

Graduate Studies Guide

Department of Biology The University of Louisiana at Monroe

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Introduction

The purpose of graduate school is to offer students advanced instruction and intellectual training in specialized areas of interest. Graduate education differs fundamentally from undergraduate education in emphasizing independent scholarship. A student is expected to assume increased responsibility and employ greater initiative in his or her academic endeavors.

The successful graduate student reads. Familiarity and understanding of current literature in the field of interest is critical to the student's development. Many graduate courses are seminars that stress active class participation with direct contribution of the student to the study topic. Graduate students are expected to write more papers and reports.

The focal point of a graduate student's program in Biology is the research project. As in course work, greater student initiative is demanded. It is expected that the student will participate not only in data collection and analysis for his/her thesis research project, but will contribute to the development of the project. The intellectual growth of the graduate student demands increased critical thinking skills.

Students receiving the Master's Degree in the Department of Biology generally find employment in the private or government sectors, or pursue a Ph.D. in their specialty. In both cases, it is our goal to produce graduates that are competitive. Our students are

exposed to current and classical literature in their fields, encouraged to work independently, and are trained to critically interpret the results of and determine the significance of research (theirs and others'). Beyond a solid knowledge of their field of study, graduate students will be expected to effectively use bibliographic resources, to understand basic statistical applications in biology, to be familiar with computer databases, statistical programs, and word processing software and to develop effective oral and written communication skills.

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Admission to the Program

Students seeking admission to the Biology Graduate Program must first be admitted to the ULM Graduate School. Application forms may be obtained [online](#) or from the Office of Graduate Studies and Research or the University Admissions Office, The University of Louisiana at Monroe, Monroe, LA 71209. In addition to a minimum undergraduate GPA of 2.5, the Biology Graduate Program requires either a score of 900 or higher on the GRE General Test (combined verbal and quantitative scores), or a total of 2400 points when the GPA is multiplied by the combined verbal and quantitative GRE General Test scores. Students must also have taken courses in introductory zoology, introductory botany, introductory microbiology, ecology, genetics, and an upper level physiology class (animal, plant, human, or cell). A limited number of course deficiencies can be taken after admission.

Student applications received by the Biology Department Head are reviewed by the Department's Graduate Committee. Students may then be recommended for one of three different categories of admission.

1. *Regular Admission.* Students meet all requirements for admission.
2. *Conditional Admission.* Students are deficient in basic course requirements or have an undergraduate GPA less than 2.5, but at least 2.2.

Students having an undergraduate GPA less than 2.2, but at least 2.0, may be admitted conditionally provided GRE scores are satisfactory and other information is available to indicate suitable ability, aptitude and interest.

Students admitted conditionally must make up course deficiencies noted by the Graduate Committee. A student will be changed from conditional to regular status when the student earns 12 hours of graduate credit with a 3.0 GPA with no grade less than a C and not more than one course grade of C. If a student fails to qualify for regular status after 12 hours of graduate credit, he or she may be denied readmission to the graduate program by the University Graduate Council. Course deficiencies are incorporated into the Degree Plan. All courses must be completed before a student will be allowed to graduate.

3. *Provisional Admission.* GRE scores are lacking.

Students admitted provisionally cannot receive graduate assistantships. No more than 12 hours of course credit received during provisional admission status may be counted towards the degree. See section in this document on Non-Degree Course Credit.

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Graduate Assistantships

A limited number of assistantships are available through the Biology Department. Application forms can be obtained from the Office of Graduate Studies and Research, The University of Louisiana at Monroe, Monroe, LA 71209. To be considered for an assistantship, a student must be admitted to the Biology Graduate Program in regular or conditional status and provide three letters of recommendation. International students must demonstrate proficiency in English language skills (see the Graduate Catalog under *Procedure for Admission*).

Assistantships are considered half-time employment appointments. Duty descriptions given below assume a 20 hour per week work commitment by the student.

The Biology Department offers five categories of assistantships:

1. *Laboratory Assistantship.* This is the standard assistantship for incoming students. The responsibilities of this position include the following. Attending, observing and assisting in three lab sections in two different introductory laboratory courses, including all scheduled lab coordination meetings. This represents 3/4 of the student's assistantship responsibilities. Working with a faculty member as a research assistant up to five hours per week. This represents 1/4 of the student's responsibilities. This could include work in the professor's lab, help with fieldwork or library research, help in prepping upper-level laboratories, etc. The expectation of this experience is that the student will be exposed to ideas and skills that will augment his/her ability to develop and conduct a thesis research project.
2. *Research Fellowship.* Up to six first year students may be offered this form of assistantship in an academic year. Students must have a minimum 3.0 undergraduate GPA, 1000 or more for the combined quantitative and verbal scores on the GRE General Test and regular admission status. Duties associated with this fellowship are as follows. Attending, observing, and assisting in two sections of two different introductory laboratory courses, including all scheduled lab coordination meetings. This represents 1/2 of the student's responsibilities. Working with the faculty sponsor to develop and initiate thesis-quality research. Recipients of a research fellowship must achieve at least a 3.0 during their first semester and must show evidence of progress toward their thesis objectives for

the fellowship to be renewed for the second semester. Fellowships are not renewable beyond the second semester. Research fellows cannot receive course credit for research done in fulfillment of their research fellowship.

3. *Museum/Herbarium Assistantship*. One student may be assigned duties in the Museum of Zoology and one in the Herbarium each semester. The duties are as follows. Collection management under the direction of the Director/Curator of the facility. Students will assist in cataloging specimens, pressing plants, preserving fishes, processing loans, etc. This represents 3/4 of their responsibilities. Attending, observing and assisting in one introductory lab section (including all scheduled lab coordination meetings) during the first year of appointment and teaching one laboratory course section in the second year. This represents 1/4 of the student's responsibilities.
4. *Teaching Assistantship*. Qualified graduate students (those who have completed at least 18 graduate hours in Biology) may serve as teacher-of-record for a laboratory. In this role, they are responsible for the class, not merely serving as assistants. Duties of a teaching assistant are given below. Teaching the equivalent of four two-hour laboratory sections per semester and attending all scheduled lab coordination meetings. Training first-year graduate assistants in the duties of the laboratory.
5. *Partial Assistantship*. If there are insufficient funds to fully meet the needs of students seeking assistance, the Department Head may divide an assistantship between several students. Duties will vary with the proportion of the assistantship (1/2 time assistantship would require 10 hours of work, 1/4 time assistantship 5 hours of work, etc.). A partial assistantship qualifies a student for a tuition waiver.

The stipends for nine month assistantship (fall and spring semesters) appointments are currently:

- Laboratory Assistantship - \$8,000.00
- Research Fellowship - \$5,000.00
- Museum/Herbarium Assistantship - \$4,500.00 (first year) \$5,500.00 (second year)
- Teaching Assistantship - \$8,000.00
- Partial Assistantship - varies with appointment

Summer appointments are occasionally available.

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Graduate Studies and Thesis Research

Graduate assistants and fellows must be registered for at least 9 hours of graduate credit each semester and a minimum of 4 hours for each summer session of employment. Undergraduate course deficiencies may count toward these nine hours with approval of the major professor and Dean of Graduate Studies and Research. Graduate assistants

must maintain a B average with no grade lower than a C and no more than 6 hours of C on the graduate record. Assistants and fellows must show satisfactory progress towards their degree and fulfill the duties of their appointment. Renewal of assistantships or fellowships is not guaranteed.

Tuition Waivers - Students receiving partial or full assistantships and fellowships are also awarded a tuition waiver. The tuition waiver applies to each semester an assistantship is received, for the first summer session immediately following a spring semester in which an assistantship was held (if the student has not graduated), and for the summer session immediately preceding a fall semester assistantship appointment. Students are still responsible for other fees (activity fees, etc.). The tuition waiver represented a savings of \$825 per semester for in-state graduate students and \$1,995 per semester for non-resident graduate students.

Sponsors - Once a student has been approved for admission, but before the student has been admitted, the Graduate Faculty are notified of the student's recommended admission status and research interests. Any faculty member interested in advising that student may then offer to serve as the student's sponsor. A sponsor is a member of the Biology Department Graduate Faculty who serves as advisor for the student's first semester in the program. A student will not be admitted without a sponsor. The student will be informed of potential sponsors. If more than one faculty member has offered to serve as sponsor, the student will decide with whom he/she wishes to work. Although a student often chooses the sponsor to serve as Major Professor, he/she may select another member of the faculty willing to accept him/her.

Major Professors - The major professor serves as the primary advisor for a graduate student's research and studies. A major professor must be selected by the end of the student's first semester. Students without a major professor at the end of the second semester will not be reappointed to an assistantship. The student then completes a Major Professor Appointment Request Form and presents it to the Department Head. These forms are available in the Biology Department Office. The Department Head then recommends the appointment to the Dean of Graduate Studies and Research.

Graduate Student Orientation - To better acquaint the incoming graduate student with Graduate School regulations and life, an orientation sponsored by the Office of Graduate Studies and Research is held prior to the start of the fall semester in August. All new graduate students will be notified of the time, date, and location by mail.

Graduate Advisory Committee - Graduate students must establish an advisory committee by the end of the second semester of enrollment. The advisory committee is composed of the major professor and two other members of the University Graduate Faculty. Members of the committee are selected in consultation with the major professor. The student is then responsible for obtaining the consent of the selected faculty to serve on the committee. At least two members of the committee must be members of the ULM Biology Department. On occasion there is need for committee appointment of individuals with special expertise not available on campus. The student's major professor may

nominate that person for Adjunct Faculty status and Associate membership on the Graduate Faculty. The nomination is submitted for approval by the Department Head, Dean of the College of Pure and Applied Sciences, University Graduate Council, and Dean of Graduate Studies and Research. This should be done well in advance of committee designation. Once selected committee members have agreed to serve, the major professor submits a Committee Recommendation Form to the Dean of Graduate Studies and Research.

Research Plan - The student is expected to arrange a formal meeting with his/her Graduate Advisory Committee once per semester, starting with the second semester of enrollment. Graduate students should submit a written research proposal, developed in discussion with the major professor, to each committee member for review and approval during the first formal committee meeting. It is recommended that the proposal be presented to the faculty member the week before the meeting to allow adequate time for familiarization with the proposal. When the advisory committee approves a final version of the research proposal, a Research Plan and Progress Review Form will be signed by each member and submitted to the Department Head for review.

Degree Plan - A proposed plan of study, called the degree plan, should also be approved during the first meeting of the advisory committee. The degree plan lists the student's deficiencies (if any), and courses to be taken in the major area, minor area (if applicable), and related course work from other departments.

Note: A minimum of 27 hours of course work, plus 6 hours of Biology 599 (Thesis) must be listed. This is the equivalent of three semesters of 9 hours of course work. Nine hours is the minimum course load for a full-time graduate student. A minimum of 15 hours of 500-level course work (Graduate Only classes) not including Biology, Botany, Marine Sciences, or Zoology 591 or Biology 599 is required. A minimum of nine hours of 500-level course work (including three lecture courses) must be taken in Biology, Botany, Microbiology, and/or Zoology. At least half of the total course work in the major area and one-half the total course work should be composed of 500-level courses.

The completed Degree Plan will be signed by all members of the advisory committee and submitted by the major professor to the Dean of Graduate Studies and Research for approval. Graduate students may take up to 18 hours per semester, unless they hold an assistantship or fellowship. Graduate assistants and fellows must have approval of the major professor and Graduate Dean to enroll in more than 15 hours in a semester. Nine hours is the minimum enrollment in a regular semester and three hours in a summer session for a full-time graduate student and is required for the student to receive an assistantship or fellowship. Students may enroll in a maximum of seven semester hours during a summer session.

Graduate School Courses - Courses offered by the Department are noted in the ULM Graduate Catalog. Graduate courses are 400- and 500-level courses, with the latter open only to graduate students. These courses all entail higher expectations for graduate students. In 400- level courses, additional work will be assigned to the graduate students

compared to the undergraduates in the same course. This may include such items as research papers, class presentations, additional journal readings, or short grant proposals. Graduate students need to become comfortable in presentations, both written and oral. Skills in these areas will be essential to future success. It is expected that graduate students will be internally motivated to attend and actively participate in their course work and to become leaders in both the classroom and laboratories.

Directed Studies - Graduate students may receive course credit for research projects done under the supervision of faculty members or through LUMCON (see Marine Science listing in the 1997-1998 Graduate Catalog). This credit may not be received for research done as part of the duties of a Research Fellowship. Graduate students may include a maximum of 3 hours of 591 courses in their degree plans. These courses are Biology 591, Botany 591, Zoology 591, and Marine Science 591. Exceptions may be considered by student appeal through the student's advisory committee to the Biology Department Graduate Faculty.

Any student wishing to receive 591 credit must submit a description to their advisory committee (or sponsor/major professor for those without a committee) for preapproval. All members of the committee (or the sponsor/major professor) must approve the proposal. The professor directing the 591 course would oversee the student's work. Upon completion of the project, the student must submit a report. Grading responsibilities would remain with the professor directing the project, but a copy of the student's report would be submitted to each member of the student's advisory committee (or sponsor/major professor).

Internships - The cooperative internship program allows students to obtain course credit for real work experience. Graduate students may not include Biology 410 (Cooperative Internship) in the degree plan, but the experience may be especially valuable for individuals not interested in graduate study beyond a Master's Degree. Many opportunities are available for volunteers. The true promise of the program is not immediate financial reward, although some positions with companies or agencies may include a salary. The primary benefits are given below:

- Familiarity with work in their areas of interest. Students can better decide what directions to take in preparation for a career. Potential employers recognize that the student has some realistic idea of the job at hand.
- A non-academic perspective. Students often seem to fall into an academic track simply because they have received all of their training from academic role models. Our concern as faculty is not simply to reproduce our own, but to offer students real choices in career opportunities.
- Learning skills and insights not available in the classroom. This hands-on experience can significantly add to the knowledge obtained from the literature, discussion, and structured laboratory and field exercises.
- References and contacts from outside the academic community. There are many qualified people looking for work in biology today. Just a little extra knowledge about personality or work habits can provide a job applicant and an employer with

a tremendous advantage. And a face is easier to remember than an application form.

Changing the Degree Plan - Sometimes a course listed in the degree plan is not offered or does not achieve adequate enrollment, new courses applicable to a student's interest are offered, or a student's research focus may be redirected. If a change to the degree plan is necessary, a Change in Student's Degree Plan Form must be signed by the major professor and submitted to the Department Head and Dean of Graduate Studies and Research for their signatures.

Graduate Credit for Outstanding Seniors - ULM undergraduates with a B average lacking 9 or fewer hours for graduation (6 hours for summer graduation) may receive graduate credit for up to 6 hours of graduate level classes below the 500 level. Refer to the Graduate Catalog for details.

Transfer Credit - Students may transfer no more than 1/3 of the hours required for their degree plan from other institutions. Transfer credit must be requested in the first summer session or semester of admission or readmission to ULM. Once a student is admitted to the Graduate Program, prior approval must be obtained to earn and transfer graduate credit from another institution. The course credit must be applicable to the degree program and only courses with a grade of B or better may be transferred. Up to six hours of credit for courses with C grades taken in other programs or from non-degree status at ULM may be transferred with the approval of the advisory committee and the Dean of Graduate Studies and Research. The major professor must submit a Transfer Credit Form to the Dean of Graduate Studies and Research requesting graduate credit for the courses. Consult the Graduate Catalog for other details.

Non-Degree Course Credit - Students with baccalaureates or higher degrees may choose to enroll in courses without pursuing a degree. They may be admitted to the university in Non-Degree status. Refer to the Graduate Catalog for further information on admission procedures. No more than 12 hours of non-degree course credit or credit earned in provisional admission status, total, may be counted towards the degree whether taken at ULM or transferred from another institution. As noted under Transfer Credit, up to six hours of C grades in earned in non-degree status may be transferred for graduate credit with the approval of the advisory committee and the Dean of Graduate Studies and Research.

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Degree Progress

The Research Plan and Progress Review Form is also used for progress assessment. During each meeting of the student's advisory committee, committee members will note the student's progress in research and towards the completion of the degree plan. If a student is not making satisfactory progress in his/her research or towards completion of

course work, the major professor may terminate the association. The major professor may also recommend that a student not be reappointed to an assistantship or fellowship. If a student's cumulative GPA drops below 3.0, if the student receives a grade lower than a C in any course or if the student earns more than 6 hours of C in graduate credit, readmission to the Graduate School may be denied by the University Graduate Council. Students denied readmission may appeal through the Office of Graduate Studies and Research or the Coordinator of Graduate Studies for the College of Pure and Applied Sciences.

Sometimes a student's research interest or career goals change, or the working relationship between the student and a member of the advisory committee changes. If a member of the committee is a matter of concern for the student, the student may request that the major professor change the committee membership. It is the role of the major professor to weigh and outline for the student the pluses and minuses of the committee member of concern's participation. If after consultation it is agreed that a more appropriate member could be selected or the working relationship between the committee member and student is detracting from the project, the major advisor may recommend a change in advisory committee structure. Conversely, the committee member may choose to resign from the committee for these or other reasons. In either case, the major professor must submit a Change in Advisory Committee Form for approval by the Dean of Graduate Studies and Research.

If the student's research interest changes such that they are no longer coincident with those of the major professor or the working relationship between the student and major professor is dysfunctional, the student may request a change of major professor. The major professor may terminate the relationship with the student for the same reasons. The student must find another member of the Graduate Faculty willing to serve as major professor and submit a new Major Professor Appointment Request Form to the Department head and Dean of Graduate Studies and Research.

In all cases, no matter what the reason may be for making changes in committee structure, it is a matter of courtesy that the committee member or major professor be apprised of an impending change.

Graduate School Calendar - Each semester and summer term the Office of Graduate Studies and Research publishes a calendar of important deadlines for finishing graduate students. If it is the semester of anticipated graduation, the student must immediately notify the Office of Graduate Studies and Research of that intent with an Application for Graduate Degree. It is also necessary to schedule the comprehensive examinations with members of the advisory committee. There are deadlines for filing a thesis with the Graduate Advisory Committee and later with the Office of Graduate Studies and Research. Detailed instructions are mailed to each graduating student and their major professor. It is the student's responsibility to review the calendar and notices and meet the applicable deadlines.

Thesis - All Biology graduate students must write a thesis based upon their research project. Students should consult their major professors and follow the guidelines currently in effect. A copy of Guidelines for the Preparation of Field Studies, Theses and Dissertations is available in the Office of Graduate Studies and Research. Students should also consult the Office of Graduate Studies and Research in the early stages of manuscript preparation for approval of graphs, figures, fonts, etc. Theses must be approved by the advisory committee before submission to the Office of Graduate Studies and Research. It is most likely that the advisory committee will return the thesis to the student for revision, sometimes more than once. Therefore, submit as early in the semester of intended graduation as possible. Deadlines for manuscript submission to the advisory committee and the Office of Graduate Studies and Research are distributed to finishing students each semester. If a deadline is not met, graduation will be delayed. The Comprehensive Examination Report must be submitted to the Office of Graduate Studies and Research prior to submission of the thesis.

Completion of the thesis and acquisition of a degree should not in themselves be the goals of a student's graduate research. An approved thesis reports research that the student's Graduate Advisory Committee regards as a contribution to the understanding of a particular facet of biology. The diploma the student receives declares that the student has made a contribution to science and is capable of conducting independent research. Every effort should be made to publish some or all of the thesis research in a journal. This allows others to share in the information gained. An unpublished thesis adds nothing to the body of scientific knowledge and in essence represents a professionally unsubstantiated claim of the student's abilities.

Comprehensive Exams - All written comprehensive exams are scheduled each semester within a time period specified in the calendar circulated. Written comprehensive examinations may be taken during any semester once the student has enrolled in the remaining courses of the degree plan. Questions for the written exams are submitted by each member of the student's advisory committee. The questions may be derived from material covered in classes the student had under a committee member or refer to the student's area of research interest.

In the Biology Department, oral examinations are given as a thesis defense, and only occur after successful completion of the written portion of the comprehensive examinations. The defense follows approval of the thesis by the advisory committee. At that time, the student will give a short presentation of their thesis project and conclusions. Advisory committee members examine the student's rationale, hypothesis, analysis, conclusions, and general knowledge of the subject area. A student may also be queried on subject matter that was covered on the written exam, especially if the student's response was unconvincing, incomplete or wrong. Questions may also probe a student's ability to proceed beyond the limits of their studies, testing the student's ability to address new problems.

Prior to graduation, the student will present their research to the entire Department in a seminar. A student will receive the final thesis grade only after all requirements are met

for graduation, including Department seminar presentation. The degree candidate's performance on comprehensive examinations and the scheduled date for the Department seminar must be reported to the Dean of Graduate Studies and Research by the student's major professor (Comprehensive Examination Report). The student will be expected to be able to discuss any recent publications pertaining to the thesis area.

Registration In Absentia - A student that has completed all course requirements and is no longer resident at ULM, but is writing the thesis manuscript, may register in absentia. Approval of the advisory committee must be obtained. Any student that has registered for the full amount of allowable graduate credit must still register for three hours of Biology 599 in the semester or summer term for which an Application for Graduate Degree has been submitted.

Vital Forms Checklist:

- Major Professor Appointment Request
- Advisory Committee Recommendation
- Change in Advisory Committee
- Degree Plan
- Change in Degree Plan
- Transfer Credit
- Research Plan and Progress Review
- Comprehensive Examination Report
- Application for Graduate Degree

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