

Psychological & Brain Sciences

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

- 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 following areas:

- 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

There are also many opportunities for undergraduates in this department:

- 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

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Majors

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 the 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 valuable multipurpose 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 (300 level 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 Advanced Placement (AP) psychology test score of 5, an International Baccalaureate (IB) score of 6 or 7, or a British A-Level grade of A. (**Note:** The AP, IB, or British A-Level earns an exemption from Psych 100B but earns no units of credit toward the major.)
- Psych 300 Introduction to Psychological Statistics
 - Math 2200 or Math 3200 or both Marketing Statistics DAT 120 and DAT 121 may substitute for Psych 300 but earn no units of credit toward the major. No 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
Psych 305	Health Psychology	3
Psych 367	Positive Psychology: The Science of Happiness	3
Psych 395	Prejudice, Stereotyping & Discrimination	3
Psych 396	Psychological Dynamics of Empathy	3
Psych 4099	Human Evolutionary Psychology	3

Abnormal/Affective:

Code	Title	Units
Psych 354	Abnormal Psychology	3
Psych 3195	Abnormal Child Psychology	3
Psych 3501	Psychotherapy: Introduction to Practice and Research	3

Psych 3645	Understanding Emotions	3
Psych 367	Positive Psychology: The Science of Happiness	3
Psych 4765	Inside the Disordered Brain: Biological Bases of the Major Mental Disorders	3

Biological/Neurological Bases of Behavior:

Code	Title	Units
Psych 330	Sensation and Perception	3
Psych 3401	Biological Psychology	3
Psych 345	Genes, Environment, and Human Behavior	3
Psych 3604	Cognitive Neuroscience	3
Psych 374	Drugs, Brain and Behavior	3
Psych 4046	Developmental Neuropsychology (Writing Intensive)	3
Psych 4182	Perception, Thought and Action	3
Psych 4765	Inside the Disordered Brain: Biological Bases of the Major Mental Disorders	3

Behavior and Cognition:

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

Lifespan Development:

Code	Title	Units
Psych 219	The Infant Mind: Sophomore Seminar (this course can fulfill the core area, but units are counted as part of the "6 units rule" described below)	3
Psych 321	Developmental Psychology	3
Psych 325	Psychology of Adolescence	3
Psych 326	Introduction to the Psychology of Aging	3
Psych 358	Language Acquisition	3
Psych 427	Social Gerontology	3
Psych 4046	Developmental Neuropsychology (Writing Intensive)	3

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

Elective courses: An additional 9 units of course work

6 Units Rule: No more than 6 units from the following course types may be used to satisfy the minimum requirements for the Psychology & Brain Sciences (P&BS) major:

- 100-/200-level courses (other than Psych 100B)
- Psych 333 Independent Study in Psychological & Brain Sciences
- Psych 444C Independent Study for a Concentration in Psychological and Brain Sciences
- Psych 498 Study for Honors and Psych 499 Study for Honors
- Approved University College psychology classes
- Cross-listed courses not home-based in P&BS
- Transfer credits (students transferring from another college should 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 P&BS department for their applicability toward the major.

Senior Honors: The primary goal of the honors program in P&BS 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:

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

Concentrations in Psychological & Brain Sciences

To augment the broadly based P&BS 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 who will 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 P&BS major. No more than 3 units of course work taken for a concentration may be applied toward a P&BS 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 pursuing the cognitive neuroscience major, the cognitive neuroscience concentration is not an option.

The Six Concentrations

Cognition in Children

This concentration allows students to acquire deeper knowledge of cognitive and social-cognitive processes that occur during infancy and early childhood. The courses for this concentration consider child development more generally and then explore in more depth the development of cognitive, conceptual, linguistic and social abilities.

Adviser/coordinator: Professor Lori Markson

Course work required:

Code	Title	Units
Psych 321	Developmental Psychology	3

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

Code	Title	Units
Psych 219	The Infant Mind: Sophomore Seminar	3
Psych 358	Language Acquisition	3
Psych 4046	Developmental Neuropsychology (Writing Intensive)	3
Psych 4591 or Psych 4592	The Development of Social Cognition Development of Social Cognition (Writing Intensive)	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 and Desirée White

Cognitive Neuroscience

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

Adviser/coordinator: Professor Todd Braver

Course work required:

Code	Title	Units
Psych 3604	Cognitive Neuroscience	3

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

Code	Title	Units
Psych 330	Sensation and Perception	3
Psych 3401	Biological Psychology	3
Psych 345	Genes, Environment, and Human Behavior	3
Psych 374	Drugs, Brain and Behavior	3
Psych 4046	Developmental Neuropsychology (Writing Intensive) ((Writing Intensive))	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

Research mentorship: Prior approved research mentorship with a relevant faculty member and successful completion of a research paper

Relevant faculty: Deanna Barch, Ryan Bogdan, Todd Braver, Ian Dobbins, Denise Head, Wouter Kool, Kathleen McDermott, Desirée White and Jeff Zacks

Reading, Language and Language Acquisition

This concentration provides students with a deep and broad knowledge of linguistic development. The courses take an in-depth look at the development of written and spoken language.

Adviser/coordinator: Professor Rebecca Treiman

Course work required:

Code	Title	Units
Ling 170D	Introduction to Linguistics	3

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 or Psych 358W	Language Acquisition	3
Psych 433	Psychology of Language	3
Psych 4351 or Psych 4352	Reading and Reading Development (Writing Intensive)	3

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 and Kristin Van Engen.

Lifespan Development

Many introductory courses in developmental psychology focus on the changes that occur from birth to adolescence. The 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 and Lori Markson.

Possible internships: Students may work in an assisted-living facility or another community-based program designed to assist older adults. Other internships are available; contact Dr. Denise Head for opportunities.

Experimental Psychopathology

This concentration allows students to acquire more advanced knowledge of the ways in which psychologists study mental disorders. Current research demonstrates the importance of integrating psychological and biological variables to better understand 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 broad-based appreciation for conceptual and methodological issues that are central to research in psychopathology.

Adviser/coordinator: Professor Deanna Barch

Course work required:

Code	Title	Units
Psych 354	Abnormal Psychology	3

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 and 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) and group (e.g., gender) differences 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:

Code	Title	Units
Psych 353	Psychology of Personality	3

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, Patrick Hill, Josh Jackson, Tom Oltmanns, Michael Strube and Renee Thompson

The Major in Psychological & Brain Sciences: 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 this undergraduate major in 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 relationship between healthy cognitive and brain function and its breakdown in various disease states and disorders. The cognitive neuroscience major provides excellent preparation for a career in health and medical professions, scientific research, computer fields, education and law.

Total units required: 36-37 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
Total Units		7

Note: Each of these prerequisites has its own prerequisites: Math 132 requires Math 131; for Biol 2960, taking Chem 111A and Chem 112A (concurrently) is strongly recommended. These are biology and pre-med prerequisites as well, and they are typically completed during a student's first year. They may alternatively be satisfied through AP credit 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 P&BS major. 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, an IB score of 6 or 7, or a British A-Level grade of A. (**Note:** The AP, IB, or British A-Level earns an exemption from Psych 100B but earns no units of credit toward the major.)

Math 2200 or Math 3200 or both Marketing Statistics DAT 120 and DAT 121 may substitute for Psych 300 but earn no units of credit toward the major. No AP math course can substitute for Psych 300.

Additional Biological & Cognitive Distributions (two courses — one each from Distribution A and B lists):

Distribution A eligible courses:

Code	Title	Units
Psych 321	Developmental Psychology	3
Psych 330	Sensation and Perception	3
Psych 361	Psychology of Learning	3
Psych 380	Human Learning and Memory	3
Psych 358	Language Acquisition	3
Psych 4099	Human Evolutionary Psychology	3
Psych 4182	Perception, Thought and Action	3
Psych 433	Psychology of Language	3

Distribution 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
Biol 3422	Genes, Brains and Behavior	3
Psych 345	Genes, Environment, and Human Behavior	3
Physics 350	Physics of the Brain	3
Psych 374	Drugs, Brain and Behavior	3

Computation Requirement (one 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

With prior approval, another course involving a significant computational/programming component may be substituted.

Capstone/Depth Requirement (9 units — one course each from Groups A, B, and C):

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

Capstone/Depth A eligible courses:

Code	Title	Units
Psych 4046	Developmental Neuropsychology (Writing Intensive)	3
Psych 4099	Human Evolutionary Psychology	3
Psych 4182	Perception, Thought and Action	3
Psych 433	Psychology of Language	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 of the department, such as the following:

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

Capstone/Depth B eligible courses (for capstone research/writing-intensive experience):

Code	Title	Units
Psych 4046	Developmental Neuropsychology (Writing Intensive)	3
Psych 4413	Advanced Cognitive Neuroscience (Writing Intensive)	3
Psych 444B	Independent Study for the Major in Psychological & Brain Sciences: Cognitive Neuroscience	3
Psych 498 & Psych 499	Study for Honors and Study for Honors (Writing Intensive)	6

Capstone/Depth C eligible courses: An additional 3 units from the Capstone/Depth A or B lists or, with prior approval, MBB 300, Psych 333 (all 3 units must be completed in one semester and in one lab to be considered for approval), or Psych 498/Psych 499.

Acceptance Into the Psychological & Brain Sciences: Cognitive Neuroscience Major

Acceptance into the major is contingent upon 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 about 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 during their third semester (sophomore year). Decisions are based on the student's statement and academic record as well as the interview with the major adviser.

Minors

The Minor in Psychological & Brain Sciences

Units required: 15

Required course:

Code	Title	Units
Psych 100B	Introduction to Psychology	3

Elective courses:

Four additional courses (i.e., a minimum of 12 units of additional course work) in P&BS, 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 psychology score of 5, an IB score of 6 or 7, or a British A-Level grade of A 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 of P&BS, 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 P&BS courses at Washington University.)

For those who have a broad or general interest in P&BS, we recommend taking several courses from the five core areas of psychology (i.e., Social/Personality; Abnormal/Affective; 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 may 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 may also 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. NOTE: For freshman and sophomore students enrolled in Psych 100B who are interested in exploring controversial issues in Psychology within a seminar format, see Psych 102, First-Year Opportunity: Controversial Issues in Psychology.

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

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

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

Credit 1 unit. A&S: FYO A&S IQ: SSC Arch: 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 that young adults confront 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-year students. Credit/no credit only.

Credit 1 unit. A&S: FYO

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.

L33 Psych 109 First-Year Opportunity: Research 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: FYO A&S IQ: SSC Arch: SSC Art: SSC EN: S

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, by teaching mindfulness skills through a set of easy-to-learn practices and exercises, and by surveying 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 freshman only.
Credit 1 unit. A&S: FYO

L33 Psych 185 First-Year Seminar: Race and Racism

This first-year seminar aims to introduce students to theoretical and empirical research on race and racism. It will provide an overview of historical, sociological, political, epidemiological, and especially social psychological perspectives on racial bias. We will examine mechanisms that contribute to prejudice, stereotyping and discrimination. We will review how bias uniquely affects particular groups, including Native, Asian, Latino, white and Black Americans. We end the course with discussions about interracial interactions.
Credit 3 units. A&S: FYS A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

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.

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

This course focuses on memory not only as an individual phenomenon but also how our memories for historical events can be determined by the groups to which we belong. We will survey such topics as experimental methods and findings in the study of individual memory; questions of accuracy and vividness of memory; false and illusory memories; eyewitness memory reports that are used in trials; methods to greatly enhance learning and memory; and people with extraordinary memories; . We then transition to the study of collective memory, or how our memories and identities are shaped by the groups to which we belong. The topics will include transmission of memories and identity through narratives; shared historical memories; battles over how the past is to be remembered; and revision of the memories of the past to meet concerns of the present. We also consider how memory is used in political arguments. Enrollment is restricted to 19 first-year students.
Credit 3 units. A&S: FYS A&S IQ: SSC Arch: SSC Art: SSC BU: BA EN: S

L33 Psych 225 Internship in Psychology

An opportunity to gain practical, applied experience in a non-academic, community service agency. For description of prerequisites, course goals, agency selection, registration policies, and course requirements, obtain a copy of "Internships in Psychology" available in room 207B in Somers Family Hall or on the P&BS website: <http://psychweb.wustl.edu/undergraduate>. This course can be taken only once, open to junior and senior P&BS majors only. Credit/No Credit only. Permission of Instructor Required.
Credit 3 units.

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 will be 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 in the second semester also is required. For further information and petition form, pick up the Practicum brochure from the Department. This course can only be taken once for credit. Credit/No Credit only. Enrollment through the practicum coordinator only.
Credit 3 units.

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 261 Applying the Science of Learning

This course is intended to cover the science of human learning, with special focus on areas, theory, and research that have potential to improve how students learn. Thus, the course will provide selective coverage of theoretical and empirical work in the science of learning that can inform and improve student learning. The applicability of these themes to the students in this course will be explicitly developed through students' explicit translation of the experimental findings from the literature to their own learning challenges. The course will be organized around three major integrated goals. First, the relevant basic theory and findings in select topics in the science of learning will be covered. Second, the implications of this work for improving learning outcomes in authentic educational contexts will be considered. Third, together we will develop concrete techniques and examples of how the principles that emerge can be adopted to significantly enhance outcomes of lifelong learning challenges. Prerequisite: Psych 100B.

Credit 3 units. A&S IQ: SSC Arch: SSC Art: SSC BU: BA 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, though knowledge of elementary algebra is essential. Psych 300 is required of all P&BS majors. 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 the 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 & brain sciences 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 who 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 Psychology 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 the 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 the under supervision of a faculty member. Enrollment limited to 15 students. Declared psychology & brain sciences 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: (1) how humans think and learn; (2) how children, adolescents, and adults differ in their cognitive and moral development; (3) the sense in which motivation and intention explain why people act as they do; and (4) how such key human characteristics as intelligence, motivation, and academic achievement can be measured. Offered fall and spring semesters.

Same as L12 Educ 304

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 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 will cover 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 will be 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. PREREQ: Psych 100B. Credit 3 units. A&S IQ: NSM Arch: NSM Art: NSM BU: BA, SCI

L33 Psych 333 Independent Study in Psychological & 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.

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

L33 Psych 344 Principles of the Nervous System

This course will provide a broad introduction to neuroscience, starting at the level of cellular and molecular neuroscience and ultimately ending at systems and theoretical neuroscience, with emphasis on the organization of the mammalian central nervous system. Topics will include neuronal structure, the action potential, information transmission between neurons, sensory/motor systems, emotion, memory, disease, drugs, behavior, and network dynamics. A fundamental goal of this course is to provide students with the ability to approach complex problems using the scientific method and to understand the limits of knowledge. This course will also expose students to some of the neuroscience community at Washington University. Prerequisites: Biol 2960 and Biol 2970 recommended; Biol 3058 recommended or Psych 3401 and permission of the instructor. Same as L41 Biol 3411. Credit 3 units. A&S IQ: NSM Arch: NSM Art: NSM BU: SCI

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

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

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

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

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

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

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

L33 Psych 360 Cognitive Psychology

Introduction to the study of thought processing from an information-processing approach. Emphasis will be placed on theoretical models that are 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 Arch: SSC Art: NSM BU: BA

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

L33 Psych 361 Psychology of Learning

Basic learning processes in animals, such as conditioning, reinforcement, aversive control, 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

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

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

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

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

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

L33 Psych 3885 The Mental Health Crisis in Higher Education

During the last decade, college campuses have seen unprecedented increases in the proportion of students suffering from mental health problems. Many institutions have responded by increasing the number of mental health counselors available in student health centers, making the accommodations at disability resource centers more robust, and providing safe spaces for students to process incidents and events that have triggered them. Are such interventions improving the well-being of today's students, or might they actually be further encumbering students' psychological health? This discussion-based course will explore arguments made on all sides of this provocative debate and examine research on the nature of today's college students and what resources and services most contribute to their psychological health and well-being. Enrollment is limited to 15 students. Prerequisite: at least 6 units of advanced home-based psychology courses.

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

L33 Psych 395 Prejudice, Stereotyping, & Discrimination

This course will trace prejudice, stereotyping, and discrimination from its ordinary origins in social cognition to its most extreme consequences in war and genocide. Topics include prejudice, the causes of stereotyping and discrimination, the development of prejudice in children, subtle and overt prejudice and

stereotyping, group conflict, the role of social norms, the experience of being a target of discrimination, and interventions to reduce prejudice and discrimination. Areas covered include racism, sexism, ageism, homophobia, ableism, colorism, and religious discrimination. Prerequisite: Psych 100B.

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

L33 Psych 396 Psychological Dynamics of Empathy

In this course, we will explore the antecedents and consequences of empathic motivation, defined broadly. Along the way, we consider answers to several interesting questions: Why are some people generally more empathic than others? Are there cultural differences in levels of this trait? To what extent is empathy an "emotional" or "cognitive" phenomenon? We will also consider the conditions under which empathy is associated with prosocial outcomes (e.g., reducing racial prejudice) but with recognition that empathy has a "darker" side, one that can ironically exacerbate people's preexisting biases. The approach to empathy will be highly interdisciplinary as we consider research and theory within several fields within psychology (e.g., social, personality, cognitive) as well as areas that draw from other scholarly disciplines (e.g. social neuroscience, social anthropology, theology, religious studies). Prerequisite: Psych 100B.

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

L33 Psych 4046 Developmental Neuropsychology (Writing Intensive)

Discussion will focus on early development and disorders affecting the brain, such as cerebral palsy, sickle cell disease, and autism. Writing Intensive. Open only to advanced undergraduates, and declared psychology majors will be given preference. Limited to 15 students. Prerequisites: Psych 100B and one of the following: Psych 321, Psych 360, Psych 3604, Psych 4604, or Psych 3401.

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

L33 Psych 4048 Neuropsychology of Dementia

The primary goal of this course is to acquaint students with the basic features of common dementia subtypes, such as Alzheimer's disease, frontotemporal dementias, vascular dementia, Lewy body disease, Huntington's disease and Parkinson's disease. The course will cover the clinical manifestations (cognitive and behavioral symptoms, course, prognosis), neuroanatomical signatures, pathophysiology, intervention and treatment, and current research directions. Students will gain a detailed understanding of the major dementia subtypes as manifestations of underlying brain pathology and anatomical patterns of brain damage. Upon completion of the course, the student should be able to (1) identify and distinguish the most common dementia subtypes based on knowledge of clinical presentation and disease mechanisms; (2) understand how underlying brain changes may be linked to specific clinical manifestations; (3) understand how therapeutic strategies are linked to pathophysiology; (4) engage in scholarly discussion about the topics; and (5) read and critique empirical research papers. Prerequisite: Psych 326 and either Biol 3411, Psych 344, or Psych 3401.

Credit 3 units. A&S IQ: NSM

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 Arch: NSM Art: NSM BU: BA

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

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

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 will gain practical knowledge of how to use statistics in research. PREREQ: Psych 300; OR graduate standing.

Credit 3 units. A&S IQ: NSM

L33 Psych 4182 Perception, Thought and Action

This course focuses on current topics in visual perception, visual attention, and the control of action. Readings consist of recent journal articles. Class meetings emphasize presentation and discussion of the material in the readings. Limited to 15 students. Prerequisites: Psych 100B and one of the following: Psych 301, Psych 330, Psych 3401, Psych 344, Psych 360, Psych 361, Psych 3604, Psych 380, Psych 433 or Psych 4604.

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

L33 Psych 4226 The Psychology of Social Stigma

This seminar aims to introduce students to theoretical and empirical social psychological research on prejudice and social stigma. The topics covered will include examinations of why individuals stigmatize by exploring cognitive, evolutionary, self and system justification explanations. The course will examine the effects of stigmatization for low-status groups (stereotype threat, dis-identification, compensation and health outcomes). We will explore the role of stigma in intergroup interactions as well as variations in the experience of stigma. Finally, we will examine high-status groups' perceptions of bias (e.g., perceptions of anti-white discrimination). Prerequisite: Social Psychology (Psych 315) or Prejudice (Psych 395).

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

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

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.

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

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

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

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

L33 Psych 4352 Reading and Reading Development (Writing Intensive)

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

L33 Psych 4413 Advanced Cognitive Neuroscience (Writing Intensive)

This course presents an intensive, case-study based approach to the underlying principles and mechanisms of brain function that give rise to complex human cognitive behavior. Emphasis will be placed on understanding and evaluating cutting-edge neuroscience research that has yielded new insights into the organization and structure of higher mental processes. Students will 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 will be given priority over others to enroll. Prerequisite: Psych 3401, Psych 344/Biol 3411, or Psych 3604.

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

L33 Psych 444B Independent Study for the Major in

Psychological & Brain Sciences: Cognitive Neuroscience
PREREQ: 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 are available in Somers Family Hall, 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

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

PREREQ: Acceptance into a Concentration in Psychological and Brain Sciences. 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 are available in Somers Family Hall, 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.

L33 Psych 4450 Functional Neuroimaging Methods

In this course, you will learn neuroimaging methods in the context of accurate, reproducible, and open science. There is no substitute for wrestling with data yourself, and so this is a hands-on course. Students will need to bring a laptop on which to install Matlab and conduct analyses. Some background in neuroimaging or programming will be helpful but is not required. Topics covered include experimental design, accounting for artifacts, single-subject models, and group models. By the end of the course, students will have used a computer script to analyze an fMRI dataset and have a good understanding of preprocessing and statistical analyses in fMRI. Limited to 24 students. Prerequisite: Psych 3604, Psych 4413, or graduate standing.

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

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

L33 Psych 4541 Personality and Psychopathology

This course is an advanced seminar in the study of personality disorders. It will cover a range of conceptual and methodological issues involved in scientific efforts to understand ways in which pathological personality features disrupt people's lives. Students will 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 will focus on the development of practical skills in conducting research interviews designed to elicit information about personality and social adjustment. PREREQ: Psych 354, and junior or senior standing.

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

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. Prerequisites: Psych 100B and 9 units of advanced home-based psychology courses.

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

L33 Psych 4557 Biopsychosocial Aspects of Eating Disorders and Obesity

This seminar examines the epidemiology, etiology, prevention, and treatment of body image, eating disorders, and obesity. An emphasis will be placed on understanding the characteristic symptoms of excessive dieting, body image disturbance, and binge eating, not only as formal psychiatric syndromes but also as a representation of dysregulatory processes reflecting social-cultural, psychological, and biological disturbances. Students will 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 courses.

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

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

L33 Psych 4592 Development of Social Cognition (Writing Intensive)

This course explores current issues in social cognitive development. We will examine the critical issues in the field, beginning with the roots of 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. We will also consider what happens when the human capacity to reason about others breaks down, as in autism. Additional topics will include children's reasoning about social groups, the development of bias and prejudice, and aspects of morality. We will look at these issues in the context of innate knowledge and the effects of one's environment on children's development. Each week, we will cover a topic

by reading a background chapter and a set of two journal articles. Class time will be devoted to the active discussion of these readings, with lecture and class activities as needed, to complement the readings and set the stage for class discussion. This is a writing intensive course, so it has a second goal of improving students' writing. There will be several writing assignments of varying length, some of which will receive extensive feedback from the instructor before the student prepares an improved final version. Students will also give two presentations to the class: one that directly addresses writing and another on a research topic of their choice relevant to social cognitive development. Prerequisites: Psych 100B and either Psych 215, Psych 321, or Psych 360. Credit 3 units. A&S IQ: SSC, WI EN: S

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.

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

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

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

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 the 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. Prerequisite: 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

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

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: Psych 100B and either Psych 3401, Psych 354, or a basic biology/neuroscience course. Credit 3 units. A&S IQ: NSM Arch: NSM Art: NSM

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

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 will be examined. Prerequisites: Psych 100B and either Psych 360, Psych 361, or a philosophy course.

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

L33 Psych 4971 Undergraduate Teaching

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

Credit 2 units.

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

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; the written agreement (Petition for Permission to Enroll) of a member of the faculty of the department (or another approved supervisor) to supervise an Honors project; and approval of the Honors Coordinator. 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 will be based on the evaluation of the written thesis and the student's overall

performance as an undergraduate. All students must meet with the Honors Coordinator prior to registering. Students in the Honors Program will meet regularly in the Honors Seminar to discuss their research and become acquainted with the work of the other students. Prerequisite: Psych 498.

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