



**Department of Biological Sciences
Doctoral Program in Biology University of
Texas at El Paso(UTEP)Introductory
Handbook**

**Department of Biological Sciences
Doctoral Program in Pathobiology**

UTEP Doctoral Program

9/5/2014

I. Doctoral Program Details

A. Advisors, Registration, GPA, Standings and Stipends

Doctoral Students are required to consult with their faculty advisors each semester for planning of their course of study and registration. The Biology Graduate Program Director (Dr. Aguilera) and the Doctoral Advisors (Drs. Walsh, Llano, Zhang) will advise all incoming and enrolled graduate students. In addition, incoming students should select or be assigned a faculty mentor in their specialized area of study within the first semester. Together, these advisors will oversee the trainee's program of study. Upon admission to the program, trainees will choose a Dissertation Advisor and work with that person to assemble a Dissertation Committee. This Dissertation Committee will oversee the proposal, research and dissertation portions of the trainee's program. In addition to these advisors, there is also a faculty member elected as Ombudsman for graduate students (**TBA**).

Full time doctoral students must register for nine doctoral-level credit hours (see below) in each of the fall and spring semesters (summer registration may be required depending on funding source). Dates and times for graduate registration are listed in each semester's course schedule. Each student must maintain a minimum GPA of 3.0 to remain in good academic standing. To receive a stipend as Assistant Instructor (AI), the trainee must be enrolled full time and be in good standing.

B. Course Requirements

Courses required for doctoral students include those from four categories: Required, Menu electives, Free Electives, and Doctoral Research/Dissertation.

1. Required Courses will be offered at least every two years. Each student must take all four core courses, three Biology seminars and the seminar course on ethics. For full time students, these core courses should be completed in the first two years of the program. These courses include:

BIOL 5340	Structure and Function of Macromolecules
BIOL 5328	Biostatistics
BIOL 6301	Environmental Pathobiology
BIOL 6310	Advanced Research Techniques
BIOL 5130	Seminar (at least three seminar courses)
BIOL 5131	Ethical, Social and Political Dimensions

2. Menu Electives will be offered at least every two to three years. Each student must take at least two of these electives, at least one of which must be a 6xxx level course. Menu electives include:

BIOL 5326	Advanced Topics in Immunology
BIOL 5346	Ecological Toxicology
BIOL 5360	Limnology
BIOL 6303	Gene Regulation
BIOL 6304	Physiological Regulatory Mechanisms

3. Free Electives will be offered at least every three years. In addition to the credit hours required above, each doctoral student must take additional credit hours of free electives or excess menu electives to total a **minimum of 9 hours**. See the catalogue for a complete list of free electives. A partial list of free electives includes:

BIOL 5342	Synthesis and Degradation of Macromolecules
BIOL 5343	Cellular Toxicology
BIOL 5344	Molecular Pathogenesis
BIOL 6305	Cellular Physiology
BIOL 6306	Membrane Biology

BIOL 6345 Molecular Parasitology

Up to 24 hrs of graduate level course work from an earned Master's degree may be considered for transfer to the doctoral degree. To apply for transfer of credit, submit a list of the courses, as well as the official course descriptions, to the Doctoral Advisor. For credit to be transferred, the graduate advisor must find that the course is an appropriate substitution for the degree program and that it was successfully completed by the student. Final approval is given by the Graduate School. Most often, transferred courses will be listed under the "Free Electives" portion of the program of study.

4. Doctoral Research. Students must accumulate 30 hours of doctoral level research (BIOL 6X90) plus 6 hours of dissertation (BIOL 3698 and BIOL 3699) after admission to candidacy. BIOL 6398 should be taken in the first semester following successful advancement to candidacy. Students must be enrolled in BIOL 6399 during the semester in which they have their final dissertation defense.

C. Examinations

The **Qualifying exam** should be taken before the end of the second year.

The exam will consist of a written section as well as an oral exam administered by the students committee. In addition, for the oral portion of the exam the student should select a faculty member to be a non-examining member of the panel and to be an advocate for the student.

The written portion of the Qualifying exam is taken prior to defense of the dissertation research project. **The committee will prepare 4 questions; the student will choose 2 of the 4 questions to address in the written oral.** The student will be responsible for all questions during the oral exam. The written exam will be reviewed by all members of the committee and this process will be overseen by a member other than the mentor. The student will have 2 weeks to complete the written exam. After successfully completing the written portion, the student will be allowed to continue to the oral defense of the proposed research. Immediately following the dissertation defense, an oral examination will be administered by the committee. If the examination is not successful, the student may petition for a second examination at the discretion of their Dissertation Committee and the Graduate Program Director.

D. Timeline for Biology Doctoral Degree

The requirements for awarding of a Doctor of Philosophy Degree are:

- Successful completion of required course work and laboratory rotations
- Successful completion of qualifying exams
- Successful defense of dissertation proposal
- Successful completion and defense of dissertation

In order to encourage timely completion of the degree, the following time constraints are enforced for full time students in this program:

At the start of the program, students must select a mentor for a laboratory rotation who will advise the trainee during the first semester. The Graduate Advisor and/or the Faculty Dissertation Advisor will aid the student in designing a course of study tailored to the trainee's interests. The trainee must form a Dissertation Committee. The Dissertation Committee shall consist of a Chair or Co-Chair from the Tenured/Tenure-Track faculty of the Biology Graduate Faculty plus three additional members of the Graduate Faculty, one of whom must be from

outside of the Biological Sciences Department. This committee will guide the student through their doctoral research and writing of their dissertation and will be responsible for final approval of the written dissertation. To be considered a full-time student, students must register for nine hours of courses both in the Fall and Spring semesters and register for three hours of course work for the Summer semester.

By the end of the first year, students should have rotated in the laboratories of two approved faculty. Rotations are taken once for credit as the Advanced Research Techniques (BIOL 6310) course. At the end of the first semester, trainees will not be given a grade P (In Progress) until the completion of the second rotation and the submission of two rotation reports (within one semester of completion). Trainees must write a 2-5 page report of their rotation results and experience as part of the grade for the course (see Table 1). This report should be written in the form of a research paper with the following components: (1) Summary/Abstract (include the specific aims of project), (2) Brief Introduction, (3) Materials and Methods, (4) Results, (5) Discussion (or Results and Discussion) and (6) References. It is expected that data in the form of figures will be included in the report. It is important to state at the beginning the aim(s) of the project and the results obtained during the rotation. The report will be reviewed and returned for correction. Grades will not be entered until the corrections have been returned to the Graduate Program Director.

Table 1. Timeline for Doctoral Candidates.

Timeline	Requirements	Course Requirements
Year 1	<ul style="list-style-type: none"> • Completion of two semester-long laboratory rotations and submission of two research reports to the graduate program director. EEB students must identify a Mentor by 1st semester. • Mentor is identified and committee is formed • Complete Preliminary Degree Plan • Annual committee meeting 	<p>Enroll in core courses</p> <p>Take seminar class both semesters</p>
Year 2- 3	<p>Preliminary Exam</p> <ul style="list-style-type: none"> • Consists of 4 written questions. Students answer 2 and the other 2 will be part of oral exam during the proposal defense. Written answers will be limited to 5 single spaced pages per question • After passing the written portion of the exam, students will defend their research proposal and have an oral examination • Written and oral exams are coordinated by a committee member other than the mentor 	<p>Complete all coursework including free electives and core courses</p> <p>Take seminar course for at least one more semester (at least 3 credits required)</p>
Years 1-5	<ul style="list-style-type: none"> • Annual committee meeting • Informal presentation of research results at seminar – no credit • 	
Years 4-6	<ul style="list-style-type: none"> • Permission to write dissertation must be unanimous among committee members • Student must submit 1 paper for publication related to dissertation prior to defense 	<p>Research hours (as needed) and at least 6 credits of thesis hours.</p>

By the sixth semester, and preferably by the end of the second year, students should have completed ALL CORE courses for the doctoral program. NOTE that some of the core courses are offered only once every two years and must be taken in the year they are offered!

After completion of core courses but no later than the end of the third year, students must have successfully completed the Qualifying Exams and have advanced to candidacy. A dissertation research proposal is part of the Qualifying Examination. Each student will write a detailed Dissertation Proposal, including a review of the field, statement of hypothesis and specific aims, a detailed description of the approach and methods to be used and all appropriate references. This proposal must be approved by all members of the student's Dissertation Committee and must be made available for comments by the Biology Graduate Faculty. The Dissertation Committee will be responsible for administering the written and oral examination portion of the Qualifying exam. The written and oral portions of the exam will be coordinated by a member of the Dissertation Committee other than the Dissertation Advisor. Students will continue to make timely progress on their dissertation work, with annual submission of results for review by the Dissertation Committee.

Dissertation Defense (Final Oral Thesis Defense). To complete the doctoral program, each student must successfully defend their Doctoral Dissertation based on their original research. When the student and their committee agree that research progress has been sufficient, a formal written note from the mentor and signed by all committee members must be submitted to the Graduate Program Director indicating that the student has permission to write the dissertation. After the dissertation is written and approved by the committee, the student may schedule the oral defense of the dissertation. AT LEAST ONE WEEK PRIOR TO THAT DATE, a final complete copy of the dissertation will be given to each member of the committee AND a copy will also be placed in the Biology Office for review by interested faculty. Following the public defense, the committee will meet privately with the student to evaluate the dissertation and defense and will determine whether to accept, accept with modifications (any needed corrections will be provided to the chair and student in writing within 48 hours), or to reject the dissertation. If a dissertation is accepted with modifications, the committee should specify whether the final version needs a full review by the committee or only by the Chair of the Committee or designate.

E. Summary of Normal Progress towards the Ph.D. Degree:

1. **Milestones Agreement** – At the end of the first semester, the student must submit the signed Milestones Agreement to the Graduate School.
2. **Core Course Work:** Course work will be completed by the sixth semester of the student's program of study.
3. **The Qualifying Examination:** This exam will be taken as soon as feasible after the completion of the core courses and relevant elective coursework, and should be completed by the beginning of the third year in the program.
4. **Advancement to Candidacy:** After passing the written qualifying exam, defending the dissertation proposal, and successfully completing the oral exam, students are advanced to candidacy. Students must formally meet with the Dissertation Committee once a year at which time a progress report will be presented. Soon thereafter, the committee chair must submit a report on the meeting to the Director of the Graduate Program in Biology.
5. **Completion of Ph.D. Program:** Ideally, students should complete the Ph.D. requirements (including dissertation) by the fourth year, but no later than the sixth year in the program. Permission for extension of Ph.D. timeline beyond the sixth year must be approved by the Trainee's Dissertation Committee and the Biological Sciences Graduate Program Director. ALL TRAINEES SHOULD BE

AWARE THAT THE STATE DOES NOT PERMIT STATE FUNDING (i.e., Teaching Assistantships or Assistant Instructorships) AFTER COMPLETION OF 99 CREDIT HOURS.

F. Exceptions to the Guidelines

Exceptions to guidelines require the specific approval of the Doctoral Committee, the Director of the Graduate Program in Biology and the Graduate School. Candidates requesting exceptions will be required to fully justify that request.

G. Ph.D. Course of Study Form

The course of study form is a record of your progress through the doctoral requirements. Before your second semester in the program, you should have completed an initial course of study form and have had it approved by both the departmental Doctoral Advisor and the Graduate School. At the completion of each major requirement of your doctoral work, the student is required to complete and have all forms approved. This will help insure that all your records are complete

THE UNIVERSITY OF TEXAS AT EL PASO

Graduate School

El Paso, Texas 79936-0587

PROGRAM OF STUDY FOR THE DOCTORAL PROGRAM IN BIOLOGY

STUDENT: _____

STUDENT NUMBER: ____-____-_____

DEPARTMENT: **Biological Sciences**

MAJOR: **Biology**

[Minor not applicable]

DATE OF ACCEPTANCE INTO PROGRAM: _____

TERM OF FIRST COURSE USED TOWARDS DEGREE: _____

This program has a **DISSERTATION REQUIREMENT**.

INITIAL FACULTY MENTOR: _____

REQUIRED CORE COURSES:

	<u>DATE / GRADE</u>
BIOL 5328 Biostatistics	_____
BIOL 5340 Struct and Fct of Macromolecules	_____
BIOL 6301 Environmental Pathobiology	_____
BIOL 6310 Advanced Research Techniques	_____
BIOL 5130 [Seminar]	_____
BIOL 5130 [Seminar]	_____
BIOL 5130 [Seminar]	_____
BIOL 5131 Ethical, Social and Political Dimensions	_____

(16 HOURS)

MENU ELECTIVES [choose two, at least one 6000 level]:

	<u>DATE / GRADE</u>
BIOL 5326 Advances in Immunological Concepts	_____
BIOL 5346 Environmental Toxicology	_____
BIOL 5360 Limnology	_____
BIOL 6303 Gene Regulation	_____
BIOL 6304 Physiological Reg. Mechanisms	_____

(6 OR 7 HOURS)

OTHER APPROVED ELECTIVES [to total 31 hrs and may include up to 24 transfer credits from a Master of Science degree program, with Departmental approval]:

<u>Course Number and Title</u>	<u>DATE / GRADE / Transfer</u>
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

DISSERTATION RESEARCH [total of 30 hrs]

- BIOL 6190 Independent Research
- BIOL 6290 Independent Research
- BIOL 6390 Independent Research
- BIOL 6490 Independent Research
- BIOL 6590 Independent Research
- BIOL 6690 Independent Research

DISSERTATION

BIOL 3698 Dissertation, first semester
BIOL 3699 Dissertation, continuing semesters

QUALIFYING DATE AND OUTCOME (PASS/FAIL):

DISSERTATION COMMITTEE

CHAIR: _____

MEMBER: _____

MEMBER: _____

OUTSIDE MEMBER: _____

MEMBER [optional]: _____

DISSERTATION PROPOSAL

TITLE: _____

DATE APPROVED: _____

SUCCESSFUL DISSERTATION DEFENSE DATE: _____

APPROVALS [Required for all changes and updates]:

GRADUATE DOCTORAL ADVISOR / DATE

DIRECTOR OF GRADUATE STUDENT SERVICES / DATE

Students are urged to study the general requirements for graduate degrees stated in the Graduate Studies Catalog. Students are responsible for checking their own progress to be sure they meet these requirements. Any deviation from the above course schedule must have the approval of the Department Doctoral Graduate Advisor and the Director of Graduate Student Services. The Preliminary Program of Study should include all course work required for the graduate degree. It does not constitute a waiver of any requirements for the degree as set by the Graduate School or Department Program requirements beyond the minimum required for the degree that are listed above.

SIGNATURE OF STUDENT / DATE

Appendix A: Current Administrative Positions and Contact Numbers

Chair, Department of Biology:

Dr. Bruce Cushing Bioscience 2.118 747-5844

Chair, Biology Graduate Faculty:

Dr. Kristina Garza Bioscience 4.152 747-6562

Director of Graduate Studies:

Dr. Renato Aguilera Bioscience 4.144 747-6852

Doctoral Advisor:

Dr. Elizabeth Walsh Biology 218 747-5421

Dr. Jianying Zhang Bioscience 3.124 747-6995

Dr. Manuel Llano Bioscience 3.144 747-6885

Graduate Advisor:

Dr. Jerry D. Johnson Biology 205 747-6999

Building Manager:

Enrique Martinez Bioscience 2.158 747-6881

Asst: Fernando Gomez Biology 115 747-5986

Biology Office Staff:

Susanna Renteria Bioscience 2.120 747-6882

Juan Camacho Bioscience 2.120 747-6879

Annette Vasquez Bioscience 2.138 747-7478

BBRC Staff:

Mayanin Acuña Bioscience 2.132 747-6850

Bonnie Smith Bioscience 2.137 747-6992

SCORE/RISE Staff:

Elizabeth Quezada Bioscience 2.136 747-6890

FACULTY MENTOR/DOCTORAL STUDENT CONTRACT

Faculty Mentor Responsibilities

The faculty mentor

- Will keep trainee “on track” and hold mentee accountable for his/her time and quality of effort.
- Will provide opportunities for trainee to develop research and academic skills
- Will advise the trainee on the selection of trainee’s dissertation committee and will ensure this committee is instituted within the year of residence.
- Will ensure that the trainee meets with dissertation committee at least once a year.
- Will have frequent meetings with mentee and provide an open environment for discourse and questions.
- Will ensure that the trainee fulfills all graduate program responsibilities and meet milestones (see timeline below)
- Will ensure adherence to the general rules for the responsible conduct of research by the trainee and will hold responsibility for the general validity of the data generated and published by the trainee.
- Will ensure adherence by the trainee to the animal and recombinant DNA protocols approved for the lab.
- Will guide the design and planning of research/assays and interpretation and the completion of the research
- Will provide constructive criticism and review dissertation work and possible publications.
- Will assist the trainee in preparing research presentations at departmental and scientific meetings.
- Will notify Graduate Program Director if the mentee is experiencing personal or academic difficulties.
- Will submit a report on yearly dissertation committee meetings to the Biology Graduate Program Director.

Student Responsibilities

The student

- Will have the primary responsibility for the successful completion of his/her degree.
- Will meet regularly with their research advisor and provide him/her with updates on the progress and results of their activities and experiments.
- Will work with their research advisor to develop a dissertation project. This will include establishing a timeline for each phase of the work. The student will strive to meet the established deadlines.
- Will work with their research advisor to select a dissertation committee. This will be done by the end of the first academic year.
- Will meet with this committee at least once annually (or more frequently, if needed). The student will be responsive to the advice of and constructive criticism from the committee.
- Will attend and participate in laboratory meetings, seminars and journal clubs that are part of their educational program.
- Will maintain a detailed, organized, and accurate laboratory notebook. The student should be aware that their original notebooks and all research data in all formats are the property of the laboratory and institution but that they are able to take a copy of their notebooks after completion of the dissertation.

- Will discuss policies on work hours, sick leave and vacation with their research advisor.
- Will discuss policies on authorship and attendance at professional meetings with their research advisor.
- Will attend the doctoral student seminar series. Attendance is mandatory. Students will present once per year commencing in their second year.
- Must make timely progress toward degree completion and satisfactorily meet the standards of scholarship established by the University according to the timeline indicated below.
- Must have a clear understanding of the requirements to complete their degree objectives and develop a plan to satisfy these requirements within the shortest reasonable timeline.
- Graduate students who receive financial support for their graduate program should understand the responsibilities associated with the support they receive and to carry out these responsibilities in a timely, conscientious and professional manner.
- Graduate students with assignments as teachers have special responsibilities to be prepared for their class/laboratory sessions, and to maintain professional and mentoring relationships with their students.
- **Continuous registration is required of all graduate students. Graduate students who fail to register and are not on an official leave of absence are not considered to be students.**

Timeline for Biology Doctoral Degree:

- For the Pathobiology program, incoming trainees must enroll (once) in BIOL 6310 (Advanced Research Techniques) and conduct rotations in two laboratories during the first two semesters. Trainees must submit two written reports to obtain a final class grade (see Ph.D. Handbook for instructions).
- Course work should be initiated during first semester and completed by the sixth semester in residence.
- Will meet with dissertation committee once a year and provide progress report at each meeting.
- Will take qualifying exam at the end of Year 2 and no later than the third year in program. Written permission is required to extend beyond year 2.
- Trainees must submit a manuscript for publication prior to applying for graduation.
- Trainees should complete the Ph.D. requirements (including dissertation) by the fourth year, but no later than the sixth year in the program. If it is anticipated that the project will not be completed by the end of the sixth year, the Committee Chair must petition on behalf of the student for an official extension.

Student

Advisor

Date