Graduate Course Offerings 2026-2027
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 2026

PSYC 100. Proseminar (Nautiyal) 12

Required for PBS/COGN PhD students in their first year. The course introduces students to the practicalities, expectations, and norms of grad school in PBS, as well as available resources. Topics to be discussed may include goal-setting, managing well-being, communicating science, the use of generative AI in research and computational skills. Responsible and Ethical Conduct of Research is also covered.

PSYC 126/IND 102. Systems Neuroscience (Dwiel) 10A

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 162. Human Electrophysiology Lab (Stoermer) ARR

The goal of this course is to provide an introduction to the methodology of human electroencephalogram (EEG), including event-related potentials (ERPs), oscillatory activity, and steady-state visual evoked potentials (SSVEPs). The course will provide theoretical background on these methods, as well as hands-on experience: we will design our own EEG experiment, record EEG data in the lab, and analyze it together; including data preprocessing (artifact rejection, filtering), computing ERPs, and oscillatory activity. Finally, the class will also cover how to present EEG/ERP data and interpret ERP components, oscillations, and SSVEPs.

PSYC 166. Pedagogy with Purpose (Clark) 3A

Textbook or primary literature? Open-access articles? Multiple-choice, essay, or short-answer? Lecture, discussion, or flipped? Group work or individual projects? AI-resistant, AI-curious, or AI-embracing? These are just a few of the choices that instructors face as they plan and implement their courses. In this class, you will evaluate the literature that informs these choices (among others) and identify evidence-based principles to carry forward to future teaching opportunities. Open to students who have completed their first year of graduate study.

WINTER 2027

PSYC 102. Core Concepts II. (Finn) ARR

Core Concepts classes will examine cross-cutting ideas from psychology and neuroscience to provide first and second year PBS/COGN students with a solid foundation in concepts central to Psychological and Brain Sciences. The concepts will illuminate the organizing principles of the brain and mind: how neural systems are structured and how they give rise to thought, learning, emotion, and value. They will each be explored from multiple perspectives to integrate concepts across different levels of analysis, experimental approaches, and model systems. The course will include lectures and class discussion and may explore topics including representation, individual variability, and networks.

PSYC 110. Measurement and Statistics I (Thornton) ARR

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

PSYC 164. Computational Methods (Haxby) ARR

This course will review current computational methods for understanding how information is coded in neural activity and how to decode patterns of neural activity to reveal the information that is being represented and processed. The course will cover topics such as multivariate pattern classification, representational similarity analysis, forward encoding models, and using hyperalignment to build common models of representational and connectivity spaces. The course will concentrate on applications to human functional neuroimaging data, but application to other methods of measuring neural activity in humans and animals will also be covered.

PSYC 175. Current Issues in Behavioral Neuroscience (O'Neill) ARR

This course explores the neural circuit basis of emotion—particularly fear—using cellular, systems-level, and computational approaches in animal models. Beginning with historical and modern theories, we will quickly move to primary-literature discussions of the neural circuitry that may underlie emotional experience. Students will critically engage with methodology and experimental findings from neurophysiological recordings (electrophysiology, calcium imaging) and evaluate causal manipulations (optogenetics, chemogenetics) of neural circuits in the amygdala and connected regions. Problem-sets and presentations will develop conceptual and quantitative reasoning in this subject.

SPRING 2027

PSYC 103. Core Concepts III (Wheatley) ARR

Core Concepts classes will examine cross-cutting ideas from psychology and neuroscience to provide first and second year PBS/COGN students with a solid foundation in concepts central to Psychological and Brain Sciences. The concepts will illuminate the organizing principles of the brain and mind: how neural systems are structured and how they give rise to thought, learning, emotion, and value. They will each be explored from multiple perspectives to integrate concepts across different levels of analysis, experimental approaches, and model systems. The course will include lectures and class discussion and may explore topics including inference and generalization, temporal dynamics, and social interaction and communication.

PSYC 111. Measurement and Statistics II (Thornton) ARR

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

PSYC 173. Neurodiversity (Robertson) ARR

There is remarkable variation in how each of our brains are wired and how we each experience the world. Yet, neuroscience has traditionally focused on understanding the *general* principles of neural processing, often overlooking the diversity of cognitive experience. The course centers on a timely and fundamental question: what does "neurodiversity" mean? In what ways can neural architecture exhibit meaningful forms of diversity?
To address this question, we will draw on philosophical, historical, neurobiological, and computational perspectives. We begin by tracing the historical construction of "mental difference," from early psychiatric categories to modern diagnoses such as autism. Moving beyond a medicalized model of thinking about psychiatric conditions, this course introduces a computational framework for neurodiversity, focusing on canonical neural computations and tuning parameters that may vary across individuals and give rise to different cognitive styles.
The core thesis of the course is that neurodiversity can be understood as variation in the parameterization of shared neural computations that shape how minds perceive, learn, and decide. We will examine key dimensions of neurodiversity through this lens, asking how variation in these parameters is expressed at cognitive, computational, and neural levels. For each dimension, we will consider the relevant theories, the neural circuits that support it, and evidence for atypical parameter tuning in conditions such as autism, schizophrenia, ADHD, OCD, and anxiety. We will also consider how these dimensions emerge over development, and close by asking what it would mean to build institutions, interventions, and technologies that are responsive to different kinds of minds.

This course is designed for students interested in cognitive science, cognitive neuroscience, and computational psychiatry. It emphasizes close reading of primary literature, collaborative synthesis across papers, and the development of mechanistic explanations linking behavior, computation, brain circuits, and clinical variation.

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.