COGNITION AND PERCEPTION (PHD)

Department Website (http://as.nyu.edu/psychology/)

NYSED: 08361 **HEGIS:** 2002.00 **CIP:** 42.2704

Program Description

The Program in Cognition and Perception spans multiple subareas of psychology, such as perception, attention, memory, categorization, language, emotion, decision-making, development, motor control, and cognitive neuroscience. How do we identify the letter "a"? How do we perceive depth and shape? What representational resources are innate? How do human cultures, and individual children, go beyond innate representational capacities? How do toddlers make decisions about their world? How are explicit and implicit memories coded in the brain? How do we inhibit inappropriate responses? How are sentences understood? How are new concepts acquired? How does attention affect perception?

The Program in Cognition and Perception spans two campuses: NYU in New York and in Abu Dhabi. Our Cognition and Perception faculty page lists the faculty associated with each campus. A PhD student for NYU in New York typically spends five years in New York taking courses and carrying out research. A PhD student for NYU in Abu Dhabi will typically spend two years primarily in New York with multiple visits to Abu Dhabi. During those two years, students complete all or most of their coursework as well as carrying out research in collaboration with an NYU Abu Dhabi advisor and a co-mentor in New York. The subsequent three years are spent in Abu Dhabi completing the dissertation research and any remaining course requirements. For more information on the Global PhD program, click here (https://as.nyu.edu/nyu-as/as/departments/psychology/graduate/global-phd.html).

In the Program in Cognition and Perception, students and faculty investigate how people perceive, think, and act. Research is central in our graduate training. Students are exposed to a broad range of knowledge in cognition and perception and they are trained to think creatively and to develop independent research careers. Students and faculty work closely with researchers in other departments and research centers: (Neural Science (http://www.cns.nyu.edu/), Computer Science (https://as.nyu.edu/nyu-as/as/departments/cs.html), Data Science (https://datascience.nyu.edu/), Linguistics (https://as.nyu.edu/nyu-as/as/departments/linguistics/graduate.html), and Philosophy (https://as.nyu.edu/nyu-as/as/departments/philosophy/graduate.html)). Every week there are journal club discussions and talks by leading researchers that take place within the Psychology Department, in other NYU departments, and at other nearby schools in New York City (see Events link). Ready access to researchers at several great universities and to incredible cultural resources makes New York City a great place to study perception and cognition.

Our graduate students begin research immediately. Research includes behavioral methods as well as measurements of motor responses (arm and eye movements, locomotion), brain responses (using fMRI, MEG and EEG), perturbation of brain responses (using TMS) and other physiological measurements (e.g., hormone levels). Students typically work with one faculty mentor, although lab rotations and cross-lab collaborations are also frequent and encouraged. Ours is a highly collaborative Program with many research projects that combine the expertise of more than one faculty member. Students benefit from interaction with their faculty advisers and the lively exchange of research ideas among students, postdocs, and faculty at the Cognition and Perception Area Seminar, many other research seminars and journal clubs in several research areas (Development, Decision-making, Concepts and Categorization, etc.) and our annual Miniconvention. As a result of this focus on research, our students publish regularly in high-impact journals and go on to become researchers at the best research universities and industrial laboratories.

Admissions

All applicants to the Graduate School of Arts and Science (GSAS) are required to submit the general application requirements (https://gsas.nyu.edu/nyu-as/gsas/admissions/arc.html), which include:

- Academic Transcripts (https://gsas.nyu.edu/nyu-as/gsas/admissions/arc/academic-transcripts.html)
- Test Scores (https://gsas.nyu.edu/nyu-as/gsas/admissions/arc/test-scores.html) (if required)
- Applicant Statements (https://gsas.nyu.edu/nyu-as/gsas/admissions/arc/statements.html)
- Résumé or Curriculum Vitae
- Letters of Recommendation (https://gsas.nyu.edu/nyu-as/gsas/admissions/arc/letters-of-recommendation.html), and
- A non-refundable application fee (https://gsas.nyu.edu/admissions/arc.html#fee).

See Psychology (https://gsas.nyu.edu/admissions/arc/programs/psychology.html) for admission requirements and instructions specific to this program.

Program Requirements

Formal requirements for the doctorate in Cognition and Perception include the satisfactory completion of 72 credits (at least 32 in residence at New York University). All students must complete the program requirements with a grade of 'B' or better.

Course	Title	Credits
Major Requirements		
Quantitative Methods Requirement		
PSYCH-GA 2211	Math Tools for Cognitive Science and Neuroscience	3-4
or PSYCH-GA 2228	Interm Stat Methods	
2nd Quantitative Methods course [1]		3
Core Content Areas Requirement		*9*
Select one course (3 credits each) from three of the four core content areas of the program [3]		
Perception		
PSYCH-GA 2223	Perception	
Development		
PSYCH-GA 2209	Cognitive Development	
PSYCH-GA 2220	Developmental Cognitive Neuroscience	
Cognitive Neuroscience		
PSYCH-GA 2221	Cognitive Neuroscience	

PSYCH-GA 2220	Developmental Cognitive Neuroscience	
Cognition		
PSYCH-GA 2207	Categories and Concepts	
PSYCH-GA 2212	Neuroeconomics and Decision Making	
PSYCH-GA 2225	Learning and Memory	
PSYCH-GA 2226	Psycholinguistics	
PSYCH-GA 2710	Neurolinguistics (Neurolinguistics)	
Required Paper and Lab Courses		
PSYCH-GA 3100	Doctoral Psychology Project I	3
PSYCH-GA 3200	Doctoral Psychology Project II	3
PSYCH-GA 3000	Doctoral Research Laboratory [2]	3
21 additional credits in PSYCH-GA 3000 [2]		21
Electives		
Coginition and Perception Advanced Electives [4]		9
Research Courses		17-18
Total Credits		**72**

[1] May be satisfied with courses within Psychology, the Center for Data Science, Computer Science, Mathematics, Economics, the PR/ISM Program in the Steinhardt School or other departments, as approved by the Program Coordinator.
[2] This course is taken 8 times for a total of 24 credits.
[3] Or other courses as approved by the Program Coordinator. Note that Developmental Cognitive Neuroscience, PSYCH-GA 2220 may count as a course in Development or in Cognitive Neuroscience, but may not count for both for satisfying the core content requirements.
[4] Three advanced elective courses in Psychology or in other departments as approved by advisement.

Training for research begins when students enter the program and culminates in the doctoral thesis. Students become active members of one of the productive research laboratories associated with the program, facilitating contact with faculty members, advanced students, and postdoctoral scientists.

Concentrations

Developmental Psychology

Students engage in advanced-level seminars and research with faculty affiliated with both developmental psychology and their chosen field of interest. The fact that the concentration cuts across different areas of psychology assures that students receive broad exposure to theories of development and methods of studying developmental change across a range of content areas. Students pursue a specific course of study in developmental psychology within the required curriculum of their core psychology program. They attend and present their research at weekly lab meetings. Nationally renowned developmental scholars are invited to present their research to the program, and students have the opportunity to discuss their work with them.

Courses: Five (5) courses are required for the Developmental Psychology, two (2) of which may have been taken to satisfy core requirements and can also count toward the concentration, reducing the total courses required to three (3).
Cognitive Development, PSYCH-GA 2209 (3 credits)

Four other developmental electives (12 credits)

The elective courses should be chosen in consultation with a developmental Faculty adviser. These five courses (15 credits) may overlap with the Core Content and Advanced Elective Ph.D. requirements, counting for both.

Students in the developmental concentration are required to write their dissertation on a developmental topic with the supervision of a Developmental Faculty adviser.

Quantitative Psychology

Students may also concentrate in quantitative psychology, which involves mathematical representations of behavioral data, using statistical analysis and mathematical models of psychological phenomena. All areas of psychology can be approached from a quantitative perspective, so it is possible to pursue a quantitative concentration from either of the doctoral specialty programs. Students take elective courses in advanced statistical and/or mathematical topics and demonstrate an ability to communicate mathematical approaches clearly.

Courses: Students must take and pass six (6) quantitative courses with a grade of 'B+' or better. Two (2) of these are the two courses taken to satisfy the Quantitative Methods requirement. Three (3) of these courses replace the 9 credits required in the Advanced Electives requirement. The final course replaces 3 credits in the General Electives requirement. These courses may be chosen from those offered by the Department of Psychology or other departments, as approved by the Quantitative Concentration Mentor

Mentor: All students pursuing the quantitative concentration must secure a mentor from among the provided mentor list. The mentor serves as a guide to taking appropriate courses for the concentration, for choices of quantitative courses to teach or serve as a Class Assistant for, and for advice on the quantitative components (i.e., data analysis or modeling) of their research papers. Students admitted to the concentration will usually have received an 'A' or an 'A-' in the first quantitative courses in the program (e.g., Math Tools or Intermediate Statistics).

Teaching: Experience in teaching quantitative psychology, either as a teaching assistant of a quantitative course, or as an instructor of a college level course on quantitative methods, or through equivalent experience. The student's quantitative mentor must certify that the student satisfactorily prepared and presented lab sessions or course lectures.

Written Report: Demonstration of ability to communicate advanced quantitative material. The student must submit a written report to their Mentor that demonstrates competence in writing about quantitative psychology. This report might be a senior-authored empirical research paper that requires sophisticated quantitative methods, or it might be a review of quantitative models or methods. In certain cases it may constitute one of the chapters of the dissertation.

Additional Program Requirements

Advising

Students are required to have a faculty adviser, or co-Advisers, at all times while in the program. Although students typically enter the program with

an adviser at the point of Admission, some students may be required to choose an adviser within the first two weeks of the first semester. Advisers take primary responsibility for the research activities of their students, and advise them on other matters pertinent to their graduate degrees and may also serve as their primary dissertation sponsor. The role of the adviser may include: course selection, when it is appropriate to teach, when and whether to do an internship, and post degree-completion career plans. The adviser, and co-Adviser (if applicable), are responsible for tracking student progress and recommending final grades for Doctoral Research Laboratory, PSYCH-GA 3000, in each term the student is enrolled in that course. Students have the option of changing their adviser, but must always have an adviser.

Dissertation Proposal

By the end of the spring semester of year four, students should formulate and defend their dissertation proposal to their three-member Faculty committee (see 'Dissertation Committee Composition') and receive signed approval of their proposal before continuing research toward their final dissertation.

Dissertation and Oral Defense

By the end of the Spring semester of year five, students should complete the oral defense of their dissertation before their primary Faculty committee and two additional Readers, as chosen by the student in consultation with their committee members. Prior to giving the oral defense, students must gain authorization of the primary committee members, and the Program Coordinator, to defend. This approval must be received by the department prior to scheduling the oral defense. All students should plan to complete a final dissertation in five years. The composition of the five-person dissertation committee (Advisor/sponsor, two primary members, two readers) must include a minimum of three full-time Department of Psychology Faculty members, and must include one member from outside of the program (*i.e.* from another Program in the Department of Psychology, from another Department within New York University, or from outside of New York University). Any committee member from outside the Faculty of Arts and Science must receive approval from the Director of Graduate Studies.

Departmental Approval

All Graduate School of Arts & Science doctoral candidates must be approved for graduation by their department for the degree to be awarded.

Sample Plan of Study

Course	Title	Credits
1st Semester/Term		
PSYCH-GA 2211 or PSYCH-GA 2228	Math Tools for Cognitive Science and Neuroscience or Interm Stat Methods	4
PSYCH-GA 2223	Perception	3
PSYCH-GA 3000	Doctoral Research Laboratory	3
	Credits	**10**
2nd Semester/Term		
PSYCH-GA 2221	Cognitive Neuroscience	4
Major Requirement		3
PSYCH-GA 3000	Doctoral Research Laboratory	3
	Credits	**10**
3rd Semester/Term		
PSYCH-GA 3100	Doctoral Psychology Project I	3
PSYCH-GA 2233	Math Tools II: Simulation and Data Analysis	3
PSYCH-GA 2207	Categories and Concepts	3
	Credits	**9**
4th Semester/Term		
PSYCH-GA 2245	Functional Magnetic Resonance Imaging Lab	3
ELECT		3
PSYCH-GA 3000	Doctoral Research Laboratory	3
	Credits	**9**
5th Semester/Term		
PSYCH-GA 3200	Doctoral Psychology Project II	3
PSYCH-GA 3304	Predoctoral Research in Psychology	3
PSYCH-GA 3000	Doctoral Research Laboratory	3
	Credits	**9**
6th Semester/Term		
PSYCH-GA 3304	Predoctoral Research in Psychology	6
PSYCH-GA 3000	Doctoral Research Laboratory	3
	Credits	**9**
7th Semester/Term		
PSYCH-GA 3301	Dissertation Research	6
PSYCH-GA 3000	Doctoral Research Laboratory	3
	Credits	**9**
8th Semester/Term		
PSYCH-GA 3302	Dissertation Research	4
PSYCH-GA 3000	Doctoral Research Laboratory	3
	Credits	**7**
	Total Credits	**72**

Following completion of the required coursework for the PhD, students are expected to maintain active status at New York University by enrolling in a research/writing course or a Maintain Matriculation (MAINT-GA 4747) course. All non-course requirements must be fulfilled prior to degree conferral, although the specific timing of completion may vary from student-to-student.

Learning Outcomes

Upon successful completion of the program, graduates will:

1. Be able to discuss the central theories and literature of the discipline and, in particular, the student's research subarea, and be able to critique current research literature, including the recognition of strengths and weaknesses of theoretical arguments and empirical evidence.
2. Be able to develop ideas, formulate hypotheses and design research studies to test the hypotheses.
3. Have the knowledge and skills to select appropriate statistical methods and mathematical modeling approaches to evaluate data and theories, and to implement these methods and modeling approaches to research problems.
4. Learn to communicate clearly both orally and in writing both in terms of teaching and to communicate the results of the student's research.
5. Produce research papers that are published as journal or conference papers or that are deemed to be publishable by the faculty.

Policies

NYU Policies

University-wide policies can be found on the New York University Policy pages (https://bulletins.nyu.edu/nyu/policies/).

Graduate School of Arts and Science Policies

Academic Policies for the Graduate School of Arts and Science can be found on the Academic Policies page (https://bulletins.nyu.edu/graduate/arts-science/academic-policies/).