be initiated with the committee's approval. The override request will be reviewed by the department chair and the graduate school's degree analyst.
- F. Enrollment
  - 1. Students should enroll in a minimum of 6 credit hours during each fall and each spring semester and the courses must be listed on the student's program of study.
    - a. Students supported by Teaching Assistantships or Research Fellowships have 9 credit hours of tuition waived; they should enroll in at least 9 credit hours.
    - b. In accordance with the Graduate School, international students are required to enroll in at least 9 credit hours per semester and at least 1 credit hour in the summer.
- G. Time Limit
  - 1. Students taking longer than three years to complete their M.S. should work with their mentor and committee to develop a plan of completion.
  - 2. If a student wants to include a course in their program that was not completed within the past 5 years, the student should consult with their mentor and committee to determine if the course can count towards the M.S.
  - 3. Students not completing all the requirements for the M.S. within 6 years might be required to pass another comprehensive exam.
- H. Completion of Degree *in Absentia*
  - 1. Students finishing their M.S. who are no longer on campus should stay in contact with their mentor and develop a plan of completion.

## 7. SCHOLASTIC STANDARDS

Graduate students are held to a higher academic standard than undergraduates; they are expected to demonstrate exceptional performance in all their courses.

- A. A graduate student automatically is placed on probation and is subject to termination of graduate status or their assistantship for any of the following reasons:
  - 1. A GPA of less than 3.00 in any semester.
  - 2. A grade of "C" in more than 6 credit hours or 2 courses.
  - 3. A grade lower than "C" in a course listed on their program of study.

B. Students must maintain a 3.00 GPA in courses listed on their program of study to be eligible for graduation.

## 8. RESEARCH

A. **Research Proposal.** Writing an acceptable research proposal is a professional skill that all graduate students are expected to achieve. Research proposals are written as part of the required Biol 805 (Professional Scientific Communication) course. All graduate students submit their research proposal to their committee and discuss the proposal during a committee meeting. The research proposal should be presented to the student's graduate committee at least two weeks prior to the meeting. The committee may recommend that the student revise the proposal prior to receiving committee approval.

Students conduct the research and either include it in their thesis (Thesis track) or report (Non-thesis track). As research progresses, it may be necessary to deviate from the research proposal. Students should consult their mentor and committee to determine if the deviations need to be reviewed and approved by the committee. It is the student's responsibility to keep all members of the graduate committee informed of progress in their research.

B. **Thesis or Report.** Preparation of the thesis (Thesis track) or report (Non-thesis track) is an indicator of the student's ability to analyze, summarize, and present research findings. The quality and accuracy of this document is of paramount importance.

The student should consult with their mentor to review the format for the thesis or report. The graduate school has specific requirements for formatting a thesis (<https://www.fhsu.edu/academic/gradschl/current-students/guide-formatting-thesis.pdf>). Reports are reviewed and approved by the mentor who may request changes before final approval is granted. A thesis is first reviewed by the mentor who will determine when it is suitable for review by the student's graduate committee. The graduate committee can request changes to the thesis. When a majority of the graduate committee has approved the thesis, the graduate student can circulate the signature sheet. The approval of the thesis is discussed in the thesis defense. (See 9. EXAMINATIONS)

C. **Misconduct in Research.** The conduct of graduate student research will comply with university policy, including IACUC and IRB regulations. Allegations of misconduct are subject to due process. A finding of misconduct is followed by notification and disciplinary action as outlined in university policies.

Research misconduct might include (but is not limited to) four categories of unacceptable actions:

- Acts of deception, falsification, plagiarism, or misappropriation.
- Failure to comply with sponsoring agency guidelines.
- Retaliation against any person reporting misconduct in research.
- Failure to comply with legal requirements governing research.

D. **Use of University Property.** Use of university equipment, facilities, vehicles, properties, or supplies must be approved by the mentor and the faculty or staff member responsible for such items. Graduate students must assume responsibility for the proper use of university equipment and property, and for the care and return of borrowed materials.

The Department will furnish expendable supplies only for teaching obligations. Graduate students must purchase their own supplies for classes in which they are enrolled. The same principle applies to the use of the departmental copy machine.

Equipment and rooms for student research are not to be shared with anyone not specifically authorized to use them. Only students receiving formal financial assistance from the university are allowed to drive

university vehicles. Permission to use university vehicles must be obtained from the student's mentor and budgetary authority, and the appropriate request forms must be completed and approved. In some cases, special training might be required for the use of vehicles or other specialized equipment.

- E. **Publications and Presentations.** Students are strongly encouraged to communicate the results of their research to the broader scientific community, by presenting their research at a meeting and/or by submitting to a peer-reviewed journal. Students who are presenting their research at a meeting may apply for an honorarium from the Department of Biological Sciences to help defray some of the costs of travel.

Students and their mentor should consider professional ethics when reaching a decision about recognition for publication. It is prudent for the student and their mentor to establish in advance what the proposed publication arrangements will be, including authorship and assigned responsibilities. Results of sponsored research should be published jointly with the person or persons who received the grant or contract.

- F. **Ownership of Data.** Students performing research sponsored by grants, assistantships, or departmental monies should understand that the data they collect is the property of Fort Hays State University and the sponsoring agency. Students, faculty mentors, and sponsoring agencies should establish an understanding of how data will be handled.

## 9. EXAMINATIONS

- A. **English Proficiency.** International students for whom English is not their first language must meet Graduate School requirements for demonstrating English proficiency. Additional proficiency will be required of all students serving as graduate teaching assistants.
- B. **Diagnostic Examination.** The faculty mentor or graduate committee may require the student to take a diagnostic examination to assist in the preparation of the program of study.
- C. **Qualifying Comprehensive Examination.** All M.S. degree candidates must pass a qualifying comprehensive examination. Students must sign up for their comprehensive exam on the Graduate School's website (<https://www.fhsu.edu/academic/gradschl/Comprehensive-Exam-Signup/>) by the deadline set by the Graduate School. Students should work with their mentor to develop a timeline for when comprehensive exams should be completed.

### 1. Format

- a. The student and committee should determine the format of the comprehensive exam. The format should align with and help the student achieve their future goals. Example formats include, but are not limited to, preparation and oral presentation of a research proposal, writing a research proposal, writing a grant proposal, writing a publication, and written or oral content knowledge exam.

### 2. Scheduling

- a. During fall and spring semesters, the exam can only be scheduled to take place between the 3rd and 12th weeks of the semester. Scheduling during the summer session is rare; however, students should work with their committees if there is a compelling reason why summer scheduling is necessary. Please inform the department chair of any exceptions to the scheduling guidelines.
- b. The comprehensive exam should be taken after students have completed the majority of their coursework or during their final semester.

- c. The tentative date for the exam is set by the student with the consent of the faculty mentor, and the graduate committee.
- d. Students are responsible for reserving a room, scheduling the event on the department calendar, and ensuring all committee members are notified of any changes.

### 3. Evaluation

- a. Upon completion, the committee will meet to evaluate the exam. Possible outcomes of the deliberation will be either:
  - i. Unconditional Pass
  - ii. Conditional Pass with revisions
  - iii. Fail
- b. Upon successful completion of the exam, the student will meet with their mentor and/or committee to discuss the committee's comments together. The discussion may include going over what the student did well and areas where the student needs to improve.
- c. If a student fails, they must repeat the exam. The timeline for the repeat should be determined by the committee. The committee must provide the students with feedback from the failed exam along with suggestions for improving their performance. A second failure would result in dismissal from the graduate program.
- d. It is the responsibility of the mentor to submit the Report of the Comprehensive Examination to the Graduate School within 2 working days after the day of the examination.

**D. Oral Examination of Research (Thesis Defense),** Students in the thesis option are required to pass an oral examination of their research (thesis defense). The thesis defense consists of two parts: the public oral presentation and the formal examination.

#### 1. Scheduling

- a. The thesis defense cannot be scheduled in the first two weeks or in the last 4 weeks of a semester. Scheduling during the summer session is rare; however, students should work with their committees if there is a compelling reason why summer scheduling is necessary.
- b. The thesis, approved by the mentor, should be submitted to the student's graduate committee at least two weeks prior to the tentative date for the thesis defense.
- c. The faculty mentor and all the members of the graduate committee must approve the defense date.
- d. The graduate committee makes an initial assessment of the thesis to determine whether the thesis is defensible and if the exam should occur.
- e. When the thesis and the date have been approved, the student is responsible for reserving a room, scheduling the event on the department calendar, and ensuring all committee members are notified of any changes.

#### 2. Public Presentation

- a. Announcement



The graduate student is responsible for the development and dissemination of an announcement (or flyer) that advertises the public presentation of their research. The flyer should be physically and digitally posted at least one week in advance.

b. Presentation

- i. The student will reserve the room and deliver a 30-40 minute presentation and be prepared to answer questions from the audience following the presentation.
- ii. The mentor will help the student with technology, introduce the student, and select questions from the audience.

3. Formal Examination

- a. The student's graduate committee will administer the examination, the mentor will serve as the chair.
- b. At the beginning of the exam, the faculty mentor will determine the order that committee members will question the graduate student. All members of the examination committee have the opportunity to ask questions about the thesis.
- c. At the end of the questions the mentor will excuse the student.
- d. Once the student has left the room, the graduate committee will discuss and vote on the student's performance. The committee can decide how they wish to collect the votes (i.e., secret ballot, verbal vote, etc.)
  - i. The only possible votes are Pass and Fail.
  - ii. A majority of Pass votes is required for the student to pass the examination.
- e. Once the votes are counted the student is brought back into the room and informed only of whether they passed or failed the examination (not the vote count).
- f. A student who fails the oral examination can retake the examination one additional time at a time to be approved by the examination committee.
- g. It is the responsibility of the faculty mentor to submit the Report of the Examination form to the Graduate School within 2 working days after the day of the examination.

## 10. FINANCIAL ASSISTANCE

1. Graduate students may be hired as temporary members of the university's instructional (GTA) or research staff (GRA). GTAs must assist faculty in teaching courses and GRAs must perform research according to the guidelines outlined by their funding source. The department also has two Graduate Curatorial Assistantships through the Sternberg Museum and four Graduate Wetlands Assistantships through the Kansas Wetlands Education Center. Students are not guaranteed financial assistance.
2. Application and Selection
  - a. Once accepted into the program, incoming students will be reviewed for the potential to receive financial assistance. If further action is required, the student's mentor will communicate the requirements to the student.

- b. Returning students will be assessed to determine if their current funding should be continued and/or if they are eligible for other funding opportunities. Returning students should discuss funding opportunities with their mentor.
3. Recommendations for funding will be made by a selection committee comprised of faculty members in the department reviews the graduate student applications and forwards its recommendations to the department chair, who makes recommendations to the Graduate School, which awards all assistantships.
4. Outside Employment is strongly discouraged for students on GTAs, GRAs, GCAs, and GWAs.
5. Responsibilities
  1. Graduate Teaching Assistants (GTAs)

GTAs are assigned primarily to teach or assist in laboratory courses. Assignments are distributed as evenly as possible and are based on a standard of 19 hours of work per week.

    - a. Eligibility

Students are eligible for support for up to four semesters (fall and spring). Assistantships can be withdrawn at any time for lack of funds, student's failure to perform assigned tasks, or student's failure at other responsibilities.
    - b. Specific duties given to each GTA are made by the supervising faculty and might include but are not limited to the following:
      - scheduled hours teaching or assisting in lab or classroom
      - mandatory GTA meetings with faculty supervisor
      - preparing for lab (e.g., reading background information, writing lecture notes and quizzes)
      - setting up lab materials and putting lab materials away
      - grading lab assignments outside of class
      - assisting faculty with preparation of lecture materials or grading exams
      - other duties assigned by faculty supervisor or department chair.
    - c. Office hours
      - GTAs will be assigned office space.
      - GTAs will schedule a minimum of three office hours per week between 8:00 am and 4:30 pm Monday through Friday. These office hours will be announced in the classes taught by the GTA, printed in the syllabi, posted on the office door, and provided to the department's administrative assistant and supervising instructors, within one week of the start of each semester.
      - During scheduled office hours, GTAs must be available in their office or teaching lab to meet with students or faculty.
  2. Graduate Research Assistants, Graduate Curatorial Assistants, and Graduate Wetlands Assistants (GRAs, GCAs, and GWAs)
    - GRAs, GCAs, and GWAs are required to have a written description of expectations that details their responsibilities and remuneration.
    - Description of expectations must be signed and dated by the student, the student's mentor, and the supervisor of the GRA, GCA or GWA.
    - The signed description of expectations must be submitted to the Biology Department office prior to the start of the semester.
    - The original description can be amended. The amended description must be signed by

all parties and submitted to the Biology Department office.

**i. EQUAL EMPLOYMENT OPPORTUNITY**

Fort Hays State University's affirmative action and equal opportunity statement can be reviewed here:  
<https://fhsu.edu/president/Compliance-Office/Equal-Employment-Opportunity/index.html>.