

# Psychological & Brain Sciences

Psychological & Brain Sciences allows students to examine in depth the study of behavior in the areas of:

- Aging and development
- Biological bases of behavior
- Clinical and abnormal psychology
- Cognition
- Cognitive neuroscience
- Learning and memory
- Personality
- Sensation and perception
- Social interactions

The Department of Psychological & Brain Sciences at Washington University has particular strengths in the areas of:

- Aging
- Behavioral economics
- Human development
- Diversity Science
- Cognitive neuroscience
- Emotion
- Judgment and decision making
- Learning and operant conditioning
- Neuropsychology
- Personality and individual differences
- Adult psychopathology
- Sensory processes in vision and audition
- Social theories of self and social processes
- Human emotion

Opportunities for undergraduates include:

- Research involvement with faculty members
- Supervised internships with community-service agencies
- Practicum in Applied Behavior Analysis: Autism Spectrum Disorder
- Study abroad
- Concentrations within the major
- Senior Honors
- Membership in Psi Chi, the national honor society in psychology

**Contact:** Shelley Kohlman  
**Phone:** 314-935-5169  
**Email:** [skohlman@wustl.edu](mailto:skohlman@wustl.edu)  
**Website:** <https://psychweb.wustl.edu>

## Faculty

### Chair

**Deanna M. Barch** (<http://psychweb.wustl.edu/people/deanna-barch>)

Gregory B. Couch Professor of Psychiatry  
PhD, University of Illinois at Urbana-Champaign

### Associate Chair

**Jeffrey M. Zacks** (<https://dcl.wustl.edu/people/jeff-zacks>)

Professor  
PhD, Stanford University

### Endowed Professors

**John Baugh** (<http://psychweb.wustl.edu/people/john-baugh>)

Margaret Bush Wilson Professor in Arts & Sciences  
PhD, University of Pennsylvania  
(African and African-American Studies; Anthropology; Education; English)

**Pascal R. Boyer** (<https://psychweb.wustl.edu/people/pascal-boyer>)

Luce Professor of Collective and Individual Memory  
PhD, University of Paris  
(Anthropology)

**Randy J. Larsen** (<http://psychweb.wustl.edu/larsen>)

William R. Stuckenberg Professor of Human Values and Moral Development  
PhD, University of Illinois at Urbana-Champaign

**Thomas F. Oltmanns** (<http://psychweb.wustl.edu/oltmanns>)

Edgar James Swift Professor of Arts & Sciences  
PhD, State University of New York–Stony Brook

**Steven E. Petersen** ([http://dbbs.wustl.edu/faculty/Pages/faculty\\_bio.aspx?SID=1480](http://dbbs.wustl.edu/faculty/Pages/faculty_bio.aspx?SID=1480))

James S. McDonnell Professor of Cognitive Neuroscience  
PhD, California Institute of Technology  
(Neurology and Neurological Surgery)

**Henry L. Roediger III** (<http://psychweb.wustl.edu/roediger>)

James S. McDonnell Distinguished University Professor  
PhD, Yale University

**Rebecca A. Treiman** (<https://psychweb.wustl.edu/treiman>)

Burke and Elizabeth High Baker Professor of Child Developmental Psychology  
PhD, University of Pennsylvania

**Denise E. Wilfley** (<https://psychweb.wustl.edu/wilfley>)  
Scott Rudolph University Professor of Psychiatry  
PhD, University of Missouri

## Professors

**Richard A. Abrams** (<http://psychweb.wustl.edu/people/richard-abrams>)  
PhD, University of Michigan

**David A. Balota** (<http://psychweb.wustl.edu/people/david-balota>)  
PhD, University of South Carolina

**Todd Braver** (<http://psychweb.wustl.edu/people/todd-braver>)  
PhD, Carnegie Mellon University

**Brian D. Carpenter** (<http://psychweb.wustl.edu/people/brian-carpenter>)  
PhD, Case Western Reserve University

**Ian G. Dobbins** (<https://psychweb.wustl.edu/people/ian-dobbins>)  
PhD, University of California, Davis

**Leonard Green** (<http://psychweb.wustl.edu/green>)  
PhD, State University of New York–Stony Brook

**Sandra S. Hale** (<https://psychweb.wustl.edu/hale>)  
PhD, University of Wisconsin–Milwaukee

**Mark A. McDaniel** (<http://psychweb.wustl.edu/mcdaniel>)  
PhD, University of Colorado

**Kathleen B. McDermott** (<https://psychweb.wustl.edu/mcdermott>)  
PhD, Rice University

**Mitchell Sommers** (<http://www.psych.wustl.edu/sommers>)  
PhD, University of Michigan

**Michael J. Strube** (<http://psychweb.wustl.edu/people/michael-strube>)  
PhD, University of Utah

**Desirée A. White** (<http://psychweb.wustl.edu/white>)  
PhD, Washington University

## Endowed Associate Professor

**Joshua Jackson** (<http://psychweb.wustl.edu/jackson>)  
Saul and Louise Rosenzweig Associate Professor of Personality Science  
PhD, University of Illinois at Urbana-Champaign

## Associate Professors

**Ryan Bogdan** (<http://psychweb.wustl.edu/people/ryan-bogdan>)  
PhD, Harvard University

**Julie M. Bugg** (<http://psychweb.wustl.edu/people/julie-bugg>)  
PhD, Colorado State University

**Janet M. Duchek** (<https://psychweb.wustl.edu/people/janet-duchek>)  
PhD, University of South Carolina

**Denise P. Head** (<http://psychweb.wustl.edu/people/denise-head>)  
PhD, University of Memphis

**Patrick Hill** (<https://psychweb.wustl.edu/hill-0>)  
PhD, University of Notre Dame

**Alan J. Lambert** (<http://psychweb.wustl.edu/lambert>)  
PhD, University of Illinois at Urbana-Champaign

**Lori Markson** (<http://psychweb.wustl.edu/markson>)  
PhD, University of Arizona

**Thomas L. Rodebaugh** (<http://psychweb.wustl.edu/rodebaugh>)  
PhD, University of North Carolina at Chapel Hill

## Assistant Professors

**Tammy English** (<http://psychweb.wustl.edu/english>)  
PhD, University of California, Berkeley

**Calvin Lai**  
PhD, University of Virginia

**Renee J. Thompson** (<http://psychweb.wustl.edu/thompson>)  
PhD, University of Illinois at Urbana-Champaign

**Kristin Van Engen** (<https://psychweb.wustl.edu/van-engen>)  
PhD, Northwestern University

**Clara L. Wilkins**  
PhD, University of Washington

## Affiliated Faculty

**Arpana Agrawal** (<http://psychweb.wustl.edu/agrawal>)  
PhD, Virginia Commonwealth University  
(Psychiatry)

**Joe Barcroft** (<http://pages.wustl.edu/barcroft>)  
PhD, University of Illinois at Urbana-Champaign  
(Romance Languages and Literatures)

**Cindy Brantmeier** (<http://education.wustl.edu/people/cindy-brantmeier>)  
PhD, Indiana University  
(Education & Applied Linguistics)

**Robert Carney** (<http://www.psychiatry.wustl.edu/c/Faculty/FacultyDetails.aspx?ID=508>)  
PhD, Washington University  
(Psychiatry)

**Robert Cloninger** (<https://psychobiology.wustl.edu/people/cloninger.htm>)  
PhD, University of Gothenburg  
MD, University of Umea  
(Psychiatry)

**Maurizio Corbetta** (<http://www.nil.wustl.edu/labs/corbetta/about.html>)  
MD, University of Pavia  
(Neurology)

**James DuBois** (<https://publichealth.wustl.edu/scholars/james-m-dubois>)

PhD, International Academy of Philosophy, Liechtenstein  
(Medicine)

**Hillary Elfenbein** (<http://www.olin.wustl.edu/EN-US/Faculty-Research/Faculty/Pages/FacultyDetail.aspx?username=helfenbein>)

PhD, Harvard University  
(Business)

**Kenneth Freedland** (<http://www.psychiatry.wustl.edu/c/Faculty/FacultyDetails.aspx?ID=1730>)

PhD, University of Hawaii  
(Psychiatry)

**Robert Fucetola** (<http://wuphysicians.wustl.edu/physician2.aspx?Physnum=2526>)

PhD, Washington University  
(Neurology)

**Jason Hassenstab** (<https://neuro.wustl.edu/biographies/jason-hassenstab-phd>)

PhD, Fordham University  
(Neurology)

**Andrew Heath** (<http://www.psychiatry.wustl.edu/Faculty/FacultyDetails?ID=56>)

DPhil, Oxford University  
(Psychiatry)

**Tamara Hershey** (<http://www.psychiatry.wustl.edu/Faculty/FacultyDetails?ID=568>)

PhD, Washington University  
(Psychiatry)

**Barry Hong** (<http://psychiatry.wustl.edu/c/faculty/FacultyDetails.aspx?ID=81>)

PhD, Saint Louis University  
(Psychiatry)

**Brett Hyde** (<http://pages.wustl.edu/bhyde>)

PhD, Rutgers University  
(Philosophy)

**Brenda Kirchhoff** (<https://psychweb.wustl.edu/kirchhoff>)

Research Scientist  
PhD, Boston University  
(Psychological & Brain Sciences)

**Patrick Lustman** (<http://psychiatry.wustl.edu/c/faculty/FacultyDetails.aspx?ID=472>)

PhD, Michigan State University  
(Psychiatry)

**Alvitta Ottley** (<https://cse.wustl.edu/faculty/Pages/faculty.aspx?bio=109>)

PhD, Tufts University  
(Computer Science and Engineering)

**Jonathan Peelle** (<http://jonathanpeelle.net>)

PhD, Brandeis University  
(Otolaryngology)

**John Pruett** (<http://psychiatry.wustl.edu/Faculty/FacultyDetails?ID=1151>)

PhD, Washington University  
(Psychiatry)

**Marcus E. Raichle** (<http://www.nil.wustl.edu/labs/raichle>)

MD, University of Washington  
(Radiology)

**Eugene Rubin** (<http://psychiatry.wustl.edu/c/faculty/FacultyDetails.aspx?ID=200>)

MD, PhD, Washington University School of Medicine  
(Psychiatry)

**Lawrence Snyder** ([http://dbbs.wustl.edu/faculty/Pages/faculty\\_bio.aspx?SID=3164](http://dbbs.wustl.edu/faculty/Pages/faculty_bio.aspx?SID=3164))

MD, PhD, University of Rochester  
(Neurobiology)

**David Van Essen** ([http://brainvis.wustl.edu/wiki/index.php/Main\\_Page](http://brainvis.wustl.edu/wiki/index.php/Main_Page))

PhD, Harvard University  
(Anatomy and Neurobiology)

**James V. Wertsch** ([http://anthropology.artsci.wustl.edu/wertsch\\_james](http://anthropology.artsci.wustl.edu/wertsch_james))

Marshall S. Snow Professor in Arts & Sciences  
PhD, University of Chicago  
(Anthropology; International and Area Studies; Education)

**David Wozniak** (<http://psychiatry.wustl.edu/Faculty/FacultyDetails?ID=155>)

PhD, Washington University  
(Psychiatry)

## Research Professor

**Joel Myerson** (<http://psychweb.wustl.edu/myerson>)

PhD, Arizona State University

## Lecturers

**Tim Bono** (<http://psychweb.wustl.edu/bono>)

PhD, Washington University

**Emily Cohen-Shikora** (<https://psychweb.wustl.edu/cohen-shikora>)

PhD, Washington University

**Erin Lawton** (<https://psychweb.wustl.edu/lawton-0>)

PhD, Washington University

**John Nestojko** (<https://psychweb.wustl.edu/nestojko>)

PhD, University of California, Los Angeles

**Heather Rice** (<http://psychweb.wustl.edu/rice>)

PhD, Duke University

**Robinson Welch** (<http://www.psychiatry.wustl.edu/wilfleylab/home/welch>)  
PhD, University of Missouri-Columbia

## Professors Emeriti

**Stanley Finger** (<http://psychweb.wustl.edu/finger>)  
PhD, Indiana University Bloomington

**Larry Jacoby** (<http://psychweb.wustl.edu/jacoby>)  
PhD, Southern Illinois University Carbondale

**Brett Kessler** (<http://psychweb.wustl.edu/kessler>)  
PhD, Stanford University

**Michael Merbaum** (<http://psychweb.wustl.edu/merbaum>)  
PhD, University of North Carolina at Chapel Hill

**Anthony Schuham** (<http://psychweb.wustl.edu/schuham>)  
PhD, Washington University

**Martha Storandt** (<http://psychweb.wustl.edu/storandt>)  
PhD, Washington University

**Robert L. Williams** (<http://psychweb.wustl.edu/williams>)  
PhD, Washington University

## Majors

The Department of Psychological & Brain Sciences (P&BS) offers the following majors:

- Psychological & Brain Sciences (p. 4)
  - Concentrations within Psychological & Brain Sciences (p. 5)
- Cognitive Neuroscience (p. 7)

## The Major in Psychological & Brain Sciences

The field of psychology encompasses a large and diverse area of study that is empirical, theoretical and practical. As the science concerned with the study of behavior, psychology includes such areas as biological bases of behavior; brain-behavior interactions; learning; memory; cognition; motivation; emotion; sensation and perception; the study of social interactions, persuasion and attitudes; aging and development; personality; clinical, abnormal, and health psychology; and leisure and work experiences. Psychology is a multipurpose, valuable discipline in which to major. It has relevance for those considering careers in law, medicine, the health professions, education and business. In addition, it provides important skills and knowledge for those who may not be planning additional schooling.

**Total units required:** 34 units, of which at least 25 must be at the 300 level or above.

### Required courses:

- Psych 100B Introduction to Psychology is a prerequisite for all upper-level courses (numbered 300 and above).

Exemption from Psych 100B 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 or IB score of 6 or 7. (*N.B.*: AP or IB earns *exemption* from Psych 100B but no units of credit toward the major.)
- Psych 300 Introduction to Psychological Statistics
  - Math 2200 or Math 3200 or both Marketing Statistics QBA 120 & QBA 121 may substitute for Psych 300 but earn no units of credit toward the major. No advanced placement (AP) math course can substitute for Psych 300.
- Psych 301 Experimental Psychology or Psych 3011 Experimental Psychology

**Core requirements:** At least one course from each of the following five categories:

### *Social/Personality:*

Code	Title	Units
Psych 315	Introduction to Social Psychology	3
Psych 353	Psychology of Personality	3

### *Abnormal/Affective Psychology:*

Code	Title	Units
Psych 3501	Psychotherapy: Introduction to Practice and Research	3
Psych 354	Abnormal Psychology	3
Psych 3645	Understanding Emotions	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 374	Drugs, Brain and Behavior	3

### *Behavior and Cognition:*

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

### *Lifespan Development:*

Code	Title	Units
Psych 321	Developmental Psychology	3
Psych 325	Psychology of Adolescence	3
Psych 326	Introduction to the Psychology of Aging	3
Psych 427	Social Gerontology	3

**Elective courses:** An additional 9 units of course work

No more than 6 units from the following categories may be used to satisfy the minimum requirements for the psychological & brain sciences major:

- 100-/200-level classes (other than Psych 100B)
- 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
- University College-approved psychology classes
- Cross-listed courses not home-based in Psychological & Brain Sciences
- Transfer classes (students transferring from another college, please refer to the Transfer Credit section below)

## 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 psychological & brain sciences department for their applicability toward the major.

**Senior Honors:** The primary goal of the Honors Program in psychological & brain sciences is to provide students who have achieved a superior academic record 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:

- Overall and psychological & brain sciences GPAs  $\geq$  3.65
- Completion of both Psych 300 and Psych 301 (or Psych 3011)
- An approved honors research adviser

## Concentrations in Psychological & Brain Sciences

To augment the broadly based psychological & brain sciences major, the department offers concentrations for students who wish to engage more intensively with a specific area within the discipline. The concentrations are meant as an enrichment of the major, but the units for the concentrations may be part of the regular P&BS major requirements.

A concentration requires a minimum of 12 units, which include required and elective courses, one of which must be at the 400 level. In addition, to complete a concentration, students will have to undertake an approved research assistantship (Psych 444C Independent Study for a Concentration in Psychological and Brain Sciences), or an approved internship, practicum, or honors thesis.

A concentration will 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 concentrations. Each concentration will have a member of the faculty as the contact person to meet with and advise students in the concentration.

Courses taken for a concentration may be used to fulfill no more than one of the Core categories or distribution requirements of a psychological & brain sciences major. None of the units for a concentration can be counted for any other major or minor (i.e., there is no double counting). For those doing the psychological & brain sciences: cognitive neuroscience major, the cognitive neuroscience concentration is not an option.

### There are six concentrations:

**Cognition in Children** — This concentration allows students to acquire deeper knowledge of cognition and its development in the first few years of life. The courses for the concentration consider child development more generally and then explore in more depth the early development of cognitive, conceptual and social-cognitive abilities. Adviser/coordinator: Professor Lori Markson.

Course work required: Psych 321 Developmental Psychology

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

Code	Title	Units
Psych 219	The Infant Mind	3
Psych 358	Language Acquisition	3
Psych 4046	Developmental Neuropsychology	3
Psych 4591	The Development of Social Cognition	3

*Research mentorship:* Prior approved research mentorship with a relevant faculty member and successful completion of a research paper. Relevant faculty: Pascal Boyer, Lori Markson, Rebecca Treiman, Desirée White.

**Cognitive Neuroscience** — This concentration allows students to acquire deeper knowledge of the relation between mind and brain. The courses for the concentration consider the neurobiological basis for psychological functions at a more general level, and then explore in greater depth specialized topics relating to how higher cognitive processes, such as memory, attention, perception and emotion, emerge from brain function. Adviser/coordinator: Professor Todd Braver.

Course work required:

Code	Title	Units
Psych 3401	Biological Psychology	3
or Psych 344	Principles of the Nervous System	

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

Code	Title	Units
Psych 3604	Cognitive Neuroscience	3
Psych 374	Drugs, Brain and Behavior	3
Psych 4046	Developmental Neuropsychology	3
Psych 4413	Advanced Cognitive Neuroscience (Writing Intensive)	3
Psych 4450	Functional Neuroimaging Methods	3
Psych 4746	Biological Pathways to Psychopathology: From Genes and the Environment to Brain and Behavior	3
Psych 4765	Inside the Disordered Brain: Biological Bases of the Major Mental Disorders	3
Psych 488	The Cognitive Neuroscience of Film	3

**Research mentorship:** Prior approved research mentorship with a relevant faculty member and successful completion of a research paper. Relevant faculty: Deanna Barch, Todd Braver, Ryan Bogdan, Ian Dobbins, Denise Head, Kathleen McDermott, Desirée White, Jeff Zacks.

**Reading, Language, and Language Acquisition** — This concentration provides students with a deep and broad knowledge of linguistic development. The courses look in-depth at the development of written and spoken language. Adviser/coordinator: Professor Rebecca Treiman.

Course work required: Ling 170D Introduction to Linguistics

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

Code	Title	Units
Psych 234	Introduction to Speech and Hearing Sciences and Disorders	3
Psych 358	Language Acquisition	3
or Psych 358W	Language Acquisition	
Psych 433	Psychology of Language	3
Psych 4351	Reading and Reading Development	3
or Psych 4352	Reading and Reading Development WI	

**Research mentorship:** Prior approved research mentorship with a relevant faculty member and successful completion of a research paper. Relevant faculty: Rebecca Treiman, David Balota, Lori Markson, Mitchell Sommers.

**Lifespan Development** — Many introductory courses in developmental psychology focus on changes that occur from birth to adolescence. The supplemental concentration in lifespan

development provides students with an understanding of the cognitive and physiological changes that occur over the lifespan, with a primary focus on older adulthood. A major goal of the concentration is to provide students with an understanding of the similarities and differences in development at different stages of the lifespan. Adviser/coordinator: Professor Mitchell Sommers.

Course work required:

Code	Title	Units
Psych 326 & Psych 427	Introduction to the Psychology of Aging and Social Gerontology	6

Electives (must include one of the following courses):

Code	Title	Units
Psych 321	Developmental Psychology	3
Psych 4301	Contemporary Topics in Cognitive Development	3

**Research mentorship or internship experience:** Students can complete this aspect of the concentration with *either* a prior approved research mentorship *or* an approved internship related to older adults. Successful completion of a paper is required in either case. Relevant faculty for research mentorship: Mitchell Sommers, David Balota, Brian Carpenter, Sandra Hale, Denise Head, Lori Markson. **Possible internships:** Work in an assisted-living facility or other community-based program designed to assist older adults. Other internships are available; contact Dr. Brian Carpenter for opportunities.

**Experimental Psychopathology** — This concentration allows students to acquire more advanced knowledge of the ways in which psychologists study mental disorders. Current research has demonstrated the importance of integrating psychological and biological variables in understanding the classification, etiology and treatment of a wide variety of mental disorders, including schizophrenia, mood disorders, anxiety disorders, substance use disorders and eating disorders. Students who pursue this concentration will develop a broadly-based appreciation for conceptual and methodological issues that are central to research in psychopathology. Adviser/coordinator: Professor Deanna Barch.

Course work required: Psych 354 Abnormal Psychology

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

Code	Title	Units
Psych 345	Genes, Environment, and Human Behavior	3
Psych 374	Drugs, Brain and Behavior	3
Psych 4541	Personality and Psychopathology	3
Psych 4557	Biopsychosocial Aspects of Eating Disorders and Obesity	3

Psych 4746	Biological Pathways to Psychopathology: From Genes and the Environment to Brain and Behavior	3
Psych 4765	Inside the Disordered Brain: Biological Bases of the Major Mental Disorders	3

*Research mentorship:* Prior approved research mentorship with a relevant faculty member and successful completion of a research paper. Relevant faculty: Deanna Barch, Ryan Bogdan, Josh Jackson, Tom Oltmanns, Tom Rodebaugh, Renee Thompson, Denise Wilfley.

**Personality and Individual Differences** — This concentration allows students to acquire deeper knowledge of how and why individuals differ from one another and the ways in which individual (e.g., personality, self) and group differences (e.g., gender) influence behavior, emotion, experience, identity and psychopathology. The core course for the concentration (Psych 353) considers personality more generally. The seminars explore in depth specific aspects of personality and individual differences, including biological bases of individual differences (i.e., genetics), the interpersonal processes associated with personality and personality judgment, individual differences in self and identity, group differences and personality pathology. Adviser/coordinator: Professor Tammy English.

Course work required: Psych 353 Psychology of Personality

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

Code	Title	Units
Psych 345	Genes, Environment, and Human Behavior	3
Psych 3645	Understanding Emotions	3
Psych 367	Positive Psychology: The Science of Happiness	3
Psych 413	Contemporary Topics in Social Psychology	3
Psych 4541	Personality and Psychopathology	3
Psych 4555	Emotion Regulation	3

*Research mentorship:* Prior approved research mentorship with a relevant faculty member and successful completion of a research paper. Relevant faculty: Tammy English, Josh Jackson, Randy Larsen, Tom Oltmanns, Michael Strube, Renee Thompson, Heike Winterheld.

## The Major in Cognitive Neuroscience

*How does the brain think?* Cognitive neuroscience refers to the scientific study of the linkage between mental functions and the operation of the brain and nervous system. The goal of cognitive neuroscience is to provide an understanding

of psychological processes, such as attention, memory, thinking and emotion, in terms of physical principles and biological components. At the same time, it aims to provide an understanding of the psychological constraints on how the brain functions, computes, and generates behavior. Students who pursue the undergraduate major in psychological & brain sciences: cognitive neuroscience will gain a strong foundation in how to study the brain and mind at various levels of analysis, including cellular biology, brain systems, cognitive and affective function, and neural computation. In addition, they will gain an appreciation of the relation between healthy cognitive and brain function and its breakdown in various disease states and disorders. A cognitive neuroscience degree provides excellent preparation for a career in health and medical professions, scientific research, computer fields, education and the law.

**Total units required:** 37 units/12 courses (plus prerequisites).

### Prerequisites Outside of Psychological & Brain Sciences (7 units):

Code	Title	Units
Math 132	Calculus II	3
Biol 2960	Principles of Biology I	4

**Note:** Each of these prerequisites has its own prerequisites — Math 132 requires Math 131, and Biol 2960 requires Chem 111A and Chem 112A (concurrently).

**Note:** These are Biology and Pre-Med prerequisites as well and are typically completed in a student's first year. They might alternatively be satisfied through AP or any other already-approved mechanism from the respective department or the college.

### Core Requirements (19 units):

Code	Title	Units
Psych 100B	Introduction to Psychology	3
Psych 300	Introduction to Psychological Statistics	3
Psych 301	Experimental Psychology	4
or Psych 3011	Experimental Psychology	
Psych 3401	Biological Psychology	3
or Psych 344	Principles of the Nervous System	
Psych 360	Cognitive Psychology	3
Psych 3604	Cognitive Neuroscience	3
Total Units		19

**Note:** The first three requirements (i.e., Psych 100B, 300, and 301/3011) are the same as those for the regular psychological & brain sciences major.

**Note:** L33 Psych 344 is home-based in Biology; students should register under the cross-listed Psych L33 course designation, not L41 Biol 3411.

Exemption from Psych 100B 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 or IB score of 6 or 7. (*N.B.*: AP or IB earns *exemption* from Psych 100B but no units of credit toward the major.)

Math 2200 or Math 3200 or both Marketing Statistics QBA 120 & QBA 121 may substitute for Psych 300 but earn no units of credit toward the major. No advanced placement (AP) math course can substitute for Psych 300.

**Additional Biological & Cognitive Distributions (2 courses): One each from A & B:**

**Group A eligible courses:**

Code	Title	Units
Psych 330	Sensation and Perception	3
Psych 361	Psychology of Learning	3
Psych 380	Human Learning and Memory	3

**Group B eligible courses:**

Code	Title	Units
Biol 3058	Physiological Control Systems	2
Biol 3151	Endocrinology	3
Biol 328	Principles in Human Physiology	4
Biol 3421	Introduction to Neuroethology	3
Physics 350	Physics of the Brain	3
Psych 345	Genes, Environment, and Human Behavior	3
Psych 374	Drugs, Brain and Behavior	3

**Computation Requirement (1 course):**

Code	Title	Units
CSE 131	Introduction to Computer Science	3
Psych 4175	Applied Statistical Analysis with R	3
Psych 5007	Statistics and Data Analysis in MATLAB	2

Or, with prior approval, another course involving a significant computational/programming component.

**Capstone/Depth requirement (9 units): One each from A, B, C:**

(**Note:** None of these can be used to also fulfill any of the other requirements — i.e., no double counting.)

**Group A eligible courses:**

Code	Title	Units
Psych 4046	Developmental Neuropsychology	3
Psych 4182	Perception, Thought and Action	3
Psych 4413	Advanced Cognitive Neuroscience (Writing Intensive)	3
Psych 4450	Functional Neuroimaging Methods	3
Psych 4746	Biological Pathways to Psychopathology: From Genes and the Environment to Brain and Behavior	3
Psych 4765	Inside the Disordered Brain: Biological Bases of the Major Mental Disorders	3
Psych 488	The Cognitive Neuroscience of Film	3

or an appropriate 400-level course from outside the department (with prior approval), for example:

Code	Title	Units
Biol 4030	Biological Clocks	3
Biol 404	Laboratory of Neurophysiology	4
Biol 4580	Principles of Human Anatomy and Development	3
L30 Phil 4212	Philosophy of Neuroscience	3

**Group B eligible courses in capstone research/writing intensive experience:**

Code	Title	Units
Psych 4046	Developmental Neuropsychology	3
Psych 4413	Advanced Cognitive Neuroscience (Writing Intensive)	3
Psych 444B	Independent Study for the Major in P&BS: Cognitive Neuroscience	3
Psych 498	Study for Honors	3

**Group C eligible courses:** An additional 3 units from group A or group B or, by prior approval: MBB 300, Psych 333 (*N.B.*: All 3 units must be completed in one semester, in one lab, to be considered for approval), or Psych 498/Psych 499.

**Acceptance into the Psychological & Brain Sciences: Cognitive Neuroscience Major**

Acceptance to the major is contingent on an application and then approval by the major committee. As part of this application, the student will meet with an appropriate adviser who will carefully review the requirements and oversee the student's progress. A brief one-page statement from the student on why they feel that the cognitive neuroscience major is appropriate for them will be requested as part of the application.

Washington University students will be considered for admission to the cognitive neuroscience major no sooner than in their third semester (sophomore year). Decisions are based upon the



student's statement, academic record, and interview with the major adviser.

## Minors

### The Minor in Psychological & Brain Sciences

**Units required:** 15

**Required course:** Psych 100B Introduction to Psychology

**Elective courses:**

Four additional courses (i.e., a minimum of 12 units of additional course work) in Psychological & Brain Sciences, all of which must be at the 300 level or above.

#### Additional Information

Students may receive exemption from the Psych 100B requirement only if an AP Psych score of 5, or IB score of 6 or 7 is received. For exemption, no credit will be given; therefore, five applicable courses must be completed. No more than 3 units of an approved cross-listed course originating outside the Department of Psychological & Brain Sciences, an approved psychology course taken in University College, an approved psychology course taken at another university, or an independent study-type course (e.g., Psych 333) may count toward the minor. (Transfer students must complete at least 9 advanced units of home-based Psychological & Brain Sciences courses at Washington University.)

For those who have a broad or general interest in psychological and brain sciences, we recommend taking several courses from the five core areas (i.e., Social/Personality; Abnormal/Affective Psychology; Biological/Neurological Bases of Behavior; Behavior and Cognition; and Lifespan Development).

For those students who want to concentrate in a more specialized area, courses can reflect such specialization. For example, a student interested in the helping professions or counseling may wish to select from such courses as Psych 353 Psychology of Personality, Psych 354 Abnormal Psychology, Psych 361 Psychology of Learning, and Psych 321 Developmental Psychology. A student wishing to pursue a specialization in experimental psychology/neuroscientific bases of behavior might select from such classes as Psych 3401 Biological Psychology, Psych 361 Psychology of Learning, Psych 330 Sensation and Perception, Psych 360 Cognitive Psychology, and Psych 3604 Cognitive Neuroscience, and consider doing Independent Study (Psych 333).

## Courses

Visit online course listings to view semester offerings for L33 Psych (<https://courses.wustl.edu/CourseInfo.aspx?sch=L&dept=L33&crslvl=1:4>).

#### L33 Psych 100B Introduction to Psychology

A survey and analysis of concepts, theory and research covering the areas of learning, memory, social, abnormal, clinical, physiological and sensory psychology. This is a general survey course designed to introduce students to the diversity of areas, approaches and theories that comprise the study of mind and behavior. Psych 100B is required of all majors and is prerequisite to all upper-level courses in Psychology. Open to freshmen. Note: For freshmen with AP/IB exemption, and freshmen and sophomores concurrently enrolled in Psych 100B who are interested in exploring a few areas of Psychology within a seminar format, refer to the companion course, Psych 102 Seminar: Introduction to Psychology.

Credit 3 units. A&S IQ: SSC Art: SSC BU: BA EN: S

#### L33 Psych 102 First-Year Opportunity: Contemporary Issues in Psychology

This seminar will enable students enrolled in Introduction to Psychology (Psych 100B) to explore in greater depth several of the ideas and concepts in contemporary psychology. Open to freshmen and sophomores who are concurrently enrolled in Psych 100B, and freshmen with AP/IB exemption. Sections are limited to 15 students.

Credit 1 unit. A&S: FYO A&S IQ: SSC Art: SSC EN: S

#### L33 Psych 105 First-Year Opportunity: Psychology of Young Adulthood

This course will cover selected topics relevant to the developmental, social, personal, and cognitive issues confronting young adults during their college years. Material will be drawn mainly from the field of psychology, and the emphasis will be on the scientific basis of concepts and on empirically supported strategies for growth and development. The knowledge gained may contribute to academic success, personal development, and a more rewarding social and academic experience over the course of college and beyond. This 1-unit course is only open to first-semester freshmen. Credit/No Credit only.

Credit 1 unit. A&S: FYO

#### L33 Psych 106 The Science of Effective Study Strategies

You have now spent at least 12 years in school, studying for exams and/or tests (for most of you, that's most of your lifetime). What can current research tell us about how well we study, whether we make efficient study decisions, and whether our study strategies are effective? This course offers an overview of current research from cognitive and educational psychology on effective study strategies. Throughout this course, students are encouraged to develop their understanding of scientific research and evaluate evidence supporting study strategies. Prerequisite: open only to freshmen and sophomores. Credit/no credit only. Credit 1 unit. A&S IQ: SSC EN: S

#### L33 Psych 107 The Science of #Slaying It! in College

You have spent the last 12 or so years "slaying it" as a student. You likely have developed lots of effective strategies for succeeding in school. Recently, our understanding of what those successful strategies are has greatly expanded. But, how do we know what skills are particularly helpful to do well academically? From psychological research! In this class students will learn about the psychological research that has illuminated which strategies are most helpful when studying, when in the classroom, and when asking for help. We will focus on how to most effectively study but will discuss other strategies

as well. Students will also be asked to apply these skills in the other classes that they're taking this semester, with the hope that they develop and refine the skills they already have and continue slaying it as a student. Prerequisite: open only to freshmen and sophomores. Permission of instructor required. Credit/No Credit option only.  
Credit 2 units.

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### L33 Psych 109 Research Seminar in Psychology

Weekly presentations by various members of the psychology faculty; introduces students to research areas and current issues. Attendance at all lectures required. Open to freshmen and sophomores only. Prerequisite: Psych 100B. Credit/no credit only.  
Credit 1 unit. A&S IQ: SSC Arch: SSC Art: SSC EN: S

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### L33 Psych 111 First-Year Opportunity: Mindfulness Science & Practice

Mindfulness is a term that is becoming increasingly used in popular culture to refer to a set of skills associated with increased attentional focus, successful stress-management, and improved health, sleep, and emotional well-being. This course will expose students to the various facets of mindfulness from both an applied and scientific perspective, both through the teaching of mindfulness skills through a set of easy-to-learn practices and exercises, and through a survey of empirical research regarding mindfulness effects on cognition, emotion, brain function and health. The goal of the seminar will be to provide practical skills that can contribute to personal development, emotional well-being and academic success, while also developing critical thinking skills in learning how to read and evaluate primary scientific literature on mindfulness. Open to freshmen only.  
Credit 1 unit. A&S: FYO

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### L33 Psych 212 Study Abroad: Experiences in Psychology

Prerequisite: enrollment in an approved Psychology study abroad program and prior permission of the director of undergraduate studies. Credit to be arranged. Credit/No Credit only.  
Credit variable, maximum 3 units.

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### L33 Psych 219 The Infant Mind

What goes on inside the mind of an infant? Descartes argued that the infant was entirely bound by sensation; thus, to think like a baby was to not think at all. Over the past few decades, however, research has revealed that the mind of the infant is abuzz with activity, capable of quickly learning astonishing amounts of information in a relatively short time. In this course we explore different topics concerning the inner workings of the infant mind. We cover topics such as imagination, language, memory, emotions and morality. This course is open to students from all majors, but Psych 100B is highly recommended. Enrollment is restricted to 24 sophomores or by permission of the instructor.  
Credit 3 units. A&S IQ: SSC BU: BA EN: S

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### L33 Psych 221 First-Year Seminar: Introduction to Memory Studies

This course focuses on memory not only as an individual phenomenon but also as the basis for the transmission of culture and the construction of collective identity. We will survey such topics as experimental methods and findings in the study of

individual memory; questions of accuracy and vividness of memory and witness reports; repressed memories; transmission of cultural norms and identity through narratives; shared historical memories; individual trauma and historical upheaval; revision of the past and political usage of collective memory. Enrollment is restricted to 25 freshmen, or by permission of the instructor.

Credit 3 units. A&S: FYS A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

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### L33 Psych 225 Internship in Psychology

An opportunity to gain supervised, applied experience in a nonacademic, community service agency. For a description of prerequisites, goals, agency selection, registration policies and course requirements, obtain a copy of *A Guide to Internships in Psychology* available outside room 221 and room 419A, Psychology Building. In addition to work at their internship site, students are required to meet regularly with the internship coordinator. This course can be taken only once. CET (<https://gephardtinststitute.wustl.edu/for-faculty-and-staff/community-engaged-teaching>) course. Permission of instructor required. Credit/No Credit option only.  
Credit 3 units.

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### L33 Psych 234 Introduction to Speech and Hearing Sciences and Disorders

Introduction to the fields of speech-language pathology, audiology, education of hearing-impaired children, and speech and hearing sciences. Normal speech and hearing processes are discussed, as well as communication disorders. Selected research topics in speech and hearing sciences are presented. Same as L12 Educ 234  
Credit 3 units. BU: BA EN: S

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### L33 Psych 235 Practicum in Applied Behavior Analysis: Autism Spectrum Disorder

An opportunity to be trained in applied behavior analytic techniques and to work with a child with autism/pervasive developmental disorder. Training and supervision are arranged and coordinated by the family of the child and their consultant. To receive credit, students must undertake a year's work with the child, complete the minimum number of hours of training and therapy, and attend regular therapy meetings. In addition, students must meet with the practicum coordinator for discussion of assigned readings and presentations on autism and therapy. Completion of a paper also is required. For further information and petition form, pick up the Practicum brochure from the department. This course can be taken only once for credit. Credit/no credit only. Enrollment through the practicum coordinator only. CET (<https://gephardtinststitute.wustl.edu/for-faculty-and-staff/community-engaged-teaching>) course.  
Credit 3 units.

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### L33 Psych 246 Mindfulness in Psychology and Eastern Philosophies: Sophomore Seminar

This course explores the concept of mindfulness in psychology and in Eastern philosophies. We will discuss the scientific literature on mindfulness, as well as mindfulness as presented by Buddhist scholars. We will engage in several different mindfulness practices throughout the semester. Prerequisite: Psych 100B.  
Credit 3 units. A&S IQ: LCD, SSC Arch: SSC Art: SSC EN: S

**L33 Psych 300 Introduction to Psychological Statistics**

Descriptive statistics including correlation and regression. Inferential statistics including nonparametric and parametric tests of significance through two-way analysis of variance. Course emphasizes underlying logic and is not primarily mathematical, although knowledge of elementary algebra is essential. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: NSM, AN Arch: NSM Art: NSM

**L33 Psych 301 Experimental Psychology**

This course provides training in the logic and techniques of psychological research so as to provide students with experience in the design of psychology experiments and interpretation of results. Topics include experimental design and control, library research, quantitative treatment of data, graphical presentation of results, and clarity of scientific writing. Lectures focus on general principles of experimentation, whereas the laboratory sections provide an introduction to a range of psychological phenomena through hands-on experience in experimentation. Each student also completes an independent research project. Declared psychology majors will have priority. Limited to 15 students per section. Prerequisites: Psych 100B and Psych 300. Credit 4 units. A&S IQ: NSM Arch: NSM Art: NSM BU: SCI

**L33 Psych 3011 Experimental Psychology**

Psych 3011 is limited to students who have not taken Psych 300 and want to enroll in Psych 300 and Experimental Psychology concurrently. Therefore, students who enroll in Psych 3011 must also register for Psychology 300. Psych 3011 fulfills the Psych 301 requirement for the major. Topics in the two courses (i.e., Psych 300 and Psych 3011) will be coordinated in order to integrate the concepts from Statistics with those from Experimental Psychology. Experimental Psychology provides training in the logic and techniques of psychological research so as to provide students with experience in the design of psychology experiments and interpretation of results. Topics include experimental design and control, library research, quantitative treatment of data, graphical presentation of results, and clarity of scientific writing. Lectures focus on general principles of experimentation while the laboratory component provides an introduction to a range of psychological phenomena through hands-on experience in experimentation. Each student also completes an independent research project of their own design under supervision of a faculty member. Enrollment limited to 15 students. Declared psychology majors will have priority. Prerequisites: Psych 100B and concurrent enrollment in Psych 300.

Credit 4 units. A&S IQ: NSM Arch: NSM Art: NSM BU: BA, SCI

**L33 Psych 304 Educational Psychology**

A course in psychological concepts relevant to education. Organized around four basic issues: how humans think and learn; how children, adolescents and adults differ in their cognitive and moral development; the sense in which motivation and intention explain why people act as they do; how such key human characteristics as intelligence, motivation and academic achievement can be measured. Prerequisite: sophomore standing. Offered fall and spring semester. Same as L12 Educ 304

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

**L33 Psych 305 Health Psychology**

Review and discussion of psychobiological approaches to health, as well as psychological aspects of physical illness.

Topics: stress and coping, psychosocial factors in the etiology and progression of chronic illness, and psychological sequelae of chronic illness. There will be an emphasis on research methodology and results. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

**L33 Psych 315 Introduction to Social Psychology**

Introduction to the scientific study of individual behavior in a social context. Topics: person perception; stereotyping and prejudice; attitudes; memory; and political psychology, among other issues. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

**L33 Psych 3195 Abnormal Child Psychology**

This course familiarizes students with current perspectives on the nature, causes, assessment, treatment and prevention of child psychiatric disorders and related family dysfunction. Theoretical perspectives and research findings are discussed pertaining to anxiety, depression, conduct disorder, attention deficit/hyperactivity disorder, autism, learning impairments and parent-child conflict. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

**L33 Psych 321 Developmental Psychology**

This course concentrates on the cognitive and social development of the person from conception to adolescence. Topics covered include: infant perception, attachment, cognitive development from Piagetian and information processing perspectives, aggression and biological bases of behavior. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

**L33 Psych 3211 Music Cognition**

An introduction to modern research on music perception and cognition. The course covers four main topics: the perception of key, the psychoacoustics of dissonance, the relationship between attention and musical meter, and the process by which melodies establish, fulfill, and deny expectations. Students read and discuss research from both cognitive science and music theory, in addition to completing several projects.

Same as L27 Music 3221

Credit 3 units. A&S IQ: NSM Arch: NSM Art: NSM BU: HUM

**L33 Psych 325 Psychology of Adolescence**

A broad introduction to adolescence as a developmental period of transition and change. The major topics include the fundamental changes of adolescence; the context of adolescence; and processes of psychological development. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

**L33 Psych 326 Introduction to the Psychology of Aging**

Study of the processes of aging in the individual in terms of their behavioral effects. Age changes in biological functions, sensation, perception, intelligence, learning, memory and creativity are studied to understand the capacities and potentials of the mature and older person. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

**L33 Psych 330 Sensation and Perception**

What's involved in seeing and hearing? This course covers perception from the physical stimuli (light and sound) that

impinge upon the sensory receptors through the higher-level percepts that the stimuli generate. Demonstrations and illusions are used as we learn about the anatomy and physiology of the sensory systems and study the brain mechanisms that are involved in vision and audition. Prerequisite: Psych 100B. Credit 3 units. A&S IQ: NSM Arch: NSM Art: NSM BU: BA, SCI

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### L33 Psych 333 Independent Study in Psychological and Brain Sciences

Prerequisites: Psych 100B and permission of a member of the faculty of the department (or other approved supervisor) who agrees to supervise the student's work. Credit to be arranged. A maximum of 6 units may be applied toward the major. The electronic Petition for Supervision of Independent Study form is available online (<http://eyes.wustl.edu/psych333>). Students will be enrolled only after their form is approved by the faculty supervisor and forwarded to the undergraduate coordinator. Credit/ No Credit only. Credit variable, maximum 3 units.

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### L33 Psych 3401 Biological Psychology

An introduction to biological mechanisms underlying behavior. Topics include the physiology of nerve cells; anatomy of the nervous system; control of sensory and motor activity, arousal and sleep; motivation; and higher mental processes. Prerequisite: Psych 100B. Credit 3 units. A&S IQ: NSM Art: NSM BU: SCI

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### L33 Psych 344 Principles of the Nervous System

The basic anatomical, physiological and chemical organization of the nervous system; how nerve cells communicate with each other, the ionic basis of nerve signals, the function and properties of chemical agents in the nervous system, the development of neural circuitry, and how neurons interact to produce behavior. Prerequisite: Biol 2960, Biol 2970 recommended, Biol 3058 recommended or Psych 3401 and permission of instructor. Same as L41 Biol 3411. Credit 3 units. A&S IQ: NSM Arch: NSM Art: NSM BU: SCI

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### L33 Psych 345 Genes, Environment, and Human Behavior

This class will examine how genetic influences impact various dimensions of human behavior, ranging from traits (e.g., personality) to psychiatric disorders. Topics to be covered include methods used to study genetic influence, how genetic predispositions interact with the environment, and ethical implications. Modern methods for gene-identification, such as genomewide association studies, polygenic risk scores and epigenetic experiments will be examined in detail. Emphasis will be placed on understanding core concepts (e.g., what is identity-by-descent) as well as application (e.g., calculate heritability, interpretation of results from published studies). Prerequisite: Psych 100B. Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: SCI EN: S

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### L33 Psych 3501 Psychotherapy: Introduction to Practice and Research

This is an introductory course in psychotherapy: The treatment of psychological problems through the application of interventions grounded in psychological theory and focusing on behavior or mental processes. Students become familiar with the more popular schools of psychotherapy, including their historical context, characteristic techniques, theoretical underpinnings and

current research support. Students also gain an appreciation of the problems and solutions in researching psychotherapy, as well as emerging variations on psychotherapy procedures. Prerequisite: Psych 100B. Credit 3 units. A&S IQ: SSC BU: BA EN: S

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### L33 Psych 353 Psychology of Personality

Review of basic theoretical orientations to the understanding of personality and complex human behavior. Overview of related techniques, procedures and findings of personality assessment and personality research. Discussion of critical issues in evaluation of personality theories. Prerequisite: Psych 100B. Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

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### L33 Psych 354 Abnormal Psychology

This is an introductory course in psychopathology or the scientific study of mental health disorders. The course includes definitions, theories and classifications of abnormal behavior. Content focuses on symptoms, classification, prevalence, etiology and treatment of mental health disorders, including mood, anxiety, eating, schizophrenia spectrum, substance use and personality disorders. Prerequisite: Psych 100B. Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

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### L33 Psych 356 Introduction to Forensic Psychology

This course is an introduction to the interaction between psychology and the legal system. The contribution of psychology to such legal areas as family law, juvenile delinquency, criminal cases, law enforcement and correctional psychology is surveyed. Topics covered include domestic violence, child abuse, personal injury, eyewitness testimony, insanity, sex offenders and psychopaths. Legal standards regarding insanity, civil commitment and expert testimony are reviewed. We also focus on the emerging contributions of neuroscience to the field of forensic psychology. Prerequisite: Psych 100B. Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

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### L33 Psych 357 Introduction to Clinical Psychology

A survey of clinical psychology. Emphasis is placed on historical and recent developments in the field (e.g., managed care), as well as the consideration of the roles, functions and techniques of clinical psychologists including psychological testing and psychotherapy. Prerequisites: Psych 100B and either Psych 353 or Psych 354. Credit 3 units. A&S IQ: SSC Art: SSC BU: BA EN: S

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### L33 Psych 358 Language Acquisition

This course examines the development of language skills in children, asking how children so rapidly learn their first language. Topics include: biological bases of language development; development of phonology, syntax, and morphology; language development in atypical populations; childhood bilingualism; and development of written language skills. Prerequisites: Psych 100B and Ling 170D. Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

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### L33 Psych 358W Language Acquisition

This course examines the development of language skills in children, asking how children so rapidly learn their first language. Topics include: biological bases of language development; development of phonology, syntax and morphology; language development in atypical populations; childhood bilingualism; and

development of written language skills. Prerequisites: Psych 100B and Ling 170D and junior or senior standing. Writing-intensive.

Credit 3 units. A&S IQ: SSC, WI EN: S

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### L33 Psych 360 Cognitive Psychology

Introduction to the study of thought processing from an information-processing approach. Emphasis on theoretical models grounded in empirical support. Topics include pattern recognition, attention, memory, reasoning, language processes, decision making and problem solving. Prerequisite: Psych 100B. Credit 3 units. A&S IQ: NSM Art: NSM BU: BA

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### L33 Psych 360A Cognitive Neuroscience

A general introduction to the underlying principles and mechanisms of brain function that give rise to complex human cognitive behavior. Emphasis is placed on how emerging methods and approaches from both neuroscience and cognitive psychology have been integrated to yield new insights into the organization and structure of higher mental processes. Topics include perception, attention, memory, language and executive control. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: NSM Arch: NSM Art: NSM BU: SCI

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### L33 Psych 361 Psychology of Learning

Basic learning processes in animals, such as conditioning, reinforcement, punishment and constraints on learning. Comparisons and interactions between classical and operant conditioning. Consideration given to learning theorists and theories, along with applications from the laboratory to the "real world." Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: NSM Art: NSM BU: SCI

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### L33 Psych 361A Psychology of Learning: Laboratory

This laboratory course is a supplement to the Psych 361 Psychology of Learning class. Students gain firsthand experience, via a virtual rat, of principles and procedures related to the acquisition and maintenance of behavior. Weekly lab meetings introduce Pavlovian and operant principles, which are then implemented as laboratory exercises with the virtual rat. Concurrent enrollment in Psych 361 required.

Credit 1 unit. A&S IQ: NSM

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### L33 Psych 3645 Understanding Emotions

Emotions both shape and are shaped by our subjective experiences, physiology, behaviors, cognitions, social interactions, and health. Their complexity and significance make the study of emotions particularly exciting and challenging. This course offers an overview of theory and research on emotions with content stretching across psychological disciplines, including personality, social, clinical, developmental, and neuropsychology. Course content will include definitions of emotions, physiological changes associated with emotions, and individual differences in emotional experience. The course will also examine how culture, cognitions, and relationships affect and are affected by emotions and how emotion is related to physical and mental health. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: SSC BU: BA EN: S

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### L33 Psych 367 Positive Psychology: The Science of Happiness

Reviews the relatively recent development in the field known as "Positive Psychology." Topics may include: happiness and life-satisfaction, positive self-esteem, creativity, caring relationships, love (passionate and otherwise), empathy, optimism, ambition, moral character development, attachment, compassion, forgiveness, helping, work ethics, and successful aging. Designed to take a sampling of those aspects of psychology that emphasize the positive side of human nature. Prerequisites: Psych 100B, junior or senior standing.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

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### L33 Psych 374 Drugs, Brain and Behavior

This course reviews information pertaining both to medications used to treat psychiatric disorders and to psychoactive drugs of abuse. By learning principles of pharmacology and mechanisms of action of these agents, students develop an enhanced knowledge of the brain mechanisms underlying abnormal human behavior. Prerequisites: Psych 100B and one of the following: Psych 354 or Psych 3401 or Psych 344.

Credit 3 units. A&S IQ: NSM Art: NSM BU: SCI

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### L33 Psych 380 Human Learning and Memory

A survey of issues related to the encoding, storage and retrieval of information in humans. Topics include memory improvement strategies, people with extraordinary memories, memory illusions and distortions, among other topics. Limited to 25 students. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: NSM Art: NSM BU: BA

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### L33 Psych 399 Living, Dying and Death: A Biopsychosocial Approach to Understanding the End of Life

This survey course examines dying and death from biological, psychological and social perspectives. Topics include theoretical and research approaches to studying dying and death; historical and cross-cultural attitudes; psychological understanding and coping with death over the life span; the process of dying and definitions of death; health care professionals and treatment approaches for the dying; assisted death and other ethical/legal issues, grief and bereavement, mass tragedy and public death, and planning for death. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

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### L33 Psych 4046 Developmental Neuropsychology

Development of the brain and associated changes in cognitive abilities are discussed, with an emphasis on recent research that integrates the theoretical perspectives of cognitive psychology and neuropsychology. Discussion focuses on early development and disorders affecting the brain such as cerebral palsy, sickle cell disease and autism. Prerequisite: Psych 321, Psych 360, Psych 3604 or Psych 3401.

Credit 3 units. A&S IQ: NSM, WI Art: NSM

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### L33 Psych 4075 Advanced Research Methods & Design

This course is an advanced foray into research design and methods used in psychological science. This course is project-based, writing-intensive, and will be supplemented heavily with readings and discussions of topics of broad importance to psychological research (e.g., reliability, validity, signal detection theory, philosophy of science). These readings will enhance students' abilities to think critically about psychological research design and methods, as both a consumer and creator

of psychological research. During the course of the semester they will complete two original research projects (e.g., an observation study and an experimental study). Together with their classmates they will devise research questions, design studies to test their research questions, collect data, and statistically analyze their results. Individually, students will write-up, and then revise, each research project in an APA-style paper. The writing requirements for this course build on the skills students acquired in Experimental Psychology and will further their abilities to communicate scientific ideas more skillfully, clearly and accurately. Prerequisite: L33 Psych 301 or 3011. Credit 3 units. A&S IQ: NSM, WI

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### L33 Psych 4099 Human Evolutionary Psychology

How did evolution by natural selection shape the way human beings think and behave? Does evolution explain human cooperation and friendship, human morality, reproductive decisions and social interactions? What sex differences in cognition or behavior are caused by evolution? This course introduces the concepts and findings of evolutionary psychology, mostly through reading of primary sources — articles from psychology and biology journals — and discussion and presentation of empirical cases. Prerequisites: at least 6 units of Psychology level 300 or above, or Anthro 3383. Credit 3 units. A&S IQ: SSC EN: S

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### L33 Psych 413 Contemporary Topics in Social Psychology

Consideration of selected contemporary topics in social psychology. Participation in a research project of appropriate scope. Prerequisite: Psych 315. Credit 3 units. A&S IQ: SSC Art: SSC EN: S

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### L33 Psych 4175 Applied Statistical Analysis with R

This course is designed to introduce R as both a means of applied statistical analysis as well as a window into data organization and programming. The goal of the course is to teach the tools needed to take a raw dataset and not only perform a statistical test in R, but also to learn how to arrange the dataset to perform a variety of tests, to choose the appropriate test, and to visualize the results. Students gain practical knowledge of how to use statistics in research. Prerequisites: Psych 300, or Math 2200 or Math 3200, or other approved university statistics course; or graduate standing in psychology, or graduate standing in another department by permission. Credit 3 units.

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### L33 Psych 4182 Perception, Thought and Action

This course focuses on current topics in visual perception, visual attention, eye movements and sensory-motor behavior. Readings consist of recent journal articles. Class meetings emphasize presentation and discussion of the material in the readings. Prerequisite: previous course work in cognitive psychology, experimental psychology or perception. Credit 3 units. A&S IQ: NSM Art: NSM

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### L33 Psych 4227 The Psychology of Close Relationships

This course examines close relationships from a scientific perspective. The course focuses on intimate relationships but also touches on friendships and family relationships. The objective of this course is to introduce students to the scientific perspective of close relationships. Students learn how research psychologists apply the scientific method of data collection

and analysis to investigate how people experience and think about relationships. We explore questions such as: Why are people attracted to some people but not others? How do relationships develop over time? How does each person's personality influence the trajectory of a relationship? How do external factors (e.g., social norms, stress, life events) influence relationships? How do gender and sexual orientation influence people's experiences in romantic relationships? Prerequisites: Psych 100B and Psych 301.

Credit 3 units. A&S IQ: SSC EN: S

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### L33 Psych 427 Social Gerontology

This course provides an introduction to aging and growing old, from an interdisciplinary perspective. Specific attention is paid to demographics, physical health and illness, mental health, interpersonal relations, work issues, living arrangements, ethics, and death and dying. Prerequisites: junior or senior standing and completion of 6 advanced units in Psych.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC EN: S

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### L33 Psych 4301 Contemporary Topics in Cognitive Development

Cognitive Developmental topics include: Piagetian abilities (e.g., conservation, formal reasoning), basic cognitive abilities (e.g., processing speed), executive functions (e.g., working memory), and other current topics (e.g., processing facial stimuli). Prerequisite: Psych 321 or 360.

Credit 3 units.

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### L33 Psych 4302 Cognitive Psychology Applied to Education

This course is intended to cover topics in the cognitive psychology of human memory, conceptual learning and comprehension with special focus on areas, theory and research that have potential application to education. Thus, the course provides selective coverage of theoretical and empirical work in cognitive psychology that provides potential to inform and improve educational practice. The applicability of these themes are explicitly developed and evaluated through the primary research literature using educationally oriented experimental paradigms. The course is of interest and benefit to education majors and to psychology majors interested in cognitive psychology and its applications. Prerequisites: junior/senior status; 9 units in psychology and Psych 100B or junior/senior status; 9 units in Education and Psych 100B.

Credit 3 units. A&S IQ: SSC EN: S

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### L33 Psych 4305 Psychological Science: Fact and Fiction

Skeptical analysis of psychological science as practiced and popularized in the media. Analysis of discrepancies between media and scientific claims regarding areas such as repressed memory, brain imaging, heritability and psychotherapy. Additional examination of scientific career demands such as peer review, journal publication and research funding. These topics are interwoven with a review of common errors in reasoning particularly with respect to probabilistic reasoning and the public misperception of the practice and principles of scientific psychology. Prerequisite: junior or senior standing and completion of 6 advanced units in psychology.

Credit 3 units. A&S IQ: SSC, WI Arch: HUM Art: SSC EN: S

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### L33 Psych 433 Psychology of Language

This course surveys current research and theory in psycholinguistics, covering the biological bases, cognitive bases

and learning of language. We consider studies of normal children and adults, the performance of individuals with various types of language disorders, and computer simulations of language processes. Topics range from the perception and production of speech sounds to the management of conversations. Each student carries out an original research project on some aspect of psycholinguistics. Prerequisites: Ling 170D and Psych 100B. Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC EN: S

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**L33 Psych 4351 Reading and Reading Development**

This seminar surveys current research on reading and spelling skills and their development. Students read and discuss journal articles that examine the cognitive and linguistic processes involved in reading, reading disorders, and educational issues. Prerequisites: permission of instructor and previous course work in experimental psychology or psychology of language. Credit 3 units. A&S IQ: SSC EN: S

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**L33 Psych 4352 Reading and Reading Development WI**

This writing-intensive seminar surveys current research on reading and spelling skills and their development. Students read and discuss articles and chapters that examine the cognitive and linguistic processes involved in reading, reading disorders, and educational issues. Prerequisites: Psych 100B and Ling 170D and junior or senior standing. Credit 3 units. A&S IQ: SD, WI EN: S

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**L33 Psych 4361 Psychological Perspectives on the Self**

Historical and contemporary theories related to the self in social psychology. Emphasis on contemporary research and a focus on the self as a construct central to understanding important social phenomena. Topics include definitions and measurement of the self; motivational implications of the self for impression management, ability appraisal, self-regulation and social inference. Prerequisites: Psych 100B and Psych 315. Credit 3 units. A&S IQ: SSC, WI Art: SSC

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**L33 Psych 4408 Trauma and Memory**

A thorough investigation of the effects of trauma on memory in both individuals and collective groups. Topics include flashbulb memories; forgetting and repression; post-traumatic stress and memory; and effects of trauma on individual and group identity. Prerequisites: Psych 100B and 6 units of advanced-level psychology or anthropology course work. Credit 3 units. A&S IQ: SSC EN: S

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**L33 Psych 4413 Advanced Cognitive Neuroscience (Writing Intensive)**

An intensive, case-study-based approach to the underlying principles and mechanisms of brain function that give rise to complex human cognitive behavior. Emphasis is placed on understanding and evaluating cutting-edge neuroscience research that has yielded new insights into the organization and structure of higher mental processes. Students develop critical thinking and writing skills via a strong class participation component and a writing-intensive format. Topics include perception, attention, memory, language, emotion and executive control. Writing Intensive. Declared psychology majors are given priority over others to enroll. Prerequisites: Psych 100B and either Psych 3401 or Psych 344/Biol 3411 or Psych 3604. Credit 3 units. A&S IQ: NSM, WI Art: NSM

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**L33 Psych 444A Independent Study for a Supplemental Concentration**

Prerequisite: acceptance into a supplemental concentration in Psychological & Brain Sciences (only for students who matriculated prior to 2016). Written permission (Petition for Supervision of Psych 444A) of a member of the faculty of the department (or other approved supervisor) who agrees to supervise the student's work is also required. In addition to the approved research for the supplemental concentration, an APA-style research paper must be satisfactorily completed to obtain credit. Petition for Supervision of P&BS 444A forms are available in the Psychology Building, room 207B. Students will be enrolled only after they have completed both the Petition for a Supplemental Concentration in P&BS and the Petition for Supervision of P&BS 444A, and returned them to the undergraduate coordinator in Psychology 207B. Open only to P&BS majors, and by approval. Credit 3 units.

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**L33 Psych 444B Independent Study for the Major in P&BS: Cognitive Neuroscience**

Prerequisite: acceptance into the P&BS cognitive neuroscience major. Permission of a member of the faculty of the department (or other approved supervisor) who agrees to supervise the student's work. In addition to the approved research in the area of cognitive neuroscience, an APA-style research paper must be satisfactorily completed to obtain credit. Petition for Supervision of P&BS 444B forms are available in the Psychology Building, room 207B. Students will be enrolled only after they have completed the petition and returned it to the undergraduate coordinator in Psychology 207B. Open only to P&BS:CN major, by prior approval only. Credit 3 units. A&S IQ: SSC EN: S

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**L33 Psych 444C Independent Study for a Concentration in Psychological and Brain Sciences**

Prerequisites: acceptance into a concentration in Psychological & Brain Sciences (only for students who matriculate Summer 2016 and later). Written permission (Petition for Supervision of P&BS 444C) of a member of the faculty of the department (or other approved supervisor) who agrees to supervise the student's work is also required. In addition to the approved research for the concentration, an APA-style research paper must be satisfactorily completed to obtain credit. Petition for Supervision of P&BS 444C forms are available in the Psychology Building, room 207B. Students will be enrolled only after they have completed both the Petition for a Concentration in P&BS and the Petition for Supervision of P&BS 444C, and returned them to the undergraduate coordinator in 207B. Open only to P&BS majors and by approval. Credit 3 units.

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**L33 Psych 4450 Functional Neuroimaging Methods**

This course is intended for students wishing to become sophisticated producers or consumers of functional neuroimaging data. Emphasis will be on extracting the most information from neuroimaging techniques toward the goal of answering psychologically motivated questions. A number of issues relating to neuroimaging methodology will be covered, including technical principles, acquisition options, potential sources of artifact, experimental design, software tools, and analytical techniques. Class approach will be hands-on, with students gaining experience in actually acquiring and working

with neuroimaging data. Prerequisites: Permission of instructor required.

Credit 3 units. A&S IQ: SSC Art: SSC EN: S

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### L33 Psych 4535 Personality Judgment: How We Perceive Ourselves and Others

This course examines how we form judgments of people's personalities. The central question is the accuracy of personality judgments. The readings examine theory and research concerning this topic, and class discussion focuses on critical evaluations of the readings and generation of new research questions. This course examines personality judgment from a scientific perspective and addresses such questions as: How should accuracy be measured? What do you have to know about a person to judge their personality accurately? Does accuracy increase with greater acquaintance? Who makes a good judge of personality? How well do relationship partners know each others' personalities? How is judging our own personality similar to or different from judging others' personalities? How accurate are our perceptions of our own personality? How can the accuracy of personality judgment be improved? Prerequisites: at least 6 units of home-based psychology courses and Psych 353.

Credit 3 units. A&S IQ: SSC EN: S

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### L33 Psych 4541 Personality and Psychopathology

This course is an advanced seminar in the study of personality disorders. It covers a range of conceptual and methodological issues involved in scientific efforts to understand ways in which pathological personality features disrupt people's lives. Students learn about the similarities and distinctions between normal and pathological features of personality as well as the role that personality may play with regard to the causes and treatment of other kinds of mental disorder. A laboratory component of the class focuses on the development of practical skills in conducting research interviews designed to elicit information about personality and social adjustment. Prerequisites: Psych 354, junior or senior standing, and permission of the instructor.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC EN: S

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### L33 Psych 4555 Emotion Regulation

The purpose of this course is to provide an introduction to the field of emotion regulation. We will discuss theoretical and empirical work on emotion regulation from various areas of psychology, including social, personality, developmental, clinical and neuroscience. Example topics include definitional issues, goals and strategies, personal and interpersonal consequences, sociocultural influences, lifespan development, health and psychopathology. Prerequisite: Psych 301.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC EN: S

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### L33 Psych 4557 Biopsychosocial Aspects of Eating Disorders and Obesity

The aim of this seminar course is to examine the epidemiology, etiology, prevention and treatment of body image, eating disorders and obesity. An emphasis is placed on understanding the characteristic symptoms of excessive dieting, body image disturbance and binge eating, not only as formal psychiatric syndromes but as a representation of dysregulatory processes reflecting social-cultural, psychological and biological disturbances. Students also learn about the clinical characteristics, medical sequelae and physical aspects of eating disorders and obesity. Prerequisites: Psych 100B and junior/senior standing plus 6 units of advanced home-based psychology.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC EN: S

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### L33 Psych 4591 The Development of Social Cognition

This course explores what is known about the development of social cognition. Our starting point is infants' capacity to navigate the social world, for instance, detecting agents, identifying social partners and learning from those around us. We consider what happens when the human ability to reason about others breaks down (as with autism), and what this can teach us about typical development. Each week we cover one topic and a related set of readings. Class meetings are devoted to active discussion and debate about the content of the readings. Students are required to write a weekly reaction paper to the readings to promote class discussion and give an in-class presentation on a novel research topic at the end of the semester. Graduate students may have additional course requirements. Prerequisites: Psych 100B and one of the following: Psych 315 or Psych 321 or Psych 360.

Credit 3 units. A&S IQ: SSC BU: BA EN: S

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### L33 Psych 4592 Development of Social Cognition (Writing Intensive)

This course will explore what is known about the development of social cognition, with a focus on infants' and children's reasoning about others' actions and minds. We will begin by framing the critical issues in social cognitive development, with a focus on attachment in infancy and the human propensity to connect with others. We will then consider contemporary research concerning infants' ability to navigate the social world, for example, identifying social partners and learning from others. We will also look at what happens when the human capacity to reason about others breaks down, as with autism. Further topics will include children's reasoning about social groups, development of bias and prejudice, various aspects of morality, and social exclusion and bullying. Each week we will cover a topic that includes a set of readings, for which you will write a brief response paper. Class time will be devoted to active discussion of these readings, with lectures to set the stage for discussion. Writing Intensive. Prerequisites: Psych 100B, and either Psych 315, 321, or 360

Credit 3 units. A&S IQ: SSC, WI EN: S

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### L33 Psych 461 Seminar in Selected Topics in Learning & Memory: Collective Memory

This course provides an overview and analysis of phenomena of people remembering as part of a group — one's country, one's state, one's university, one's family. Collective memories are critical for one's identity, for knowing who we are and how to interpret the world around us. We will consider narcissistic tendencies of group memories in specific contexts (e.g., the Russian vs. American interpretation of world events; views of Trump supporters vs. Clinton supporters on events in the U.S.). The course will range from humanistic, anthropological, psychological, and sociological perspectives on memory. Prerequisites: Psych 100B and a course on human memory or permission of the instructor.

Credit 3 units.

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### L33 Psych 4615 The Science of Paying Attention

What processes underlie humans' ability to "pay" attention? This course will introduce students to theories of attention and cognitive control. Students will develop an understanding of empirical approaches to studying the control of attention, and examine factors that facilitate and impair humans' ability to pay attention. A final section will examine attention and



cognitive control challenges that accompany aging and select psychological disorders such as ADHD, and applications of attention and cognitive control research to the classroom, driving, and other contexts. Prerequisites: Psych 100B and Psych 301.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC EN: S

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**L33 Psych 462 Psychology of Memory and Cognition**

This course will explore the core readings that have shaped the way scientists tackle fundamental aspects of memory and cognition. These include cognitive methods, pattern recognition, attention, working memory, episodic memory, semantic memory, language acquisition and comprehension, decision making, problem solving, and expertise. Each week we will explore at least three "classic" readings on a given topic along with some more recent papers. The goal is to expose students to this foundational literature, and develop a better understanding of the zeitgeist that set the stage for these papers to change how researchers tackled specific problems. Prerequisite: Psych 360 or Psych 380.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC EN: S

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**L33 Psych 4625 Autobiographical Memory**

This course investigates how people create and remember their personal life histories, with an emphasis on empirical studies within the cognitive tradition. Possible topics include childhood amnesia, false memories, emotional memories, the role of motivation in remembering, and how personal events are represented in memory. Prerequisite: Psych 360 or Psych 301 or Psych 380.

Credit 3 units. A&S IQ: SSC, WI Art: SSC

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**L33 Psych 4647 Ancient Madness**

In this course we will ask what madness meant in Greek and Roman culture. We will find reading strategies that are sensitive both to ancient evidence and to the ethical demands of talking about, evaluating, and categorizing people treated as mad. While we will concentrate on literary (particularly tragic and epic), philosophical, and medical texts, we will also look at visual representations and evidence from ritual and cult. An important part of our project will involve tracing the afterlife of classical ideas: The history of melancholia will ground this aspect of the course. Finally, we will consider how antiquity informs psychoanalysis (Oedipus, Antigone, Narcissus), and how ancient madness might partake in a critique of contemporary understandings of mental illness.

Same as L08 Classics 4647

Credit 3 units. A&S IQ: HUM, LCD EN: H

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**L33 Psych 4651 History and Modern Systems of Psychology**

An introduction to the history of psychology. This course begins with a brief consideration of forces leading to development of psychology in the mid-1800s. It then examines the birth of modern psychology in Germany, and the schools of psychology that emerged early in the 20th century. Newer orientations and ideas are considered in the final segment of the course. We also consider the impact of psychology on American public life during the 20th century. Prerequisites: Psych 100B, junior or senior standing and 6 units of advanced home-based Psychology courses.

Credit 3 units. A&S IQ: HUM Art: HUM EN: H

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**L33 Psych 4746 Biological Pathways to Psychopathology: From Genes and the Environment to Brain and Behavior**

This seminar will introduce students to methods and recent empirical literature evaluating links between genes, brain and behavior. This research is beginning to illuminate specific biological pathways shaping risk for psychopathology. In particular, the course focuses on the design, analysis and interpretation of multimodal research (e.g., fMRI, PET, EEG, pharmacology, molecular genetics, environmental assessment/manipulation) examining the biological underpinnings of behavior relevant to psychopathology. Primary journal articles, reviews, and book chapters are the readings for this seminar. Prerequisites: Psych 100B and Psych 345 or Psych 3401 or Biol 2970.

Credit 3 units. A&S IQ: NSM Arch: SSC Art: SSC

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**L33 Psych 4765 Inside the Disordered Brain: Biological Bases of the Major Mental Disorders**

How do subtle disturbances in brain circuits lead to abnormal behavior and psychopathology? This course provides students with a working knowledge of our rapidly evolving understanding of brain circuits that create order in our social, emotional and cognitive worlds, and how disorder within these circuits leads to a broad range of psychopathology including depression, anxiety, phobias, PTSD, OCD, addiction, schizophrenia, psychopathy and violence. Prerequisites: Biological Psychology (Psych 3401), or Abnormal Psych (Psych 354), or a basic biology/neuroscience course.

Credit 3 units. A&S IQ: NSM Arch: NSM Art: NSM

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**L33 Psych 488 The Cognitive Neuroscience of Film**

To understand complex events in real life depends on perception, action and memory. To understand movies, people probably depend on similar psychological and neural mechanisms. This seminar uses results from psychology and neuroscience to try to better understand the experience of a movie viewer, and uses theory and practice to explore psychological hypotheses about perception. Prerequisite: Psych 360 or Psych 3604 or Psych 4604, or graduate standing in Psychology.

Credit 3 units. A&S IQ: NSM

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**L33 Psych 4891 The Science and Politics of Testing in the United States**

Why do tests permeate American Society? Tests have been integral to the decision-making process in many venues of American culture-e.g., immigration opportunities, voting rights, college admissions, workforce considerations, special education placement, educational reform, and graduation requirements. The credibility of these decisions depends upon the claim that a particular test is a scientific instrument and relevant to the decision-making process. This claim is worthy of study. The purpose of this course is twofold. The first purpose is to examine how the nexus of science and politics influence testing practices in American society. The second purpose is explore how testing practices influence the culture of schools, civil liberties, the work place, and public discourse about merit.

Same as L12 Educ 4891

Credit 3 units. A&S IQ: SSC, SD EN: S

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**L33 Psych 494 Behavioral Psychology Readings Group**

This weekly journal-style readings class provides the opportunity to read and discuss seminal as well as current papers on the

conceptual aspects of behavioral psychology and relevant research. Points of contact among behaviorism, cognitivism and neuroscience, and the natural lines of fracture, are examined. Prerequisite: permission of instructor.  
Credit 1 unit. A&S IQ: SSC EN: S

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**L33 Psych 4971 Undergraduate Teaching**

Limited opportunities for outstanding undergraduates to serve as teaching assistants for selected departmental courses. Prerequisites: psychology majors only, junior/senior standing and permission of psychology adviser, course instructor and departmental approval. Credit cannot be counted toward fulfilling the requirements for the major or minor in psychology. Credit/No Credit only. Enrollment by department only.  
Credit 2 units.

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**L33 Psych 498 Study for Honors**

Acceptance into the Honors Program is based on superior performance as evidenced by the student's record in undergraduate course work and the written agreement (Petition for Permission to Enroll) of a member of the faculty of the department (or other approved supervisor) to supervise an Honors project. The student must complete 6 units of Honors work (3 units of Psych 498 and 3 units of Psych 499), submit an acceptable written thesis, and be recommended by the department. Recommendation for an Honors degree is based on the evaluation of the written thesis and the student's overall performance as an undergraduate. Students in the Honors Program meet regularly in the Honors Seminar to discuss their research and become acquainted with the work of the other students. Psych 498 is a writing-intensive course. All students must meet with Dr. Sommers prior to registering. Prerequisite: Psych 301 or equivalent and permission of instructor.  
Credit 3 units. A&S IQ: SSC, WI Art: SSC EN: S

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**L33 Psych 499 Study for Honors**

Acceptance into the Honors Program is based on superior performance as evidenced by the student's record in undergraduate course work and the written agreement (Petition for Permission to Enroll) of a member of the faculty of the department (or other approved supervisor) to supervise an Honors project. The student must complete 6 units of Honors work (3 units of Psych 498 and 3 units of Psych 499), submit an acceptable written thesis, and be recommended by the Department. Recommendation for an Honors degree is based on the evaluation of the written thesis and the student's overall performance as an undergraduate. Students in the Honors Program meet regularly in the Honors Seminar to discuss their research and become acquainted with the work of the other students. Permission of instructor is required for this course. All students must meet with Dr. Sommers prior to registering. Prerequisite: Psych 301 or Psych 3011.  
Credit 3 units. A&S IQ: SSC Art: SSC EN: S

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