

Psychological & Brain Sciences Major, Cognitive Neuroscience Specialization

Program Requirements

- **Total units required:** 43-46 units (34, at least 25 of which must be at the 300 level or above, for the major requirements plus 9-12 units for the specialization)

Required Courses

- Psych 100B Introduction to Psychology is a prerequisite for all upper-level courses (300 level and above). Exemption from Psych 100B Introduction to Psychology is possible in the following circumstances:
 - Completion of an equivalent course transferred from another institution, if approved by the director of undergraduate studies.
 - An AP psychology test score of 5, an IB score of 6 or 7, or a British A-Level grade of A.
- Psych 300 Introduction to Psychological Statistics
 - SDS 2200, SDS 3200, or DAT 120 may substitute for Psych 300 Introduction to Psychological Statistics but earn no units of credit toward the major. No AP math course can substitute for Psych 300 Introduction to Psychological Statistics.
- Psych 301 Experimental Psychology or Psych 3011 Experimental Psychology

In cases where an exemption is granted (e.g., Psych 100B, Psych 300), no credits are earned toward the major, so exempt courses must be made up with additional P&BS content electives (approved by the major advisor).

Core Requirements

Students must complete at least one course from each of the following five categories:*

Social/Personality:

Code	Title	Units
Psych 305	Health Psychology	3
Psych 315	Introduction to Social Psychology	3
Psych 353	Psychology of Personality	3
Psych 396	Psychological Dynamics of Empathy	3
Psych 4099	Human Evolutionary Psychology	3

Mental Health/Affective:

Code	Title	Units
Psych 3195	Abnormal Child Psychology	3
Psych 354	Psychopathology and Mental Health	3
Psych 3645	Understanding Emotions	3
Psych 4765	Inside the Disordered Brain: Biological Bases of the Major Mental Disorders	3

Biological/Neurological Bases of Behavior:

Code	Title	Units
Psych 330	Sensation and Perception	3
Psych 3401	Biological Psychology	3
Psych 345	Genes, Environment, and Human Behavior	3
Psych 3604	Cognitive Neuroscience	3
Psych 4182	Perception, Thought, and Action	3
Psych 4765	Inside the Disordered Brain: Biological Bases of the Major Mental Disorders	3

Behavior and Cognition:

Code	Title	Units
Psych 360	Cognitive Psychology	3
Psych 361	Psychology of Learning	3
Psych 358	Language Acquisition	3
Psych 380	Human Learning and Memory	3
Psych 4099	Human Evolutionary Psychology	3
Psych 433	Psychology of Language	3

Lifespan Development:

Code	Title	Units
Psych 219	The Infant Mind: Sophomore Seminar (this course can fulfill the Lifespan Development Core, but the credit counts in the "6 units Rule")	3
Psych 321	Developmental Psychology	3
Psych 325	Psychology of Adolescence	3
Psych 326	Introduction to the Psychology of Aging	3
Psych 358	Language Acquisition	3
Psych 427	Social Gerontology	3

* If a course falls into more than one category, it can be used to fulfill only one of those categories (i.e., no double-counting).

Elective Courses

Students must complete an additional 9 units of Psychology & Brain Sciences (P&BS) course work.

6-Units Rule

No more than 6 units from the following course types may be used to satisfy the minimum requirements for the P&BS major:

- 100-/200-level courses (other than Psych 100B Introduction to Psychology)
- Psych 333 Independent Study in Psychological and Brain Sciences
- Psych 444C Independent Study for a Concentration in Psychological and Brain Sciences
- Psych 498 Study for Honors and Psych 499 Study for Honors
- Approved School of Continuing & Professional Studies psychology classes
- Approved psychology study abroad courses from a non-psychology study abroad program
- Cross-listed courses not home-based in P&BS
- Approved transfer credits (students transferring from another college should refer to the Transfer Credit section below)

Cognitive Neuroscience Specialization

To augment the major in Psychological & Brain Sciences, the department offers the option of a specialization for students who wish to engage more intensively with a specific area within the discipline.

A specialization may be a valuable experience for students planning on graduate study in psychology or related fields or for those who have a particular interest or want to gain expertise in one of the approved specializations. It may provide a useful preparation for the Honors program in psychology, or it may serve as a substitute for the Honors experience for those students who may not qualify for Honors.

Completion of a specialization entails 12 units:

- Three courses (9 units), at least one of which must be an advanced, 400-level course; and
- A semester of research in an appropriate, approved lab consisting of Psych 444C Independent Study for a Concentration in Psychological and Brain Sciences, which requires the successful completion of an American Psychological Association–style research paper or an approved Honors project. In some cases, a relevant internship or practicum may be an appropriate alternative to research experience. (**Note:** Students may be required to complete a preliminary semester [3 units] of Psych 333 Independent Study in Psychological and Brain Sciences, depending on the nature of the project intended for Psych 444C; the additional independent research is at the discretion of the research mentor and will not be counted toward the completion of the specialization requirements.)

One course taken for a specialization may be used to fulfill no more than one of the core categories or distribution requirements of a Psychological & Brain Sciences major (i.e., one course could double-count for the major and the specialization). None of the units for a

specialization can be counted for any other major or minor (i.e., there is no double counting with another major or minor). For those pursuing the Psychological & Brain Sciences: Cognitive Neuroscience major, the Cognitive Neuroscience Specialization is not an option.

Each specialization has a Psychological & Brain Sciences faculty advisor/coordinator who will meet with interested students to help ensure the successful and appropriate completion of the specialization and who serves as the liaison with the Psychological & Brain Sciences Undergraduate Studies Committee. A student may pursue only one specialization.

Students should contact Shelley Kohlman (skohlman@wustl.edu) in Somers Family Hall, Room 207B, to arrange a specialization. Forms are available from Shelley, and completed forms must be returned to her in order for a specialization to be considered officially "in progress."

Recognition of the specialization will appear on the student's academic record under *Milestones* once all requirements have been met.

Requirements for the Cognitive Neuroscience Specialization

This specialization allows students to acquire deeper knowledge of the relationship between the mind and the brain. The courses for the specialization consider the neurobiological basis of psychological function at a more general level and then explore, in greater depth, specialized topics related to how higher cognitive processes (e.g., memory, attention, perception, emotion) emerge from brain function.

Advisor/coordinator: Professor Todd Braver

Course work required:

Code	Title	Units
Psych 3604	Cognitive Neuroscience	3

Electives (must include two courses, at least one of which is at the 400 level):

Code	Title	Units
Psych 330	Sensation and Perception	3
Psych 3401	Biological Psychology	3
Psych 345	Genes, Environment, and Human Behavior	3
Psych 4182	Perception, Thought, and Action	3
Psych 4412	Advanced Cognitive Neuroscience	3
Psych 4631	Introduction to Computational Cognitive Science	3
Psych 4746	Biological Pathways to Psychopathology: From Genes and the Environment to Brain and Behavior (Biological Pathways to Psychopathology)	3
Psych 4765	Inside the Disordered Brain: Biological Bases of the Major Mental Disorders (Inside the Disordered Brain)	3

Research mentorship: Prior approved research mentorship with a relevant faculty member and successful completion of a research paper (i.e., Psych 444C Independent Study for a Concentration in Psychological and Brain Sciences or Psych 498 Study for Honors/Psych 499 Study for Honors)

Relevant faculty: Todd Braver, Deanna Barch, Ryan Bogdan, Ian Dobbins, Denise Head, Wouter Kool, Zachariah Reagh, and Jeff Zacks (other potential faculty mentors may be approved)

Additional Information

Transfer Credit

If accepted by the College of Arts & Sciences, transfer credits will be evaluated by the director of undergraduate studies in the P&BS department for their applicability toward either major in P&BS.

Senior Honors Program in Psychological & Brain Sciences

The primary goal of the honors program in P&BS is to provide students who have achieved a superior academic record with the opportunity to conduct a comprehensive empirical investigation under the direction of a faculty member.

To be admitted into the honors program, students must meet the following requirements:

- Have overall and P&BS grade point averages of at least 3.65
- Complete both Psych 300 and Psych 301 (or Psych 3011)
- Have an approved honors research advisor

Contact: Shelley Kohlman
Phone: 314-935-5169
Email: skohlman@wustl.edu
Website: <https://psych.wustl.edu/undergraduate-program>