GRADUATE HANDBOOK

Department of Biological Sciences
Delaware State University

A guide to the three Graduate programs offered by the Department of Biological Sciences at Delaware State University (DSU):

MS in Biological Sciences
MS in Cellular and Molecular Neuroscience
PhD in Neuroscience

Handbook for Master of Science (MS) Degree in (i) Biological Sciences and (ii) Cellular and Molecular Neuroscience.

The DSU Department of Biological Sciences offers two MS level tracks: MS in Biological Sciences and MS in Cellular and Molecular Neuroscience. This handbook clarifies departmental and program specific policies, and direct you to other policies, regulations, deadlines, etc. pertaining to the DSU School of Graduate, Adult, and Extended Studies (SGAES) University policies are not replaced by the policies below; but are clarified as they relate to the Masters programs. The MS degree provides students with an opportunity to earn a graduate degree in Biological Sciences at large, or specialize in the area of Cellular and Molecular Neuroscience. DSU provides students with a competitive environment that fosters the progression towards their graduate degree in order to successfully compete in the professional arena and/or enhance their academic preparation. *For DSU policies set forth by SGAES, such as transfer of credits, submission of forms, thesis development, and probation, dismissal, and withdrawal, please refer to their website:* https://sgaes.desu.edu/

Admission Criteria
Admission is considered for applicants who have submitted a complete application, and who meet all admission criteria as outlined below. Considering that there are a limited number of seats, will be evaluated on a competitive basis by the Graduate Program Committee based on the following:

Personal Statement
The personal statement must demonstrate research experience, scientific writing capacity, scientific reasoning and critical thinking, and goal-oriented and progressive thinking that links previous experience with both short-term and long-term academic and professional goals.

Transcript
Minimum transcript criteria include a 3.0 overall GPA, Bachelor's Degree conferred in Biology or similar field. Pre-requisite courses include General Biology, General Chemistry, General Physics, Cell Biology, Genetics, Molecular Biology, Statistics, Biochemistry.

GREs
GRE Scores for the General Test must reflect an overall percentile score of 100, with a minimum percentile score of 25 within the three content areas (Verbal Reasoning, Quantitative Reasoning, and Analytical Writing). Discipline-specific GREs (e.g. biology) are not considered for evaluation.

Letters of Recommendation
Three letters of recommendation are those that indicate the reviewer's support of the applicant in terms of their academic strength, personal character, and academic potential of the applicant.

Financial Support
The department admits a limited number of students to the graduate programs so that they can be supported with tuition scholarships and research stipends from grants; however, funding is not guaranteed upon admission. Admission without funding is not usually a viable option, unless the student has a formal financial commitment letter from a faculty sponsor from the Biology department. The program is considered a career endeavor. In some cases, students will be partially supported by teaching assistantships. In all cases students are expected to focus full-time on their studies and research. No student enrolled in either of the MS program and supported financially through DSU

will be allowed to take up employment elsewhere without permission from advisor, GPC and department chair.

Requirements

The program will require at least thirty (30) credit hours, with forty-two (27) from coursework and 3 from thesis research. Notwithstanding the difference in credit requirements for coursework and research, the latter is a critical component of the MS degree, as elaborated further on. The program requires completion of all required coursework according to University criteria for graduate students (see below) and the completion and defense of a research thesis supervised by a faculty mentor. The thesis project may be conducted in a research lab within the Department of Biological Sciences or another lab at DSU or another research institution, if the research is considered relevant to the field. If the student conducts research at another institution, they will have a dissertation research advisor at that institution and a faculty advisor at DSU. The program is designed so that completion is possible in four academic years plus four summers of full-time dedication to research. However, the amount of time can vary and will depend upon the progress of work and approval of the student's research mentor and dissertation committee.

An extremely critical component of the Masters degree requires laboratory-based research (including experimental design, execution of experiments, data collection and analyses) along with course work. Newly-admitted students are enrolled in a professional development course (BIOL-590) which includes rotations in laboratories of potential faculty advisors. Students that are funded directly by a faculty advisor (as compared to those awarded institutional funding) are recommended, but not required, to complete the lab rotation process in accordance with current department guidelines. These rotations are completed by the middle of the first semester, allowing students and mentors to initiate a professional partnership towards the doctoral degree. Besides the required courses, students will select specific elective courses in consultation with their research mentors, and depending on the direction of their research project. The two tables below provide a generic timeline of required and elective courses for MS students in the (a) Cellular and Molecular Neuroscience Program, and (b) Biological Sciences Program.

COURSE COMPONENT for MS In Cellular and Molecular Neuroscience Program:

Year 1 Fall Semester			Year 1 Spring Semester		
Course	Course Name	Cr	Course	Course Name	Cr
BIOL 503*	Introduction to Neuroscience	3	BIOL-xxx	Neuroscience elective	3
BIOL 590*	Professional Development I	3	BIOL 521*	Foundation II	3
BIOL-xxx	Foundation I	3	BIOL 591*	Professional Development II	2
			Biol 690	Thesis reserach	1
	Total Credits	9		Total Credits	9

Year 2 Fall Semester			Year 2 Spring Semester		
Course	Course Name	Cr	Course	Course Name	Cr
BIOL-xxx	Neuroscience elective	3	BIOL 505	Exptal Design/Biostats	3
BIOL-xxx	Biology elective	3			
BIOL 691	Thesis Research II	1	BIOL 691*	Thesis Research III	2
	Total Credits	7		Total Credits	5
			Total Credits: 30		

Notes:

A. Courses listed in the above table with a definite course number are required.
B. *AGNR501 and AGNR551 are considered equivalent to BIOL505
C. Foundational courses: May take 2 out of 3 from BIOL 520, 521 and 650
D. Neuroscience electives include BIOL 515, 610, 612, 622, 653
E. Biology electives include any graduate level course offered by the Department of Biology or other CAST departments with advisor approval.
F. A critical component of MS in Cellular & Molecular Neuroscience requires lab work including experimental data collection and analyses, which is carried out by students along with course work. Upon completion of above coursework, a student may register for sustaining thesis until successful public dissertation presentation and oral defense of research thesis.

COURSE COMPONENT for MS In Biological Sciences Program:

Year 1 Fall Semester			Year 1 Spring Semester		
Course	Course Name	Cr	Course	Course Name	Cr
BIOL-xxx	Foundation I	3	BIOL-xxx	Foundation II	3
BIOL 590	Professional Development I	3	BIOL 591	Professional Development II	2
BIOL xxx+	Biology Elective	3	BIOL xxx	Biology Elective	3
			BIOL 690	Thesis Research	1
	Total Credits	9		Total Credits	9

Year 2 Fall Semester			Year 2 Spring Semester		
Course	Course Name	Cr	Course	Course Name	Cr
BIOLXXX	Biology Elective	3	BIOL 505	Exptal Design/Biostats	3
BIOL xxx+	Biology Elective	3	BIOL 692	Thesis Research	2
BIOL 691	Thesis Research	1			
	Total Credits	7		Total Credits	5

	Total Credits: 30

Notes:

A. Courses listed in the above table with a definite course number are required.
B. *AGNR501 and AGNR551 are considered equivalent to BIOL505
C. Foundational courses: May take take 2 out of 3 from BIOL 520, 521 and 650
D. Biology electives include any graduate level course offered by the Department of Biology or other CAST departments with advisor approval.
E. An extremely critical component of MS in Biological Sciences requires lab work including experimental data collection and analyses, which is carried out by students along with course work. Upon completion of above coursework, a student may register for sustaining thesis until succesful public dissertation presentation and oral defense of research thesis.

Amount of Credit Accepted for Transfer

Transfer of credits adheres to the standards of Graduate Programs at Delaware State University. A maximum of nine (9) credit hours can be transferred into the program, after approval. Also, note that MS students will not automatically be transferred into the PhD program upon completion of the degree; the standard application process applies to be considered for admission by the Graduate Program Committee.

Lab Rotations

Students awarded institutional funding will rotate through three or more faculty research labs, based on student preference and current student load in each lab considered for rotation. Once the rotations are completed, the Graduate Program Committee will review the lab rotations and will consider the student and mentor preferences before placing a student in a research lab for their degree program.

Mentored Research

Graduate students are to complete a research dissertation under the direction of a primary research

mentor. This mentor is typically a member of the DSU Department of Biological Sciences. With approval by the GPC, faculty conducting research in the scope of the Program, but with an appointment external to the Department or to the Institution, may be approved to serve as the primary research mentor. All students are expected to uphold the expectations (time spent in lab, completion of research experiments, grant and manuscript writing, and other duties) that are established between the research mentor and student. Failure to do so may result in withholding of pay or termination of the mentor/student assignment for the program.

Academic Honesty Policy

Academic honesty and integrity are crucial components in the educational and scientific arena. The Department of Biological Sciences maintains a no tolerance policy for all forms of dishonesty within its graduate programs. This includes, but is not limited to, the use of any unauthorized assistance (cheating) on quizzes or exams, dependence upon the aid of unauthorized sources for completion of assignments (copying from others), and plagiarism, which is the presentation (paraphrased or directly copied) of the work of others as if it is your work, without clear acknowledgement of the source in the composition of papers and other assignments. This applies to gradable coursework as well as non-gradable works (grant proposals, manuscript and dissertation writing, etc). Cheating, copying, plagiarism, and any other forms of academic dishonesty, at any level are intolerable, and may result in the dismissal of the student(s) involved from all graduate programs within the Department of Biological Sciences. Cases of Academic Dishonesty may be reported to the Department's Graduate Programs Committee, depending on their severity, after evaluation individually by the instructor.

In instances where the dishonesty is in dispute and/or ambiguous, or at the request of the instructor and/or student(s) involved, the Graduate Programs Committee will convene a hearing to decide if dishonesty has occurred. The student(s) and instructor involved will individually present their perspectives and evidence to the GPC and then be excused while the GPC deliberates. If the GPC finds that dishonesty has occurred, the student(s) involved will receive a grade of **F** in that course but be allowed to complete the semester and then be dismissed from all graduate programs within the Department of Biological Sciences.

Any decision resulting in dismissal due to academic dishonesty may be appealed as follows:

1. Graduate students should file, in writing, the complaint or appeal to the Chair of the Department who will review it with the Graduate Programs Committee for resolution. The student shall receive a reply within 10 working days;

2. If the disposition is not favorable, the graduate student may appeal to the Associate Dean of Academics for the College of Agriculture, Natural Sciences, and Technology, by submitting the previous appeal documents, the response, and any additional relevant information. The Dean shall reply to the student within 10 working days. The last appeal will be to the Dean of the Graduate School.

If the offending student is supported by any grants, the stipend will cease immediately following a negative decision from any appeal(s). All cases of academic dishonesty, regardless of their outcome, will be documented in a confidential file in the Department Chair's office. Only the Department Chair and GPC Chair will be granted direct access to this file.

Professional and Social Conduct
It is expected that each graduate student in the Department of Biological Sciences conduct themselves in a professional manner. This includes treating colleagues, faculty, and staff with courtesy and respect; proudly representing the Program, Department, and University at all off-campus events (i.e., scientific conferences, recruitment efforts, etc.); and, contributing to the surrounding community in a positive manner. Unprofessional conduct, sexual harassment, or similar situations will be addressed on a case by case basis, and may result in the student's recommendation for dismissal to the Department Chair and Graduate Dean.

THESIS DEFENSE
A **completed** thesis has to be provided by the student to the Dissertation Committee at least two weeks prior to the scheduled defense date (current DSU policy calls for three weeks prior). The graduate student will not be allowed to proceed to the oral presentation and defense of the thesis until the thesis committee has been furnished with a **complete** dissertation document. The graduate student will present the thesis as an hour-long seminar open to the department and university community. This will be followed by a closed meeting with the Thesis Committee for a question and answer session. To pass the dissertation defense, **all** Thesis Committee members must concur that **all** conditions for degree conferral have been met. **Successful completion of the MS degree requires the signatures of all Thesis Committee members.**

The Committee has five alternatives: (a) to accept the thesis without any recommended changes, and for all members to sign the approval page; (b) to accept the thesis, subject to the student making the recommended changes, and all Committee members, except the chairperson, sign the approval page, with the chairperson responsible for checking the revised thesis to ensure the changes were made, and signing approval at that time; (c) to recommend revision to the dissertation, but not to sign until the revised thesis has been submitted to and reviewed and approved by the Committee members; (d) to recommend revision of the thesis and a second meeting of the Committee with the student to review the dissertation and complete the defense; or (e) to determine the thesis, including its defense, to be unsatisfactory, and therefore the student fails. The Committee chairperson will communicate the decision to the student and, except for alternatives (a) and (e), the expected time period for completing the revisions and process. The following is a partial list of what constitutes a deficient MS thesis that are likely to result in an unfavorable recommendation:

- the oral presentation does not thoroughly and clearly describe the thesis with appropriate background and interpretation of results.
- the oral presentation demonstrates an unfamiliarity with the research project and/or data presented.
- any other clear indication that the student is not familiar with the content and/or subject matter of their research project(s).

Requirements for Graduate Thesis
The dissertation, its defense, and all related procedures are to be ***completed the due dates set forth by the School of Graduate Studies and Research*** for that particular semester.

Students must register for Thesis or Dissertation credit hours while working on their thesis. If a student needs additional time to complete the dissertation, the symbol "Q" ('thesis continuing') will be assigned for their dissertation grade until the dissertation is completed. The student must continue

to register for thesis work as long as active work on the thesis continues, or until the thesis is approved by the Thesis Committee. Upon completion, a letter grade will be retroactively assigned by the student's advisor. If a student has completed all course requirements and doctoral research, but has not defended their dissertation, the student should register for *Sustaining Thesis* while completing the writing and defending of the dissertation. ***Students must be registered and enrolled in the University to be awarded a degree.***

Degree Conferral

Students must have the dissertation completed and approved prior to the end of the term in which he/she expects to graduate as described above. All dissertation requirements set by the Graduate School must be met.

Doctor of Philosophy (PhD) Degree in Neuroscience

This handbook is a guide to the Neuroscience graduate program leading to the Doctor of Philosophy (PhD) degree offered by the Department of Biological Sciences at DSU. This handbook will clarify departmental and program specific policies, and direct you to other policies, regulations, deadlines, etc. pertaining to the DSU School of Graduate, Adult, and Extended Studies (SGAES) University policies are not replaced by the policies below; but are clarified as they relate to the Neuroscience doctoral program. **The PhD in Neuroscience** provides students with an opportunity to earn a doctoral degree in this fast-growing and opportunity-rich area of biology. DSU provides students with a competitive environment that fosters the progression towards a PhD in Neuroscience in order to successfully compete in the professional arena. *For DSU policies set forth by SGAES, such as transfer of credits, submission of forms, thesis development, and probation, dismissal, and withdrawal, please refer to their website:* https://sgaes.desu.edu/

Admission Criteria

Admission is considered for applicants who have submitted a complete application, and who meet all admission criteria as outlined below. Considering that there are a limited number of seats, will be evaluated on a competitive basis by the Graduate Program Committee based on the following:

Personal Statement. The personal statement must demonstrate research experience, scientific writing capacity, scientific reasoning and critical thinking, and goal-oriented and progressive thinking that links previous experience with both short-term and long-term academic and professional goals.

Transcript. Minimum transcript criteria include a 3.0 overall GPA, Bachelor's Degree conferred in Biology or similar field. Pre-requisite courses include General Biology, General Chemistry, General Physics, Cell Biology, Genetics, Molecular Biology, Statistics, Biochemistry.

GREs. GRE Scores for the General Test must reflect an overall percentile score of 100, with a minimum percentile score of 30 within the three content areas (Verbal Reasoning, Quantitative Reasoning, and Analytical Writing). Discipline-specific GREs (e.g. biology) are not considered for evaluation.

Three Letters of Recommendation. Strong letters of recommendation are those that indicate the reviewer's support of the applicant in terms of their academic strength, personal character, and academic potential of the applicant.

Financial Support

The department admits a limited number of students to the graduate programs so that they can be supported with tuition scholarships and research stipends from grants; however, funding is not guaranteed upon admission. Admission without funding is not usually a viable option, unless the student has a formal financial commitment letter from a faculty sponsor from the Biology department. The program is considered a career endeavor. In some cases, students will be partially supported by teaching assistantships. In all cases students are expected to focus full-time on their studies and research. No student enrolled in the PhD program and supported financially through DSU will be allowed to take up employment elsewhere without permission from advisor, GPC and department chair.

Requirements

The program will require at least sixty (60) credit hours, with forty-two (42) from coursework and 18 from dissertation research. Notwithstanding the difference in credit requirements for coursework and research, the

latter forms the vital backbone of the degree, as elaborated further on. The program requires completion of all required coursework according to University criteria for graduate students (see below) and the completion and defense of a research dissertation supervised by a faculty mentor. The research may be conducted in a neuroscience lab within the Department of Biological Sciences or another lab at DSU or another research institution, if the research is considered relevant to the field. If the student conducts research at another institution, they will have a dissertation research advisor at that institution and a faculty advisor at DSU. The program is designed so that completion is possible in four academic years plus four summers of full-time dedication to research. However, the amount of time can vary and will depend upon the progress of work and approval of the student's research mentor and dissertation committee.

An extremely critical component of the doctoral degree requires laboratory-based research (including experimental design, execution of experiments, data collection and analyses) along with course work. Newly-admitted students are enrolled in a professional development course (BIOL-590) which includes rotations in laboratories of faculty advisors participating in the PhD Neuroscience Program. Students that are funded directly by a faculty advisor (as compared to those awarded institutional funding) are recommended, but not required, to complete the lab rotation process in accordance with current department guidelines. These rotations are completed by the middle of the first semester, allowing students and mentors to initiate a professional partnership towards the doctoral degree. Besides the required courses, students will select specific elective courses in consultation with their research mentors, and depending on the direction of their research project. The table below is a generic timeline of required and elective courses for students in the Ph.D. Neuroscience Program.

COURSE COMPONENT for PhD In Neuroscience Program:

Year 1 Fall Semester			Year 1 Spring Semester		
Course	Course Name	Cr	Course	Course Name	Cr
BIOL 503	Introduction to Neuroscience	3	BIOL-xxx	Foundation course-II	3
BIOL 590	Professional Development I	3	BIOL505*	Biostats	3
BIOL-xxx	Foundation course-I	3	BIOL 591	Professional	2
			BIOL 690	Thesis Research	2
	Total Credits	9		Total Credits	10

Year 2 Fall Semester			Year 2 Spring Semester		
Course	Course Name	Cr	Course	Course Name	Cr
BIOL-xxx	Neuroscience Elective	3	BIOL-xxx	Neuroscience Elective	3
BIOL-xxx	Biology Elective	3	BIOL-xxx	Biology Elective	3
BIOL 690	Thesis Research I	2	BIOL 691	Thesis Research II	2
	Total Credits	8		Total Credits	8
Year 3 Fall Semester			Year 3 Spring Semester		
Course	Course Name	Cr	Course	Course Name	Cr
BIOL-xxx	Neuroscience Elective	3	BIOL-xxx	Open Elective	3
BIOL-xxx	Biology Elective	3	BIOL 800	Dissertation Research	3
BIOL 603	Strategies for Effective Teaching in Biology	1			
BIOL 692	Thesis Research III	2			
	Total Credits	9		Total Credits	6
Year 4 Fall Semester			Year 4 Spring Semester		
Course	Course Name	Cr	Course	Course Name	Cr
BIOL xxx	Open Elective	3	BIOL 800	Dissertation Research	4
BIOL 800	Dissertation Research	3			
	Total Credits	6		Total Credits	4

	Total Credits: 60

Additional notes and requirements concerning coursework:

A. Courses listed in the above table with a definite course number are required.
B. *AGNR501 and AGNR551 are considered equivalent to BIOL505
C. Foundational courses: May take clear 2 out of 3 from BIOL 520, 521 and 650
D. Neuroscience electives include BIOL 515, 610, 612, 622, 653
E. Biology electives include any graduate level course offered by the Department of Biology or other CAST departments with advisor approval.
F. Open electives include graduate level courses offered by Department of Biology or by other departments, with permission and approval of the instructor and thesis advisor.

G. Candidacy Requirement: Proposal Defense with Thesis Committee, Passing Qualifier Exams 1 and 2, teaching experience (approved by Research Advisor) submission of examination results, research plan with Candidacy application to the School of Graduate Studies
H. Upon completion of above coursework, a student may register for sustaining thesis (BIOL698) until successful public dissertation presentation and oral defense of research thesis.

A partial list of electives for Neuroscience doctoral program (3 credits each):
BIOL-511 Pharmacology
BIOL-542 Biology of Aging
BIOL-605 Cell Morphogenesis
BIOL-515 Molecular Foundations of Behavior
BIOL-625 Immunology
CHEM-521 Biochemistry
BIOL-651 Proteins: Structure and Function
BIOL-575 Molecular Genetics & Genomics
BIOL-653 Nervous System Disorders
BIOL-600 Molecular Endocrinology

In addition to the electives listed above, other graduate courses at DSU may count towards elective credits pending prior approval by the dissertation advisor, departmental graduate program director, and the Chair of the Department of Biological Sciences. Please note that the department may not be able to offer these courses on a regular basis, therefore, students are advised to refer to the dynamic catalog for specific semesters.

Amount of Credit Accepted for Transfer
Transfer of credits adheres to the standards of Graduate Programs at Delaware State University. A maximum of nine (9) credit hours can be transferred into the program, after approval. A request to the SAGES to waive the 9-credit limit in cases of students that have been accepted into the PhD program after being awarded an MS degree from DSU Department of Biological Sciences or similar DSU graduate program. Note that MS students will not automatically be transferred into the PhD program upon completion of the degree; the standard application process applies to be considered for admission by the Graduate Program Committee.

Lab Rotations
Students awarded institutional funding will rotate through three or more faculty research labs, based on student preference and current student load in each lab considered for rotation. Once the rotations are completed, the Graduate Program Committee will review the lab rotations and will consider the student and mentor preferences before placing a student in a research lab for their degree program.

Mentored Research
Graduate students are to complete a research dissertation under the direction of a primary research mentor. This mentor is typically a member of the DSU Department of Biological Sciences. With approval by the GPC, faculty conducting research in the scope of the Program, but with an appointment external to the Department or to the Institution, may be approved to serve as the primary research mentor. All students are expected to uphold the expectations (time spent in lab, completion of research experiments, grant and manuscript writing, and other duties) that are established between the research mentor and student. Failure to do so may result in withholding of pay or termination of the mentor/student assignment for the program.

Teaching Experience: All doctoral candidates are to complete a one credit 'strategies in effective teaching" course. For this course, students will work with a faculty instructor to develop and deliver a lecture along with

an assessable assignment and quiz reflecting the material presented to the class. The assessable items will also include development of a rubric to be used for grading the class assignment.

Academic Honesty Policy

Academic honesty and integrity are crucial components in the educational and scientific arena. The Department of Biological Sciences maintains a no tolerance policy for all forms of dishonesty within its graduate programs. This includes, but is not limited to, the use of any unauthorized assistance (cheating) on quizzes or exams, dependence upon the aid of unauthorized sources for completion of assignments (copying from others), and plagiarism, which is the presentation (paraphrased or directly copied) of the work of others as if it is your work, without clear acknowledgement of the source in the composition of papers and other assignments. This applies to gradable coursework as well as non-gradable works (grant proposals, manuscript and dissertation writing, etc). Cheating, copying, plagiarism, and any other forms of academic dishonesty, at any level are intolerable, and may result in the dismissal of the student(s) involved from all graduate programs within the Department of Biological Sciences. Cases of Academic Dishonesty may be reported to the Department's Graduate Programs Committee, depending on their severity, after evaluation individually by the instructor.

In instances where the dishonesty is in dispute and/or ambiguous, or at the request of the instructor and/or student(s) involved, the Graduate Programs Committee will convene a hearing to decide if dishonesty has occurred. The student(s) and instructor involved will individually present their perspectives and evidence to the GPC and then be excused while the GPC deliberates. If the GPC finds that dishonesty has occurred, the student(s) involved will receive a grade of **F** in that course but be allowed to complete the semester and then be dismissed from all graduate programs within the Department of Biological Sciences.

Any decision resulting in dismissal due to academic dishonesty may be appealed as follows:

1. Graduate students should file, in writing, the complaint or appeal to the Chair of the Department who will review it with the Graduate Programs Committee for resolution. The student shall receive a reply within 10 working days;

2. If the disposition is not favorable, the graduate student may appeal to the Associate Dean of Academics for the College of Agriculture, Natural Sciences, and Technology, by submitting the previous appeal documents, the response, and any additional relevant information. The Dean shall reply to the student within 10 working days. The last appeal will be to the Dean of the Graduate School.

If the offending student is supported by any grants, the stipend will cease immediately following a negative decision from any appeal(s). All cases of academic dishonesty, regardless of their outcome, will be documented in a confidential file in the Department Chair's office. Only the Department Chair and GPC Chair will be granted direct access to this file.

Professional and Social Conduct

It is expected that each graduate student in the Department of Biological Sciences conduct themselves in a professional manner. This includes treating colleagues, faculty, and staff with courtesy and respect; proudly representing the Program, Department, and University at all off-campus events (i.e., scientific conferences, recruitment efforts, etc.); and, contributing to the surrounding community in a positive manner. Unprofessional conduct, sexual harassment, or similar situations will be addressed on a case by case basis, and may result in the student's recommendation for dismissal to the Department Chair and Graduate Dean.

Annual Review

All graduate students pursuing a PhD degree will undergo an annual review. **The first component** of this review will include a listing of students' course grades for the past academic year as well as a summary of student-stated goals for the next year and progress on goals from the previous year. **The second component** of the annual review will include an evaluation by the students' Dissertation Advisor. The Student and Dissertation Advisor Annual Review Forms are included in Appendix A.

This review is designed to provide students with guidelines as to what the expectation is, in terms of performance, to remain and succeed in the graduate program. This will help guide each student and address their strengths and weaknesses, and will facilitate students' performance so that they will remain in good standing in the program. It can include recommendations for course work beyond the curriculum requirements.

The Graduate Program Committee will evaluate each graduate student's annual review every summer (until candidacy is reached). In the event that a student is found not to be in good standing, the student and Dissertation Advisor must meet with the Graduate Programs Committee to discuss potential actions to be taken (for example: deny opportunities to serve as a departmentally funded TA, discontinue RA stipend/tuition waiver benefits, dismissal from the advisor's lab, or termination from the program).

Advancement to Candidacy

All PhD students are accepted as pre-candidates to the doctoral program. Advancement to Candidacy requires completion of the following items, in order:

1. Plan of Study
2. Establishment of a Dissertation Committee
3. Dissertation Proposal Defense with Dissertation Committee
4. Passing grade of QE1
5. Passing grade of QE2
6. Advancement to Candidacy
7. Completion of Strategies in Effective Teaching
8. Publication requirement: Students must have a minimum of one first authored paper accepted in a peer-reviewed journal prior to scheduling a defense date. This manuscript should be approved by the stdent's research mentor and the thesis committee.
9. Audit and Application for Graduation
10. Dissertation final draft submitted to Dissertation Committee (2 weeks in advance of defense date)
11. Dissertation Defense
12. Dissertation final version submitted to graduate school

After successful completion of QE-2, a student is eligible for advancement to doctoral candidacy. It is important to complete all DSU Graduate School requirements and documents, adhering to set deadlines, and in consultation with your research mentor, Graduate Program Director, and Department Chair. It includes completing appropriate online documentation.
https://sgaes.desu.edu/admissions/current-students" https://sgaes.desu.edu/admissions/current-students

Students are expected to commit from four to six years to the program, in terms of year-round dedication to their laboratory research, coursework, and other expectations set forth by their primary research advisor, their dissertation committee, with sufficient progress approved by GPC Annual review of the student. A student may request consideration for early degree completion (upon 4 years in the program); however, the individual

must show clear evidence of exceptionality, demonstrated through the publication of at least two first authored original research articles in peer reviewed scientific journals.

Qualifying Exam: Part-1 (Critical content knowledge):
Graduate students receive 2 research articles relevant to different areas of Neuroscience from respected journals and encompassing multiple sub-areas (emphasizing the core and elective courses that the student has completed) in mid-May about a week after the Spring semester final exams. Students will have 2 weeks to thoroughly understand the articles, including details that may or may not be found in back-references, and all associated information relevant to the articles. The exam is administrated over 2 consecutive days (one day for each paper) and students are given 5 hours each day. The exam is graded by GPC QE-1 sub-committee using a standardized rubric, and results compiled and submitted to the Program Director and Department Chair with potentially one of 3 possible outcomes:

a. Pass and continue in the program
b. Pass conditionally with required remedial measures
c. Fail and be dismissed from the program

Qualifying Exam: Part-2 (Research proposal):
The second part of QE requires that the doctoral student writes and defends their research proposal. The topic will focus on their current and approved dissertation research proposal via their advisor, however at least one aspect addressed in this proposal must be related, yet a distinct and broad extrapolation, from their dissertation research. Students are expected to draft their proposal in a format consistent with a grant application and have at least two Specific Aims with clear objectives related to each aim. The proposal should contain a discussion of the background and significance for the project, and a detailed experimental design section including plans for data interpretation. Although there is no explicit minimum page requirement, it is expected that each proposal will have sufficient material in the Background and Significance section to give the project context and go into sufficient depth in the Experimental Design and Methods section to clearly describe the proposed experiments. Where appropriate, expected results should be discussed. Students can use the format and guidelines of a pre-doctoral NSF-GRFP or NRSA NIH proposal submission. However, the page range for the proposal is a minimum of 4 and a maximum of 10 pages (8.5x 11" page size, 12-point Times New Roman font, 1" margins on all sides, and must be single spaced to 1.5 spaced). Students will defend their research proposal orally, in the format of a formal, hour-long seminar, before the Committee <u>two weeks after submission of the final proposal</u>. This will be a closed presentation attended only by the Examination/Advisory Committee. The presentation will be immediately followed by a question and answer session between the committee and the student. Based on the written proposal and its oral presentation, the Committee will make one of four recommendations: pass, pass with re-defend, pass with re-write and re-defend, or fail. This recommendation will be communicated to the student by the end of the semester. Students will also be provided with a summary statement. If the student does not successfully complete part 2 of the QE, he/she is required to exit the PhD program. If the student does not pass the qualifier exams, the committee may recommend completing the requirements for a terminal Master's degree along with conditions, if any.

DISSERTATION DEFENSE
The **complete** dissertation will be given to the Dissertation Committee <u>at least two weeks prior</u> to the scheduled defense date (current DSU policy calls for three weeks prior). The graduate student will not be allowed to proceed to the oral presentation and defense of the dissertation until the thesis committee has been furnished with a **complete** dissertation document. The graduate student will present the dissertation as an hour-long seminar open to the department and university community. This will be followed by a closed meeting with the Dissertation Committee for a question and answer session. To pass the dissertation defense, **all** Dissertation Committee members must concur that **all** conditions for degree conferral have been met. **Successful**

completion of the PhD degree requires the signatures of <u>all</u> Dissertation Committee members.

The Committee has five alternatives: (a) to accept the dissertation without any recommended changes, and for all members to sign the approval page; (b) to accept the dissertation, subject to the student making the recommended changes, and all Committee members, except the chairperson, sign the approval page, with the chairperson responsible for checking the revised thesis to ensure the changes were made, and signing approval at that time; (c) to recommend revision to the dissertation, but not to sign until the revised dissertation has been submitted to and reviewed and approved by the Committee members; (d) to recommend revision of the dissertation and a second meeting of the Committee with the student to review the dissertation and complete the defense; or (e) to determine the dissertation, including its defense, to be unsatisfactory, and therefore the student fails. The Committee chairperson will communicate the decision to the student and, except for alternatives (a) and (e), the expected time period for completing the revisions and process.

If a student pursuing a PhD degree has advanced to candidacy but is deficient in one or more critical components of the dissertation, that student will have the option of pursuing the Master of Science in Cellular and Molecular Neuroscience degree offered by the Department of Biological Sciences. The following is a partial list of what constitutes a deficient PhD dissertation for a student who has advanced to candidacy. These deficiencies are likely to result in a recommendation that the student pursue the Master of Science in Cellular Neuroscience degree:

- the oral presentation does not thoroughly and clearly describe the dissertation with appropriate background and interpretation of results
- the oral presentation demonstrates an unfamiliarity with the research project and/or data presented
- any other clear indication that the student is not familiar with the content and/or subject matter of their research project(s)

<u>Requirements for Graduate Dissertation</u>

The dissertation, its defense, and all related procedures are to be ***completed the due dates set forth by the School of Graduate Studies and Research*** for that particular semester.

Students must register for Thesis or Dissertation credit hours while working on their dissertation. If a student needs additional time to complete the dissertation, the symbol "Q" ('thesis continuing') will be assigned for their dissertation grade until the dissertation is completed. The student must continue to register for dissertation work (minimum of 3 hours, but up to 6 to maintain full-time status) as long as active work on the dissertation continues, or until the dissertation is approved by the Dissertation Committee. Upon completion, a letter grade will be retroactively assigned by the student's advisor. The student is eligible to receive a maximum of six (6) hours credit toward graduation as a result of thesis work course registration. If a student has completed all course requirements and doctoral research, but has not defended their dissertation, the student should register for *Sustaining Thesis* while completing the writing and defending of the dissertation. ***Students must be registered and enrolled in the University to be awarded a degree.***

<u>Degree Conferral</u>

Students must have the dissertation completed and approved prior to the end of the term in which he/she expects to graduate as described above. All dissertation requirements set by the Graduate School must be met.

GRADUATE STUDENT PROGRESS REPORT

DSU Department of Biological Sciences

Note that research advisors may modify the format as needed.

Student_____Advisor_____Date_____

To be completed by the advisor (mentor) on an annual basis:

Date of most recent committee meeting:_____

Dissertation Committee members:_____, Advisor

_____ _____

_____ _____

Additional Member for Defense (expert external to DSU): _____

Rank the student from 1 to 4 (1 = insufficient; 2 = average, 3 = proficient); and write comments as needed. If the student is given a 1 or 2, make suggestions to improve.

Is the student making adequate progress?	1	2	3
Is the expected date of completion realistic?	1	2	3
Is the student upholding your workload expectations?	1	2	3
Does the student show up for work on time, and is in the lab on a daily basis, unless an excused absence has been arranged?	1	2	3
Are the student's communication skills acceptable? (i.e. responds to email and phone calls in a regular and timely fashion, effectively communicates research progress, willingness to discuss research effectively with other committee members and / or collaborators, etc.)	1	2	3
Does the student maintain proper lab etiquette (clean workspace, attention to detail, lab safety, lab books organized and detailed)	1	2	3

Does the student maintain good research records (datasheets and analyses are well-organized and labeled and easy to follow, photos are properly

labeled, etc.)	1	2	3
Does the student exhibit collegiality towards others students and faculty (willingness to help participate with other projects)	1	2	3
Does the student exhibit diligence, is task-oriented, and meets deadlines?	1	2	3
Is the student becoming an independent thinker; able to troubleshoot problems in the lab, and able to effectively expand their knowledge on their project?	1	2	3
Is the student developing scientific writing skills; demonstrated by thesis proposal, grant and manuscript writing?	1	2	3
Does the student regularly participate in seminars and journal club?	1	2	3

Future goals for the student:

Concerns that need to be brought to the attention of the Graduate Committee, Graduate Program Director, and / or Department Chair:

Advisor's signature_____Date_____