Guidelines for Graduate Study in Biology
Department of Biological Sciences, Emporia State University (ESU) (updated XXX 2020)

This document constitutes policies for graduate programs within the Emporia State University's (ESU) Department of Biological Sciences.

These guidelines do not apply to those students wishing to take graduate-level courses but not intending to work toward a graduate degree. Such students enroll on a non-degree seeking basis. The Graduate School should be consulted for this information. The Dean of the Graduate School or the Chair of the Department of Biological Sciences serves as the student's advisor.

These guidelines also do not apply to ESU's M.S. Forensic Science. For information on the MSFS program, see https://www.emporia.edu/forensicscience/ or contact Dr. Melissa Bailey, Director, MSFS Program; ESU Department of Biological Sciences; mbailey4@emporia.edu.

I. General Requirements

A. Admission to Graduate Study, Master of Science (M.S.) or Master of Arts (M.A.) in Biology

1. Prospective students will be evaluated by the Biology Graduate Committee (consisting of the Biology Graduate Program Coordinator and two other faculty) only after their application is complete. A complete application includes:

- ESU Graduate School Application
- ESU Biology Graduate Application
- Official transcripts from undergraduate institutions
- Three letters of recommendation

The prospective graduate student submits all online applications. It is the applicant's responsibility to request that official transcripts be transmitted to the Graduate School.

International students should consult ESU's International Education English Proficiency Requirements.

The Department of Biological Sciences also administers a separate English Proficiency Exam as a prerequisite for the Scientific Writing course (GB 752), which is a required course in the M.S. Thesis and M.S. Non-thesis program options (see section I.F).

2. The prospective graduate student submits the Department of Biological Sciences' application form. Recommendations from three persons familiar with the applicant's suitability for graduate study are required using the Reference Form, the link for which should be sent to the applicant's references. (The departmental Graduate Coordinator should update links throughout this document as necessary.)

3. The Graduate School prepares and posts the applicant's materials to OnBase, including a copy of the Application for Admission for Graduate Study, letters of reference, the department's application form, and copies of all transcripts.

4. Applicants must have a baccalaureate degree with a major in a biological science, OR applicants with a baccalaureate degree with a major in an area other than biology must have an appropriate background in biology as determined by the Biology Graduate Committee.

All applicants must have a cumulative grade point average of at least 3.0 and a grade point average of at least 3.0 over the last 60 hours of undergraduate work. Applicants who do not meet the minimum requirements may be admitted on probation or, if the deficiencies are considered to be sufficiently serious, they may be denied admission to the Biology Graduate Program.

Applicants for the Master of Science Thesis and Non-thesis options must list three faculty members with whom the applicant might work. Because at least one of the faculty members must indicate a willingness to serve as the student's major advisor for admission to the program, it is essential that the Thesis and Non-thesis applicants contact one or more potential major advisors beforehand to inquire about potential research opportunities. This does not preclude a change of advisors or research topics after arrival of the student, provided satisfactory alternate arrangements can be made. Applicants for the Master of Arts option do not have to list a major advisor during the application process; once admitted, an advisor will be assigned.

All applicants are encouraged to complete the application process as early as possible to be considered for an assistantship To be considered for Spring admission, Master of Science (M.S. Thesis and M.S. Non-thesis options) applications must be completed by November 1st; for Summer/Fall admission, applications need to be completed by April 1st. Applications received after these deadlines may be considered, pending interest of a prospective major advisor for the M.S. Thesis and Non-thesis options. There are no deadlines for Master of Arts option applications, and their review will be performed as they are received. Applicants seeking support through a Graduate Teaching Assistantship upon admission in Fall should submit their complete applications by February 15th as departmental deliberation to fill these positions will begin in March.

5. Admission decisions: Application content, including essays (e.g., previous experience, career goals), previous coursework in science and mathematics, academic record, and the letters of reference are reviewed by the Biology Graduate Committee. If the undergraduate record and letters of recommendation are satisfactory, and (for the Thesis and Non-thesis options) the department has a supervisory faculty member willing to advise the prospective student, the applicant is admitted. If the record is 1) unsatisfactory or incomplete, or 2) a supervisory faculty member is unavailable, the student may be 1) denied admittance or admitted on probation, or 2) may enter as an Master of Arts (M.A.) option student or as a non-degree seeking student (see Section I.B.3). Further, after arrival of the student, the department reserves the right for the student's graduate Advisory Committee to impose additional undergraduate course requirements if it is deemed in the best interest of the student.

6. For students accepted into the graduate program, "conditional" status is used when the baccalaureate degree has not yet been received. The "condition" is removed when the baccalaureate degree is received.

7. The Graduate School notifies the applicant of the action of the department.

B. Programs of Study (M.S. Thesis, M.S. Non-thesis, M.A.)

1. M.S. Thesis option: For those students considering graduate work beyond the Master's level, or employment as professional biologists, the M.S. Thesis option is strongly recommended. This program is designed to provide students with more sophisticated research experiences than the M.S. Non-thesis or M.A options. The M.S. Thesis option requires no fewer than 33 hours of

graduate credit, including a minimum of five hours of thesis credit. There is no limitation on the number of thesis and investigation credit (research) hours for which a student may enroll; however, only five hours of thesis credit and no more than 12 hours of combined thesis and research credit [see B.5] may apply toward the M.S. Thesis option). An Advisory Committee will be selected by the student, in consultation with the major academic advisor, and will consist of at least two other faculty members (including those with approved as Associate, Regular, or Adjunct Graduate Faculty).

By the end of the student's first semester: A Degree Plan detailing the 33 hours of coursework must be prepared in consultation with the academic advisor, the student's Advisory Committee, and approved by the Graduate Coordinator .

By the end of the student's second semester: A Proposed Plan of Research should be submitted for review, and eventual approval signature, by the advisor and the members of the student's Advisory Committee. Students should leave ample time for review of the proposal by the advisor and revisions (potentially multiple) by the student. When the proposal is determined by the advisor as satisfactory, the student must send the proposal to their Advisory Committee for review. At least one meeting of the committee must be held to discuss the Proposed Plan of Research. It is not satisfactory for the student to get signatures of approval without such a meeting.

Course requirements: Students enrolled in the M.S. Thesis option must take Research Design and Analysis and Introduction to R (GB 750 and 751; 4 hrs) during the first Fall term of enrollment and Scientific Writing (GB 752; 2 hrs) during the first Spring term of enrollment. Exceptions to this schedule must be approved by the Biology Graduate Committee. MS-Thesis students are required to enroll in one semester of Graduate Research Seminar (GB 770; 1 hr; in which the student presents a seminar) and three semesters of Biology Seminar (GB 771; 1 hr; no presentation required; attendance and seminar review only). In addition to the required GB 770 seminar, thesis-option students are required to present a public defense of their thesis and pass a private, oral exam over the thesis and possibly subject areas pertaining to the thesis, administered by the student's Advisory Committee.

When the thesis research is completed and the student believes the thesis is in a reasonably polished form, the first draft should be submitted to the major advisor for evaluation and critiquing. It may be necessary to rewrite the material several times before it is suitable for review and evaluation by the other members of the student's Advisory Committee. For thesis requirements and deadlines, see the Graduate School thesis guide. If the advisor should be away from the campus during the final stages of a thesis, it is the student's responsibility to make satisfactory arrangements for completing the thesis. The major advisor will work closely with students enrolled in the M.S. Thesis option throughout all phases of the research, guiding and evaluating progress periodically. However, the research is the responsibility of the student.

2. M.S. Non-thesis option: Students who prefer to place less emphasis upon original research and more emphasis on research literature and biological coursework may fulfill degree requirements by completing 36 hours of graduate credit. A maximum of 6 hours of graduate research (see B.5) can count toward the 36 hours.

By the end of the student's first semester: A Degree Plan detailing the 36 hours of coursework must be prepared in consultation with the academic advisor and approved by the Graduate Coordinator.

Course requirements: Students enrolled in the M.S. Non-thesis option must take Research Design and Analysis and Introduction to R (GB 750 and 751; 4 hrs) during the first Fall term of enrollment and Scientific Writing (GB 752; 2 hrs) during the first Spring term of enrollment. Exceptions to this schedule must be approved by the Biology Graduate Committee. M.S. Non-thesis students are required to enroll in one semester of Graduate Research Seminar (GB 770; 1 hr; in which the student presents a seminar) and three semesters of Biology Seminar (GB 771; 1 hr; no presentation required; attendance and seminar review only). The GB 770 seminar given by the student in their final semester will constitute the public defense of their GB 880 (Research Problems in Biology) literature review (see below). An exam committee consisting of two other faculty members chosen by the student and approved by the advisor and Department Chair will administer the oral exam. This exam will focus on the student's GB 880 literature review and topics pertaining thereto.

Literature review: MS-non-thesis students are required to complete a comprehensive literature review of publication quality on recent research in a biological topic. Students should see recent examples of literature reviews from the primary literature (the student's major academic advisor may be consulted for examples). This review will be awarded 1-3 hours of Research Problems in Biology (GB 880) credit that must be taken in the student's final semester and is supervised by the student's academic advisor. It is the student's responsibility to consult with their major academic advisor, and other faculty with relevant expertise as needed, in developing the GB 880 literature review topic early in the student's program as the literature search, reading, and writing of the literature review will be substantial. The student should submit a 'best-effort' rough draft of their literature review to their major academic advisor for editing early in their final semester. The advisor will return this draft for subsequent and immediate revision by the student. The next and final draft submitted by the student will be scored for a final grade and must be submitted by the end of the student's final semester. Additional drafts beyond the single review required by the advisor may be arranged at the prerogative of the advisor. The student should manage their time such that there is ample time for writing and subsequent editing and revision of the literature review.

3. Master of Arts (MA) Degree in Biology: Students preferring a flexible program that places less emphasis upon research and more emphasis on biological coursework may fulfill degree requirements by completing 36 hours of graduate credit including the comprehensive oral examination administered by three faculty members (GB 870 MA Biology Capstone Exam). This option does ***not*** require students to enroll in the Research Design and Analysis and Introduction to R (GB 750 and 751) or Scientific Writing (GB 752) courses (i.e., these courses are optional); therefore, students enrolling in this option are not required to take the departmental English Proficiency Exam (see F). The MA option does require the student to enroll in 3 semesters of Graduate Seminar in Biology (GB 771; no presentation required). Although M.A.-option students do not require commitment of a particular faculty member for admittance to the program, an advisor with relevant expertise in the student's concentration area will be assigned to student by the Graduate Coordinator or Department Chair.

4. All students are required to pass the English proficiency exam (see F) as a prerequisite to enrollment in Scientific Writing (GB 752). Semesters of GB 770 will be for graded credit; the semesters of GB 771 will be for Pass/No Credit. Students may be excused from seminar requirements only with the prior approval of the Biology Graduate Committee.

5. For purposes of definition, the following courses at the master's level are considered as research credit hours: GB, BO, EB, MC, or ZO 809 -- Graduate Project, 1-3 hours; GB 880 -- Research Problems in Biology, 1-3 hours; GB, BO, EB, MC, or ZO 885 -- Graduate Research,

2-3 hours; GB 890 -- Thesis, 1-5 hours.

6. A Degree Plan particular to each Program of Study (M.S. Thesis, M.S. Non-thesis, M.A.) outlines the schedule of required and elected coursework and must have signatures of approval from the advisor, Graduate Coordinator, and Advisory Committee (latter for Thesis option only). Upon approval, the original is sent to the Graduate Office, one copy is sent to the student and a second copy is sent to the major advisor. No more than one course (3 credit hours) outside of ESU's departments of Biological Sciences, Physical Sciences, or Mathematics can count toward any M.S. or M.A. Biology degrees; any exception must be approved by the academic advisor and Biology Graduate Committee. All graduate students must complete their Degree Plan by the end of their first semester, and students enrolled in the M.S. Thesis option must complete their Proposed Plan of Research by the end of their second semester. Failure to do so after completion of 15 credit hours will result in a "hold" on the student's next enrollment. The approved Degree Plan and Proposed Plan of Research (with Thesis Committee Declaration Form signed by Advisory Committee) must be submitted by M.S. Thesis students to the Graduate Program Coordinator. For graduate assistants, completion of these plans is required for both mid-year and subsequent contract renewal.

7. Satisfactory Academic Progress: Graduate students must maintain at least a 3.0 GPA for all courses on the graduate program and for all biology courses numbered 500 or above, whether they appear on the Degree Plan or not. No grade lower than a B- in a 500-699 numbered course may be counted on the graduate program; Cs will count on 700-899 numbered courses. Failure to maintain a 3.0 average will result in the student being placed on probation or being removed from the graduate program. If the student's record is unsatisfactory, they may be asked to terminate graduate study. In such an event, the student may appeal their case by letter to the Biology Graduate Committee. After consulting with the student's major advisor, the committee may request that additional work be completed, or the student may be required to discontinue graduate study.

8. Students admitted under probationary status must complete probationary requirements, as stated in the original admittance letter and as required by the Department, by the end of the first semester of enrollment. A student on probation must obtain permission of the Department Graduate Committee to enroll in research credit hours. Grades in research hours taken while on probation may not be counted in satisfying any GPA requirements of the probation. Students placed on probation during the course of their tenure must complete probationary requirements within one semester. Failure to meet probation requirements in the subsequent semester will result in removal of the student from the graduate program.

C. Graduate Assistantships (Teaching, Research and Administrative)

1. Graduate Teaching Assistantships for the academic year may be available for a limited number of qualified students. These are usually awarded in the spring for the following academic year. In addition, a limited number of summer Graduate Teaching Assistantships may be available. Graduate Research Assistantships are funded through grants obtained and coordinated by faculty and are typically provided for students to assist faculty with their research or collaborative research between the faculty member and graduate student. Applicants may also apply for a limited number of university-wide Administrative Assistantships, which entail clerical work within departmental offices. A graduate assistant will be employed for no more than six semesters on university funds and no more than eight semesters total if at least two are externally funded. An assistant must enroll in no fewer than six graduate credit hours (500 and above) per semester during the regular academic year. A graduate assistant who enrolls in

fewer than six hours, or whose course load drops below six hours during the semester, will relinquish any unused portion of the assistantship.

2. International students must pass the SPEAK test to be eligible for a teaching assistantship.

D. Graduate Scholarships (Smalley, Clarke, and ESU Graduate School scholarships)

The Katherine Smalley Graduate Scholarship is available to students who are (1) currently enrolled in at least five hours of graduate credit, (2) not on academic probation, (3) in their third semester of full-time graduate study, (4) approval on their degree plan and—for M.S. Thesis students—their Proposed Plan of Research. Other considerations include the student's graduate GPA, progress towards degree completion, and activities such as presentations at scientific meetings, publications, departmental activities (committees, organizations, etc.), and other activities that may have advanced career opportunities. Preference will be given to those students who have not previously been awarded this scholarship. The Robert F. Clarke Memorial Biology Scholarship is available to students who are currently enrolled in at least six hours of graduate credit in Biology and have a minimum GPA of 3.0. All full-time biology graduate students enrolled for the following fall semester will be notified of the competition and criteria. A letter of application must be made and returned to the Graduate Program Coordinator, to be due in mid-October. Evaluations will be done by the Biology Graduate Committee or by a group of Biology faculty members designated for that purpose. Additional graduate student scholarships are available through the ESU Graduate School.

E. Advisement

1. The student will meet with the advisor to plan the first enrollment.

2. The advisor assists the student with the Degree Plan (I.B.6). At that time, it is important that the student assist the advisor in listing any transfer credit. It is the student's responsibility to request that official transcripts and information attesting to the graduate status of these courses be transmitted to the Graduate School. The student should consult the Graduate Policy Handbook for additional information about transfer and extension credit. No more than nine credit hours taken on a non-degree basis may be used on the Degree Plan, grades earned in these courses must be B- or higher, and the transfer courses cannot be used in GPA calculations pertinent to the graduate Program of Study.

3. Graduate students in the M.S. Thesis option request no fewer than two other faculty members to serve as members of the student's Exam Committee. One of those members must have an area of specialization (research area) other than the area in which the student has chosen to work. Graduate committees must be composed of at least 50% regular graduate faculty members of the ESU Department of Biological Sciences.

4. For any change in the degree plan, a substitution can be made on the original plan or a new degree plan can be developed; either must be signed by the student's advisor/advisory committee, and submitted to the Graduate Program Coordinator, who then forwards it to the Graduate School.

5. Graduate students may transfer between the M.A., M.S. Non-thesis, and M.S. Thesis options only with the prior approval of the Biology Graduate Committee. In such cases, a new advisor and committee will be selected and a substitute degree plan completed. However, credits

earned in GB890 (Thesis) will not transfer to the MA or MS Non-thesis and any grade earned, including “IP” (in progress) grades, will be converted to a “W” (withdraw).

F. English Proficiency Examination

Students are required to pass an English Proficiency Exam as a prerequisite to enrollment in Scientific Writing (GB752). Graduate students in the M.S. Thesis and M.S. Non-thesis options are required to take an English Proficiency Examination early during their first semester of graduate study to determine the student's ability to communicate in writing in the English language. This requirement also stands for M.A.-option students electing to enroll in GB 752. The examination is administered and evaluated by the Biology Graduate Committee. Students will be notified in writing prior to the time the examination will be given. A student who does not pass the exam will meet with the Graduate Program Coordinator to discuss remedial action. The major advisor may be notified and will be asked to participate in the discussion. In extreme cases, following review by the Department of Biological Sciences, the graduate student may be asked to terminate degree work at the discretion of the Biology Graduate Committee.

G. Final Requirements

1. Each graduate student enrolled in the M.S. Thesis option must give a public defense of her/his work. This is followed by a private defense before the student's committee that must be completed before final thesis submission to the ESU Graduate School (dates vary by semester – see https://www.emporia.edu/graduate-school/ for details). If approved, the final exam form is signed and forwarded to the Graduate Program Coordinator who forwards it to the Graduate School. If a student does not pass the final examination, the student may defend again no sooner than 4 months, and no later than 10 months after the date of the original defense. Failure to pass the final examination a second time, or allowing the 10-month period to lapse, will result in removal of the student from the graduate program.

2. Each graduate student enrolled in the M.S. Non-thesis and M.A. options must be examined by an exam committee of at least 3 faculty members, including and chosen in consultation with the major academic advisor. If the student fails the exam on the first attempt, a second attempt must be made the following semester (including summer semesters). Failing the comprehensive oral examination a second time will result in dismissal from the program.

3. Students will be admitted to Degree Candidacy when the following conditions have been met: 1) not on probation, 2) satisfactory completion of the English Proficiency Exam (M.S. options), 3) satisfactory academic record (I.B.7), 4) approved Degree Plan, 5) an approved Proposed Plan of Research (M.S. Thesis-option students), and 6) passing the required final examination.

4. All “IP” (In Progress) grades for GB 890 (Thesis, M.S.) and other coursework (research project credit or otherwise) must be converted to a final grade upon completion of the student’s degree requirements.

H. Time Limit

Biology graduate students have a seven-year time limit to complete their degree from the date of first enrollment. Students not completing the degree within the seven-year time limit may

petition the Biology Graduate Committee for a one-year extension. Courses on the Degree Plan must be revalidated for the ninth and tenth years, following successful petition to the University Graduate Council. No course work beyond the ten-year time limit will be valid. Coursework beyond the ten-year time limit must be retaken or removed from the Degree Plan. If a student's graduate committee decides that the student is not making satisfactory progress toward completion of the degree requirements, it is the prerogative of the committee to set a deadline for completion of the degree requirements at some date earlier than the end of the seven-year period.

I. Appeals

All decisions and actions of the Graduate Committee, excepting those related to admissions and Graduate School guidelines, may be appealed. To begin the appeal process, students must submit to the Graduate Committee a written appeal that is co-signed by the student's advisor. It might be necessary for the student and/or the student's advisor to meet with the committee as part of the appeal process. Unless extenuating circumstances can be demonstrated, it is not likely that an appeal will be successful.

II. Additional Requirements

Graduate students using the resources of the university, e.g. libraries, laboratories, etc., must be enrolled in one or more courses for credit.

A graduate student must complete at least one credit hour during the term in which the degree is conferred.

Graduate students also are bound to university policies described in the ESU Graduate Policy Handbook but not necessarily found in these guidelines.

These guidelines apply to all students who begin their graduate work after 8 May 2020.