

*Preparing People to Lead Extraordinary Lives*



**LOYOLA  
UNIVERSITY  
CHICAGO**

# GRADUATE PROGRAM HANDBOOK

DEPARTMENT OF BIOLOGY

2021 -2022

Welcome to the Graduate Program in Biology. Our faculty are dedicated to your success, and will provide you with personal attention, superb resources, and room to explore and excel. Research is the primary focus of our Master's program. We hope that you will not only gain essential information about the field you are studying, but that you will make a significant contribution to that field and develop a deep-rooted appreciation for scientific thinking and experimental design. We look forward to your discoveries, your continuing educational growth, and your company.

This handbook contains information, policies, insights, and anecdotes. It lists important departmental target dates and Graduate School deadlines that you will need to keep in mind. Sample copies of numerous departmental and Graduate School forms that you will be endlessly filling out are also included.

*Revised August, 2021*

## **REGISTRATION**

During your first semester, your temporary advisor/director will be the Graduate Program Director. He/she will plan your course schedule with you and sign the Graduate Course Approval Form. All **MS students are registered directly through the Biology Department.**

By the time you register for second semester, however, you will have a permanent thesis director. Before registering for each semester, you will need to complete a Graduate Course Approval Form. Plan your course schedule with your director, have him or her sign the form, and bring it to the Biology Graduate Program Director for his or her signature. Then take the form to the Biology Department office, where you will be entered into the computer.

Our full-time graduate students must register for 8-9 credits fall semester. The maximum course load permitted is 12 credits per semester. Remember, those students on tuition fellowships are receiving only 15 credit hours of tuition scholarship per year; you will pay out of your own pocket for more hours. Tuition scholarship may not be used for course work that is not directly applicable toward the M.S. Degree.

Nonregistration during the summer will have no impact on your status as a graduate student or graduate assistant, or on your student visa status.

## **CAMPUS COMPUTERS**

Your universal login ID and temporary password will be available at orientation. You will be able to use any computer on campus. For Computer Help Desk, dial 4-4444 from any Loyola phone.

It is against Department regulations to make any additions, subtraction, or change to any Biology shared computers.

## **ADMISSION ON PROBATION**

Students admitted on probation must register for at least eight credit hours in their first semester. Removal from probationary status entails attaining a GPA of 3.0 in the first semester (Department rule) AND attaining a grade of B or better in the first three graduate courses taken (Graduate School rule). Failure to meet either of these requirements will result in dismissal from the program.

## **A WORD ABOUT DEADLINES**

You'll see deadlines for completion of specific requirements for the degree scattered about this handbook. Please be aware that the dates mentioned are dates that keep you off probation, not dates that will get you finished in two years. The program usually takes longer than two years to complete.

## COURSE REQUIREMENTS AND SCHEDULING

Please see Appendices for Course Requirements of the Program. Directed Readings (493) may or may not be considered a formal course. Designation of a specific Directed Readings as a formal course depends on the nature of the offering, which should be clearly reflected in the course outline submitted (check with the Graduate Program Director). **Only graduate level courses (400, 500 level) will be counted towards your degree.**

Your thesis director should help you devise an individualized curriculum with an appropriate mix of didactic and non-didactic courses that yields 30 credit hours. Premature repetition of non-didactic courses can cost you several hundred dollars in tuition. How many and which didactic elective courses you take will be determined by you and your director, based on your background and the specific area of research in which you are engaged. You must take at least 3 credit hours of Research (422), but should take additional 422 credits only to bring your total hours to 30. You need not register for research credits in proportion to the time spent on your research. Graduate courses in related departments (Chemistry, Psychology, Microbiology, Anatomy, Physiology, etc.) may be taken for degree credit, but you must obtain written permission from the GPD of Biology and the instructor of the other department. Enrolling in Directed Readings (Biol 493) requires that you complete the appropriate form available in the Biology Office.

Students who have fulfilled all course requirements and have completed 30 hours of graduate credit must register for Thesis Supervision (595). Possible exceptions may occur if you wish to register for a didactic offering after you have completed 30 credit hours. Students must continue to register for Biol 595 every semester until they complete all degree requirements. You are not authorized to use university facilities, like your director's laboratory and the library, if you are not registered. Spring registration also covers the summer. The Graduate School will also require payment for all semesters in which you failed to register at the time you graduate. The M.S. in Biology must be completed within five years of matriculation. If you have not finished all requirements within five years, you must apply to the Graduate School for an extension in order to be allowed to continue working on your degree. The Graduate Program Director can provide further information on filing the application.

## TEACHING IN BIOLOGY

### Student Requirement

The teaching requirement for the M.S. in Biology will be one semester of Biology 510 (one credit hour) followed by two semesters of Biology 511 (Teaching Practicum, two credit hours each). Unsupported students, students supported through and advisors external grant, and students supported by their own grants take BIOL 511 once.

Biology 511 (Teaching Practicum) is a single semester's experience as a student teacher in a (usually) 200 level courses taught by a member of the Biology Graduate Faculty. Assignment of a student to a particular course will be made jointly by the Thesis Director, and the GPD. A student's academic background will be taken into consideration. Every effort will be made to place a student in a course taught by her/his thesis director or, failing that, in a course taught by another member of the student's thesis committee.

Students will attend lectures, assist with writing and grading of homework and tests, and prepare and present two lectures in the course. If the course has a laboratory, participation in laboratory preparation, presentation, and monitoring might be expected.

A student's total time commitment in Biology 511 (Teaching Practicum) will be no more than **10 hours per week**, of which about half might be attending lectures, and no more than one-third will be in any one category or duty. Categories may include: 1) leading discussion, 2) grading homework, 3) preparing and grading tests, 4) preparing and presenting lectures, 5) preparing lab exercises and/or materials, and 6) presenting and monitoring lab exercises.

Students will be required to keep a log of time spent in different categories of work. The log will be reviewed by the course instructor and by the GPD to ensure that workloads are equitable and appropriate.

### FULL-TIME VS. PART-TIME STATUS

The schedule for completing course requirements, and the target dates for progress through the program, are based on full-time participation in the program. Full-time students have an average time-to-completion for our graduate program of 2 to 3 years. In order to complete the program in a timely fashion, students normally need to spend at least 40 hours a week working on their thesis research. If you are not able to put in this time commitment (e.g. because of an outside job), you can expect to take longer to complete the program.

For students in the degree program (as opposed to non-degree) who are supported, are considered full time by the University. However, for insurance purposes, the student must carry 8 hrs during the fall semester to be considered full time. Unsupported students must register for at least 8 credit hours or Thesis Supervision (595) or Master's Study (605) to be considered full-time students.

If you need to be officially certified as a full-time student for any reason, please contact the Graduate Program Director. After reviewing your case, he or she will make a recommendation to the Graduate School Dean. However, only the Dean of the Graduate School is empowered to certify students as full time.

## STIPENDS AND TUITION FELLOWSHIPS

The Graduate School provides our program with limited funds for stipends and tuition scholarships. Because successful completion of the program in two to three years requires a full-time commitment on your part, we strive to support as many students as possible. The Biology Department offers competitive scholarships of \$24,000/year with 15 tuition credits/year and health care. This scholarship is renewable for a second year pending academic progress. Awards are made with the understanding that students will keep their respective awards for a second year, assuming they meet the standards for continuation. In order to continue receiving full awards students must have a 3.5 GPA for their courses during the first two semesters. Students must have the recommendation of their research advisors for award renewals. Other requirements for renewal of stipends and tuition scholarships for a second year include regular attendance of departmental events (seminars and defenses), and final committee approval of the thesis outline. Rare extenuating circumstances that might preclude a student's meeting these requirements will be handled on a case-by-case basis. Even though students frequently take longer than 2 years to complete the program, please remember that there is no Graduate School support for students after their first two years. This does not preclude a student's being supported longer on an individual faculty member's grant.

Students who enter the program in January are **not** eligible for Graduate School support. Students entering the program in August without funding will **not** be eligible for any Graduate School support throughout their stay at Loyola. This does not preclude their being supported on individual faculty members' grants. Faculty members with outside grants sometimes have funding available to support their own students. Other sources of support (e.g., loans) are available to Graduate Students. Check with the Graduate School Office or the Financial Aid Office.

These are full calendar year awards, and assistants are expected to devote full time to their programs during the summer months. While some students may take on outside employment during their studies, satisfactory progress in your program must remain your highest priority. Students are strongly discouraged from engaging in activities that compromise their progress in any way. In the case of fully supported students, the Biology Department and the Graduate School consider outside employment in excess of twenty hours per week as grounds for termination of support.

Students receiving any financial support administered through the university are required to complete and submit a few standard employment forms. Forms are available at the Graduate School office in the Granada Center.

## CHOOSING A THESIS DIRECTOR

Choosing a thesis director will be the most important decision you will make in the course of your studies. Not only must your research interests parallel those of your director, but some measure of personal rapport will also be essential. Remember, you will be spending the better part of two years in his or her laboratory. You may even request spending time in a particular laboratory, although such requests are sometimes difficult to grant. "Veteran" graduate students can also provide valuable insights and information.

You should be sure that you make your prospective thesis director aware of you anticipated time commitment to your graduate studies. You should obtain explicit information from them regarding

their expectations of time commitment on your part, and the level of independence expected in designing and executing a thesis project. These expectations vary among labs, and you should endeavor to find a good fit for your learning style

We try our best to ensure good matches between students and faculty. Please be aware that some faculty may not be able to accommodate new students in a particular year or may have to choose among interested students.

**You and your potential Thesis Director must complete the Graduate Student and Thesis Director Expectation form. It is essential that both student and Director have a clear understanding of expectations.**

## **CHOOSING A THESIS COMMITTEE**

Within your first semester, you should have a research goal in mind. In consultation with your director, you should write a brief one-page statement summarizing your research project. You should then approach potential committee members, give them a copy of your project summary, and solicit their participation in your endeavors. We encourage students to choose not only committee members that are well-versed in the area of their proposed research, but to consider faculty who can also provide a novel perspective. Along with your director, the committee must include two other Biology Graduate Faculty members. If you wish, additional members may be drawn from the Biology faculty, graduate or non-graduate faculty from other departments, or even faculty members from neighboring institutions. For non-Loyola committee members, the Graduate School will request a copy of the proposed member's vita before approving the committee. These additional members may be voting or non-voting members. All voting members of your committee must be present at your final oral defense.

To formalize your committee, complete the form in the Graduate School's GSPS system.  
Departmental Thesis

## **THESIS PROPOSAL**

The deadline for a full thesis proposal is **January 15**. This proposal will enable your thesis committee to effectively provide you with constructive comments, and to help you plan and implement your experiments before you have made a major commitment of both time and resources. Your Thesis Director has the primary responsibility for supervising your research, but the contributions of your other committee members are extremely important, and their counsel should be sought early and often.

If your proposal involves vertebrate animals or human subjects, it must be approved by the Institutional Animal Care and Use Committee or the Institutional Review Board for the Use of Human Subjects.

The sooner you accomplish this, the sooner you can proceed with the confidence that you have full committee approval and support. The Proposal is an agreement between you and your Committee as to what research you need to accomplish for your degree. Remember that you are developing a proposal for your thesis research, not generating a thesis. You and your director will have to agree on how many preliminary experiments need to be done before preparing the proposal and how extensive its literature review needs to be. Your committee members can also be helpful in guiding

your proposal preparation. The proposal must be completed in a timely fashion to meet departmental goals for satisfactory progress. Note that the departmental deadline for obtaining official approval of your Thesis Proposal is **January 15**, and that the Graduate School will collect a \$30 fee at the time of its submission. Your full proposal is to be submitted to the Biology Department and included in your official file. You will upload your proposal's abstract onto the Graduate School's GSPS web site. All committee members with sign of on the proposal directly online.

It is the policy of the Biology Department that full - time graduate students who have not had their thesis proposal approved by their committee within one calendar of their matriculation will be put on probation for one semester. Any student failing to obtain committee approval of the thesis proposal by the end of the probationary semester will be subject to dismissal from the program. Dismissal and/or non-renewal of stipends must be approved by the Graduate Committee. Input from the student, the thesis director, and the thesis committee will be taken into consideration.

### **THESIS COMMITTEE MEETINGS**

In order to keep your thesis committee members abreast of your progress, you must schedule regular committee meetings. After initially meeting with your committee, **you must continue to meet with your committee at least twice a year until you have distributed a draft of your thesis to your committee members.** Meetings should be scheduled even if your progress is limited. In conjunction with these meetings, written progress reports may also be submitted at the discretion of your Thesis Director or committee members. Additional meetings may also be requested by you, your director, or committee members. At each meeting, you and all committee members must sign and date a Thesis Committee Meeting Form, which you should give to the GPD for placement in your file.

**At the end of every academic, you must submit a Progress Report to the GPD for evaluation by the Graduate Committee.**

### **THESIS PREPARATION**

After you have completed most of your experimental work and your director and committee members are satisfied with your progress, you should begin working on your thesis. Your Thesis Proposal should serve as a good launching vehicle. Most theses consist of: 1) abstract --a brief description of the project's goals and outcomes; 2) literature review; 3) experimental procedures and data evaluation (materials and methods); 4) results; and 5) discussion and conclusions. This list of headings is included only for illustrative purposes. Your Thesis Director may suggest an alternative outline, but your thesis should include all of the above elements.

### **THESIS DEFENSE AND GRADUATION**

You must notify the Graduate School by filing an "Application for Graduation". Please see the Graduate School's timeline for format checks and other important deadlines.

A student does not generally submit his/her thesis draft to the Thesis Committee members until the Thesis Director is satisfied with the product. You can expect to work closely with your Director in preparing the Thesis and will probably go through several drafts with her/him. When you are ready to distribute your Thesis to your committee members, deliver their copies to them along with the

departmental Thesis text approval form. You must allow at least **two weeks** for your committee members to review the thesis.

### **PROCEDURE FOR SCHEDULING A DEFENSE**

All committee members must approve the student's thesis before a defense can be scheduled. Each committee member must fill out the "Notification of Thesis Status" form. All committee forms must be submitted to the GPD before a thesis defense can be scheduled. The defense must be advertised for 5 working days before the actual defense date.

The format of the final defense is as follows: 1) There is usually a 15 -minute social before the seminar. Seminar announcements should indicate both the time of the social and the time at which the seminar will begin. 2) The GPD will convene the defense, and introduce the thesis director. In the event that the GPD cannot moderate the defense, the Chair of the Graduate Committee or a tenured member of the Graduate Committee will moderate. 3) The thesis director will introduce the candidate. 4) The candidate will give a 30-45 minute seminar of her/his work. 5) The moderator will conduct a question-and-answer period of 15-30 minutes. 6) The moderator will dismiss the audience. 7) The thesis director will chair a closed oral defense attended only by the candidate and the thesis committee. During this time, committee members will raise any questions or concerns they have about the thesis, the seminar, or other aspects of the project. 8) The thesis director will dismiss the candidate and chair a closed discussion with the thesis committee of the merits of the defense. 9) The thesis director will adjourn the meeting and announce the vote of the committee to the candidate.

### **BIOLOGY GRADUATE STUDENT ASSOCIATION (BGSA)**

The Biology Graduate Students Association (BGSA) was formed to create cohesiveness and mutual support among biology graduate students and to enhance the intellectual growth of graduate students and faculty. All biology graduate students, full-time and part-time, are automatically members of BGSA. There are no initiation rites or membership dues.

BGSA holds regular meetings to discuss both academic and "student life" issues. The organization elects officers and delegates to represent the students at Biology Faculty meetings and Biology Graduate Committee meetings (one delegate for each body). Active student participation in decisions related to the program is an important factor in the growth, success, and vitality of the program.

BGSA activities are sponsored in part by the student Activity fee. This fee is assessed by the University each semester, and is not covered by stipends.

## APPENDICES

### Course Requirements for the M.S. Degree in Biology

#### Required Courses:

1. Biostatistics – BIOL 470 (lab and Lecture): 4 credits
2. Scientific Logic & Critical Thinking (Advanced Evolution) – BIOL 500: 3 credits
3. Seminar in Biology (Graduate Seminar) – BIOL 501 (1 credit to be taken fall of second year):
4. Department Seminar – BIOL 502 (Second year students, offered Fall semester): 1 credit
5. Teaching Biology – BIOL 510 (Lecture): (1 credit to be taken fall of first year)

#### **Subtotal: 10 credits**

6. Teaching Practicum - BIOL 511 – a) All university-funded students must take BIOL 511 twice:  
2 x 2 credits = 4 credits  
b) Non-university-funded students or students with externally funded grants, e.g., NSF, take BIOL 511 once: 2 credits

**Subtotals: university funded students: 10 + 4 = 14 credits**

**Other students: 10 + 2 = 12 credits**

**Didactic Electives: 9-15 credits.**

#### **Research:**

BIOL 422: 3 – 9 credits. Students must take at least 3 research credits, but students should use additional research credits to bring their total hours to 30.

**TOTAL: 30 credits (credit hours)**

## Example: Course Sequence

### First Year

Fall		Spring	
Scientific Logic	500 (3 credits)	Electives/ Research	(0-6 credits)
Teaching	510 (1 credit)	Teaching Bio 511	(2 credits)
Elective	(0-5 credits)	Total hours	(6-7 credits)
Total hours	(8-9 credits)		

### Second Year

Fall		Spring	
Dept. Seminar	502 (1 credit)	Electives/Research	(6-7 credits)
Grad Seminar	501 (1 credit)	Teaching Bio 511	(2 credits)
Biostatistics	470 (4 credits)	Total hours	(7-8 credits)
Teaching Bio	511 (2 credits)		
Electives/Research	(0- 3 credits)		
Total Hours	(8-9 credits)		

First Year: 15 hrs.

Second Year: 15 hrs.

Total Program Hours = 30 hrs.

- Biostatistics 470 is offered every other year and alternates with Scientific Logic (500)
- Students on University Scholarships must take Teaching Bio (511) two times  
Unsupported students, students supported through and advisors grant, and students supported by their own grants take BIOL 511 one time.

# THESIS ADVISOR APPOINTMENT FORM

## DEPARTMENT OF BIOLOGY LOYOLA UNIVERSITY CHICAGO

To be submitted by the student to the Graduate Program Director.

Name of Student: \_\_\_\_\_

Name of Advisor: \_\_\_\_\_

Signature of Advisor: \_\_\_\_\_ Date: \_\_\_\_\_

Signature of GPD: \_\_\_\_\_ Date: \_\_\_\_\_

General topic of anticipated thesis (not binding):

## Graduate Student and Thesis Director Expectation Form

It is vital that the graduate student and the Thesis Director understand and agree to each other's expectations [e.g., time commitment to the reach project, level of independence of the student, expectations for the final product (e.g., publication quality), ownership of data, authorship of published works, length of time to completion].

This form is designed to initiate a conversation between student and advisor. This form must be filled out by each participant, signed, and submitted to the GPD with the Advisor Appointment form.

Expectations of the Graduate Student by the Thesis Director:

Expectations of the Graduate Director by the student:

Thesis Director signature: \_\_\_\_\_ Date\_\_\_\_\_

Student signature: \_\_\_\_\_ Date\_\_\_\_\_

**Graduate Course Approval  
 Department of Biology  
 Loyola University Chicago**

Course Approval Form for \_\_\_\_\_ Semester 20 \_\_\_\_\_

Name \_\_\_\_\_

Daytime Phone \_\_\_\_\_

Current Address \_\_\_\_\_

*To ensure that all students receive proper advising and that an appropriate record is made of the same, this form must be filled out completely for a student to be allowed to register. When all signatures are affixed, return this form to the Biology Department.*

Department	Course Number	Section Number	Semester Hours	Comments

*Please sign below as indicated:*

Student \_\_\_\_\_ Date \_\_\_\_\_

Advisor \_\_\_\_\_ Date \_\_\_\_\_

Graduate Program Director \_\_\_\_\_ Date \_\_\_\_\_

BIOL 511. TEACHING PRACTICUM: REQUEST FOR ASSIGNMENT

**Department of Biology  
Loyola University Chicago**

All students must register for BIOL 511. Teaching Practicum one time to qualify for the M.S. in Biology. Students receiving a full stipend and full tuition scholarship from the Graduate School must register for BIOL 511 two times. Ideally, students will be assigned to a course taught by their thesis director, but this will not always be the case.

Until the teaching requirement is fulfilled, students must discuss potential teaching options for the upcoming semester with their thesis director. This form is to be returned to the graduate program director indicating the student and director's preference for semester(s) and course(s) for the student's teaching assignment.

Students requesting to work with an instructor other than the thesis director should discuss the issue with that faculty member in advance and have them sign this form.

Final assignments will be made by the graduate program director, graduate committee chair and department chair.

Semester: \_\_\_\_\_ Course Requested:

\_\_\_\_\_  
Instructor of Record:

\_\_\_\_\_  
Other Comments:

\_\_\_\_\_  
Student's Signature

\_\_\_\_\_  
Thesis Director's Signature

\_\_\_\_\_  
Course Instructor's Signature (if not thesis director)



### **MS Student Progress Report 2020-2021**

This form is to be completed at the end of each semester by all MS students enrolled, and submitted to the GPD for evaluation by Biology Graduate Committee. Students will provide a progress report of their achievement from that semester towards the completion of their degree. Students will identify thesis objectives with their advisor for the following semester. Students must meet with their advisor to complete this progress form.

Date:

Name of Student:

Planned Date of Graduation:

Semester progress of objectives as reported by student:

Objectives for next semester:

- 1.
- 2.
- 3.

Student Signature \_\_\_\_\_

Comments:

Advisor Signature \_\_\_\_\_

Notes