

# GUIDE FOR GRADUATE STUDY

## Master of Science in Integrated Biosciences

Northern Michigan University

Approved by the Integrated Bioscience Advisory Committee  
August 2019

## FOREWORD

Graduate students should be familiar with the contents of the current Northern Michigan University Graduate Bulletin at the time of their admittance into a degree program. The NMU Graduate Bulletin is available online at <http://www.nmu.edu/gradstudies/>. This guide for graduate students expands on the Graduate Bulletin with respect to requirements and policies pertinent to students admitted to the graduate program in the Department of Biology.

This Guide is written to be specific to the Master of Science in Integrated Bioscience, housed in the Biology Department. Other guides are available for the Master of Science in Biology and the Master of Science in Postsecondary Biology Education. Students in those programs are encouraged to find those documents on the Biology Department web pages.

**Mission:** The Master of Science program in Integrated Biosciences provides quality graduate education through student-faculty collaboration in interdisciplinary natural science research and scholarly activity with links to biology. Graduates will have a strong understanding of interdisciplinary natural sciences and the principles that guide the design and execution of high-quality research. Graduates will have substantial research experience and will be able to communicate scientific information to the public and the scientific community

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## IMPORTANT DATES

Note that other important dates *not* listed here include deadlines for internal funding and registration. Check the website for information on these and other important dates.

### PRIOR TO ADMISSION

**March 1** – start of consideration for fall admission applications

**March 1** – First deadline for applications for fall-awarded Graduate Assistantships in Biology\*

**April 15** – Second deadline for consideration for fall-awarded Graduate Assistantships

**May 1** – end of consideration of applications for fall admission (except under exceptional circumstances)

**September 15** – start of consideration for winter admission applications

**September 15** – deadline for applications for winter-awarded teaching assistantships

**December 1** – end of consideration of application for winter admission

*\*Carefully review policies regarding award of assistantships to MS Integrated Biology students described later in this document.*

### DURING THE PROGRAM

**TWO weeks before first fall semester** – TA training program

**One week prior to either semester** – required attendance for teaching assistantships to prep courses

**First Semester**- take BI 500 and prepare proposal; define research project; form advisory committee

**Second Semester** – complete proposal and get it approved; begin collecting data or prepare for full field season

**May 1 of first year** – deadline for completion of proposal in order to retain teaching assistantship

**Third semester**- Finish data collection and data analysis; start writing thesis

**Fourth semester**- Complete thesis; seminar and defense completed one month prior to graduation; filing of *Thesis Defense Evaluation Form*; use last month to prepare manuscripts for submission for publication

### FOR THESIS COMPLETION

**Thesis is completed and revised to the satisfaction of your advisor** (~2.5 mo prior to Graduation Day)

Two weeks for committee review of your completed thesis

**Defense Date**- About TWO MONTHS before graduation day.

One-Two weeks for revision following successful defense

TWO weeks prior to sending thesis to Graduate School, give otherwise-approved thesis to Department Head for review

## ADMISSIONS

### ADMISSIONS PROCEDURES

Applicants for admission to the Northern Michigan University College of Graduate Studies and the Biology Department M.S. in Integrated Bioscience must submit the following directly to the College of Graduate Studies office:

- Completed Application for Admission  
(This form can be obtained from the College of Graduate Studies, Biology Department or at <http://www.nmu.edu/gradstudies/admission.htm>.)
- Application for Assistantship (if desired)
- Official transcripts from all previously attended colleges
- Three letters of recommendation.
- Letter of Application describing your background, research interests and career goals.
- Memorandum from a faculty member who is approved as a mentor in the program indicating their willingness to serve as your graduate thesis advisor and your potential for success in the graduate program.

International Students must also:

Hold or obtain an F-1 or J-1 visa  
Submit official transcripts through an acceptable clearinghouse  
Present a Declaration and Certification of Financial Responsibility  
Submit evidence of proficiency in English (a minimum TOEFL score of 550 is required)

International students are encouraged to consult the International Affairs office by telephone (1-906-227-2910) or at [OIA@nmu.edu](mailto:OIA@nmu.edu).

### TIMELINES FOR ADMISSION

Application packets must be **complete** to be considered for admission. Incomplete application materials will be retained for one year from the initial application date. Applicants wishing to be considered after that time must resubmit all materials. Late applications may be considered at the discretion of the department and only under extreme circumstances.

#### *Fall Semester Program Start*

Applications for fall admission will be reviewed from March 1 through May 1. Applicants

interested in being considered for a fall-awarded graduate (teaching) assistantships should have all materials submitted by March 1.

#### *Winter Semester Program Start*

Applications for winter admission will be reviewed from September 15 through December 1. Applicants interested in being considered for a winter-awarded graduate (teaching) assistantship must have all materials submitted by September 15.

### ADMISSION REQUIREMENTS AND STATUS

#### *REGULAR DEGREE ADMISSION*

Applicants are required to comply with the regular admission requirements of the College of Graduate Studies, which includes an undergraduate grade point average of 3.0. In addition, students must have either: a) a bachelor's degree in the natural sciences, mathematics or computer science, or b) a minimum of 24 credit hours in undergraduate natural science courses, or equivalents, with a minimum GPA in these courses of 3.0.

Students are expected to have sufficient training at the undergraduate or post-baccalaureate level, which could include employment-related experience, to successfully undertake the thesis project and the program. Transcripts of applicants will be evaluated on an individual basis with input from the faculty advisor.

Applicants are also expected to have a background in a breadth sciences, with a total of 16 credits of coursework from at least two natural science, mathematics, or computer science disciplines that are not the area of their primary undergraduate training. Other courses may be accepted with the approval of the program advisory board.

Applicants and/or their potential advisors may request special consideration for admission of students with backgrounds that do not meet these expectations. Written requests should be directed to the Program Advisory Board. The program may admit students with deficient backgrounds with conditions that need to be met in a defined period of time.

Applicants are required to comply with the regular admission requirements of the Office of Graduate Education. In addition:

1. Applicants must include an essay indicating their background, career goals and research interests.
2. Applicants must submit three letters of recommendation.
3. Students must have a thesis adviser prior to admission. This advisor can be drawn from any of the natural sciences, engineering, computer science, or mathematics disciplines. Applicants are strongly encouraged to communicate with the thesis adviser early in the application process. To identify the adviser, students should contact a faculty member and establish the willingness of that person to serve as the adviser, as indicated by a

memorandum from the faculty member to the program advisory board. This memorandum should also indicate the general area of research to be conducted by the student and provide a rationale for the fit of this research area with the mission of the M.S. Integrated Biosciences program.

Students must have regular degree status in order to be considered for a graduate assistantship or to graduate.

Additional information may be obtained from the Department Head of Biology, 2001 New Science Facility (phone 906-227-2310).

#### *CONDITIONAL ADMISSION*

Applicants with an undergraduate or graduate grade point average of less than 3.00, or with numerous deficiencies in course work may be granted conditional admission.

The conditions that must be met for a change to regular admission status will be specified in the letter of acceptance. Students who fail to meet the conditions of their admission by the completion of 12 graduate credits will be denied further registration.

Conditional admission can also be granted to undergraduate students in their final semester before graduation, which will allow enrollment in courses for graduate credit.

#### *PROBATIONARY NON-DEGREE STATUS*

Probationary non-degree status is granted to students who do not qualify for regular or conditional admission or who fail to meet acceptable academic standards in graduate course work. Graduates of non-accredited institutions are initially placed in non-degree status. Graduate students whose grade point average drops below 3.0 will be placed on probationary status and have a maximum of two semesters to raise their grade point average to 3.0 or above. Students cannot receive a graduate degree while on probationary status. Policies of the College of Graduate Studies concerning academic probation are found in the Graduate Bulletin under "Academic and Retention Standards".

#### *NON-DEGREE ADMISSION*

Students admitted to the College of Graduate Studies, but not admitted to the departmental program have non-degree status. A student classified as a non-degree student may petition the Dean of Graduate Studies and Research for regular degree status after the completion of 12 but no more than 20 hours of graduate credit by completing a "Request for Change of Curriculum" form. Only students with a minimum grade point average of 3.00 may file such a petition. No assurance can be given to a student that any credits earned under non-degree status will be accepted in a degree program or used to meet the requirements for graduation. To be applied toward a degree program, courses completed during non-degree standing must be recommended by the assigned advisor and approved by the department head and the Dean of Graduate Studies and Research.

## MAINTENANCE OF ACADEMIC STANDARDS

The provisions specified in the Graduate Bulletin section titled "Grading," apply to students in Biology. Grades received in any undergraduate deficiency courses are not included when calculating graduate GPAs.

## GRADUATION AND DEGREE REQUIREMENTS

### M.S. IN INTEGRATED BIOSCIENCES PROGRAM REQUIREMENTS

Programs must include a minimum of 32 credit hours of graduate courses. A minimum of 16 credit hours must be 500-level courses. A minimum of 16 credits must be in courses of defined content.

- A minimum of 7-8 credit hours of biology courses are required.
- Students must complete 7-8 credits in one other natural science or mathematics/computer science departments (denoted by course prefix).
- Remaining credits may be drawn from listed courses at the discretion of the student and his/her advisory committee.
- Graduate students must carry out a plan of study which includes research and thesis. Candidates must perform original research under the direction of a research adviser and present a seminar and thesis based on the research at the conclusion of their program.
- Students in this program may receive primary mentorship by a research advisor in a natural sciences, mathematics or computer science discipline who maintains Level 3 graduate faculty status at NMU.
- The student's advisory committee must approve a formal research proposal providing a review of literature and clear explanation of methods prior to the start of data collection.
- The candidate will defend his or her thesis at an examination consisting of a public presentation, a written thesis document, and a examination by the thesis committee.
- The thesis must be accepted by the Master of Science in Integrated Biosciences Advisory Board and the Office of Graduate Education.

## GRADUATE PLAN OF STUDY AND ADMISSION TO CANDIDACY

### GRADUATE ADVISOR

All graduate students in the M.S. in Integrated Bioscience graduate program must have a thesis advisor. This individual must be identified and agree to act as the thesis advisor prior to admission to the M.S. Integrated Bioscience. In order to act as a thesis advisor a faculty member must be in a natural sciences, mathematics or computer science discipline and maintain a Level 3 graduate faculty status at NMU. The primary role of the

thesis advisor is to chair the student's graduate advisory committee, have the primary role in overseeing the academic progress of the student and the planning, execution and completion of the thesis.

If the student wishes to change thesis advisors or the thesis advisor determines that he/she can no longer act in that capacity, the student and advisor should try to identify a new thesis advisor that would be willing to serve in that role. If the student and advisor are unable to come to a mutually agreeable solution the Program Advisory Committee will be asked to make a recommendation to the Department Head. If NMU is unable to resolve the situation, the student may be dismissed from the graduate program.

### GRADUATE ADVISORY COMMITTEE

All graduate students in the M.S. Integrated Biosciences program should choose a graduate advisory committee and meet with that committee before they have completed 12 hours of their graduate program. The graduate advisory committee consists of the thesis advisor (who chairs the committee and must have appropriate Graduate Faculty status) and at least two additional faculty members. A minimum of one member of the committee must be from the Biology faculty, but this person need not be the thesis advisor. Non-NMU faculty, adjunct faculty and non-faculty experts may serve on graduate advisory committees as either voting members or as non-voting advisory experts. All voting members of the committee must hold appropriate Graduate Faculty status.

### PLAN OF STUDY

The student and advisory committee will develop a proposed plan of study that specifies the course work that is required for each student to complete the master's degree. The *Proposal Evaluation and Plan of Study* form must be signed by the thesis advisor, members of the thesis committee, and must be submitted to the Department Head of Biology and to the Office of Graduate Studies and Research. Forms for this process are available on the Biology web page and/or in the Biology Department office. This form and the signatures are the official indicator of your graduate advisory committee and your successful completion of the proposal requirement for your degree.

The Biology Department Graduate Committee will maintain records of all graduate students to insure that there is compliance with this policy. Failure to form an advisory committee and complete a proposal and plan of study within the specified time may result in forfeiture of credits earned in excess of 12 semester hours and the termination of an assistantship appointment and/or denial of future registration.

### ADMISSION TO CANDIDACY

Admission to the College of Graduate studies and to the M.S. in Integrated Bioscience does not imply admission to candidacy for a graduate degree. Admission to the College of Graduate studies and to the M.S. Integrated Bioscience program indicates that you are a graduate student; admission to candidacy indicates that you are a candidate for a graduate degree. Admission to Candidacy will be granted upon the recommendation of the

Graduate Advisory Committee, Department Head and approval of the Dean of Graduate Studies.

Requirements for admission to candidacy include:

- Regular degree status
- Cumulative graduate grade point average of 3.0 or better.
- Approved *Proposal Evaluation and Plan of Study Form* signed by graduate advisory committee.
- Application for candidacy during the semester in which the 12<sup>th</sup> graduate credit will be earned.

Changes in the student's program require submission to the College of Graduate Studies either 1) an amendment using a "Course Substitution Form" (available on College of Graduate Studies Website) to the student's currently approved Graduate Plan of Study signed by the graduate advisor.

## THESES

1. All graduate students in the M.S. Integrated Bioscience graduate program are required to carry out a plan of study that includes research and thesis. The research must be original and carried out under the direction of a graduate research advisor. This research should be conducted using the scientific method, but does not preclude a student from forming a hypothesis and testing that hypothesis through collection and synthesis of data from the literature.
2. Theses shall be prepared in accordance with the "Guidelines For The Preparation of Master's Theses." The Guidelines can be obtained in the Biology Department or the College of Graduate Studies Web Page (<http://www.nmu.edu/gradstudies/thesis/>).
3. Prior to registering for or receiving thesis or research credit, a formal research proposal providing a literature review and clear explanation of the methods to be used must be presented to the Advisory Committee for approval.
4. Each student will present a public seminar and prepare a thesis based on the research at the conclusion of their program.
5. Subsequent to the presentation of the public seminar the thesis will be defended by the candidate at an oral examination conducted by the members of the candidate's graduate advisory committee. A majority of voting members on the committee must approve the thesis.
6. At the time of the thesis defense, the graduate student's thesis committee will complete the *Graduate Thesis Defense Evaluation Form* and indicate the assessment of the three elements to the thesis defense (seminar, written thesis, oral

examination). This form must be signed by the thesis committee and submitted to the Department and the Office of Graduate Studies and Research at the time of the defense. For each element, the student may receive a pass (acceptable), resubmit (not acceptable, but resubmission is allowed) or fail (not acceptable and no resubmission is allowed). Students are allowed one resubmission on elements for which resubmission is allowed.

6. After the successful thesis defense, a copy of the corrected version of the thesis will be submitted for review by the Department Head at least three weeks before submission to College of Graduate Studies.
7. Following completion of the thesis defense, the original thesis and one copy must be submitted to the Office of Graduate Studies. The original thesis should be signed by the student's Graduate Advisory Committee, the Department Head and the Dean of Graduate Studies. This approved document must be in the College of Graduate Studies no later than 30 calendar days prior to graduation.
8. The data collected by the student in preparation of a thesis is the intellectual property of the student, the thesis advisor and the funding agency. Students that leave the university prior to completion of their thesis, or prior to publication of their data should see that adequate documentation is filed with the thesis advisor and/or funding agency. Prior to leaving the university, it is wise that clear expectations for publication of data be discussed with the thesis advisor. These expectations should include a timeline for publication (by the student or thesis advisor), authorship and author affiliations.

### SUGGESTED TIMELINE

This timeline is provided as a suggested guideline for students to complete a Master's degree in two years. Students should consult their advisor to derive modifications appropriate to individual research programs, but generally, students should plan to complete major tasks close to the following schedule:

- |                       |  |
|-----------------------|--|
| 1. Prior to admission | Identification of thesis advisor and general research area   |
| 2. First semester     | Definition of research project and formation of thesis advisory committee  |
| 3. Second semester    | Approval of research proposal, filing of <i>Proposal Evaluation and Plan of Study</i> form, and advancement to candidacy; begin collecting data or prepare for full field season                     |
| 4. Third semester     | Finish data collection and data analysis; start writing thesis   |
| 5. Fourth semester    | Complete thesis; seminar and defense completed one month prior to graduation; filing of <i>Thesis Defense Evaluation Form</i> ; use last month to prepare manuscripts for submission for publication |

## RESEARCH FUNDING

Students conducting original research as part of their plan of study should apply for funding to help offset the cost of the proposed research. Applications for funding can be from internal campus and external sources. Campus funding sources include:

- Charles C. Spooner Student Research Program.  
Spooner grants can provide up to \$500 dollars. Application deadlines and application procedure can be found on the College of Graduate Studies website at [http://www.nmu.edu/graduate\\_studies/charles\\_spooner.htm](http://www.nmu.edu/graduate_studies/charles_spooner.htm).
- Excellence in Education Research Grant Program.  
Excellence in Education Grants provide up to \$1,500 dollars for summer research. Application deadlines and application procedures can be found on the College of Graduate Studies website at [http://www.nmu.edu/graduate\\_studies/excellence\\_education.htm](http://www.nmu.edu/graduate_studies/excellence_education.htm).
- Department of Biology Development Fund.  
Development fund grants are administered by the Department's Budget Committee. Deadlines for proposals are October 15 (for fall semester), March 15 (for winter semester and spring sessions) and June 15 (for summer sessions). The application should include a statement of intent and the objectives, the plan and timetable, and a budget justification. Complete guidelines for development fund grants are available in the Department Office.

## GRADUATION

1. Completion of requirements or the enrollment in all required courses does not automatically make a student a candidate for graduation. A candidate for graduation shall make an application for graduation by registering for graduation using the appropriate code from the course scheduling booklet in the same manner as registering for a class. The last day to register (apply) for graduation is the fourth day of the semester in which the student plans to receive the master's degree.
2. At the time of registration for the semester in which the student expects to complete their work they must pay a one-time graduation fee to Financial Services. If a student plans to attend commencement ceremonies and rent a gown, an apparel rental fee must be paid at the NMU Bookstore.
3. A candidate for graduation must check with the Placement and Career Planning Office to make certain that all placement forms have been completed if they wish to use their services.

4. A candidate for teacher certification must check with the Registrar's Office to make certain that all requirements and application forms have been submitted.
  
6. All requirements for the degree, except for current course enrollment, must be completed 30 calendar days prior to the date of graduation. This includes filing the completed thesis and removal of all "I" or "R" grades, which are commonly given while completing research and thesis. It is the student's responsibility to ensure that all necessary documentation has been filed and received prior to graduation.

#### PROFESSIONAL STANDARDS

- Students are expected to maintain scientific integrity and not to engage in scientific misconduct as described in the NMU Student Handbook and Graduate Bulletin.
- Students conducting research with animals or humans must comply with all IACUC and IRB requirements for those experiments, including completing designated training and following all procedures specified by the IACUC protocol(s) associated with the research. Students are required to abide by all required permits and permissions, including state and federal permits.
- Students are expected to make satisfactory progress towards completing their research and thesis.

#### POLICY FOR GRADUATE STUDENT GRIEVANCES

The student should first review and discuss with the faculty member the problem or allegation. If not satisfied with the results of such a meeting, the student should then go to the department head.

The NMU Graduate Programs Committee (GPC) is authorized to review requests for exceptions to certain graduate policies. The Committee does not hear grade appeals; a separate procedure exists for those (see the Northern Michigan University [Student Handbook](#)). The GPC's primary authority lies within the sphere of the policies governed by the Office of Graduate Education (e.g., admission, matriculation and retention). However, in specific cases it may serve as an appellate body for academic matters deriving from the rules and practices of the departments and colleges. One function of the committee is to review petitions for academic reinstatement from graduate students who have been dismissed from graduate programs and/or courses. It will not review academic decisions that are based upon the expertise of the faculty in a particular field. However, the committee may examine the equity of the processes by which such academic decisions have been made. It will hear appeals of dismissal decisions.

## GRADUATE ASSISTANTSHIPS

A limited number of graduate assistantships (teaching and research) are available each year. These assistantships are awarded to highly qualified graduate students on the basis of academic merit. Teaching Assistantships refer to positions where the student works for the Department in a primarily teaching role (e.g. teaches labs, etc.) Other graduate assistantships include research assistantships where a student may be supported financially from a grant and administrative assistantships where a student is supported through work in an administrative capacity in one of the university offices (e.g. Grants and Research). The Biology Department is in charge of the award of teaching assistantships within the Biology Department. Other departments may also offer graduate assistantships. Other graduate assistantships are overseen by their funder (e.g. grant principle investigator or NMU administrator). In general, for the M.S. Integrated Biosciences, the student is eligible for funding through the home department of their primary thesis advisor. Opportunities may be available from other departments, depending on availability. Students in M.S. Integrated Biosciences are encouraged to discuss funding opportunities with both their primary thesis advisor and with the Program Director for M.S. Integrated Bioscience.

### *Details on Biology Department Assistantships:*

Graduate Assistantships may be awarded to M.S. Biology graduate students and to M.S. Integrated Bioscience students who have a major advisor in the Biology Department on a one year basis with expectation of renewal for a second year as long as appropriate benchmarks are met. Graduate Assistantships may be awarded to students in the M.S. Integrated Bioscience program who have a major advisor outside the Biology Department and to M.S. Postsecondary Biology Education majors after the second review date (April 15) on a single year basis with no expectation of renewal for a second year, although these students may be considered again should G.A. availability occur.

To apply for a Graduate Assistantship, the following steps are necessary:

1. Submit a completed application for admission to the Graduate Office. See application procedures in this guide.
2. Complete an application for graduate assistantship ([http://www.nmu.edu/graduate\\_studies/forms/ga\\_app.pdf](http://www.nmu.edu/graduate_studies/forms/ga_app.pdf))

For Graduate Assistantships beginning in the fall semester, these materials should be submitted and available in the Graduate Studies Office by March 1. Normally the department will act on applications and announce the awards by April 1. Should additional GAs still be available after this time, a second review date of April 15 will be implemented and awards will be announced by May 1. For assistantships beginning in the winter

semester, the corresponding dates are October 15 for submission and November 15 for award announcement.

If a Graduate Assistantship becomes available in the winter, the selection criteria will be applied to any students who are eligible who wish to be considered from M.S. Biology, M.S. Integrated Biosciences (any department) and M.S. Post Secondary Education with priority given to eligible thesis students with a major advisor housed in the Biology Department. These positions will be filled for one semester. The position will then be added to the available pool awarded for the following fall and the student will return to eligible status for review for a fall-awarded assistantship. Students may only be awarded an assistantship for a total of four semesters.

Applicants for research assistantships should:

1. Submit a completed application for admission to the Graduate School. See application procedures in this guide.
2. Submit a letter directly to the faculty member for whom the research will be conducted. Additional application materials may be requested by the faculty member.

#### QUALIFICATIONS FOR APPOINTMENT

1. An applicant must have completed all application processes.
2. An applicant must be enrolled in a degree program and have regular admission status. Students transitioning from conditional to regular status may apply for an appointment in their last semester on conditional status with the understanding that appointment is dependent upon achieving regular status prior to the start of the appointment contract.
3. Once appointed, the Graduate Assistant must:
  - Be enrolled in at least six (6) credit hours of graduate work that is relevant to the declared program of study (courses that are or will be included in the Plan of Study), but no more than ten (10) credits. A six (6) credit load does not substitute for the required number of credits to be a full time student. A minimum of eight (8) credits must be taken during the Fall and Winter semesters to qualify as a full time student. [*N. B.* Students enrolled in 6-10 credits receive the same benefits and have the same responsibilities by NMU's standards. "Full-time student" status may be of concern for other reasons to students.]
  - Maintain an overall graduate grade point average of 3.0.
  - Meet the qualifications as determined by the nature of the particular assignment.
  - Satisfactorily perform the duties assigned as evaluated by the faculty supervisor.

4. All Graduate Assistantships are awarded for one academic year and can be renewed for a second year. Renewal is not automatic and is dependent on:
  - Maintenance of a 3.0 or higher GPA.
  - Satisfactory performance in assigned duties.
  - Adequate progress toward completion of degree.
  - Admittance to Candidacy (approval of research proposal by June 1).

#### CRITERIA FOR THE SELECTION OF GRADUATE (TEACHING) ASSISTANTS IN BIOLOGY

1. Scholarship

Applicants for graduate assistantships will be evaluated on their academic performance.

- Their undergraduate and graduate GPA, particularly in biology and other science courses, will be reviewed and rated. Emphasis will be placed on the applicant's most recent academic performance.
- GRE scores will be assessed as part of the overall application.
- Demonstrated professional experience such as internships, research experiences, job experience, etc.
- Applicants will be rated more favorably if they have no undergraduate deficiencies.

2. Potential for Success in the Graduate Program

Applicants for teaching assistantships will also be evaluated on their overall potential success in the graduate program

- Letters of Recommendation: Applicants will be evaluated on the basis of three letters of recommendation, requested by the applicant, from people familiar with their background and potential for graduate study and teaching. These may be the same letters used for admission to the program.
- Teaching Ability: The major duty of our teaching assistants is to teach laboratory classes and provide laboratory support. Preference will be given to applicants with academic preparation or experience that qualifies them to fill the needs of the department and who have the potential or skill for good teaching.
- Information from the potential advisor explaining the goodness of fit for the applicant with respect to their research program and the department.

#### GRADUATE ASSISTANT STIPENDS

1. Graduate Assistants receive a stipend standardized for full time appointments.
2. Full time graduate assistants normally receive tuition waivers for the period of time that they are appointed. Full appointments during the Fall and Winter Semesters allow for 8.0 credit hours of tuition waiver per semester.

3. Graduate Assistants who have completed one academic year's appointment and will be appointed to an assistantship in the Fall, may elect to use part of their tuition waiver from the upcoming appointment to pay for summer credits.
  - The maximum that can be "borrowed" is 2.0 credits hours from each semester of the second year's appointment.
  - In order to "borrow" the credits the student must file a petition with the department requesting the tuition waiver and indicating the number of credits "borrowed" and the semester from which they are being "borrowed".
  - The Department Head and the Dean of the College must approve this petition before being forwarded to the College of Graduate Studies.
  - The completed petition must be in the College of Graduate Studies by March 1.
  - Failure to enroll in summer courses by June 1 will result in forfeiture of this process and the credit waiver will revert back to the academic year.
  - All credits paid for under this tuition waiver must be required graduate program credits.
4. A limited number of assistantships may be available during the Summer Semester. Students interested in a summer assistantship should contact the Department Head in writing early in the Winter Semester.

#### ACADEMIC LOADS FOR GRADUATE ASSISTANTS

1. Normally, the course schedule for graduate assistants will be limited to eight (8) credits per semester.
2. Graduate assistants may be allowed to take up to 10 credits, provided the student has the written consent of his or her advisor and the head of the Department of Biology, and the approval of the Associate Provost for Graduate Studies and Research. Generally, no more than 8 credits are taken per semester unless a student has established a record of success (GPA over 3.00). Tuition remission is for a maximum of 16 hours per academic year for courses relevant to the student's plan of study.
3. Auditing a course through an official enrollment is the same as enrollment for credit.

#### GRADUATE ASSISTANT RESPONSIBILITIES

The duties of a Graduate Assistant will be designed to complement the student's graduate program and to advance the program of the department.

1. A Graduate Assistant's workload consists of 20 hours per week during the Fall and Winter semester.
2. The 20 hours should include preparation time for materials used in the classroom,

teaching, office hours, grading, clerical duties, development of curricular materials, research assignments, etc.

3. Teaching Assistants are expected to hold regular office hours each week. Typically each teaching assistant should have four (4) office hours each week. These times should be included in their syllabi and posted on their office door. It is expected that the teaching assistant will be available at these times.
4. Graduate students are expected to attend invited meetings, especially those that occur prior to the start of classes each semester.
5. It is recommended that students treat their assistantship and their graduate program as their primary responsibility and are discouraged from obtaining additional employment. Students seeking additional on-campus employment must inform the Department Head.

## PROGRAM THESIS POLICY

### DEFINITION

A thesis is a thorough report of original scientific research. It is a requirement for BI 599 credit.

### STANDARDS

The standards of quality of graduate research and thesis preparation are determined by the graduate faculty in the Department of Biology, the M.S. Bioscience Advisory Committee, and the head of the College of Graduate Studies and Research.

### ADVICE ON PREPARATION OF A THESIS

The following advice is offered concerning preparation of a thesis.

1. Begin your first draft early, even if all work is not completed. Your advisory committee may wish to offer suggestions on your early drafts.
2. When your thesis supervisor approves the final rough draft, distribute this draft to your advisory committee for their use at least two weeks prior to your oral examination/thesis defense.

### FORM OF THE THESIS

There are extensive instructions for formatting a thesis on the College of Graduate Studies Website. Students should check that site for the most up-to-date format requirements. Also at that website is a link to electronic versions of previous theses, which are a good guide for formats.

### THESIS SUBMISSION

Paper copies of the thesis may be required by the graduate advisory committee prior to the thesis defense. A final paper copy, signed by the committee and the Department Head, must be submitted to the College of Graduate Studies.

Students must submit an electronic copy of their thesis as required by the College of Graduate Studies. Students are also required to send an electronic copy of their final approved thesis to their Graduate Advisor and to the Department Head.

Students are encouraged to review guidance from the Graduate Office regarding potential embargo on distribution of electronically available data and their thesis and discuss these issues with their graduate advisor. Students are also encouraged to discuss copyright issues and proper attribution of credit for project work with their thesis advisor. Note that the thesis **MUST** be solely authored by the student; however it is appropriate to note important contributions by collaborators in the Acknowledgments section of the thesis. Both of these elements must be determined at the time of submission of the thesis and cannot be changed later.

### DATE OF SUBMISSION

The final copies must be submitted to the Graduate Studies Office 30 calendar days prior to graduation. Please see the Graduate Bulletin for additional information on thesis preparation.

### PROCEDURE FOR ACCEPTANCE OF A THESIS

1. At least 6 weeks before the end of the semester in which graduating, the student will give a seminar or summary of his/her thesis work before taking an oral examination and defense of thesis. The main purpose of this examination is to test the student on the content and conclusions reached in the thesis. The examination, however, may also test the student's general academic capabilities in science.
2. The examining committee typically consists of the student's graduate advisory committee. Other members of the faculty or guest examiners may be invited by the major advisor. The examination is presided over by the chair of the student's graduate committee. The examination usually begins with the student presenting a brief summary (5-10) minutes of their research followed by questions from the committee.

3. After the examination, the examining committee recommends a grade for the thesis or they may recommend alterations to the thesis. In cases in which the thesis is judged by the examining committee to be unacceptable, the committee will make suggestions for improvement. The student will be asked to make improvements and to resubmit the thesis for final approval. A majority of voting members on the committee must approve the thesis. The committee must sign the Graduate Thesis Defense Evaluation Form at this time, indicating the status of the student's thesis. If a resubmission is necessary, an additional copy of this form would be signed when the committee reviews the work. Graduate Thesis Defense Evaluation Forms constitute the official grading of the thesis and must be submitted to the Graduate Office and the Biology Office for a degree to be awarded.
4. Upon final acceptance of the thesis, the members of the student's graduate committee must sign the thesis Signature Page which will then be forwarded to the Office for Graduate Studies for signature by the Dean of the College of Graduate Studies and Research. Review the Graduate Office web page for details on the submission process for the thesis and Signature Page.