

## Graduate Course Offerings 2025-2026

All courses are 1 credit unless otherwise noted; PBS graduate students **must** enroll in a total of at least **3 credits per term** including at least one credit of research.

### FALL 2025

#### **PSYC 100. Proseminar (all faculty)**

An introduction to the research program of PBS Faculty. Taken by students in their first year.

#### **PSYC 126/IND 102. Systems Neuroscience (van der Meer)**

The PSYC 126/IND 102 course provides graduate students with a rigorous exploration of fundamental systems neuroscience. We will focus on sensory and motor systems and their accompanying brain structures, but we will also cover hypothalamic, autonomic, limbic, and cortical systems. For each system we will discuss anatomical and physiological relationships and relate them to neurological disorders. This is a lecture-based course with the goal to provide a broad understanding of core brain structures and their underlying physiological functions.

#### **PSYC 167. Professional Development (Stoermer)**

#### **PSYC 700. Grad Student Ethics Course (Graduate Chair - TBD)**

Required course for all Cognitive Neuroscience and Psychological & Brain Sciences graduate students. Generally, consists of five two-hour sessions as well as additional reading and preparation.

#### **PSYC 103.5/IND 103.5. Neuroanatomy Module (Taube)**

*Course details to be confirmed. Mon, Sept 15 through Tues, Sept 30. Class will meet from 1-4 every day.*

This 2-3 week module will involve a hands-on experience with neuroanatomy and some clinical aspects of neurology. The class will meet every weekday in the morning from 9-12 OR, alternatively, in the afternoon (1-4) for two of the days during the first week. The first week will cover a detailed dissection of a sheep's brain, where each student will get their own sheep's brain to dissect. During the second week, we will dissect a human brain in small groups, as well as cover neurological imaging, the neurologic exam, and some interviews with patients who have various neurological disorders. On the last day of the module there will be a short practical exam that will test the material covered. Students will receive 0.33 credits for this course on their transcripts. The course is intended for students who have taken the IND 102/PSYC 126 Systems Neuroscience course, but may be open to other students by permission.

## **WINTER 2026**

### **PSYC 110. Measurement and Statistics I (Wolford)**

First section of Graduate level statistics. Taken by students in their first or second year.

### **PSYC 128. Cognitive Neuroscience (Soltani)**

## **SPRING 2026**

### **PSYC 111. Measurement and Statistics II (Wolford)**

Second term of Graduate level statistics. Typically taken by PBS students in their first or second year.

### **PSYC 134. Neural Computation (Murray)**

This course will examine the computational principles of core cognitive functions in neural circuits. Students will develop conceptual understandings of these principles, grounded in geometric and dynamical systems perspectives, which can be related to neural and behavioral phenomena in experimental neuroscience. Topics include population coding, learning, and decision making. Students will study dynamical models of neural circuits, with hands-on exercises using model simulations, and will study research papers applying computational models to better understand empirical findings in neuroscience and psychology.

### **PSYC 160. Imaging Methods (Chang)**

How can we understand how the brain works? This course provides an introduction to in vivo neuroimaging in humans using functional magnetic resonance imaging (fMRI). The goal of the class is to introduce: (1) how the scanner generates data, (2) how psychological states can be probed in the scanner, and (3) how this data can be processed and analyzed. Students will be expected to analyze brain imaging data using the opensource Python programming language. We will be using several packages such as numpy, matplotlib, nibabel, nilearn, fmripred, pybids, and nlttools. We will cover the basics of signal processing, and how we can make inferences using the general linear model. We will also introduce more advanced analysis techniques such as prediction/classification, representational similarity analysis, and intersubject correlations.

### **PSYC 171. Brain Evolution (Granger)**

For the first 200 million years of mammalian evolution, animals' brain sizes were relatively predictable from their body size via a straightforward allometric relation. In the past four million years, an evolutionary blink of the eye, primates rapidly evolved brains that are four times larger than previously would have been predicted for their body size. What are the contents of our brains? How do they differ from the brains of other mammals (and non-mammals)? How did they acquire their enormous size? Evolution acts on genes, not on organisms; what are the genetic factors that have been identified in recent primate brain growth? What mechanisms are at play, including extrinsic factors and evolutionary "pressures"? What criteria must theories of brain evolution conform to, and what data are to be accounted for? What differential predictions arise from various theories and how are they tested? What relationships obtain between anatomical and functional brain characteristics?

The class will cover a set of related topics including brain structure, anthropology, evolution, genetics, development, cognition, race, and intelligence.

## **RESEARCH AND TEACHING COURSES**

These courses are offered every term.

**PSYC 115. Supervised Teaching (1 credit):** Taken while performing a TA.

**PSYC 117. Specialist Requirement (1 credit):** Taken while doing specialist reading and written exam, usually not awarded a grade until completed (so 'ON' appears in the grade column until exam is completed and graded).

**PSYC 118. Research Presentation (1 credit):** Taken in the spring term of the second year while completing the MS thesis.

### **PSYC 168. Experiential Learning (2 credits):**

The goal of this course is to provide students with practical training through a full-time internship outside of Dartmouth College. This real-world, hands-on experience will expose students to diverse career opportunities during graduate school and give students a chance to engage with a field of interest, related to their doctoral research, prior to completion of their PhD.

For this course, the student will propose and arrange a paid or unpaid internship in an existing enterprise (industry, government, or other) in consultation with their Thesis Advisor (primary mentor) and the PBS Graduate Committee. This process should happen in advance of the term of enrollment. Course enrollment is concurrent with the internship and should be for a period of one term. At the end of the internship, the student will make an oral presentation to the PBS community (faculty, post-doctoral fellows, graduate students, and others who may be interested) that addresses the nature of the enterprise they were engaged in, the problem they were assigned, and the results and impact of their project. The purpose of the presentation is to share lessons learned from the internship experience with the PBS community. The presentation will be accompanied by a short but complete written report. Neither the presentation nor report should contain confidential information of the enterprise.

This course is considered a methods course, carries two credits, and can fulfill one of the elective course requirements for the PhD degree. Students may enroll in the course no more than once. Students holding F-1 sponsorship should consult with the Office of Visa and Immigration Services (OVIS). Students engaged in paid internships will not receive a graduate student stipend during the term of the internship.

**Prerequisites:** This course is generally open to students in their second-fourth year in the program (i.e. after completion of their first three terms and prior to proposing their dissertation). Instructor permission is required and will be granted once the PBS Graduate Committee approves of the student's internship proposal.

**PSYC 188 (1 credit), 288 (2 credits), 388 (3 credits).** **Graduate Research:** All active students must take at least one research credit every term.

## **HOW TO CHOOSE THE CORRECT RESEARCH COURSE**

Remember that you must be enrolled for 3 total credits per term to be considered 'active'. If you are not sure about courses, check with the Department Administrator.

If you are enrolling in full-time research (i.e. not taking any seminars, teaching assistantships, or specialist reading courses), enroll in PSYC 388 (3 credits). If you are enrolling in 1 seminar course as well as conducting research, enroll in PSYC 288 (2 credits). If you are enrolling in 2 courses as well as doing research, enroll in PSYC 188 (1 credit). You should be enrolled in at least 1 credit of research every term.

*Example 1:* you are a first year student taking the proseminar and doing research: you will sign up for PSYC 100 and PSYC 288.

*Example 2:* you are TA'ing a course, taking a Special Topics Seminar, and doing research: you will sign up for PSYC 115, PSYC 179, and PSYC 188.

*Example 3:* you are taking no courses, you are not TA'ing, and you are not working on your specialist requirement; you are only participating in research for the term: you will sign up only for PSYC 388.

## **COURSES OFFERED BY OTHER DEPARTMENTS AND PROGRAMS**

If there is a course offered by another department, which you would like to take for PBS grad program credit, please contact the Chair of the Graduate Committee to request approval before taking the course.