

Department of Psychological & Brain Sciences

Graduate Program Policy and Handbook

2021-2022



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Part I. Program Information

Overview

The Department of Psychological & Brain Sciences (PBS) at the University of Delaware offers a Doctoral Degree program in Psychological & Brain Sciences, with concentrations in Behavioral Neuroscience, Clinical Science, Cognitive Psychology, and Social Psychology. The Department of Psychological & Brain Sciences also offers Graduate Certificates in Developmental Processes, Quantitative Analysis, and Social, Cognitive, and Affective Neuroscience (SCAN). Certificate programs are open to any current graduate student in any program at the University of Delaware. Each concentration and certificate program has required courses and unique plans of study. Students in the doctoral program can also earn an optional Master's Degree by submitting a thesis. The objective of the doctoral program is to train researchers who will broaden the base of scientific knowledge upon which the discipline of psychology rests. Major emphasis is given to preparation for research. Other emphases include preparing students for teaching and for the practice of Clinical Science. The clinical training program is accredited by the American Psychological Association and the Psychological Clinical Science Accreditation System.

In addition, The Department of Psychological & Brain Sciences at the University of Delaware affords exceptional undergraduate Neuroscience majors already enrolled at the University an opportunity to earn both a Bachelor's Degree and a Master's Degree in Neuroscience in just five years of study, with a savings of about 50% in expenses and time required for a traditional Master of Science Degree. The 4+1 BS/MS in Neuroscience program requires students to fulfill coursework for the B.S. in Neuroscience, coursework for the M.S. in Neuroscience, and complete a research-based master's thesis under faculty supervision.

The Director of Graduate Education meets with incoming graduate students prior to the first class of the fall semester to outline the policies and requirements described in this document. Students should also look at the University of Delaware: Graduate Catalog, which can be found online at <http://catalog.udel.edu/> (choose Graduate Catalog in drop down menu).

Research Facilities

The main office of the Department of Psychological & Brain Sciences is located in 108 Wolf Hall. The Department has excellent laboratory and computer facilities to support graduate training. The research space, much of it newly designed and renovated, allows for research in animal behavior, cognitive processing, child development, electrophysiology, pharmacological and physiological bases of animal behavior, psychophysiology, small group behavior, interpersonal communication, and psycholinguistics. All laboratories have several computers and terminals that link the Department to the University-wide computing system. Training for clinical practice is provided in a separate facility containing consultation rooms designed for supervision of testing and therapy. The main office and administrative staff are located in 108 Wolf. Both the Department Chair and Director of Graduate Education have offices in Wolf Hall. Student mailboxes are located on the second floor of Wolf Hall, in room 201.

Part II. Admission

Doctoral Program

Students are admitted directly to the doctoral program. A combination of criteria are used in evaluating candidates for admission to graduate study, and these include scores on the general GRE (Graduate Record Examination), undergraduate and/or graduate GPA, letters of recommendation, personal statement, research experience, and a personal interview.

International students whose language of education is not English must also arrange to have original Test of English as a International Language (TOEFL) scores submitted; a minimum score of 100 on the IBT (600 on the paper-based test, or an equivalent IELTS score of 7.0) is required for admission. International students who hold a university degree from an institution in an English-speaking country are not required to submit TOEFL scores. International students whose native language is not English and who are awarded a teaching assistantship must successfully complete the University's International Teaching Assistant (ITA) program.

Admission to the doctoral program is competitive. All those who meet these requirements are not guaranteed admission, nor are those who fail to meet the requirements necessarily precluded from admission, if they offer other appropriate strengths. Undergraduate research experience is looked upon very favorably. An undergraduate degree in Psychology is not required for admission, but students may be required to make up deficiencies in their background by enrolling in appropriate courses.

All applications need to include a personal statement. In addition to discussing areas of interest, career goals, and how the Psychological & Brain Sciences program at UD will help a student reach these goals, the personal statement should include information regarding prior research experience (when applicable, and the length of experience and type [non-human animals - specify species - or human participants]). Further, applicants should designate up to 3 potential primary faculty advisors, in order of preference.

The deadline for applications is December 1.

4+1 MS Program

Applicants to this program are recommended to have at least a cumulative 3.0 GPA. Prior to applying, a student must identify a faculty member who agrees to serve as the 4+1 research mentor. We recommend that you work in that faculty member's lab for two semesters prior to submitting your application. This will establish a basis for that faculty member's decision to become your 4+1 research mentor. Once a faculty member has agreed to mentor your 4+1 research, you may then submit your application. The application packet should include 3 letters of recommendation from faculty at the University of Delaware, one of which must be from your 4+1 research mentor. Your application packet should also include a University of Delaware Transcript, and a two page Statement of Purpose. This statement should discuss anything that might be relevant to an admissions decision and address: a) why you wish to be admitted to the 4+1 MS Program in

Neuroscience, b) your preparation for the program, c) a brief summary of the research project you expect to complete, and d) your future plans after receiving the Master's Degree.

The GRE is not required for admission to the 4+1 Program in Neuroscience. However, international students whose language of education is not English must also arrange to have original Test of English as a Foreign Language (TOEFL) scores submitted; must complete the TOEFL with a score of 600 or higher on the paper-based test or 100 or higher on the Internet-based test. Previous education, training, or residence in the U.S. does not exempt international students from these requirements. Students who need further training in English prior to attending graduate school may apply for admission through the University of Delaware English Language Institute's Conditional Admission Program. International students whose native language is not English and who are awarded a teaching assistantship must successfully complete the University's ITA program.

Admission to the 4+1 program is competitive. Those who meet these requirements are not guaranteed admission, nor are those who fail to meet the requirements necessarily precluded from admission, if they offer other appropriate strengths.

The deadline for applications is December 1 of the senior year.

Part III. Financial Support

Doctoral Program

Support for the first year of study may come from a Teaching Assistantship (TA), a Research Assistantship (RA), or a Fellowship. The TA and RA each require an average of 20 hours of service per week for the period from 9/1-5/31. RA support may also be available during the summer months based on the primary advisor's or a faculty member's grant or contract. In most cases, a student awarded a Fellowship is excused from assistantship duties so that they may devote full time effort to research and scholarship. Fellowships can be awarded by the university or external granting organizations (e.g., NIH Predoctoral fellowships).

Financial awards in our program are commonly renewed for four additional years either in the form of a TA, RA, or some other award/combination. The decisions on the types of awards are dependent upon available TA lines, the duration of ongoing grants, the success of pending grant applications, as well as the recommendation of the faculty during mid- and end-of-year evaluations of performance.

With exceptions for fellowships and unusual circumstances as per permission of the Director of Graduate Education, PBS doctoral students are required to have a minimum of two semesters of Department supported TA or teaching experience to graduate.

Undergraduate teaching is an important part of most academic careers. Graduate students in PBS can develop their teaching skills in the following ways:

A. Serving as teaching assistants (TAs) for undergraduate courses taught by UD faculty.

B. Taking pedagogy classes, such as *PSYC 840: Teaching Practicum*, *UNIV 600: Learning*, or *UNIV 601: Pedagogy*.

C. Being Instructor of Record for an undergraduate course. If students wish to develop teaching skills and be competitive for jobs that require excellent teaching, they need to have experience as an instructor of record. We offer two opportunities for this:

C.1. By serving as a "teaching fellow" (*PSYC 841*) Teaching Fellows develop a course syllabus over the summer and meet a few times for feedback with a faculty supervisor. In the Fall, there is a weekly meeting where fellows discuss their successes and challenges. The faculty supervisor also visits each fellow's classroom at least twice. Teaching Fellows earn a 20-hour per week TA stipend for the academic year.

C.2. By serving as instructor of record during special sessions (e.g., Winter and/or Summer Terms). To apply to be instructor of record during special sessions, graduate students should respond to invitations from the Director of Undergraduate Education. The Director of Undergraduate Education will send invitations during the summer (for Winter session) and during the fall (for the two Summer sessions). Contractually, full-time faculty have highest priority to teach courses during special sessions. When we select graduate students to teach during special sessions, we give highest priority to students who have earned their Master's Degree and have also taken a graduate pedagogy course. Graduate students who teach during summer or winter sessions will receive S-Contract compensation. Graduate students should submit evidence of their teaching performance to be included in their annual evaluation. In some cases, students may teach a course for pay after consulting with their advisor.

We believe that graduate students play a crucial role as contributors to the dual teaching and research mission of our department. The Department encourages graduate students to serve as instructors of record (IOR) for one or more undergraduate PBS courses and several graduate students have done this over the years as part of TA duties. The benefits of serving as IOR include obtaining teaching experience and associated documentation of IOR experiences as well as the development of organizational and oral presentation skills for the job market. Although most TAs who are IORs will typically volunteer for this experience, we have realized that because of financial pressures, retirements, and sabbaticals that vary from year-to-year, there may be years where we need to ask 4th and 5th year (and above) graduate students to serve as IOR to fulfill their TA duties. In this situation, we aim to have this be for one semester of the year, and the Director of Graduate Education and Director of Undergraduate Education will work flexibly with the graduate students to give them some option of course as well as the days and times their classes will meet. Students would be assigned to teach only one class either in the Fall or Spring semester. Faculty who have taught various courses have contributed to a spreadsheet listing the names and contact information of faculty who are willing to offer syllabi, assignments, exams, pre-recorded lectures, and mentorship, which will be made available.

4+1 MS Program

Neuroscience Majors who are receiving scholarships or other forms of financial aid as an undergraduate are advised that such aid applies only toward the completion of the Bachelor's Degree or to the first four years of their undergraduate studies (which may nonetheless include taking some graduate courses during their senior year). Thus, students who pursue the 4+1 Program in Neuroscience may want to seek support for their Summer Research Residency and Fifth Year of Graduate Study through student loans and other financial aid. A limited amount of support is sometimes available to 4+1 Program students through the research support of their faculty mentor (e.g., RA), or on a competitive basis from other sources (such as a TA).

Travel Awards

Contingent upon availability of funds, doctoral and 4+1 students may apply once per year to the Department of Psychological & Brain Sciences for a travel award to a professional meeting (travel of ≥ 250 miles – up to \$500; travel of < 250 miles – up to \$300). Application guidelines and forms may be found on the Department's shared Google Drive (PBS Forms and Documents). In addition, all students can apply twice during their academic career for a Professional Development Award (up to \$500) from the Graduate College. You should apply for this award only if you are also applying for a travel award from the Department at the same time (Departmental cost-share is a requirement). Application guidelines for the Professional Development Award may be found at <http://grad.udel.edu/forms/>.

Additional funding opportunities are available via the following link: <http://sites.udel.edu/diversity/awards/>. A further source of travel funding, for Clinical doctoral students, is the Evelyn M. Fiorito Travel Award. Application guidelines for this award may be found on the Department shared Google Drive.

All students are encouraged to seek funding from external sources. All travel, especially International travel, must have prior approval by the student's faculty advisor and the student's UD Credit Card administrator. In addition, any international travel related to a grant must have approval from the Research Office; this includes Canada and Mexico. Approval is coordinated by the UD Credit Card administrator.

Department Allotments

Contingent upon availability of funds, the Department allocates \$150 for each doctoral and 4+1 student, each year, for miscellaneous research costs. The intent is that these funds will be used for things such as travel, society membership dues, conference registration, participant payments, and expendable supplies (pens, paper, chemicals, etc.). Unspent funds roll over from year to year. Students on their first year of clinical internship are allocated the \$150.

Dissertation Awards

Contingent upon availability of funds, the Department allocates two dissertation awards (of \$500 each) every year. The purpose of these awards is to cover costs related to students' doctoral research. The awards have to cover an urgent research expense that cannot be covered from other sources. These awards are open to students after they have successfully defended their dissertation proposal. One award is given during a Fall cycle (application deadline: September 15) and another is given during a Spring cycle (application deadline: February 15). Application guidelines for this award may be found on the Department shared Google Drive. Students need to submit a completed copy of the application form, a current CV (please designate publications or presentations for research completed at UD in blue font), and an itemized budget and detailed budget justification/research project summary to the Director of Graduate Education. The Graduate Committee selects awardees. Only one award can be given per student but unfunded applications can be resubmitted during later cycles. Applications that have secured matching contributions from other small-scale competitive extramural dissertation awards (e.g., from APA etc.) will be given very high priority. (Full graduate fellowships such as NIH or NSF fellowships, are not considered a match). Applications submitted to secure small-scale matching grants from extramural sources are also considered positively. Awards need to be spent by June 30th of the corresponding fiscal year; if a student graduates prior to that date, awards need to have been spent by the student's graduation date.

Part IV. The Doctoral Degree Program in Psychological & Brain Sciences

The information contained on pages 9-14 of section IV describes policies and procedures common to the four concentration programs in the Department of Psychological & Brain Sciences (i.e., department-wide policies and procedures), while the information contained on pages 14-33 of section IV describes policies and procedures specific to each of the four concentration programs (i.e., program-specific policies and procedures). The language used to describe department-wide policies and procedures is meant to be inclusive of and align with the language used to describe program-specific policies and procedures, while often being broader and more general. When program-specific policies and procedures are narrower or more specific than the department-wide policies and procedures, students in that program are expected to follow program-specific policies and procedures for the program in which they are a student.

Primary Advisors

A student is admitted to pursue one of four concentrations: Behavioral Neuroscience, Clinical Science, Cognitive Psychology, or Social Psychology. Advisor selection is made before a student is admitted.

The primary advisor will work out a plan of research with the student and will provide guidance in course selection. The advisor/student relationship is one of mutual agreement. A student can change advisors within a concentration if either advisor or student believes that a change is advisable and if the new advisor agrees. Please notify the Director of Graduate Education of any change. Because a student is admitted to pursue their doctoral degree in one of the four main concentrations (Behavioral Neuroscience, Clinical Science, Cognitive Psychology, Social Psychology), the student cannot change concentrations at will. A change in

concentration requires application to and acceptance by the new concentration, along with financial support commitments from the new concentration.

Advisory Committee

Each doctoral student will form an Advisory Committee that will supervise and advise students through their progression towards the degree. This committee should consist of 3 professors in the concentration or Department (primary advisor plus two other faculty members) and should be formed by the end of the first year. The membership of the Advisory Committee will be determined by the student and student's Advisor. For students in the Clinical Science concentration, the entire clinical faculty typically forms the basis of their Advisory Committee. If a student decides it is appropriate to change the composition of the Advisory Committee, the student will seek counsel from the Advisor, and the Advisor must agree to the change. No change in membership is permitted within 30 days of the Qualifying Examination.

Upon forming an Advisory Committee, all students should receive an official confirmation letter documenting committee membership from their Primary Advisor. A copy of the letter should be provided to the Graduate Academic Advisor for placement in the student's file. A template for the letter is posted on the Department shared Google Drive (Grad Student Forms > Advisory Committee). Any changes in membership need to be documented with the Graduate Academic Advisor.

Coursework and Distribution

Each concentration has specific requirements. Across all concentrations, students must complete at least 5 core courses, at least two semesters of Graduate Statistics, one semester of *PSYC 867: Professional Development Seminar*, at least 2 electives (one of which needs to be outside of the concentration or Department), and first-year and second-year research (enrolling in *PSYC 868: Research*). In addition, students in all programs are required to attend concentration seminars (Brown Bags) and Departmental colloquia each semester, enrolling in *PSYC 800: Psychological & Brain Sciences Colloquia* for 1 credit.

Full-time students pursuing the Doctoral Degree in Psychological & Brain Sciences are required to take at least 9 credits each semester, distributed among research and/or courses/seminars. Generally, a maximum load is 12 graduate credit hours; however, additional credit hours may be taken with the approval of the student's adviser and the Graduate College. When registering for research credit, students will need to select their advisor's name as well as specify the number of research credits for that semester. *PSYC 868: Research* can be enrolled in a maximum of 6 credits in a semester. Once a student has successfully completed all course requirements but has not yet met all the stipulations for passing into candidacy, the student should enroll in *PSYC 964: Pre-candidacy Study*. Students that have met all course, first- and second-year research, and qualifying exam requirements should apply for Doctoral Degree Candidacy. The Doctoral Degree Candidacy Recommendation Form can be found at: <http://grad.udel.edu/forms/>. If the student registered in

PSYC 964: Pre-candidacy Study is admitted to candidacy before the end of the free add/drop period, *PSYC 964: Pre-candidacy Study* credits will transfer to *PSYC 969: Dissertation Research* credits. Once a student has met all the stipulations of candidacy and becomes classified in candidacy, the student is required to register for 9 credits of *969 Dissertation Research*. Once 9 credits of *969: Dissertation Research* are completed, students should register in *UNIV 999: Doctoral Sustaining* (UNIV 999) until the Graduate College accepts the Dissertation. Sustaining status has the advantage of requiring a minimal registration fee each semester to retain graduate student status. All students, including sustaining students, must be registered in the semester in which the degree is officially conferred. Sustaining registration is required for summer and winter session only if the degree is awarded at the conclusion of the summer or winter session. Sustaining fees assessed during those semesters are the student's responsibility if they are not on contract.

Students entering the doctoral program with a Master's Degree will not be able to transfer coursework from another program towards their PhD Degree if that coursework counted toward a prior degree (undergraduate or graduate). If there is substantial overlap between prior coursework used for a prior undergraduate or graduate degree and that required for the PhD Degree in our program, students may provide the Director of Graduate Education with syllabi for courses that they had already taken that they believed were similar to courses that we require. The Director of Graduate Education then will ask faculty members who teach our "comparable" course to make a determination about whether the previously taken courses are indeed comparable. If the instructor of our "comparable" course deems that the previously taken course is not comparable, then students are required to take our course. Otherwise, in consultation with the Director of Graduate Education, a Course Substitution form can be submitted to the Graduate College: http://www1.udel.edu/gradoffice/forms-new/course_substitution.pdf. A substituted course does count toward the degree and does count in the total credits for the degree.

First-year and Second-year Research

In addition to course work, common to all concentrations is first-year research (students enroll in *PSYC 868: Research*) that forms the basis of an oral presentation before all concentration faculty and a written report that is evaluated by concentration faculty. The oral presentation will be delivered in a concentration Brown Bag in the second semester (Spring semester of the first year). The written report will be submitted to the student's Advisory Committee by June 15th of the first year. The Advisory Committee may distribute the report to all concentration faculty for additional feedback. The report shall either focus on experimental work completed during the first year or the student's research proposal. A report based on experimental work should include an abstract, introduction, materials and methods, results, discussion, acknowledgements, and literature cited section. A proposal based on the student's idea and research plan should be formatted as a grant submission. The student's Advisory Committee will provide an evaluation of the written report and oral presentation by June 30th. If revisions on the written report are necessary, revisions are due by July 30th. Additional details regarding concentration-specific requirements for the first year project are provided in forthcoming sections.

In all concentrations, students also conduct research during their second year (enrolling in *PSYC 868: Research*) and this work forms the basis of an oral presentation before all concentration faculty. Second-year research may be a continuation of a project started during the first year or may be a new research project. The oral presentation will be delivered in a concentration Brown Bag in the fourth or fifth semester (Spring semester of the second year or Fall semester of the third year). Students in the Clinical and Social Programs are also evaluated on a written report based on their second-year research (concentration-specific details in forthcoming sections).

Upon successful completion of First- and Second-year Research, all students should receive an official confirmation letter confirming this passing of major program milestones from their Primary Advisor or Program Area (Concentration) Head. A copy of the letter should be provided to the Graduate Academic Advisor for placement in the student's file. A template for the letter is posted on the Department shared Google Drive (Psych Forms > Grad Student Forms > First-year (or Second-year) Passing Letter).

A document based on experimental work that served as a basis of the first- and/or second-year research can be submitted to the University as a Thesis to obtain the Master's Degree. The Master's Degree is optional for each student, and does not advance a student in the program. The written report must be formatted according to the University standards. The Master's Thesis requires the signatures of the student's advisor, the Chair of the Department, the Dean of the College of Arts and Sciences, and Dean of the Graduate College. The minimum number of credits required for the Master's Degree with thesis is 24 semester hours plus 6 hours *PSYC 869: Master's Thesis*. The Master's in Psychological & Brain Sciences is not a terminal degree and is obtained either on the way to the Ph.D. or a student terminates the doctoral program early and leaves with a Master's degree.

Qualifying Exam

Also common to each concentration is a qualifying exam. This exam should be completed during, or soon after, the 4th-6th semester of graduate study (depending on concentration requirements detailed below), and must be completed successfully before the Dissertation proposal is defended. The qualifying exam is a prerequisite for Ph.D. candidacy.

Each exam requires a written product and an oral defense. The written product comes from: question-based essays; an NIH NRSA fellowship proposal; or a review paper suitable for submission to a peer-reviewed journal. Consultation with the student's Advisory Committee and concentration requirements will decide whether the written exam for a student is based on questions, a proposal, or a comprehensive review paper. The oral portion consists of an oral defense of the written product.

Upon successful passing of the qualifying exam, all students should receive an official confirmation letter confirming this passing of a major program milestone from their Primary Advisor or Program Area Head. A copy of the letter should be provided to the Graduate Academic Program Coordinator and Graduate College

for placement in the student's file. A template for the letter is posted on the Department shared Google Drive (Psych Forms > Grad Student Form > Qualls-Comps Passing Letter).

Evaluation of Performance

Letters of Evaluation- After each semester during the first year, Program Area faculty will provide each student with a letter of evaluation of progress in the doctoral program. The letter will refer to coursework, laboratory performance, TA/RA/Fellowship performance, clinical performance (where applicable) and general progress. The faculty will specify strengths as well as any shortcomings in performance and set goals for improvement and progress. This feedback is important for new students, and students should discuss the letter with their faculty advisors and Advisory Committee. After the first year, evaluations will occur once per year at the end of the academic year unless circumstances require otherwise. Letters of evaluation will be shared with members of the student's Advisory Committee (and possibly other relevant faculty) and placed in the student's file.

Grades- Students must have a minimum overall cumulative grade point average of 3.0 to be eligible for the degree. TA and RA contracts require that a student maintain at least a 3.0 for continued funding. Students must also earn a grade of at least B- in each required course. If students receive two grades of less than B- in required coursework, they will be recommended for termination from the program. A student may file an appeal to the PBS Graduate Committee for approval to retake the first and/or second course with a B- and remain in the program. Students must earn at least a B grade for the repeated course(s). If the appeal is not approved, the Graduate Committee will recommend to the Graduate College that the student be dismissed from the program.

Time Limits

From the initial day of matriculation, a student has 7 years of study to complete the Dissertation. The Graduate College sets these limits. A request for an extension must be made in the form of a written appeal to the Graduate Committee. The Director of Graduate Education will negotiate with the Associate Vice Provost for Graduate and Professional Education and Associate Dean of the Graduate College for an extension. All extensions are granted on a year-by-year basis, and are based on progress toward the degree.

Termination

A student may be recommended for termination from graduate study in the Department on any one of six academic grounds. These are (a) two evaluation letters describing unsatisfactory performance, (b) unsatisfactory grades (i.e., two grades of less than B- in required courses that have not been successfully retaken), (c) a failure to pass program requirements (e.g., first- or second-year projects, qualifying exam), or

(d) failure to meet these requirements in a timely fashion, (e) unethical conduct, or (f) failure to arrange an advisor from program faculty. Less severe sanctions for unsatisfactory performance, such as a loss of eligibility for financial support, is reserved for students with special circumstances. Recommendation for termination (regardless of grounds) requires a majority vote from all concentration faculty involved in graduate training. A letter will be sent to the Graduate College reflecting the recommendation and basis for such.

Grievance Procedures

Students may wish to contest the concentration's evaluation of laboratory, clinic, or TA/RA/Fellowship performance, and students may wish to get help in resolving interpersonal difficulties with faculty members. The evaluation form that advisor and student both sign contains a provision for students to add a written rebuttal to anything in the evaluation letter. When questions or issues arise for you in the program, your Advisor, if possible, is your first point of inquiry. If the answer to your question or issue is not known, then you should consult with, as applicable, the Director of Behavioral Neuroscience, Clinical Science, Cognitive Psychology, or Social Psychology. If still unresolved, then the question or issue can go to the Graduate Academic Advisor and Director of Graduate Education. The Director of Graduate Education will involve the Graduate Committee (which consists of all Concentration Heads), Department Chair, and Graduate College when necessary. Confidentiality will be maintained at each step, if the student requests. That is, within legal and ethical limits, no information will be released to anyone else concerning the problem without the student's expressed permission. Family Educational Rights and Privacy Act (FERPA) will be followed.

The University has a detailed procedure for grieving grade disputes and claims about harassment and discrimination. Consult the publication, "Student Guide to University Policies" at <https://www1.udel.edu/stuguide/20-21/grievance.html> for details about grievance procedures. Contact the Office of Equity and Inclusion <http://www.udel.edu/oei/index.html> for information about harassment and discrimination issues.

Coursework and Exam Requirements for the Behavioral Neuroscience Concentration

General Requirements- Students must complete required coursework, first- and second-year research, pass the qualifying exam, the dissertation proposal defense, and complete a dissertation. The Behavioral Neuroscience concentration requires a minimum of 80 credits from coursework, attendance of colloquia, and research hours.

NSCI 626	Advanced Neuroanatomy	3
NSCI 627	Advanced Neurophysiology	3
NSCI 628	Advanced Neuropharmacology	3
NSCI 629	Integrated Neuroscience I	3

NSCI 630	Integrated Neuroscience II	3
PSYC 860	Psychological Statistics I	3
PSCY 861	Psychological Statistics II	3
PSYC 867	Professional Development Seminar	3
600/800 level	Elective	3
600/800 level*	Elective	3
PSYC 800	PBS Colloquia	8 (minimum)
PSYC 868	First-year Research	6
PSCY 868	Second-year Research	6
PSYC 868/869/964/969	Research/Dissertation Research [#]	30 (minimum)
TOTAL		80 credits

**One needs to be outside the Behavioral Neuroscience Curriculum and can be from another department*

[#]Minimum 9 of PSYC 969: Dissertation Research

Master's based on first- and/or second-year research- A student may elect to obtain a Master's Degree (M.S. in Neuroscience). This requires a successful thesis defense to the student's Advisory Committee who must approve the final document prior to the student submitting the document to the Graduate College. The Thesis is also evaluated by the Department Chair and the Dean of Arts and Sciences. Awarding the Master's Degree is also subject to all other Departmental and University requirements. Passage of the Qualifying Exam is not a requirement for the Master's Degree.

Qualifying Exam- The qualifying exam should be completed by the end of the fall semester of the 3rd year or at the very latest by the end of the summer after the 3rd year. Before embarking on the qualifying exam, the student will complete first- and second-year research and clear all previous incomplete grades. All required graduate courses should be completed either before or during the semester when the qualifying exam takes place. The qualifying exam should be evaluated by the committee of 3 people who are serving as an Advisory Committee for a student PLUS 2 additional members, which can be from the same program or other Departmental/External faculty from the student's field of specialization and other supporting fields. Comments on the written part of the qualifying exam will be released to the student in writing.

In consultation with the student's Advisory Committee, a student will choose one of the following options for the Qualifying Exam- 1) Four question-based essays, covering core areas within a concentration; 2) NRSA proposal; or, 3) Review paper suitable for submission to a peer-reviewed journal. In each case, there will also be an oral component to the qualifying exam.

Four question-based essays- The student must compose a comprehensive list of readings that will consist of major articles, relevant books, and empirical journal articles that define the major cores of behavioral neuroscience (neuroanatomy, neurophysiology, neuropharmacology, and behavior) and the student's area of interest. This list should be completed and approved as soon as possible but not later than November of the third year. Based on the reading list, the student develops questions for the qualifying exam that are then approved by the student's Advisory Committee PLUS two faculty members selected to serve on the Exam Committee. The Exam Committee selects and revises, as needed, four questions for the exam, in consultation with the student. For each question, the student is given two and a half days to prepare a written response. Thus, the exam is taken in four parts (one question limited to 2500 words each plus references), normally over a three-week period (15 working days providing 2.5 days for each question plus 1-2 day breaks as negotiated by the student). Questions are typically submitted and returned via email, which provides documentation of start and end times for each question. Failure to submit the exam by the deadline decreases the likelihood of a passing grade. This written exam is then evaluated by the student's Exam Committee. The Exam Committee can also ask an expert outside of the Department or University to read and contribute to the evaluation. The student will be consulted and/or notified about the Exam Committee before undertaking the exam. The Exam Committee is responsible for determining the student's grade. The student is given written feedback on the answers to the questions within two weeks to allow for preparation for the oral exam. If one (or more) of the written answers gets a "fail" grade a student will be given one opportunity to rewrite it. Students are encouraged to consult with examiners concerning their failing grade before undertaking the re-write. This extends the grading process and time of progression to the oral examination.

In the oral exam, the same questions are revisited and the student provides arguments and responses in an interactive setting. During the first part, the student will orally deliver an overview of the answer to each question. In the second part, the student is expected to defend answers and visit questions provided in the written feedback. The Oral Qualifying Exam should be completed by the end of February or July.

The three potential outcomes of the qualifying exam are:

- *Pass*
- *Conditional pass*: Will be given if any kind of remediation is required by the Exam Committee. These most commonly (but not limited to) include: full or partial re-write of one or more questions; or, additional time will be given if one or more oral answers fail to meet the standards of the Committee.
- *Fail*: If the student's performance during the oral examination or following specific remediation is viewed as unacceptable by the Exam Committee, the student will either be recommended for dismissal from the program or given the opportunity of a second oral exam that must be completed within a specified timeline decided by the Exam Committee.

NIH NRSA Proposal- Students will first submit a 350-500 word (approximately one page) abstract of their proposal including the following components to the student's Advisory Committee PLUS two faculty members selected to serve on the Exam Committee: 1) the names of both the student and mentor; 2) an overarching hypothesis of the proposal and its significance; 3) a brief statement of the specific aims of the proposal; 4) a brief description of the major techniques or technical approaches that will be used; and, 5) a

summary of expected results and major conclusions if the project were successfully completed. A proposal abstract will be submitted either by May 1st of the second year, December 1 of the third year, or May 1st of the third year. The committee members should provide significant, meaningful feedback to the student about the proposal within 2 weeks.

Format of the Research Proposal- Students should follow the format and guidelines set forth for the Research Training Plan sections of pre-doctoral NRSA from the National Institutes of Health. The written proposal must contain the following sections as specified by the NIH for the Research Training Plan for pre-doctoral fellowship applications: 1) Specific Aims; 2) Background and Significance; 3) Innovation; 4) Research Design and Methods; and, 5) Literature Cited. The Behavioral Neuroscience concentration will create a source (electronic form) providing links to examples of successful proposals.

The proposal should be 6 pages (11 or 12 pt, Arial or Helvetica font) including sections 1-4, figures and figure legends, but not including Literature Cited. The proposal *must be written solely and in its entirety by the student* and may not be a reproduction of any other work completed or in progress. Students are encouraged to discuss their project with anyone, including their faculty supervisor, and members of their Exam Committee, in as much detail as they wish. This can include detailed discussions on aims, experiments, methods, etc. These discussions may include helping the student design experiments and critique the written document in general terms. However, the student must be prepared to orally defend ALL aspects of the proposal including the background, rationale, design of the specific aims, experimental design, data interpretation, pitfalls and methods including all techniques proposed. This aspect of the examination cannot be overemphasized.

The written proposal is due to the Exam Committee by either July 1st or February 1st (depending on the submission of the proposal abstract). The Exam Committee members must email within two weeks whether they feel the oral defense should proceed. The oral defense proceeds as long as there is no more than one dissent among the committee and that dissent is not from the Faculty Advisor.

The Oral Qualifying Exam consists of three parts. During the first part, the student will orally deliver a brief (20 minute) presentation explaining the research proposal to assigned Committee members. In the second part, the student is expected to defend the proposal to the Committee by answering questions related to the research project. The third part involves a series of broader questions from the Committee in which the student is expected to demonstrate a general knowledge in the field of Behavioral Neuroscience. The Oral Qualifying Exam should be completed by the end of July or February.

The three potential outcomes of the qualifying exam are:

- *Pass*
- *Conditional pass*: Any specific timetable and/or procedures for remediation will be set by the Committee. These most commonly (but not limited to) include: full or partial re-write of the proposal; and/or a re-interview on specific parts of the exam with one or all members of the Committee; and/or the successful completion of an additional graduate-level course.

- *Fail*: If the student's performance during the oral examination or following specific remediation is viewed as unacceptable by the Committee, the student will either be recommended for dismissal from the program or given the opportunity of a second oral exam that must be completed within a specified timeline decided by the Exam Committee.

Review Paper - Students will first submit a 350-500 word (approximately one page) abstract of their paper including the following components to the student's Advisory Committee PLUS two faculty members selected to serve on the Exam Committee: 1) the names of both the student and mentor; 2) an overarching hypothesis/area of focus for the paper; 3) a brief description of the length, formatting, and content of the paper; and, 4) a brief summary of the importance or unique focus of the paper. A proposal abstract will be submitted by either May 1st of the second year, December 1 of the 3rd year, or May 1st of the 3rd year. The committee members should provide significant, meaningful feedback to the student about the proposal within 2 weeks.

Content and Format of the Review Paper- The paper is a research paper in which the student should (a) provide a new integration of an existing body of literature that offers novel ideas, hypotheses, and/or theoretical perspectives, (b) identifies major gaps in the literature, and (c) discusses how those gaps might be filled. The paper cannot be a simple review of the literature; it must provide a synthesis or integration of theory and research on the topic and be issue- or idea-focused. The student's goal should be to become a leading expert in the chosen research question and to demonstrate expertise by providing an integrative review of the literature that moves the area forward. The paper should be original and not derivative of another paper already published or unpublished but known to the student.

The paper should be written in a style that is consistent with articles in journals that publish integrative, non-empirical papers. Indeed, one criterion that the Committee should consider in evaluating the paper is whether it is suitable for publication in a target journal appropriate for the concentration.

The minimum length for the paper text is 8,000 words, and the maximum length of text is 15,000 words. These limits do not include front and back matter (e.g., title page, references, and tables and figures). The student and Faculty Advisor should agree upon the intended length of the paper before writing begins. The paper is due to the Exam Committee by either July 1st or February 1st (depending on the submission of the proposal abstract). The committee members must email within two weeks whether they feel the oral defense should proceed. The oral defense proceeds as long as there is no more than one dissent among the Committee and that dissent is not from the Faculty Advisor. Students are encouraged to submit their review articles for publication, but is not required for passing the qualifying exam.

Use of the Faculty Advisor and Exam Committee- Although the paper is primarily the work of the student, it is expected that the Faculty Advisor will provide advice, instructions, and feedback both before and during the writing process. However, the Faculty Advisor should not edit or rewrite any parts of the paper itself. The Faculty Advisor should serve in the role of an external reviewer who provides feedback about the content and style of the paper without directly collaborating on it.

Students should also consult with their Exam Committee members as they consider their paper topic and the scope of the paper. Students should have a conversation with each Committee member after they have

developed a plan but before they have started writing. One of the jobs of the Committee is to provide feedback and assistance in finding appropriate materials for the project.

During the writing phase of the paper, students may discuss ideas with their Committee members by asking them to read and comment on parts of the paper. However, the Committee members must refrain from editing the paper. Instead, they should express concerns and point out weaknesses or strengths without telling students directly how to fix the problem.

Although students may not write collaboratively on the paper with their Faculty Advisor or Committee members prior to the oral exam, they may seek substantive collaborative help from Committee members afterwards if they plan to submit the paper for publication.

The Oral Qualifying Exam consists of three parts. During the first part, the student will orally deliver a brief (20 minute) slide presentation of the paper, typically using a small number of slides to illustrate major points. In the second part, faculty will ask questions that stem from the document. The third part involves a series of broader questions from the Committee in which the student is expected to demonstrate a general knowledge of the field of Behavioral Neuroscience. The Oral Qualifying Exam should be completed by the end of July or February.

The three potential outcomes of the qualifying exam are:

- *Pass*
- *Conditional pass*: Any specific timetable and/or procedures for remediation will be set by the Committee. These most commonly (but not limited to) include: full or partial re-write of the paper; and/or a re-interview on specific parts of the exam with one or all members of the Committee; and/or the successful completion of an additional graduate-level course.
- *Fail*: If the student's performance during the oral examination or following specific remediation is viewed as unacceptable by the Committee, the student will either be recommended for dismissal from the program or given the opportunity of a second oral exam that must be completed within a specified timeline decided by the Committee.

For All Three Types of Qualifying Exams- After evaluation of both the written and oral exams by the Exam Committee, a pass, conditional pass, or fail grade and a written feedback report are provided to the student. In the event that the exam or parts of the exam did not meet criteria for passing by majority of the Exam Committee, the student can elect to retake the exam or parts of the exam. Feedback from the Exam Committee will be given to help prepare the student for the retest. The re-administered exam (written and/or oral) must be completed within two months of completing the first exam. One re-take exam is allowed. Failure to pass the re-take exam disqualifies the student from the doctoral program and he/she will be recommended for termination from the doctoral program. In the event of an unsatisfactory revised qualifying exam, the Exam Committee will convene to critically evaluate the student's record to date. In most cases, if all other requirements have been met, the student can opt to prepare their first/second year research as a Master's Thesis, so that when they leave the program they will do so having earned a Master's Degree.

Coursework and Exam Requirements for the Clinical Science Concentration

General Requirements- The Clinical Science program includes coursework, research, and practicum training. Formal coursework is completed over a four-year period. The sequence of some coursework is fixed (as outlined in an additional information given to all clinical students) in order to provide the necessary background for simultaneous research and practicum activity. More flexibility is provided in the timing of Departmental breadth requirements and elective courses. The Clinical program of study requires a minimum of 80 credits from coursework, attendance of colloquia, and research hours. Students receive additional credits for their work in clinical settings under supervision and an internship, and should discuss the timeline of this additional work with the Director of the Clinical Science Program. In contrast to the other concentrations, all Clinical Science faculty serve on the Advisory Committee for Clinical Science doctoral students.

PSYC 809	Research Design	3
PSYC 819	Child Psychotherapy: Ethics, Diversity, Treatments	3
PSYC 820	Psychodiagnostic Assessment	3
PSYC 821	Intelligence and Achievement Testing	3
PSYC 827	Adult Psychotherapy: Empirically-Supported Treatments	3
PSYC 829	Advanced Psychopathology	3
PSYC 839	Ethics and Diversity in Clinical Science	2
PSYC 867	Clinical Science (Philosophy, History)	1
PSYC 867	Clinical Science	1
PSYC 867	Developmental Risk	3
PSYC 860	Psychological Statistics I	3
PSCY 861	Psychological Statistics II	3
PSYC 867	Professional Development Seminar	3
600/800 level	Elective	3
600/800 level	Elective	3
600/800 level	Elective	3
600/800 level*	Elective: Breadth (Biological Aspects of Behavior)	3

600/800 level*	Elective: Breadth (Cognitive/Affective Aspects of Behavior)	3
600/800 level*	Elective: Breadth (Social Aspects of Behavior)	3
PSYC 800	PBS Colloquia	7 (minimum)
PSYC 868	First-year Research	6
PSYC 868/869	Second-year Research /Master's Thesis Research	6
PSYC 969	Dissertation Research	9
TOTAL		80 credits

**Elective needs to be approved by Director of Clinical Training*

First-year Research- Students start research involvement in the first year. By the end of this year, a First-Year Project must be defended to the clinical faculty.

Second-Year Research and Master's- Second-year Research must be defended to the clinical faculty and can be submitted to the Graduate College by the end of the fall semester of the third year for a Master's Thesis. The fourth and usually fifth years are devoted primarily to Dissertation research.

Students may elect to get a Master's Degree (M.A. in Psychological & Brain Sciences) after defense of the Second-Year Project. By the end of the fall semester of their third year, students will defend this project by presenting it in writing to the clinical faculty, by presenting it orally to the clinical faculty and graduate students, and by answering questions about the project following this presentation. At least one week prior to the oral presentation and defense, students must submit the manuscript to each member of the clinical faculty. Electronic submissions are fine, but students must offer to provide a hard copy of the document to any faculty member who requests it. The written document should be prepared in a format suitable for submission to a peer-reviewed journal for publication. The clinical faculty will decide whether students successfully defended the project; a positive decision requires that the clinical faculty judge the project and manuscript to be of high quality. If students do not successfully defend the project, the clinical faculty will develop a detailed remediation plan. This plan will vary depending on the nature of the concerns, but may entail additional data analysis and/or writing and/or a second defense before the clinical faculty. Students will be required to complete the remediation process by May 31 of their third year. At that time, the clinical faculty will again decide whether the student successfully defended the project. If his/her performance is still deemed unsatisfactory, he/she will be terminated from the program. Students will need to reformat the second-year project as a Master's Thesis according to University guidelines. The Master's Degree is optional and does not advance or retard progress in the Clinical Science concentration.

Practicum- Some practicum training starts in the first year, when students typically conduct their first assessment at the Psychological Services Training Center. Practicum intensifies in the second year, when students serve as primary therapists under close faculty supervision at the Psychological Services Training Center or affiliated sites where faculty supervise (e.g., Early Learning Center). In the third year and beyond,

students work in external clinical practicum sites or continue to work at the Psychological Services Training Center.

The internship is usually taken during the sixth year. Students may apply for internship only if they have successfully defended their dissertation proposals. The Ph.D. cannot be awarded until both the internship and dissertation are completed.

Qualifying Exam- For Clinical Science students, four question-based essays will be completed, following a somewhat different procedure than for students from the other concentrations. The Clinical Science concentration-specific procedure is documented below.

Students take the comprehensive exam in the summer of their third year, after they have:

- Completed the three years of coursework and cleared all incomplete grades
- Successfully defended the First-Year Project
- Successfully defended the Second-Year Project

Areas covered by the comprehensive exam include but are not limited to:

- Psychopathology and Developmental Risk
- Assessment/Tests and Measures
- Psychotherapy and Prevention
- Personality and Individual Differences
- Professional Issues
- Ethics
- Diversity
- Research Design and Methods

Question-based essays are intended to be integrative and will generally involve more than a single substantive area.

Reading lists for each area will be reviewed each fall by the entire clinical faculty and updated as needed to reflect the most current developments in these areas. Updated reading lists will be provided to students by October 1 of their third year.

The format of the written exam is as follows:

- The written exam will be administered over two consecutive days and will include six possible questions.
- Half of the questions will be administered on the first day of written exams, and the second half will be administered on the following day. Students are to answer two questions each day.
- Exams are administered in a take-home, email format. Each day's questions will be sent electronically to students at 8:30 am of each written exam day, student's word-process their responses from their homes, and email their responses to the Graduate Academic Advisor by 4:30 pm of each written examination day.

- The essay answer to each question should not exceed five double-spaced pages (12-point font, 1 inch margins on all sides).
- Students should include a reference page with each of their answers. This can be cut and pasted from the electronic copy of the reading list.

Anonymity of written responses will be accomplished by having students select a four-digit identification number to be included with all responses, rather than their name. Students will inform the Graduate Academic Advisor of their identification number when they submit their written responses via email. The Graduate Academic Advisor will de-identify students' responses before distributing them to the Director of Clinical Training (DCT). After grading of the written portion of the comprehensive exams is completed, the DCT will get the list matching students' names with their identification numbers from the Graduate Academic Advisor.

Within one week of the written exam, students will be scheduled for a 45-minute oral exam administered by at least the Advisory Committee PLUS two others (in the case of Clinical, it will be the full program faculty). The purpose of the oral exam is to allow students to expand upon the written answers that they provided. Following students' oral exam, the clinical faculty will decide whether students passed or failed each of the four questions, taking into account both the written and oral performances.

If a student fails any exam question(s), the clinical faculty will prepare brief written feedback on the reasons for the failure and steps the student should take in preparing for the makeup exam. This feedback will be prepared as soon as the oral defense is complete, and the DCT will provide the feedback to the student within a day.

If students fail any exam question(s), they may take a makeup exam for that/those question(s) within 1-3 months after the original exam, on dates that are acceptable to both the student and the faculty. The new question(s) will be on the same content area(s) as the failed question(s); a choice of questions will not be provided. Four hours will be allotted for the written portion of each makeup question, and up to 45 minutes will be allotted for the oral portion of the makeup exam for all makeup questions combined. Since it is likely that only one student will take a makeup exam at a time, it will not be possible for responses to remain anonymous. All other aspects of the makeup exam procedure will parallel the procedures followed for the original exam. If students fail any makeup question, this signifies failure of the comprehensive exams, and they will be terminated from the program.

When students have passed all questions on the comprehensive examinations, the DCT will write a letter stating that they have completed the comprehensive examination requirement. The original of this letter will be given to students, and the DCT will provide a copy to the Graduate Academic Advisor to place in the student's file.

If students are seriously ill or experiencing serious personal hardship (e.g., death in the family, fire, accident) immediately before or on the days of the exam, they may request a make-up exam. This request must be made in writing and approved by the clinical faculty. Make-up exams should occur within one month of the

regularly scheduled exam, but students will be allowed a maximum of three months to schedule make-up exams. Make-up exams will consist of new questions written and approved by the clinical faculty.

Coursework and Exam Requirements for the Cognitive Psychology Concentration

General Requirements- Students must complete required coursework, first- and second-year research, pass the qualifying exam, and complete a dissertation. The Cognitive Psychology concentration of study requires a minimum of 80 credits from coursework, attendance of colloquia, first-year research, and research hours. Students in the Cognitive concentration will also receive evaluation letters both semesters of their second-year of study.

Choose 5 core courses from menu below-

PSYC 642	Mental Representation and Memory	3
NSCI 643/PSYC 667	Body and Space	3
PSYC 653	Introduction to fMRI	3
PSYC 667	Cognitive Control	3
PSYC 667	Infant Cognition	3
PSYC 667	Language and Cognition	3
NSCI 667	Cognitive Neuroimaging	3

Or comparable course

TOTAL **15 credits**

PLUS all Cognitive students take-

PSYC 860	Psychological Statistics I	3
PSCY 861	Psychological Statistics II	3
PSYC 867	Professional Development Seminar	3
600/800 level	Elective	3
600/800 level*	Elective	3
PSYC 800	PBS Colloquia	8 (minimum)
PSYC 868	First-year Research	6

PSCY 868	Second-year Research	6
PSYC 868/869/964/969	Research/Dissertation Research [#]	30 (minimum)
TOTAL		80 credits

**One needs to be outside the Cognitive Psychology Curriculum and can be from another department (e.g., Linguistics, Computer Science, Biology, Education).*

[#]minimum 9 of PSYC 969: Dissertation Research

First-year Research- Students are required to complete a first year research project, which they will present in the weekly cognitive Brown Bag meeting during the second semester of the first year. They are also required to write their project up in journal format (e.g., Journal of Experimental Psychology) and submit it to their Advisory Committee by June 15th. The Committee will provide feedback on the draft by June 30th. A revision of the paper (if necessary) is due by July 30th. This version will be evaluated by the student's Advisory Committee who will make a judgment on acceptability by August 15th. If the paper is deemed unacceptable, the student will be allowed one more revision that is due by September 15th. If this revision is unacceptable, the student will be recommended for termination from the program.

Master's Thesis Option- Although the cognitive concentration is designed to be a Ph.D. program, there may be circumstances in which the student desires to obtain a Master's Degree (M.A. in Psychological & Brain Sciences). For example, a student who does not pass the qualifying exam, may desire to leave the program with a Master's Degree. This can be accomplished by submitting the first year project or some other substantial project to the student's Advisory Committee who will determine whether the document is of sufficient quality to be an acceptable Master's Thesis. If so, the Thesis is also evaluated by the Department Chair and the Dean of the College of Arts and Sciences.

Qualifying Exam- The qualifying exam is taken after the student has completed 2 full years in the graduate program. In consultation with the student's Advisory Committee, a student will choose one of the following options for the Qualifying Exam- 1) NIH NRSA proposal; or, 2) Review paper suitable for submission to a peer-reviewed journal.

NIH NRSA Proposal- Students will first submit a 350-500 word (approximately one page) abstract of their proposal including the following components to the student's Advisory Committee **PLUS** two faculty members selected to serve on the Exam Committee: 1) the names of both the student and mentor; 2) an overarching hypothesis of the proposal and its significance; 3) a brief statement of the specific aims of the proposal; 4) a brief description of the major techniques or technical approaches that will be used; and, 5) a summary of expected results and major conclusions if the project were successfully completed. A proposal abstract will be submitted by May 1st of the second year. The committee members should provide significant, meaningful feedback to the student about the proposal within 2 weeks.

Format of the Research Proposal- Students should follow the format and guidelines set forth for the Research Training Plan sections of pre-doctoral NRSA from the National Institutes of Health. The written

proposal must contain the following sections as specified by the NIH for the Research Training Plan for pre-doctoral fellowship applications: 1) Specific Aims; 2) Background and Significance; 3) Innovation; 4) Research Design and Methods; and, 5) Literature Cited.

The proposal should be 6 pages (11 or 12 pt, Arial or Helvetica font) including sections 1-4, figures and figure legends, but not including Literature Cited. The proposal must be written solely and in its entirety by the student and may not be a reproduction of any other work completed or in progress. Students are encouraged to discuss their project with anyone, including their faculty supervisor, and members of their Exam Committee, in as much detail as they wish. This can include detailed discussions on aims, experiments, methods, etc. These discussions may include helping the student design experiments and critique the written document in general terms. However, the student must be prepared to orally defend ALL aspects of the proposal including the background, rationale, design of the specific aims, experimental design, data interpretation, pitfalls and methods including all techniques proposed. This aspect of the examination cannot be overemphasized.

The written proposal is due to the Exam Committee by September 7th in the third year. The Exam Committee members must email the area director within three weeks (October 1) whether they feel the oral defense should proceed. The oral defense proceeds as long as there is no more than one dissent among the committee and that dissent is not from the Faculty Advisor.

The Oral Qualifying Exam consists of three parts. During the first part, the student will orally deliver a brief (20 minute) presentation explaining the research proposal to the Committee members. In the second part, the student is expected to defend the proposal to the Committee by answering questions related to the research project. The third part involves a series of broader questions from the Committee in which the student is expected to demonstrate a general knowledge in the field of Cognition.

The three potential outcomes of the qualifying exam are:

- *Pass*
- *Conditional pass*: Any specific timetable and/or procedures for remediation will be set by the Committee. These most commonly (but not limited to) include: full or partial re-write of the proposal; and/or a re-interview with members of the Committee.
- *Fail*: If the student's performance during the oral examination is viewed as unacceptable by the Committee, the student will be given the opportunity of a second oral exam that must be completed within a specified timeline decided by the Exam Committee. Failure on the second exam will lead to termination from the doctoral program.

Review Paper - Students will first submit a preliminary package of materials to the student's Advisory Committee PLUS two faculty members selected to serve on the Exam Committee. It will consist of the following three items: 350-500 word (approximately one page) abstract of their paper including the following components: 1) the names of both the student and mentor; 2) an overarching hypothesis/area of focus for the paper; 3) a brief description of the length, formatting, and content of the paper; and, 4) a brief summary of the importance or unique focus of the paper. The package will also include a one page outline of the paper and

preliminary bibliography (minimum of 10 papers). This is due on May 1 of their second year. The committee members should provide significant, meaningful feedback to the student about the proposal within 2 weeks. The final paper is due to committee members on September 7th. The committee needs to indicate, within three weeks (October 1st), whether the paper is acceptable for the oral portion of the test to proceed.

Content and Format of the Review Paper- This is a research paper in which the student should (a) provide a new integration of an existing body of literature that offers novel ideas, hypotheses, and/or theoretical perspectives, (b) identifies major gaps in the literature, and (c) discusses how those gaps might be filled. The paper cannot be a simple review of the literature; it must provide a synthesis or integration of theory and research on the topic and be issue- or idea-focused. The student's goal should be to become a leading expert in the chosen research question and to demonstrate expertise by providing an integrative review of the literature that moves the area forward. The paper should be original and not derivative of another paper already published or unpublished but known to the student. The paper should be written in a style that is consistent with articles in journals that publish integrative reviews such as *Psychological Bulletin* or *Psychological Review*.

The length for the review paper is 10,000 - 15,000 words. These limits do not include front and back matter (e.g., title page, references, and tables and figures). The student and Faculty Advisor should agree upon the intended length of the paper before writing begins. The paper is due to the Exam Committee by September 7st of the third year. The committee members must email the area director within three weeks to indicate whether they feel the oral defense should proceed. The oral defense proceeds as long as there is no more than one dissent among the Committee and that dissent is not from the Faculty Advisor. Students are encouraged to submit their review articles for publication, but this is not required for passing the qualifying exam.

Use of the Faculty Advisor and Exam Committee- Although the paper is primarily the work of the student, it is expected that the Faculty Advisor will provide advice, instructions, and feedback both before and during the writing process. However, the Faculty Advisor should not edit or rewrite any parts of the paper itself. The Faculty Advisor should serve in the role of an external reviewer who provides feedback about the content and style of the paper without directly collaborating on it.

Students should also consult with their Exam Committee members as they consider their paper topic and the scope of the paper. Students should have a conversation with each Committee member after they have developed a plan but before they have started writing. One of the jobs of the Committee is to provide feedback and assistance in finding appropriate materials for the project.

During the writing phase of the paper, students may discuss ideas with their Committee members by asking them to read and comment on parts of the paper. However, the Committee members must refrain from editing the paper. Instead, they should express concerns and point out weaknesses or strengths without telling students directly how to fix the problem.

Although students may not write collaboratively on the paper with their Faculty Advisor or Committee members prior to the oral exam, they may seek substantive collaborative help from Committee members afterwards if they plan to submit the paper for publication.

The Oral Qualifying Exam consists of three parts. During the first part, the student will orally deliver a brief (20 minute) slide presentation of the paper, typically using a small number of slides to illustrate major points. In the second part, faculty will ask questions that stem from the document. The third part involves a series of broader questions from the Committee in which the student is expected to demonstrate a general knowledge of the field of Cognition. The Oral Qualifying Exam should be completed by the end of September.

The three potential outcomes of the qualifying exam are:

- *Pass*
- *Conditional pass*: Any specific timetable and/or procedures for remediation will be set by the Committee. These most commonly (but not limited to) include: full or partial re-write of the paper; and/or a re-interview on specific parts of the exam with one or all members of the Committee; and/or the successful completion of an additional graduate-level course.
- *Fail*: If the student's performance during the oral examination is viewed as unacceptable by the Committee, the student will be given the opportunity of a second oral exam that must be completed within a specified timeline decided by the Committee.

For both Types of Qualifying Exam- After evaluation of both the written and oral exams by the Exam Committee, a pass, conditional pass, or fail grade and a written feedback report are provided to the student. In the event that the exam or parts of the exam did not meet criteria for passing by a majority of the Exam Committee, the student can elect to retake the exam or parts of the exam. Feedback from the Exam Committee will be given to help prepare the student for the retest. The re-administered exam (written and/or oral) must be completed within one month of completing the first exam. One re-take exam is allowed. Failure to pass the re-take exam disqualifies the student from the doctoral program and he/she will be recommended for termination from the doctoral program.

Coursework and Exam Requirements for the Social Psychology Concentration

General Requirements- Students must complete required coursework, a first- and second-year research project, pass the qualifying exam, and complete a dissertation. The Social Psychology program of study requires a minimum of 80 credits from coursework, attendance of colloquia, and research hours.

Choose 5 core courses taught by social faculty from examples below-

NSCI 642	Social Neuroscience	3
PSYC 806	Social Cognition	3
PSYC 813	Groups and Intergroup Relations	3
PSYC 867	Advanced Social Psychology	3
PSYC 867	Close Relationships	3

PSYC 867	Self & ID	3
PSYC 867	Stress and Periphery	3
PSYC 867	Social Perception	3
Or comparable course		
TOTAL		15 credits

PLUS all Social students take-

PSYC 860	Psychological Statistics I	3
PSCY 861	Psychological Statistics II	3
PSYC 867	Professional Development Seminar	3
600/800 level	Stat/Methods Elective	3
600/800 level*	Elective	3
PSYC 800	PBS Colloquia	8 (minimum)
PSYC 868	First-year Research	6
PSYC 868	Second-year Research	6
PSYC 868/869/964/969	Research/Dissertation Research [#]	30 (minimum)
TOTAL		80 credits

**One needs to be outside the Social Psychology Curriculum and can be from another department*

[#]minimum 9 of PSYC 969: Dissertation Research

Students in their 4th year (or beyond) in the program may elect to register for Social program courses as an Auditor (i.e., as a Listener) by gaining the approval (in writing) of the student's primary advisor and then petitioning the Director of the Social area explaining in writing why auditing the course would be beneficial to the student's professional development. The Director of the program and the social faculty will decide whether to grant the student's request. Also, students may elect to audit social program courses after passing the Qualifying Exam. In the latter case, students should simply inform the Director of the Social program and the course's instructor in writing of their intention to audit the course.

Each semester, full-time graduate students are required to present during brown bag at least once per year. Brown bag presentations are meant to serve a variety of potential purposes. We want to give students practice presenting in front of an audience, the opportunity to refine their study ideas and hypotheses, and

practice presenting data and making accurate conclusions based on their results. To this end, we want students to focus on having high quality presentations that encourage discussion about theoretical developments, study design issues, or interpretation of data. Students should avoid presenting the same ideas or data in more than one brown bag unless there is a specific purpose for revisiting the same topic.

We strongly encourage that students use their brown bag presentation to help develop new study ideas whenever it would be helpful. Students can either have a brown bag that is solely dedicated to study development, or they can devote time during their presentation (e.g., 40 minutes) to discussing their plans for future data collection so that they can receive feedback from faculty and fellow students at a time that it will be maximally beneficial.

From year one through graduation we expect progression in brown bag content that follows this generic form: year 1 -first year project, year 2 - second year project plans or results, year 3 and 4 - content of manuscripts almost ready for publication, dissertation ideas, grant submissions, conference presentations, or publication plans, year 5 – dissertation data and job talks. Make sure to plan your brown bag talks in coordination with your primary advisor, in order to make sure they are going to help you reach the goals we have in mind for these presentations.

Brown bag sessions are also used to acquaint program members with the work of guest speakers within and outside of social psychology, professional development regarding such topics as goal setting, daily writing habits, grant writing, work/life balance, the job or post-doctoral fellowship search, or discussing an interesting current article.

Research Requirements- Students meet the research requirement, in part, by completing a grant application (to a reputable funding sources, e.g. NSF, NIH, Ford Foundation or UD based awards) or a pre-registered project proposal in year one of the program. This constitutes the first year project. Students must also complete a second-year project; both the first and second year projects should be summarized with final written reports distributed to the student's Advisory Committee. If the Advisory Committee believes that the write-up of either the first or second year projects need revision before they can approve the research, they will provide specific feedback to the student who will have at least one opportunity to revise the final document. In the event of an unsatisfactory performance on the first or second year project paper, the social area faculty will convene to critically evaluate the student's record to date.

First-year research- Students submit to their advisor a written proposal in memorandum form (e.g., the grant submission or preregistered project proposal) that summarizes the student's idea and research plan; the student also presents these ideas at a social psychology brown-bag meeting during the first or second semester of graduate study. Toward the end of the second semester or possibly early in the fall (not later than Sept. 15th) of the third semester, the student gives an oral presentation of the project at a social psychology Brown Bag meeting. The goal of this requirement is to give students immediate experience conducting research during their first year.

Second-year research- The second-year project requires the participation and approval of the student's Advisory Committee. To begin, the student prepares a written abstract of the proposed research that must be

signed by the student's Advisory Committee and presented at a Social Psychology Brown Bag session by the end of the fall semester in the second year, not later than December 1st. This brown bag presentation should be used to help develop and refine the student's ideas. The results of the second year project must be presented at a social brown bag meeting by the end of the second year. In addition, the student must submit a written paper describing the research to their Advisory Committee not later than September 1st of the third year. This paper must be approved by the student's second year project Advisory Committee. The members of the student's Advisory Committee have two weeks to provide feedback in writing to the student and other committee members. If this paper is submitted during the summer or winter-session periods, members of the student's Advisory Committee may provide this feedback two weeks into the next fall or spring semester. Feedback will be similar to that obtained by authors who submit papers to journals and if a revision is required, committee members will detail any changes that need to be made. If necessary, the student will have one month following this feedback to revise and resubmit the second year project paper. Grading is pass/fail.

Master's degree- Once the student passes the second year project requirement, the student may elect to obtain a Master's Degree (M.A. in Psychological & Brain Sciences) based on the second year project by re-formatting the written document according to Graduate College requirements. If *any* changes are introduced to the previously approved second year project paper, the student's advisor must approve all changes. If the student wishes to obtain a Master's Degree based on research other than the approved second year project final paper, at least two social faculty members will need to approve the final document prior to the student submitting the document to the Graduate College. The goal of this requirement is to develop a research idea that could result in a publishable empirical paper.

Qualifying Exam- The qualifying exam should be completed by the end of the fall semester of the 3rd year or at the very latest by the end of the spring semester of the 3rd year. Before embarking on the qualifying exam, the student will complete the first and second year project and clear all previous incomplete grades. In consultation with the student's Exam Committee (heretofore defined as 3 social faculty PLUS up to 2 external members from other programs), a student will choose one of the following options for the Qualifying Exam- 1) Four question-based essays, covering core areas within a program of study; or, 2) Review paper suitable for submission to a peer-reviewed journal.

Four question-based essays- The four question-based essays will be based on 60 readings that cover classic and important readings within social psychology. These readings are selected by the social faculty. 10 additional readings can be lab specific and are chosen by the student's advisor. The exam itself consists of 20 key terms and 6 essay questions. All questions are generated by the social faculty prior to the exam. Students select 4 of the 6 essay questions at the time of the exam. Importantly, the key terms are to be completed within a 2 hour time period on campus (closed notes in front of adviser) while students will have 48 hours to answer essay questions at a place of their choosing (open notes, no advisor present). Questions are typically submitted and returned via email, which provides documentation of start and end times for each question. Failure to submit the exam by the deadline decreases the likelihood of a passing grade. Once completed, the student's Exam Committee will review all answers and determine the appropriate grade. The student is given written feedback on the answers to the questions within two weeks to allow for preparation for the oral exam. If one

(or more) of the written answers gets a “fail” grade a student will be given one opportunity to rewrite it. This extends the time of progression to the oral examination.

In the oral exam, the same questions are revisited and the student provides arguments and responses in an interactive setting. During the first part, the student will orally deliver an overview of the answer to each question. In the second part, the student is expected to defend answers and visit questions provided in the written feedback. The Oral Qualifying Exam should be completed by the end of February or July.

The three potential outcomes of the qualifying exam are:

- *Pass*
- *Conditional pass*: Will be given if any kind of remediation is required by the Exam Committee. These most commonly (but not limited to) include: full or partial re-write of one (or more) questions; or, additional time will be given if one (or more) oral answers fail to meet the standards of the Committee.
- *Fail*: If the student’s performance during the oral examination or following specific remediation is viewed as unacceptable by the Exam Committee, the student will either be recommended for dismissal from the program or given the opportunity of a second oral exam that must be completed within a specified timeline decided by the Exam Committee.

Review Paper- The student will prepare a *Psychological Bulletin* (or *Psychological Review* or *Personality and Social Psychology Review*) type review paper summarizing a focal area of the student’s interest, which may very well lead to the formulation of a dissertation proposal. This paper should be of suitable quality to be submitted to a major journal and thus, this paper is expected to offer a valuable, unique perspective or theoretical analysis of the issues reviewed, rather than just a summary of research conducted in the field.

In consultation with the student’s Advisory Committee (with permission of the committee, it is permissible for a student to include an additional faculty advisor from some other program within or beyond the University of Delaware) the student and advisor will work together to generate a reading list of articles and books important to the focal topics and a general outline of the central questions, goals and value of the proposed project. The Committee must approve the topic and final paper.

Students should begin discussing their qualifying paper topic with their advisor by the beginning of the second year in the program. The student’s topic should be one that will likely lead into their doctoral dissertation proposal. The student will provide a draft of their qualifying exam paper to their advisor for feedback before submitting it for final approval to other members of the Committee. Once approved by the committee, the student will distribute the qualifying exam to their Exam Committee (three social faculty PLUS 2 other external members of the committee-if they so choose) who will have an opportunity to comment and offer suggestions within two weeks of receiving the document.

February 7th (Third Year): Due date for submitting the qualifying paper to each member of the Exam Committee (3 social faculty PLUS up to 2 external members from other programs) and for the student to schedule an Oral Defense with members of the Exam Committee as close as possible to March 1.

March 1st (Third year): Approximate deadline for the student to have scheduled the oral defense of the qualifying exam paper. At the conclusion of the defense, the members of the Exam Committee will determine (pass/not pass) whether the document and oral defense, separately, warrant a “pass.”

If the majority of the student’s Exam Committee believes the student’s written qualifying exam is not of sufficient quality to warrant a “pass,” the committee together with the student will discuss changes that would be needed to be included in a revision to gain approval of the majority of the Committee. Within one week, the student will send a written summary of the issues that he or she will address in the revised qualifying exam paper to their Exam Committee. At the discretion of a majority of the student’s Exam Committee, the student also can be asked to re-schedule an oral defense of the revised document.

April 1st (Third Year): Deadline for student to resubmit a revised qualifying exam document (using track changes to clearly distinguish between the revised version and the originally submitted version). Also, if the student’s Exam Committee asked for the student to orally defend the revised qualifying exam document, the student will have scheduled this oral defense for some date as close to April 15 as possible.

April 15th (Third Year): The student’s Exam Committee members have until April 15th to approve or disapprove (by majority vote) the revised qualifying exam.

In the event of an unsatisfactory revised qualifying exam, the Exam Committee will convene to critically evaluate the student’s record to date. In most cases, if all other requirements have been met, the student can opt to prepare their second year project final paper as a Master’s Thesis, so that when they leave the program they will do so having earned a Master’s Degree.

Individualized Study Plans in the Doctoral Program

Students may want to create a program of study that is tailored to individual training interest and specific research goals not covered by existing concentrations. Students should meet with their Advisory Committee to create a curriculum of study that suits their needs. Students must submit a request form (Psych Forms > Grad Student Form > Individualized Study Plan) and a short (1-2 page) written proposal to the Director of Graduate Education outlining the proposed academic coursework and need for this individualized program in relation to training and research goals. This degree path requires a minimum of 80 credits from coursework, colloquia attendance, and research hours. In addition, students pass a qualifying exam and complete a dissertation. The Graduate Committee will review the proposal. Once the proposal is reviewed by the Graduate Committee, the student will be notified via email whether the plan is approved; if it is, the student will receive an electronic copy of the signed form; if not, the student will receive feedback if the plan needs to be revised.

Additionally, students may structure their elective coursework such that they are recognized for additional specialized study that cuts across Behavioral Neuroscience, Clinical Science, Cognitive Psychology, and Social Psychology. We currently offer three such certificates: Developmental Processes, Quantitative

Analysis, and Social Cognitive and Affective Neuroscience. The certificate programs are open to any current graduate student in any program at the University of Delaware. When applying to complete a certificate students should: Fill out their Plan of Study (Psych Forms > Grad Student Form > Plan of Study) and send it electronically to the Director of Graduate Education. Once the form is reviewed by the Graduate Committee, the student will be notified via email whether the plan is approved; if it is, the student will receive an electronic copy of the signed form; if not, the student will receive feedback if the plan needs to be revised.

The student should fill out an Application for Graduate Certificate Form (<http://www1.udel.edu/gradoffice/forms-new/gradcertificate-enrollment.pdf>) and submit to the Director of Graduate Education who will submit the form (along with plan of study) to the Graduate College for audit. The University will state on the student's transcript that the Certificate in Developmental Processes, Quantitative Analysis, or Social Cognitive and Affective Neuroscience was awarded. A diploma for the certificate program is not awarded to the student.

Coursework for the Developmental Processes Certificate

Students may elect to structure their electives such that they take 4 developmental courses, or they take 3 developmental courses and perform a semester of laboratory work outside the Advisor's lab and in another lab doing developmental work. At least two of the courses must be outside the main concentration of study. A written proposal of the planned coursework to obtain the Developmental Processes Certificate should be submitted to the Director of Graduate Education. The Graduate Committee will review the proposal. Once the proposal is reviewed by the Graduate Committee, the student will be notified via email whether the plan is approved; if not, the student will receive feedback if the plan needs to be revised.

Required of all students for this certificate-

PSCY 867	Developmental Processes	3 credits
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PLUS all students choose 3 electives from menu below, or petition to have a course not included on this list accepted-

NSCI 635	Neuroplasticity	3
NSCI 637	Behavioral Epigenetics	3
NSCI 632	Developmental Behavioral Neuroscience	3
BISC 639	Developmental Neurobiology	4
PSYC 667	Infant Cognition	3
PSYC 819	Child Psychotherapy	3
PSYC 867	Developmental Risk and Psychopathology	3

PSYC 801	Laboratory rotation	3
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Coursework for the Quantitative Analysis Certificate

A student may elect to structure their coursework such that they take a sequence of six courses in statistics. A written proposal of the planned coursework to obtain the Quantitative Analysis Certificate should be submitted to the Director of Graduate Education. The Graduate Committee, in consultation with the Department Quantitative Committee, will review the proposal. Once the proposal is reviewed, the student will be notified via email whether the plan is approved; if not, the student will receive feedback if the plan needs to be revised.

Courses a student can take include:

PSYC 860	Psychological Statistics I	3
PSYC 861	Psychological Statistics II	3
PSYC 878	Hierarchical Linear Modeling	3
PSYC 879	Structural Equational Modeling	3
PSYC 867	Analysis of Change	3
An additional advanced Statistics course*		3

**requires approval from the Department Quantitative Committee*

Coursework for the Social Cognitive and Affective Neuroscience (SCAN) Certificate

Students in SCAN need to declare a major and minor program of study, chosen from Cognitive, Social, Clinical and Behavioral Neuroscience. For example, a student might choose Cognitive for the Major and Social for the minor. Each SCAN student will be assigned a faculty advisor from each program of study (as part of a student's Advisory Committee) who will help them choose relevant required and elective courses. In addition to completing required coursework in the chosen major program of study, two elective courses need to be chosen that represent the minor program of study. One of these electives should also be related to SCAN research topics. The particular courses need to be approved by the student's Advisory Committee.

Each SCAN student is also required to participate in at least one research project that cuts across two labs in the SCAN areas (enrolling in 3 credits of *PSYC 801: Laboratory Rotation*). This collaboration could involve using the primary PI's methods to investigate theoretical predictions from a model associated with a faculty member in another area. For example, a student might use methods such as time-frequency analysis that were developed in one lab in the social area to investigate statistical learning that was being studied using

fMRI in the cognitive area. The goal of the collaborative project is to combine theories, expertise, and methods across areas.

A written proposal of the planned coursework to obtain the SCAN Certificate should be submitted to the Director of Graduate Education. The Graduate Committee will review the proposal. Once the proposal is reviewed by the Graduate Committee, the student will be notified via email whether the plan is approved; if not, the student will receive feedback if the plan needs to be revised.

The Doctorate Dissertation Committee

The Dissertation Committee for all department concentrations is formed after successfully passing the qualifying exam and during preparation of the Dissertation proposal. It is recommended that students build upon their Advisory Committee for this. The Dissertation Committee must contain at least four members and no more than six. The Chair of the Dissertation Committee is the student's advisor. At least three members must be Departmental faculty, with two representing the primary area of study, and one representing a secondary area of study or from a different program. At least one member must be an external examiner. This individual must have a Ph.D. with expertise in the student's area. This external examiner may be from another department or may be from outside the University.

The Dissertation Proposal

The Dissertation Committee evaluates a written proposal that presents background, procedure, rationale, and potential outcomes of the student's prospective Dissertation research prior to the student beginning the research. The purpose of this requirement is to provide feedback about the student's intended research while that research is in its formative stages, when alterations in planning can most easily be implemented.

The student must explain and defend the proposal before the entire Dissertation Committee. The proposal defense must occur after the student passes the program-qualifying exam. The Committee signifies acceptance of the written proposal on the appropriate University form (see section below). Acceptance of the proposal indicates that the research is well-conceived and properly designed to address an appropriate question. As is true with all scientific proposals, the proposal cannot predict the unexpected. Part of the student's training includes learning to revise research plans as necessary to reach a reasonable answer to the question under investigation. As the research unfolds, the student may be required to revise procedures where necessary. Changes are not arbitrarily mandated by one person, but the written changes are evaluated through the joint consideration of the student, advisor, and Committee. Acceptance of the proposal means that the student can begin conducting Dissertation research, it does not constitute a contract or guarantee for the Doctoral Degree. Conferral of the degree depends upon the quality of the completed research and its oral defense.

Following acceptance of the proposal, the student should submit the appropriate form for admission to candidacy (see section below) and begin his/her Dissertation research. Once the form is approved by the

Graduate College, the student is officially admitted to candidacy. A copy of the proposal and any approved changes to the proposal must be added to the student's file maintained by the Department.

Modular Article Dissertation Option

In consultation with their Dissertation Committee, a student may choose to have a dissertation that is comprised of a minimum of three articles. The three articles should form a cohesive body of work that supports a theme or themes that are expressed in the introduction of the dissertation. The number of articles should be approved by the Dissertation Committee. A student must obtain copyright permission from the publishing journal to include published work in the dissertation. At least two of the articles should be based on data collected and analyzed by the student, and the student must be first author on all articles. The dissertation must also have a conclusion chapter.

The Ph.D. Defense

When the student and advisor consider the thesis complete, a copy of the written document is distributed to the members of the Dissertation Committee. The time allowed for reading is discussed with the members of the Committee and will usually range from 2 weeks to a month depending on the project and the Committee members' other commitments. The Committee may consult with the student to discuss the document and request revision where necessary. In consultation with the Committee, the student schedules an oral defense.

At least two weeks prior to the defense, a final copy of the Dissertation must be submitted to each member of the Dissertation Committee. (NOTE: the Committee may request a longer lead time if the draft is a major revision of the last draft read.)

An announcement should be sent from the student's faculty mentor to the whole Department advertising the defense and welcoming attendance. There is also a place to schedule the defense on the Graduate College website so it is viewable to the University. It is located here: <https://sites.udel.edu/gradoffice/dissertation-defense-schedule/>.

The defense consists of a presentation of the student's research and answers to questions by the Committee members and members of the audience. Following the public phase of the defense, there is a private (committee-only) phase in which questions typically address the theoretical and empirical adequacy of the research, and also its relation to the general field and related areas. At the end of the oral defense, the Committee votes on the outcome. One dissenting Committee member vote is permitted in adjudging a defense to be successful.

Forms Required for the Ph.D. Committee, Proposal, and Degree

1. Committee Membership Form

Fill out and return to Graduate College with a copy to the Graduate Academic Advisor in Psychological & Brain Sciences as soon as a Committee is confirmed. This should occur sometime prior to an oral defense being scheduled.

<http://www.udel.edu/gradoffice/forms/committeeconfirmation.pdf>

2. Proposal Approval Form (Recommendation for Candidacy)

Committee signs when prospectus meeting is held and dissertation proposal is approved. Return to Graduate College with a copy to the Graduate Academic Advisor in Psychological & Brain Sciences.

http://www1.udel.edu/gradoffice/forms-new/Doctoral_Degree_Recommendation.pdf

3. Application for Advanced Degree Form

http://www1.udel.edu/gradoffice/forms-new/Advanced_Degree.pdf

Fill out and return to Graduate College with a copy to the Graduate Academic Advisor in Psychological & Brain Sciences. This should be done early in the semester that the student expects to receive their degree in. For example, if the student is expecting the degree at the end of the spring term in May, then the Application for Advanced Degree Form should be completed at the beginning of the spring term. The actual deadline dates for receipt of this are posted on the Graduate College website located here: <http://grad.udel.edu/policies/step-by-step-guide-to-graduation/#submission-dates>. This website also provides information regarding dissertation submission deadlines.

4. Certification for Ph.D. Dissertation Defense

Committee signs when Dissertation has been successfully defended. Return to Graduate College with a copy to the Graduate Academic Advisor in Psychological & Brain Sciences.

http://www1.udel.edu/gradoffice/forms-new/certification_doctoral_dissertation.pdf

Note: For any of the above forms that require the signature of the Department Chair and/or Director of Graduate Education, submit the form to the Academic Advisor who will obtain the Chair's and/or Director's signature. The Chair and/or Director will sign paperwork only after faculty advisors and committee member (where applicable) have signed.

Format of Ph.D. Dissertation

The University has step-by-step guidelines to follow for submitting your thesis that may be found at: <http://www.udel.edu/gradoffice/polproc/steps.html>.

Part V. The 4+1 BS/MS Degree Program in Neuroscience

Summer Research Residency

Upon completing the Bachelor's Degree in Neuroscience and achieving graduate student status, students admitted into the 4+1 Program in Neuroscience transition immediately into their Summer Research Residency, for which they must register for 6 credits of graduate research in neuroscience (*NSCI 868: Graduate Research*). This step is particularly important since summer is a time when graduate students and their faculty mentors can devote the greatest amount of undistracted time and attention to research, particularly to the gathering and analysis of data for one's Master's thesis research. During their Summer Research Residency, 4+1 students must write and defend their Master's Degree Proposal (deadline of August 25), described below, and initiate their Master's Thesis Research.

Master's Degree Proposal

Students will present a concisely written thesis proposal to their Master's Thesis Committee and defend it orally. The Thesis Committee shall consist of the student's faculty mentor and at least two other members of the faculty from the Department of Psychological & Brain Sciences. Faculty from other departments or colleges within or outside the University may also serve as a research mentor and serve on the student's thesis committee, by mutual agreement of all parties involved and subject to approval by the Director of Graduate Education in the Department of Psychological & Brain Sciences.

Fifth Year of Graduate Studies & Research

Students in the 4+1 Neuroscience Program complete graduate course work in Neuroscience, attend area and departmental colloquia each semester (*NSCI 866: Neuroscience Colloquium*), and complete graduate research in neuroscience (*NSCI 868: Graduate Research* and *NSCI 869: Master's Thesis*). Colloquia and seminars are an important forum for faculty, graduate students, and invited guests to present and discuss recent research.

Hence, upon graduation, students in the 4+1 Neuroscience Program will have completed a total of 30 graduate credits beyond the Bachelor's Degree in Neuroscience. Please note that neuroscience courses that were taken as an undergraduate cannot be taken again or credited toward graduate work.

Master's Thesis Completion

The culmination of a successful Master's Thesis research project results in a written Master's Thesis. Expectations for the Master's Thesis research are established by a student's faculty mentor with oversight by the student's thesis committee and must be approved by the Director of Graduate Education. To allow for final revision and submission of the document in time to apply for the June graduation, the Neuroscience Master's

Thesis must be submitted to, and orally defended in front of, the students Master's Thesis Committee by April 15th of the second semester of the fifth year.

Advisement

Primary advising for students enrolled in the 4+1 Program in Neuroscience will be the responsibility of the student's faculty research mentor.

Program Coursework and Thesis Research Requirements

Summer Research Residency

NSCI 868 Graduate Research	6 credits
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Master's Thesis Proposal	0 credits
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First Semester of 5th Year

NSCI 6xx Neuroscience <i>Core Course</i> *	3 credits
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NSCI 868 Graduate Research	5 credits
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NSCI 869 Master's Thesis	3 credits
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NSCI 866 Neuroscience Colloquium	1 credit
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Second Semester of 5th Year

NSCI 6xx Neuroscience <i>Core</i> * <i>or Elective Course</i> **	3 credits
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NSCI 868 Graduate Research	5 credits
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NSCI 869 Master's Thesis	3 credits
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NSCI 866 Neuroscience Colloquium	1 credit
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TOTAL	30 credits
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****Core Courses***

NSCI 626 Neuroanatomy

NSCI 627 Neurophysiology

NSCI 628 Neuropharmacology

*****Elective Courses: Any 600-level NSCI course. Also includes BISC 639: Developmental Neurobiology.***

If a student has already completed NSCI core or elective courses at either the 400 or 600 level, an alternate NSCI course must be chosen. That is, courses taken during the senior year for the BS Degree in Neuroscience may not be taken again for credit during the fifth year for credit towards the MS Degree in Neuroscience. If eligible alternate NSCI courses are not being offered, any graduate level BISC or PSYC course may be substituted with the approval of the student's faculty mentor and the Director of Graduate Education.

Forms Required for the Master's Committee, Proposal, and Degree

1. Committee Membership Form

Fill out and return to the Graduate Academic Advisor in Psychological & Brain Sciences as soon as a Committee is confirmed. This should occur sometime prior to an oral defense of the proposal being scheduled.

Department Shared Google Drive (Psych Forms > Grad Student Form > Master's Degree Committee Members Form)

2. Proposal Approval Form

Committee signs when prospectus meeting is held and thesis proposal is approved. Return to the Graduate Academic Advisor in Psychological & Brain Sciences.

Department shared Google Drive (Psych Forms > Grad Student Form > Master's Thesis Proposal Form)

3. Application for Advanced Degree Form

http://www1.udel.edu/gradoffice/forms-new/Advanced_Degree.pdf

Fill out and return to Graduate College with a copy to the Graduate Academic Advisor in Psychological & Brain Sciences. This should be done at the beginning of the spring term. See deadline dates for receipt of this that are posted on the Graduate College website located here: <http://grad.udel.edu/policies/step-by-step-guide-to-graduation/#submission-dates>. This website also provided deadline for submission of the thesis.

4. Certification for Master's Thesis Defense

Committee signs when Thesis has been successfully defended. Return to the Graduate Academic Advisor in Psychological & Brain Sciences.

Department shared Gouge Drive (Psych Forms > Grad Student Form > Oral Defense Completion Form for Masters)

Note: For any of the above forms that require the signature of the Department Chair and/or Director of Graduate Education, submit the form to the Academic Advisor who will obtain the Chair's and/or Director's signature. The Chair and/or Director will sign paperwork only after faculty advisors and committee member (where applicable) have signed.

Format of the Master's Thesis

The University has step-by-step guidelines to follow for submitting your thesis that may be found at: <http://www.udel.edu/gradoffice/polproc/steps.html>.

Part VI. Research Proposals Involving Human Subjects

The Department of Psychological & Brain Sciences' procedures for approving research proposals involving human subjects conform to the principles set forth in the H.E.W. Code of Federal Regulations 45 CFR 46 (Nov. 1978) as well as those of the American Psychological Association. Students should consult the policies described below for up-to-date information:

<http://www.udel.edu/research/preparing/humansub.html>

Students should work with the UD Institutional Review Board for determination of protocol exempt status or for protocol approval.

Part VII. Research Proposals Involving Animal Subjects

The Department of Psychological & Brain Sciences' procedures for approving research proposals involving animal subjects in research conform to the principles set forth by an Institutional Animal Care and Use Committee (IACUC), which is constituted according to the Public Health Service Policy on Humane Care and Use of Laboratory Animals. Students should consult the policies described below for up-to-date information:

<http://www1.udel.edu/research/preparing/animalcare.html>