The courses in psychological and brain sciences have four purposes:

1. to acquaint all interested students with a sampling of topics through a variety of introductory and advanced courses;
2. to prepare majors for graduate work in psychology and related disciplines through a program that meets the admission requirements of the outstanding graduate departments in the United States;
3. to offer a distribution of courses for a minor concentration in psychology as well as several fields of concentration for area majors in the social and behavioral sciences; and
4. to provide an honors track designed for exceptional students who want training beyond that provided by the standard undergraduate curriculum.

The psychological and brain sciences are concerned with understanding the biological and psychological processes underlying animal and human behavior at all stages of development.

The undergraduate program leading to the baccalaureate degree is intended to provide students with a sound background in psychological and brain sciences and, at the same time, to prepare them for advanced study.

The program for doctoral students in psychological and brain sciences has a strong empirical focus and emphasizes research methodology. The broad aim of the graduate program is to train students to become scientists rather than practitioners.

Facilities

The department’s offices and laboratories contain dozens of desktop computers (PCs and Macintoshes) and UNIX workstations used for experimental control and for computational studies, simulation, data analysis, and manuscript preparation.

The F. M. Kirby Research Center for Functional Brain Imaging houses 3.0T and 7.0T Philips research-directed MRI scanners for fMRI studies of human perception, memory, and cognition.

The cognitive psychology and cognitive neuroscience laboratories contain a wide range of computer equipment and special-purpose research equipment, including image-processing and large-format graphics systems, eye-movement monitors, speech recognition and analysis systems, stereoscopic graphic systems, video equipment, EEG, Transcranial Magnetic Stimulation, and other stimulus-presentation and response-collection devices.

The biopsychology laboratories have all the facilities necessary to conduct modern behavioral neuroscience research, including equipment for behavioral and operant testing, electrophysiology, histology, surgery, neurochemistry, and systems for the analysis and synthesis of audio signals.

The courses in psychological and brain sciences have four purposes:

1. to acquaint all interested students with a sampling of topics through a variety of introductory and advanced courses;
2. to prepare majors for graduate work in psychology and related disciplines through a program that meets the admission requirements of the outstanding graduate departments in the United States;
3. to offer a distribution of courses for a minor concentration in psychology as well as several fields of concentration for area majors in the social and behavioral sciences; and
4. to provide an honors track designed for exceptional students who want training beyond that provided by the standard undergraduate curriculum.

Psychology Major Requirements

Also see Requirements for a Bachelor’s Degree. (http://e-catalog.jhu.edu/undergrad-students/academic-policies/requirements-for-a-bachelors-degree)

General Requirement:
All classes taken for the major (including those for NQE credit) must be taken for a grade and be completed with a C- or better.

Specific Requirements:

- **Intro Level Course Requirement:** Three 100-level psychology courses. These are typically taken during Year 1 and Year 2.
- **Math/Science Requirement:** AS.110.106 Calculus I (Biology and Social Sciences) or AS.110.108 Calculus I, EN.553.111 Statistical Analysis I, EN.553.112 Statistical Analysis II and AS.200.207 Research Methods in Experimental Psychology. Calculus is usually taken in Year 1, Stats 1 & 2 in Year 2, and Research Methods in fall of either Year 3 or Year 4.
- **Upper Level Course Requirement:** Five upper level psychology courses (200- or 300-level), three of which must be at the 300-level. These are typically dispersed through Years 2-4.
- **Small Group Experience:** 3 credits of either research, internship, independent study or an additional 300-level psychology course with an enrollment cap of 19 students or less. Students who are interested in graduate work in psychology are encouraged to get involved in research/internship activity starting in Year 2 and to continue throughout their time at Hopkins.
- **9 NQE Credits:** Students must complete 9 additional NQE credits using courses not taught within the psychology department (AS.200.XXX) and not counting otherwise toward the psychology major (e.g., AS.110.106 Calculus I (Biology and Social Sciences), AS.110.108 Calculus I, EN.553.111 Statistical Analysis I, EN.553.112 Statistical Analysis II, etc.).

Please note that not all courses offered by the Department of Psychological & Brain Sciences (AS.200.XXX) will fulfill the requirements of the Psychology major/minor (ex. AS.200.220 Discover Hopkins Health Studies: Application of Abnormal Psychology to Forensic Cases). Consult with Academic Advising and your psychology major advisor to ensure appropriate progress toward degree completion.

I. Required Courses Outside the Department

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS.110.106</td>
<td>Calculus I (Biology and Social Sciences)</td>
<td>4</td>
</tr>
<tr>
<td>or AS.110.108 Calculus I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EN.553.111</td>
<td>Statistical Analysis I</td>
<td>4</td>
</tr>
<tr>
<td>EN.553.112</td>
<td>Statistical Analysis II</td>
<td>4</td>
</tr>
<tr>
<td>Nine credits of additional N, Q, or E courses ***</td>
<td>9</td>
<td></td>
</tr>
</tbody>
</table>

* AS.110.105 Introduction To Calculus may not be used for this requirement.
** These courses should be taken as early as possible as they are prerequisites for many psychology courses.
*** Courses instructed within the psychology department (AS.200.XXX) or counting toward the Psychology major may not be used for this requirement.

II. Required Courses Within the Department

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS.200.207</td>
<td>Research Methods in Experimental Psychology</td>
<td>3</td>
</tr>
</tbody>
</table>

(Fall Offering)
Select three of the following:  
AS.200.101  Introduction To Psychology  
AS.200.110  Introduction to Cognitive Psychology  
or AS.060.1Cognition  
AS.200.132  Introduction to Developmental Psychology  
AS.200.133  Introduction to Social Psychology  
AS.200.141  Foundations of Brain, Behavior and Cognition  
Research, internship, independent study, or a designated seminar course*  
Five additional psychology courses distributed as follows:**  
Two additional courses at the 200-400 level  
Three additional courses at the 300-400 level  

* The seminar course must have a maximum enrollment of 19 students. Courses used to fulfill the five upper-level course requirements may not be used to satisfy this requirement. Students may take 1-3 credits in any given semester to fulfill this requirement. All students are required to discuss their plans with their faculty advisor before junior clearance.  

** One upper level course in Cognitive Science may be used to satisfy these course credits with the approval of the Director of Undergraduate Studies. Research, independent study, and internships may not be used to satisfy these course requirements.  

*** Students who are planning advanced study in psychological and brain sciences are strongly encouraged to engage in psychological research and/or clinical internships.

III. Sample Program
A typical path toward degree completion might include the following sequence of courses:

<table>
<thead>
<tr>
<th>Freshman</th>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required 100-level Psychology course</td>
<td>3</td>
<td>Required 100-level Psychology course</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>AS.110.106  Calculus I (Biology and Social Sciences)</td>
<td>4</td>
<td>NQE elective required for major</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>6</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Sophomore</th>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Required 100-level Psychology course</td>
<td>3</td>
<td>200- through 400-level Psychology course</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>EN.553.111  Statistical Analysis I</td>
<td>4</td>
<td>EN.553.112  Statistical Analysis II</td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>10</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junior</th>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS.200.207  Research Methods in Experimental Psychology</td>
<td>3</td>
<td>200- through 400-level Psychology course</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Small Group Experience or Independent Academic Work</td>
<td>NQE elective required for major</td>
<td></td>
<td>3</td>
<td></td>
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<td></td>
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</tbody>
</table>

Small Group Experience or Independent Academic Work  
Senior  
Fall  
Credits Spring  
Credits  
300- or 400-level Psychology course  
3 | 300- or 400-level Psychology course | 3 |
Small Group Experience or Independent Academic Work  
300- or 400-level Psychology course  
3 | 6 |

Total Credits: 48

Restrictions
No courses taken during Intersession or through the School of Education and the Carey Business School may be counted toward the requirements for the B.A. degree in Psychological and Brain Sciences (although a limited number of such courses may be counted toward the 120 credits required for graduation).

Most courses offered by Psychological & Brain Sciences (AS.200.XXX) through the Summer at Hopkins program will not count toward the Psychology major or minor. However, exceptions may include summer courses that are also offered and counted toward the major/minor during the Fall and Spring semesters. You may make an appointment with Dr. Stephen Drigotas, Director of Undergraduate Advising for Psychological & Brain Sciences, to ensure that your enrollments will be considered toward your academic progress in the manner you intend.

Preparation for Graduate Work in Psychology
The Department of Psychological and Brain Sciences provides preparation for graduate training in all areas of psychology, including clinical and counseling. Virtually all psychology graduate programs, including those that provide training in clinical or counseling psychology, expect students to have a strong background in scientific psychology, including statistics. The department encourages students to obtain additional practical experiences outside the classroom, including research in a laboratory and/or an internship in a mental health care setting. These additional experiences are particularly salient to graduate school admission committees.

Honors Program in Psychology
The B.A. degree with honors provides recognition for outstanding achievement in formal course work and research. The requirements for a degree with honors include those for the regular B.A. degree, plus the following:

- A minimum grade point average of 3.5 in psychology courses (exclusive of independent study or research) through the fall semester of the student’s junior year.
- A formal application to be submitted to the Director of Undergraduate Studies by March 31 of the student’s junior year. The application must include a copy of the student’s transcript, a brief description of the proposed honors research project, and written endorsement of the application by the student’s faculty sponsor. The sponsor must have a full-time faculty appointment at Johns Hopkins and either a primary or a joint appointment in the Department of Psychological and Brain Sciences.
- Students who are planning advanced study in psychological and brain sciences are strongly encouraged to engage in psychological research and/or clinical internships.

- The seminar course must have a maximum enrollment of 19 students. Courses used to fulfill the five upper-level course requirements may not be used to satisfy this requirement. Students may take 1-3 credits in any given semester to fulfill this requirement. All students are required to discuss their plans with their faculty advisor before junior clearance.
- One upper level course in Cognitive Science may be used to satisfy these course credits with the approval of the Director of Undergraduate Studies. Research, independent study, and internships may not be used to satisfy these course requirements.
- Students who are planning advanced study in psychological and brain sciences are strongly encouraged to engage in psychological research and/or clinical internships.

- The seminar course must have a maximum enrollment of 19 students. Courses used to fulfill the five upper-level course requirements may not be used to satisfy this requirement. Students may take 1-3 credits in any given semester to fulfill this requirement. All students are required to discuss their plans with their faculty advisor before junior clearance.
- One upper level course in Cognitive Science may be used to satisfy these course credits with the approval of the Director of Undergraduate Studies. Research, independent study, and internships may not be used to satisfy these course requirements.
- Students who are planning advanced study in psychological and brain sciences are strongly encouraged to engage in psychological research and/or clinical internships.
and Brain Sciences. Admission into the Honors Program is not guaranteed.

- Completion of two 300- or 600-level psychology courses, in addition to those required for the regular B.A. degree. Neither of these can be research or reading courses. These additional courses are not in addition to the 120 credits required for graduation.
- Completion of an independent research project under the supervision of a member of the department’s faculty, culminating in a written honors thesis. The student will enroll in AS.200.519 Seniors Honors Research and AS.200.520 Seniors Honors Research during both semesters of the senior year. The honors thesis must be submitted no later than March 31 of the senior year and must be read and approved in writing by two members of the faculty.
- Students considering application to the honors program should begin discussing possible thesis research topics with a faculty sponsor no later than the fall semester of their junior year.

**Minor in Psychology**

A minor in psychology is available to undergraduates majoring in any department. Students electing to minor in psychology should declare their intention directly to the Director of Undergraduate Studies in the Department of Psychological and Brain Sciences by the end of junior year. All classes taken for the minor must be taken for a grade and be completed with a C- or better. The minor requires successful completion of the following:

Select three of the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS.200.101</td>
<td>Introduction To Psychology</td>
<td>9</td>
</tr>
<tr>
<td>AS.200.110</td>
<td>Introduction to Cognitive Psychology</td>
<td></td>
</tr>
<tr>
<td>or AS.200.101</td>
<td>Cognition</td>
<td></td>
</tr>
<tr>
<td>AS.200.132</td>
<td>Introduction to Developmental Psychology</td>
<td></td>
</tr>
<tr>
<td>AS.200.133</td>
<td>Introduction to Social Psychology</td>
<td></td>
</tr>
<tr>
<td>AS.200.141</td>
<td>Foundations of Brain, Behavior and Cognition</td>
<td>3</td>
</tr>
</tbody>
</table>

One psychology course at any level 3

Two psychology courses at the 300-600 level 6

* No course from the Carey Business School or School of Education may count toward the minor.

** No more than one research or readings course may count toward the minor.

**Undergraduate Academic Awards**

The Department of Psychological and Brain Sciences offers two undergraduate academic awards. The G. Stanley Hall Prize is awarded for outstanding achievement by an undergraduate in psychology. The Julian C. Stanley Award is given to the psychology major who most closely approximates Dr. Stanley’s personal and professional standards of excellence.

**Master of Arts in Psychology**

A student who has been admitted into the Ph.D. program can earn a Master of Arts degree in partial fulfillment of the requirements for the Ph.D. degree. Normally, candidates for the Ph.D. degree in psychology will qualify for the M.A. degree at the end of their second year, after having completed two area seminars and at least two courses in psychological research design and/or advanced statistics, provided that their performance is of the quality judged satisfactory for the M.A. level. There is no terminal master’s program.

**Requirements for the Ph.D. Degree**

The Department of Psychological and Brain Sciences emphasizes training and experience in the research methods essential to the development of new knowledge in the various sub-fields of psychology. Our core program for doctoral students emphasizes scientific methodology and provides rigorous research training. Each doctoral candidate is expected to become familiar with both a relatively narrowly defined area and a broad spectrum of knowledge related to the student’s topic of specialization.

In addition to general university requirements, the Department of Psychological and Brain Sciences has the following regulations:

**Statistics**

Most graduate students will complete take AS.200.314 Advanced Statistical Methods during the first semester and AS.200.315 Advanced Research Design and Analysis during the second semester. Students with exceptional statistical training should take two more advanced courses by arrangement with the Director of Graduate Studies.

**Fundamentals and Core Topics in PBS**

AS.200.613 Fundamentals of Biopsychology, AS.200.617 Fundamentals of Cognitive Psychology, AS.200.654 Psychological & Brain Sciences Core Topics A, and AS.200.655 Psychological & Brain Sciences Core Topics B offer an introduction to the fundamental principles and methods of the psychological & brain sciences. Students will read seminal and contemporary papers in topics that cover the breadth of the field. In addition, students become versed in the careful consideration of data and in formulating written and oral arguments.

**First-Year Research Report**

During the first year, the student, together with the faculty advisor, identifies a research project that will provide extended research experience. Normally, the student designs a study as part of a larger ongoing project. A project proposal must be submitted by April 15 of the first year; this proposal introduces the nature of the scientific problem, reviews the relevant literature, and describes the proposed study in detail, together with the anticipated data, means of analysis, and interpretations. A final written version of this report must be submitted by December 15 of the student’s second year; ideally, this "first year project" report includes all the information that would be appropriate for submission to a scientific journal.

**Advanced Examination**

Each student must pass an in depth examination in his/her chosen area. This examination, which includes both a written and oral part, is graded by a committee of at least two faculty members. The written and oral portions of the advanced examination offer the student an opportunity to demonstrate both in-depth, focused knowledge in their specialty area of study, and also a breadth of knowledge outside of their area of expertise. The student must pass the advanced examination by the beginning of the third year of study.

**Advanced Study**

Each student, in collaboration with a faculty advisor, plans a course of study consisting of intermediate and advanced topical and research seminars.

**Topical Seminars**

The Department of Psychological and Brain Sciences offers topical seminars in which one or more faculty members leads seminars on
topics of special interest, such as memory, cognitive development, neurophysiological aspects of behavior, vision sciences, and decision making. Through participation in these seminars, student are exposed to findings in subfields of psychology. Topics vary from semester to semester and are determined by the interests of both faculty and graduate students.

Research Seminars
Students and faculty engaged or interested in research in particular areas organize these seminars. Participants discuss their own research and other current research in the area.

Teaching Requirement
Graduate students serve as teaching assistants (TAs) to members of the department’s faculty. All graduate students are expected to TA a total of four semesters. Although there is some flexibility in TA assignments, students typically initiate their TA experience during the first semester of their second year, continuing consecutively through the second semester of the third year. The Department Chair, Director of Graduate Studies, Department Administrator, and Academic Program Coordinator collaborate to assess the instructional support needs of the department and assign these teaching duties.

Advanced students may apply for a Dean’s Teaching Fellowship. A course is proposed by the student and is sponsored by a faculty member. These are highly competitive and prestigious awards. For details please visit http://krieger.jhu.edu/teachingfellowship/.

Literature Review
Students complete a written literature review in preparation of the completion of their dissertation. The literature review is modeled on articles appearing in professional journals. Typically the review provides a background for the thesis plan, but for some students it may be prepared on a topic other than the one selected for the thesis. The literature review is evaluated by the same committee that will evaluate the thesis plan.

Thesis Plan
At least one calendar year before receiving the Ph.D. degree, each doctoral candidate must develop a plan for the dissertation research and present the plan before a departmental committee. With the committee’s approval, the student then prepares a dissertation.

Dissertation
The dissertation represents the student’s culminating piece of scholarly work. It establishes the start of a research career and the basis for postgraduate employment. The Graduate Board of the University administers the final oral examination, a defense of the thesis. The doctoral dissertation must be in a form suitable for and worthy of publication.

Financial Aid
Financial support packages are available to all doctoral students, with 9-month stipends that are competitive with those of other universities. Financial support includes tuition remission. Summer research assistantships are available in the department.

For further information on graduate study in psychology, contact the Academic Program Coordinator for the Department of Psychological and Brain Sciences.

For current faculty and contact information go to http://pbs.jhu.edu/directory/

Faculty
Chair
Peter Holland
Krieger-Eisenhower Professor: mechanisms of behavior, learning, memory, motivation, behavioral ecology

Professors
Susan Courtney
Vice Provost for Faculty Affairs & Professor: cognitive neuroscience, functional neuroimaging, working memory, attention
Howard Egeth
perception & cognition, attention & attentional selectivity, memory, eyewitness testimony, psychology & law
Lisa Feigenson
cognitive development, numerical cognition
Michela Gallagher
cognitive development, numerical cognition

Associate Professor
Jonathan Flombaum
visual perception, attention, cognition

Assistant Professors
Marina Bedny
brain development & plasticity, cognitive neuroscience, concepts
Janice Chen
real-world memory, cognitive neuroscience, temporal structure in cognition
Chaz Firestone
perception, attention, visual cognition, foundations of cognitive science
Jason Fischer
visual scene understanding using fMRI, psychophysics, computational modeling

Christopher Honey
cognitive neuroscience, computational neuroscience, memory in neural circuits
Kishore Kuchibhotla
neural circuits; attention, learning & decision-making; audition; neural circuit dysfunction; computational modeling
Shreesh Mysore
neural circuits for behavior (attention, decision-making, etc), computational neuroscience, comparative approach to the design of neural circuits

**Associate Faculty**

Richard Allen  
Associate Professor; School of Medicine (Neurology): clinical & medical psychology

Kirsten (Kisi) Bohn  
Assistant Research Professor: acoustic communication, vocal production, social behavior, neuroethology, evolution of vocal complexity

Jeff Bowen  
Lecturer: close relationships, social psychology, self-regulation, mental representation, psycholinguistics

Stephen Drigotas  
Teaching Professor & Undergraduate Advisor: social psychology, interpersonal relationships, friendship networks, intergroup behavior, social dilemmas

Heather Roberts Fox  
Senior Lecturer: industrial/organizational psychology

Linda Gorman  
Teaching Professor: neuroscience

Paul J. Hofer  
Adjunct Associate Professor; U.S. Sentencing Commission (Washington, D.C.): law & psychology

Chelsea Howe  
Lecturer: forensics, abnormal psychology, dual diagnosis, therapy, assessment

Ann Jarema  
Junior Lecturer: clinical psychology

Chris Kraft  
Psychologist & Instructor; School of Medicine (Psychiatry & Behavioral Sciences, Center for Marital & Sexual Health); Senior Lecturer: human sexuality & behaviors

Meghan McGlaughlin  
Junior Lecturer: clinical psychology

Alison Papadakis  
Associate Teaching Professor: clinical & adolescent psychology, developmental psychopathology of depression in adolescence

Veit Stuphorn  
Associate Professor; School of Medicine (Neuroscience): neurophysiological studies of decision-making

Jason Trageser  
Lecturer: neuroscience

**Joint Faculty**

Marilyn Albert  
Professor & Director (Division of Cognitive Neuroscience; School of Medicine): aging, cognition, memory

Arnold Bakker  
Assistant Professor (Psychiatry; School of Medicine): psychiatric neuroimaging

Greg Ball  
Research Professor: biopsychology, behavioral neuroendocrinology, neuroethology

Charles (Ed) Connor  
Professor & Director (Mind/Brain Institute): neurophysiology of visual perception & object recognition

Barry Gordon  
Professor (Therapeutic Cognitive Neuroscience, Neurology & Cognitive Science); Director (Cognitive Neurology/Neuropsychology): language disorders, memory disorders, severe organic amnesia, focal amnesia, retrograde amnesia

Steven Gross  
Associate Professor (Philosophy): philosophy of language, philosophy of mind, metaphysics

Stewart Hendry  
Professor (Mind/Brain Institute): functional organization of primate visual system, primate functional neuroanatomy

Alfredo Kirkwood  
Associate Professor (Mind/Brain Institute): mechanisms of cortical modification

James Knierim  
Associate Professor (Mind/Brain Institute): behavioral neurophysiology of the hippocampal formation

Barbara Landau  
Dick & Lydia Todd Faculty Development Professor & Chair (Cognitive Science): language acquisition, cognitive development, spatial representation, acquisition of the lexicon

Hey-Kyoung Lee  
Associate Professor (Mind/Brain Institute): cellular/molecular mechanisms of synaptic plasticity underlying memory formation

Michael E. McCloskey  
Professor (Cognitive Science): language, vision, memory, cognitive neuropsychology, developmental cognitive deficits

Guy McKhann  
Professor (Mind/Brain Institute): patterns of cognitive decline after coronary artery bypass grafting

Ernst Niebur  
Associate Professor (Mind/Brain Institute): computational neuroscience

Brenda C. Rapp  
Professor (Cognitive Science): cognitive neuropsychology, attention, reading & writing

Peter R. Rapp  
Senior Investigative Chief (National Institute on Aging): Laboratory of Experimental Gerontology

**Professor Emeritus**

Bert F. Green Jr.  
psychological measurement, quantitative methods, and computer methods
Courses

AS.200.101. Introduction To Psychology. 3.0 Credits.
Do we all see colors the same way? How did so many 'good' people support the Nazi party? Do crossword puzzles really stave off Alzheimer's Disease? Redesigned for 2017, this course tries to answer these questions and many others, providing a comprehensive overview of the scientific study of the mind. We'll explore topics such as perception, language, memory, decision-making, creativity, love, sex, art, politics, religion, dreams, drugs, brain damage and mental illness, grappling with deep and long-standing controversies along the way: differences between the sexes, the relationship between mind and brain, causes and consequences of racism, human uniqueness (or not) within the animal kingdom, nature vs. nurture, good and evil, consciousness. Appropriate for anyone wanting to know who and what we are as human beings (or who noticed that psychology is now on the MCAT).
Instructor(s): C. Firestone
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.110. Introduction to Cognitive Psychology. 3.0 Credits.
Introductory survey of current research and theory on topics in cognitive psychology. The course will cover a range of topics in perception, attention, learning, reasoning, and memory, emphasizing relationships among mind, brain, and behavior.
Instructor(s): J. Flombaum
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.130. Good Vibrations. 3.0 Credits.
How can your brain distinguish your friend's voice from background noise at a party, and how does this situation differ from listening to a whole orchestra or a single opera singer? This course is designed to address the physics of sound, as well as the biological mechanisms that are involved in processing auditory input. We will discuss the details of what sound is, the ear's anatomy, physiology and different processing stages of both human and non-human animals. The course will cover the core concepts of sound transduction in air, water and within the ear, and discuss auditory illusions, the effect of damages to different parts of the ear and hearing aids. To understand how sound is transmitted from a device to your brain, we will be taking a hands-on approach throughout the semester, and each student will be able to build their own pair of headphones.
Instructor(s): M. Warnecke
Area: Engineering, Social and Behavioral Sciences.

AS.200.132. Introduction to Developmental Psychology. 3.0 Credits.
An introductory survey of human development from the prenatal period through adolescence. The developing child is examined in terms of cognitive, social, emotional, motor, and language development.
Instructor(s): L. Feigenson
Area: Social and Behavioral Sciences.

AS.200.133. Introduction to Social Psychology. 3.0 Credits.
An introductory survey of social psychology. Topics include social perception, social cognition, attitudes, prejudice, attraction, social influence, altruism, aggression, and group behavior.
Instructor(s): S. Drigotas
Area: Social and Behavioral Sciences.

AS.200.141. Foundations of Brain, Behavior and Cognition. 3.0 Credits.
A survey of neuropsychology relating the organization of behavior to the integrative action of the nervous system. Cross-listed with Behavioral Biology and Neuroscience.
Instructor(s): L. Gorman
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.159. Freshmen Seminar: Evolutionary Psychology. 1.0 Credit.
In this course we discuss evolutionary psychology, which is the idea that the mind can be understood as an adaptation to our ancestral environment by means of natural selection. Freshmen only.
Instructor(s): H. Egeth
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.161. Illusions, delusions, and other confusions: Why what you think you know about human nature is (largely) wrong. 1.0 Credit.
This course is suitable for all, but would be especially useful for a student who does not expect to take many (or any) additional psychology or cognitive science courses. We will explore what modern psychology has uncovered about how our intuitions concerning human nature deceive us. Freshmen Only.
Instructor(s): H. Egeth
Area: Social and Behavioral Sciences.

AS.200.162. Childhood Disorders & Treatments. 3.0 Credits.
This is an online course. The class will meet for ten weeks from May 23 through July 29 and will follow the deadlines for Term I for add/drop/ withdraw and grade changes. This course examines the psychological disorders that are usually first diagnosed prior to adulthood. Some of the specific disorders that will be discussed are Attention-Deficit and Disruptive Behavior Disorders, Pervasive Developmental Disorders, Learning Disorders and Intellectual Disability. Students will become familiar with various diagnoses, etiologies, and methods of treatment.
Instructor(s): A. Jarema
Area: Social and Behavioral Sciences.

AS.200.163. Gamechangers: Conceptual Breakthroughs in Neuroscience. 3.0 Credits.
Freshman Seminar; This introductory class will highlight some of the key findings in neuroscience over the past century and a half that have revolutionized our understanding of how the brain works. The goal is to convey both the essence of, and the excitement surrounding, neuroscience breakthroughs that caused paradigm-shifts. We will also look at recent neuroscience-related headlines in popular media and unpack them from a scientific perspective. Topics covered will include "Is the brain just one big lump of tissue?", "Telephones in the brain?", "The frog with upside-down vision", "Brains vs. hard-drives", "Monkey see=monkey do neurons", Epigenetics, "Changing the brain's wiring diagram", "Do ants have GPS?", The science behind the movie 'Memento', "Implanting false memories into brains", "My brain sees you, but I don't", etc. For each big question, we will first examine the thinking that previously existed, and then explore the shift in thinking.
Instructor(s): S. Mysore
Area: Social and Behavioral Sciences Writing Intensive.
AS.200.201. Psychology of Women. 3.0 Credits.  
The social construction of gender and its impact on the lives of women are examined in this course. This survey course is designed to cover a wide array of psychological topics as they relate to the female experience in American culture. The influence of historical, developmental, and social contexts on psychological experiences is also examined. The goals will be achieved through the following objectives: reading course materials, attending course lectures, engaging in discussion of controversial issues, taking quizzes and exams, doing homework assignments, and writing a reflection paper.  
Prerequisites: AS.200.101  
Instructor(s): C. Kraft  
Area: Social and Behavioral Sciences.  

AS.200.202. Forensic Psychology. 3.0 Credits.  
The field of forensic psychology is focused on answering legal questions about the causes of human behavior. This survey course will explore the work that forensic psychologists do; their research, assessment, and clinical methods; and how their work influences lawyers, judges, and other legal practitioners. Specific topics will include mental capacity assessment, psychopathy, claims of mental distress, child custody evaluations, juvenile delinquency, forensic treatment, and forensic neuropsychological assessments.  
Prerequisites: Students can only receive credit for AS.200.202 or AS.200.325, not both.  
Instructor(s): C. Howe  
Area: Social and Behavioral Sciences.  

AS.200.203. Biological Psychology. 3.0 Credits.  
Course focuses on sexual development, sexuality across the lifespan, gender identity, sexual attraction and arousal, sexually transmitted disease, and the history of commercial sex workers and pornography. Please note that the use of electronic devices is not permitted during this class, in order to promote the full interactive potential of this engaging seminar-style offering. Enrollment is limited to Senior Majors & Minors in Behavioral Biology; Biology; Cognitive Science; Medicine, Science & the Humanities; Molecular & Cellular Bio; Neuroscience; Psychology; Public Health; Sociology; Study of Women, Gender, & Sexuality.  
Corequisites: Students may enroll in both AS.200.204 and AS.290.420, but cannot do so in the same semester.  
Instructor(s): C. Kraft  
Area: Social and Behavioral Sciences  
Writing Intensive.  

AS.200.204. Human Sexuality. 3.0 Credits.  
Course focuses on sexual development, sexuality across the lifespan, gender identity, sexual attraction and arousal, sexually transmitted disease, and the history of commercial sex workers and pornography. Please note that the use of electronic devices is not permitted during this class, in order to promote the full interactive potential of this engaging seminar-style offering. Enrollment is limited to Senior Majors & Minors in Behavioral Biology; Biology; Cognitive Science; Medicine, Science & the Humanities; Molecular & Cellular Bio; Neuroscience; Psychology; Public Health; Sociology; Study of Women, Gender, & Sexuality.  
Corequisites: Students may enroll in both AS.200.204 and AS.290.420, but cannot do so in the same semester.  
Instructor(s): C. Kraft  
Area: Social and Behavioral Sciences  

AS.200.205. Discover Hopkins: Psychological Profiling. 1.0 Credit.  
“Psychological Profiling” focuses on strengths and limitations of psychological methods employed by forensic professionals who assist police in criminal investigations. Clinical cases of serial offenders, spree killers, disgruntled employees, police profiling, and terrorists will be studied. Legal and ethical issues will be explored, especially racial profiling controversies. We anticipate visits to the FBI Behavioral Sciences Unit at Quantico, Virginia; Baltimore County Forensic Crime Lab (with emphasis on crime scene analysis), and the Baltimore Police Profiling Program.  
Instructor(s): L. Raifman  
Area: Social and Behavioral Sciences.  

AS.200.207. Research Methods in Experimental Psychology. 3.0 Credits.  
This course is an overview of research methods used in psychology, experimental designs, interpreting results in psychology, and research ethics. Each student will complete an individual research project on a topic of his/her choosing as part of the course training. The class is taught interactively through lectures and labs. EN.553.112 Statistical Analysis II as a prerequisite is preferred but will be accepted as a corequisite.  
Prerequisites: EN.553.112 OR EN.550.112 (Statistical Analysis II)  
Instructor(s): H. Egeth; J. Bowen  
Area: Quantitative and Mathematical Sciences, Social and Behavioral Sciences  
Writing Intensive.  

AS.200.208. Animal Behavior. 3.0 Credits.  
Examines basic principles of animal behavior (orientation, migration, communication, reproduction, parent-offspring relations, ontogeny of behavior and social organization). Evolution and adaptive significance of behavior will be emphasized.  
Prerequisites: Prereqs: AS.020.151  
Instructor(s): K. Bohn  
Area: Natural Sciences, Social and Behavioral Sciences.  

AS.200.209. Personality. 3.0 Credits.  
This is a survey course focused on theory and research on human personality. Topics include personality traits, motivation, unconscious processes, self-regulation, cognitive and behavioral aspects of personality, biological and evolutionary influences on personality, and dysfunctional manifestations of personality.  
Instructor(s): C. Howe  
Area: Social and Behavioral Sciences.  

A forensic psychologist and SWAT team leader evaluate split second decisions employed by police who use deadly force. Police shootings, and the media report of police use of deadly force against black males, has contributed to a further deterioration of police community relationships. Relying on case studies, we will focus on how police officer decisions concerning deadly force are made, what cause bad decisions, and whether specific training can improve decision making.  
Instructor(s): L. Raifman  
Area: Social and Behavioral Sciences.  

AS.200.211. Sensation & Perception. 3.0 Credits.  
This course surveys how stimuli from the environment are transformed into neural signals, and how the brain processes those signals to interpret the objects and events in the world. A primary focus will be on the visual system, with additional coverage of hearing, touch, taste, and smell.  
Instructor(s): J. Fischer  
Area: Natural Sciences, Social and Behavioral Sciences.  

AS.200.212. Abnormal Psychology. 3.0 Credits.  
A survey of the major syndromes of psychological disorders. Research and theory about the mechanisms, development, and diagnosis of psychopathology are emphasized.  
Instructor(s): A. Papadakis  
Area: Social and Behavioral Sciences.
AS.200.220. Discover Hopkins Health Studies: Application of Abnormal Psychology to Forensic Cases. 1.0 Credit.
This introductory course will examine the basic diagnostic psychology principles with special application to forensic psychology. The class will focus on investigating forensic psychology queries including: Does my client have a mental illness? Why did he or she act in such a self-defeating way? Does the law require special disposition? Should my client be punished or rehabilitated? We will explore the reasons behind why a movie star would shoplift or a famous athlete would engage in a series of extra marital relationships; why a policeman would commit a series of bank robberies in broad daylight; or why someone would shoot a Congresswoman and kill and wound many others in the process. As part of this course, students will visit with doctors and lawyers (including Judges), view and analyze video and movies about forensic cases, and participate in mock trial exercises.
Instructor(s): K. Hill; L. Raifman; L. Williams
Area: Social and Behavioral Sciences.

AS.200.221. Discover Hopkins: A Forensic Psychologist Confronts Criminality in the Internet Age. 1.0 Credit.
A Forensic Psychologist Confronts Criminality in the Internet Age: Profiling criminal behavior, assessing insanity, and counter-intuitive (self defeating) motivations for criminal acts typically occupy forensic psychologists who work in the criminal justice system. This course initially looks into traditional forensic psychologist pursuits, and then expands the inquiry to new forms of criminality profiling for “relational aggression” crimes like cyber-bulling & sexual harassment, computer assisted crimes, hate crimes, child pornographers, as well as those high profile (media attention catching) crimes, e.g., spree killing, murder suicide, or terrorism due to political extremism and/or religious fundamentalism. Students will study with a practicing forensic psychologist and police detectives, forensic crime lab professionals, newspaper reporters, SWAT team members, mental health doctors, computer cyber crime investigators. Finally, valuable excerpts from “The Wire,” and “Serial, the podcast” will supplement class discussion and analysis. Come prepared to analyze actual forensic cases.
Instructor(s): L. Raifman.

AS.200.222. Positive Psychology. 3.0 Credits.
The course will review the growing field of positive psychology and will review the research on positive human attributes such as optimism, happiness, hope, resiliency, self-esteem, altruism, empathy, and forgiveness. This course will explore the research on how such positive attributes are developed and how they relate to psychological and physical well-being.
Instructor(s): J. Halberda
Area: Social and Behavioral Sciences.

AS.200.223. Psychotic at the White House. 1.0 Credit.
This introductory course focuses on the problem of delusional, morbidly depressed, and/or thought disordered persons who target federal officials or cites in Washington, DC. Contributing factors include: inadequate mental health commitment laws, an inability to successfully profile and prevent rarely occurring but potential dangerous behavior, pre trial commitment challenges, the insanity defense, problems associated with easy access to Federal buildings and inter agency rivalries, as well as the inevitable frenzied media response that leads to problems of copy cat behavior. Forensic psychological case studies will be featured, including presidential attempted assassin John Hinckley, Secret Service “White House cases,” Miriam Carey’s death following a car chase ending at the US Capitol, the Beltway sniper case, and others. Finally, the need for increased sensitivity to the problem of stigmatization of mentally ill non-dangerous persons will be included.
Instructor(s): L. Raifman.

AS.200.228. The Illusion of Perception. 3.0 Credits.
In this course, students will gain a comprehensive understanding of the ways we perceive (or fail to perceive) things in the real world by studying examples in perception, memory and awareness. Students will read both empirical and theoretical writing on these topics and participate in class discussions exploring their potential ramifications. If the world isn't what we perceive, what are the implications for our society, or for ourselves? Recommended Course Background: AS.050.101 OR AS.200.101 OR AS.200.110
Instructor(s): M. Schurgin
Area: Social and Behavioral Sciences.

AS.200.301. History Of Psychology. 3.0 Credits.
A survey of leading figures, schools, and systems in the history of psychology. The course will emphasize the development of experimental psychology in late 19th century Germany and its establishment in America at Johns Hopkins, Harvard, Chicago, and Columbia. Special topics will include the development of clinical and applied psychology and psychological testing. Juniors and seniors only. Recommended Course Background: two prior Psychology courses.
Instructor(s): P. Hofer
Area: Humanities, Social and Behavioral Sciences.

AS.200.302. Behavioral Assessment of Animal Models of Cognition and Neuropsychiatric Disorders. 3.0 Credits.
What does a rat exploring its environment tell us about memory? How can a mouse help us better understand schizophrenia? This course will focus on procedures that are routinely used to study behavior in animal models of cognition and neuropsychiatric disorders. The procedures discussed will include assessments that fall into 3 broad functional domains: motor function, affective or emotional states, and cognition. Throughout the course, we will read and discuss original research articles to illustrate and compare some of the measures and results from the various procedures. Postdoc Teaching Fellowship. This is designed to be an upper level course.
Prerequisites: Pre-reqs: AS.200.141 OR (AS.080.305 AND AS.080.306) or permission of the instructor.
Instructor(s): D. Smith
Area: Social and Behavioral Sciences.
AS.200.303. Psychobiology of Drug Addiction. 3.0 Credits.
The goal of this course is to explore the psychobiological bases of drug addiction. The course will begin with a discussion of the evolving concepts and theories of addiction, as well as a review of the methods and animal models relevant for the study of drug addiction. Following this primary introduction, students will learn 1) how drugs of abuse affect neural function and how this relates to their addictive potential, 2) how biological and behavioral phenotypes predispose certain individuals to addiction, and 3) how environmental factors (stress, social context, learning history, drug contingencies, etc.) contribute to the development of addiction. Special focus will be given on the complex interactions between these different factors and levels of analysis. The course will integrate a variety of approaches (molecular biology, system neuroscience, and psychology). Based on this understanding of the psychobiological mechanisms of drug addiction, we will reflect and refine our views of addiction and examine potential ways to prevent and treat the disease.
Prerequisites: Pre-reqs: AS.200.141 OR (AS.080.305 AND AS.080.306) OR (AS.020.312 AND AS.020.306).
Instructor(s): R. Keiflin
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.304. Neuroscience of Decision Making. 3.0 Credits.
This course will survey the neural mechanisms of decision-making. Current experimental research and theory concerning selection, control, and evaluation of actions are examined in humans and animals. Topics will range from simple perceptual judgements to complex social behavior. The course involves a weekly lecture about a specific topic followed by a student presentation of a current research paper. Cross-listed with Neuroscience.
Prerequisites: AS.080.305 OR AS.080.205 OR AS.200.141
Instructor(s): V. Stuphorn
Area: Natural Sciences.

AS.200.305. Advanced Seminar in Forensic Psychology. 3.0 Credits.
Forensic psychologists determine clinical diagnoses and offer expert opinions to assist court decision makers who must employ legal tests to make case determinations. This course will explore how forensic psychologists communicate with the courts via consultation, report writing, and expert testimony. Students will write forensic analyses on a variety of controversial, cutting edge forensic topics (e.g., for competence to stand trial, child abuse, civil commitment, compensation for mental injuries, sex offender commitment, insanity, fitness for duty, child custody).
Prerequisites: AS.200.212 AND (AS.200.202 OR AS.200.325)
Instructor(s): L. Raifman
Area: Natural Sciences, Social and Behavioral Sciences
Writing Intensive.

AS.200.306. Psychology in the Workplace. 3.0 Credits.
What variables determine whether a person will be happy and productive in an organization? How do you select the employee that is the right fit for a job? Industrial-organizational (I-O) psychology is the study of behavior in the workplace. Topics include job analysis, selection, performance, motivation, satisfaction, leadership and work-life balance.
Instructor(s): H. Roberts Fox
Area: Social and Behavioral Sciences.

AS.200.308. Neurobiology of Learning and Memory. 3.0 Credits.
This course is an advanced survey of the scientific study of learning and memory. An interdisciplinary approach is used to integrate the state of the field across levels from the cellular-molecular basis of synaptic plasticity to functional circuitry implicated in learning and memory systems in the brain. The course is designed to provide a deep understanding of the outstanding issues and current debates in learning and memory research with a specific emphasis on animal models. This is an interactive lecture/seminar course with active student participation. Recommended Course Background: AS.200.370 or AS.200.141 or AS.080.305/AS.080.306 or AS.020.306.
Instructor(s): M. Yassa
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.309. Evolutionary Mechanisms of Human Behavior. 3.0 Credits.
This course examines the evolution of human adaptive behaviors. In particular it examines evolutionary contributions to behaviors concerned with problems of survival such as mating strategies, parenting, and group living. Recommended Course Background: AS.200.101
Instructor(s): H. Petri
Area: Social and Behavioral Sciences.

AS.200.310. Neural Basis of Cognitive Control. 3.0 Credits.
This course examines the neural basis of "cognitive control". What is happening in our brains that enables control our thoughts and behavior? What does it mean neurologically when we say someone has "lost control"? What contributions do the neural processes of attention, memory, habits and emotions make? This is a very active area of current research, and this upper-level seminar will make broad use of the primary cognitive and systems neuroscience literature.
Prerequisites: AS.080.203 OR AS.050.203 OR AS.200.141 OR AS.200.305
Instructor(s): S. Courtney-Faruqee
Area: Natural Sciences
Writing Intensive.

AS.200.311. Sensory Representations in the Brain: Maps, Modules, & Distributed Coding. 3.0 Credits.
In this course we will explore the ways in which information from vision, hearing, touch, smell, and taste is encoded in the brain. We will compare and contrast different representation schemes and their computational advantages in order to uncover some overarching organizing principles of sensory processing in the brain. Class meetings will consist of lectures plus group discussions of classic papers in cognitive neuroscience, computational modeling, and neurophysiology. Enrollment limited to Juniors & Seniors.
Prerequisites: AS.200.211 OR AS.080.203 OR AS.050.203 OR AS.200.141 OR AS.020.312
Instructor(s): J. Fischer
Area: Social and Behavioral Sciences.

AS.200.313. Models of Mind and Brain. 3.0 Credits.
This is a seminar surveying computational approaches to understanding mental and neural processes, including sensory and conceptual representation, categorization, learning and memory. The course will also develop familiarity with computational tools such as numerical simulation, linear transformation and data visualization. Recommended Course Background: AS.110.106 / Calculus I OR AS.110.108 Calculus I, AS.050.101 / Cognition OR AS.200.211 / Sensation & Perception OR AS.080.105 / Introduction to Neuroscience OR other introductory coursework in cognitive & neural sciences.
Instructor(s): C. Honey
Area: Quantitative and Mathematical Sciences, Social and Behavioral Sciences.
AS.200.314. Advanced Statistical Methods. 3.0 Credits.
Topics in applied probability and statistical inference; analysis of variance; experimental design. Intended for graduate students in psychology. Recommended Course Background: one statistics course.
Prerequisites: Statistics Sequence restriction: students who have completed any of these courses may not register: EN.553.211 OR EN.553.230 OR AS.280.345 OR EN.553.310 OR EN.553.311 OR EN.560.435 OR EN.553.420 OR EN.553.430 OR EN.560.348
Instructor(s): J. Bowen
Area: Quantitative and Mathematical Sciences, Social and Behavioral Sciences.

AS.200.315. Advanced Research Design and Analysis. 3.0 Credits.
Second half of graduate statistics sequence, covering complex research design and analysis. Recommended Course Background: AS.200.314. Enrollment limited to seniors by instructor approval and graduate students.
Instructor(s): C. Honey; J. Chen
Area: Quantitative and Mathematical Sciences.

AS.200.316. Thought and Perception. 3.0 Credits.
This year's topic: Temporal Experience. Do we perceive time? If so, how? through what sense(s)? How long is the conscious "now"? Does the temporal order of our perceptions mirror the temporal order of what we perceive? Must the experience of a temporal duration itself be extended in time? What is the relation between the experience of time (for example, the experience of time's passage) and memory? Does our experience of time accurately represent temporal features of reality, or is it actually illusory? How does attending to time's passage affect its perceived rate of passage (and what is it to attend to time's passage)? We will explore these and other questions through an examination of both psychological and philosophical work. [This course meets jointly with Professor Gross's AS.150.476]
Instructor(s): J. Flombaum; S. Gross
Area: Humanities, Social and Behavioral Sciences Writing Intensive.

AS.200.317. Interpersonal Relations. 3.0 Credits.
This course will investigate interpersonal processes ranging from attraction and courtship to relationship functioning and distress. Open to Psychology and Behavioral Biology majors only.
Prerequisites: AS.200.133
Instructor(s): S. Drigotas
Area: Social and Behavioral Sciences.

AS.200.318. Quantitative Methods for Brain Sciences. 3.0 Credits.
Focus on frequently-used quantitative methods used in the study of brain sciences, including gaining conceptual understanding of techniques, analysis and summarization of data, extracting the process underlying a data set, explaining data as a function of variables, data visualization, etc. Enrollment is limited to undergraduate seniors and graduate students with instructor approval. Recommended Course Background: Probability & Statistics.
Instructor(s): S. Mysore
Area: Quantitative and Mathematical Sciences.

AS.200.319. Sensing & Action in Predator/Prey Encounters. 3.0 Credits.
Receiving and responding to environmental stimuli are fundamental components in a wide variety of behaviors, including the critically important behaviors of finding prey and avoiding predation. In this course, we will examine both invertebrate and vertebrate systems to understand how organisms use sensory systems to detect prey and predators, and how motor systems guide appropriate actions. We will begin by examining predator/prey interactions mediated through vision, followed by olfaction, audition and electrolocation. The course will then cover escape and predatory behaviors for a wide variety of organisms, both vertebrate and invertebrates. For each topic, we will first discuss sensing behaviors, the neural machinery of sensory systems, and how sensory signals are used to guide species-specific escape and attack behaviors at the levels of the central and peripheral nervous systems. Restricted to Juniors & Seniors with Recommended Course Background: AS.080.305 / Nervous System I AND AS.080.306 / Nervous System II OR AS.200.141 / Foundations of Brain, Behavior & Cognition.
Instructor(s): M. Wohlgemuth
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.320. The Interface of Psychology & Semantics: Procedural Matters. 3.0 Credits.
Often, languages are described as sets of expressions. But in acquiring a language, a child acquires a procedure that generates expressions. If Linguistic expressions pair pronunciations with mental representations, then one task shared by linguists and psychology is to specify the forms of these representations. This seminar explores this relationship in detail. Instructor(s): J. Halberda
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.321. Child and Adolescent Psychology. 3.0 Credits.
This course focuses on mental disorders in children and adolescents. The course begins with an exploration of the general models and theories for why psychopathology occurs in childhood. The second portion of the course provides a systematic review of the symptoms, course, risk factors, theories, and treatments for specific disorders, including mood disorders, anxiety disorders, autism, ADHD, eating disorders, and behavioral disorders.
Prerequisites: AS.200.212
Instructor(s): A. Papadakis
Area: Social and Behavioral Sciences.

AS.200.325. Law Psychology: Clinical Application. 3.0 Credits.
Introduction to legal standards governing criminal forensic psychology assessments, e.g., competence to stand trial, criminal responsibility, mitigation of death penalty, negation of mens rea, and other criminal law forensic applications. Cross-listed with Behavioral Biology.
Instructor(s): L. Raifman
Area: Social and Behavioral Sciences.

AS.200.326. Law, Psychology and Public Policy. 3.0 Credits.
An introduction to applications of psychological research in policy analysis. Special emphasis is given to the use and misuse of psychology in Supreme Court advocacy and decision making in the areas of children's rights, adult sexuality, and educational and employment opportunity. Recommended Course Background: Statistics & Regression Analysis
Instructor(s): P. Hofer
Area: Social and Behavioral Sciences Writing Intensive.
AS.200.328. Theory & Methods in Clinical Psychology. 3.0 Credits.
A critical examination of the methods of observation, description, reasoning, inference, measurement and intervention that underlie the clinical practice of psychology and psychiatry. Enrollment limited to Behavioral Biology, Cognitive Science, Neuroscience, Psychology, and Public Health majors or by instructor approval. Recommended: Junior & Senior
Prerequisites: AS.200.212
Instructor(s): D. Edwin
Area: Social and Behavioral Sciences
Writing Intensive.

AS.200.333. Advanced Social Psychology. 3.0 Credits.
The class is designed as a seminar including discussion of primary readings of social psychology articles ranging in topics from interpersonal relationship to behavior in large groups. Rising junior & senior Psychology majors only.
Prerequisites: AS.200.133
Instructor(s): S. Drigotas
Area: Social and Behavioral Sciences.

AS.200.336. Foundations of Mind. 4.0 Credits.
An interdisciplinary investigation into the innateness of concepts: perception, number, language, and morality, physics discussed. Evidence from animals, infants, patients, brains. Students collect data in sections investigating claims from the readings. Cross-listed with Cognitive Science and Philosophy.
Instructor(s): J. Halberda; L. Feigenson
Area: Social and Behavioral Sciences.

AS.200.339. Cognitive Development. 3.0 Credits.
How do children acquire knowledge about the world? In this course, we will explore how children understand the world, looking at concepts of objects, number, space, and other people. Students will read both empirical and theoretical writing on these topics, participate in class discussions, and complete short critical writing assignments and final literature review paper.
Instructor(s): M. Kibbe
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.343. Motivation. 3.0 Credits.
Current biological, behavioral, and cognitive research and theory concerning the motivation of behavior are examined. Both human and non-human animal research is reviewed. Topics include the role of genetics, arousal, biological regulatory systems, incentives, expectancies, attributions, social processes and self-actualization in the general of behavior. Recommended Course Background: AS.200.101 and AS.200.146 or instructor permission.
Instructor(s): H. Petri
Area: Social and Behavioral Sciences.

AS.200.344. Behavioral Endocrinology. 3.0 Credits.
An examination of the effects of hormones on behavior in non-human and human animals. Topics will include the effects of hormones on sexual differentiation, reproductive behavior, parental behavior, homeostasis and biological rhythms, regulation of body weight, learning and memory. Cross-listed with Behavioral Biology and Neuroscience.
Prerequisites: Prereqs: (AS.200.141 OR AS.080.306) OR (AS.020.151 AND AS.020.152) OR (AS.020.305 AND AS.020.306) or instructor’s permission
Instructor(s): K. Bohn
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.359. The Psychology of Financial Crisis. 3.0 Credits.
The 2007-8 financial crisis, considered the most severe of its kind since the Great Depression, is our primary focus. The course will initially answer two critical questions: “What happened to bring about the financial crisis?” Who was hurt and who succeeded well? We will then study specific crisis decisions to determine if a behavioral finance analysis contributes to a better understanding of decision making under conditions of uncertainty.
Instructor(s): L. Raifman
Area: Social and Behavioral Sciences.

AS.200.360. Forensic Psychology Soup to Nuts. 2.0 Credits.
The course is based upon an integrative strategy that focuses upon: (1) scientific research underlying forensic psychology expertise, (2) the formulation of expert opinions, and (3) the presentation of expert witness testimony court cases. The course syllabus identifies examples from insanity defense that raises research questions answered by studies from psychology that focus on: battered spouse syndrome, sleep disorders/criminal behavior, pedophilia, settled psychosis, and the application of death penalty to juveniles or mentally ill persons.
Instructor(s): L. Raifman
Area: Social and Behavioral Sciences.

AS.200.361. Tests & Measurements. 3.0 Credits.
Psychological tests and measures are used in several settings including research, clinical, business, forensic, school and other applied settings. This course will consider the methodological and practical issues involved in test construction, the evaluation of instruments, and the uses of psychological tests across settings and for different purposes. Examples of assessments that may be discussed are aptitude and achievement tests; personality and behavioral inventories; neuropsychological tests, observations and interviews; and tests for employment and forensic use. Enrollment limited to Junior & Senior Cognitive Science & Psychology Majors, or instructor approval. 
Instructor(s): H. Roberts Fox
Area: Social and Behavioral Sciences.

AS.200.363. Mind, Brain & Experience. 3.0 Credits.
How do nature and nurture shape the human mind? How does experience contribute to the development of visual perception, language and social reasoning? This course explores insights into these age-old questions from neuroscience and psychology. Studies of infant behavior reveal rich knowledge about objects and people in the first months of life. At the same time, experience has profound effects on behavior and neurobiology. For example, temporary absence of vision (i.e. blindness) during development permanently alters visual perception and the visual cortex. Key evidence also comes from studies of naturally occurring variation in human experience (e.g. blindness, deafness, socioeconomic and cultural differences). We will discuss what such studies of cognitive and neural function tell us about the origins of human cognition. This is a writing intensive course with weekly lectures and seminar style discussion of primary sources. Students will be required to write weekly responses to readings and a term paper.
Prerequisites: Pre-reqs: AS.200.141 OR AS.050.105 OR AS.080.105 OR AS.050.203 OR AS.020.312 OR AS.200.386 OR (AS.080.305 AND AS.080.306) OR AS.080.203
Instructor(s): M. Bedny
Area: Natural Sciences, Social and Behavioral Sciences
Writing Intensive.
AS.200.364. Advanced Topics in Cognitive Development. 3.0 Credits.
How do children acquire knowledge about the world? In this seminar course, we will explore how children understand the world, looking at concepts of objects, number, space, and other people. Students will read both empirical and theoretical writing on these topics and complete writing assignments. Classes will primarily be discussion-based.
Instructor(s): M. Kibbe
Area: Social and Behavioral Sciences
Writing Intensive.

AS.200.366. Neuroscience of Motivation: Sex, Drugs and the Brain. 3.0 Credits.
This course is designed to address the growing literature on the neurobiology of motivational behaviors, integrating studies from invertebrates to birds, rodents, primates and humans. The course will begin with a century old, yet ongoing, discussion on how researchers define ‘motivation’. Following this primary introduction, we will discuss the brain circuitry that underlies emotion, reward, and motivation, so that students attain the necessary foundations for understanding the neurobiology of motivated behavior. In particular, we will proceed with an in-depth exploration of an inherently motivated and naturally rewarding social interaction, sexual behavior, which will be discussed at multiple levels. Subsequent lectures will address literature on how humans activate the same brain reward systems artificially by using drugs of abuse. Drawing on these theoretical and empirical foundations, we will then explore the possible involvement of these motivational systems on distinctly human pleasures such as religious experience, visual arts, and music.
Prerequisites: AS.200.141 OR AS.080.105 OR (AS.080.305 AND AS.080.306) OR Permission required.
Instructor(s): O. Iyilikci
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.367. Episodic Memory in Human and Nonhuman Animals. 3.0 Credits.
Episodic memory, or autobiographical memory, has been said to be a capacity that is uniquely human. Consisting of the what, when, and where components of our experiences, episodic memory is what makes each of us who we are. This course will explore each of these components individually—the psychology and neural underpinnings of each component—before discussing them in combination as episodic memory. Finally, we will visit one of the greatest ongoing debates in the memory literature: whether or not this ability is truly “uniquely human” or if our nonhuman animal counterparts also have this capacity. Throughout the course, we will draw on evidence from empirical articles based on studies in a variety of species including rodents, primates, and birds.
Prerequisites: AS.200.101 OR AS.200.141 OR AS.080.105 OR (AS.080.305 AND AS.080.306) OR Permission required.
Instructor(s): J. Asem
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.368. Sleep, Dreams, and Altered States of Consciousness. 3.0 Credits.
Sleep, dreaming, resting and arousal to waking represent very different states of consciousness which differ dramatically both psychologically and physiologically. This course focuses on cognitive, psychological, physiological, biological and genetic aspects characterizing each of these states with some reference to other altered states. The course includes a focus on the major pathologies affecting sleep-wake states. Clinical cases will be considered. These inform about both psychological and biological aspects of these states. The relative biological functions of each state will be evaluated with particular attention to the mystery of why we have and apparently need REM and NREM sleep. Actual physiological recordings of sleep states will be reviewed and the student will learn how these are obtained and how to evaluate these. The circadian rhythms, ontogeny and evolution of these sleep-wake states will also be covered. This will include a review of information learned from non-human animal sleep. The change from sleep to full awakening reflects change toward increasing brain organization supporting consciousness. Understanding of the neurobiology of these states will be used to explore some of the more modern and scientific concepts of human self-awareness or consciousness. Recommended Course Background: AS.200.101 OR AS.080.203 OR AS.050.203
Instructor(s): R. Allen
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.369. Neuroscience of Motivation & Reward. 3.0 Credits.
This course will explore the neurobiological bases of motivated behavior, including eating, drinking, and reproduction, tracing the history of our understanding from early neuroscientific studies to the modern day, with a focus on mammalian model systems. We will discuss innate motivated behaviors, and well as how learning can guide the expression of these behaviors. Neural mediation of processes such as reward and aversion will be considered in depth, as will applications of these findings to the understanding of addiction and other behavioral disorders. The course will be a mixed lecture/seminar format; we will read original research articles and scholarly reviews.
Prerequisites: AS.200.366. Exclude students who have taken AS.200.366, AS.200.141 OR (AS.080.305 AND AS.080.306)
Instructor(s): P. Janak
Area: Natural Sciences.

AS.200.370. Functional Human Neuroanatomy. 3.0 Credits.
This course examines the general organizing principles of the anatomy of the human central nervous system and how this anatomical organization relates to function, from the level of neural circuits, to systems, to behavior. Students will learn to identify neuroanatomical structures and pathways in dissections and MRI images through computerized exercises. Readings and lectures will emphasize general structure-function relationships and an understanding of the functional roles of particular structures in sensory, motor, and cognitive systems.
Prerequisites: AS.080.250 OR AS.080.305
Instructor(s): S. Courtney-Faruqee
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.372. The Aging Brain. 3.0 Credits.
We will examine what current research can tell us about changes in mental abilities as we grow older, what biological changes in the brain during aging cause cognitive decline, and finally, how scientists are meeting the challenge of maintaining the functions of the mind into advanced old age.
Instructor(s): M. Gallagher
Area: Natural Sciences, Social and Behavioral Sciences
Writing Intensive.
AS.200.376. Psychopharmacology. 3.0 Credits.
Designed to provide information about how drugs affect the brain and behavior. The course focuses on biological concepts underlying structures and functions of the brain that relate to mental disorders. An introduction to neurobiology and brain function is presented as it applies to the interaction of various classes of drugs with the individual neurotransmitter systems in the brain. A brief historic review is followed by a discussion of clinical relevance. Cross-listed with Behavioral Biology and Neuroscience. Enrollment limited to juniors and seniors.
Prerequisites: AS.200.141 OR (AS.020.312 AND AS.020.306) OR (AS.080.305 AND AS.080.306) or permission required.
Instructor(s): H. Adwanikar
Area: Natural Sciences, Social and Behavioral Sciences.

AS.200.377. Neuroethology. 3.0 Credits.
A comparative and evolutionary approach to understanding the neural underpinnings of biologically relevant behaviors in vertebrate and invertebrate animals. Enrollment limited to Sophomores, Juniors, Seniors or by instructor approval. Recommended Course Background: AS.200.141
Instructor(s): C. Moss
Area: Natural Sciences.

AS.200.379. Research Seminar in Clinical Psychology. 3.0 Credits.
A small group exploration of current issues in clinical psychology, aimed at developing students’ empirical research skills. Following critical analysis of the empirical literature, students develop research proposals for novel research and/or conduct research and author research reports. Topics vary by semester. In the current offering, the topic will be stress, coping, emotion-regulation, peer relationships, and psychopathology among adolescents and emerging adults. Recommended Course Background: AS.200.212
Instructor(s): J. Flombaum
Area: Social and Behavioral Sciences
Writing Intensive.

AS.200.382. Models of Psychotherapy. 3.0 Credits.
This course reviews the major models of psychotherapy, including psychodynamic, cognitive, behavioral, interpersonal, and family therapy, with a focus on modern and empirically supported treatments. The application of the models through the analysis of clinical case studies is emphasized. Restricted to Junior & Senior Psychology Majors & Minors.
Prerequisites: AS.200.212
Instructor(s): A. Papadakis
Area: Social and Behavioral Sciences
Writing Intensive.

AS.200.384. Spatial Orientation and Navigation: Behavior and Neural Mechanisms. 3.0 Credits.
A cross-disciplinary investigation of space representation and navigation in a broad range of animal species. Topics will include sonar orientation, landmark use, the role of dead reckoning, spatial memory, long-distance migration, and map-making.
Prerequisites: AS.200.141 OR (AS.080.305 AND AS.080.306) or equivalent.
Instructor(s): C. Moss
Area: Natural Sciences.

AS.200.386. Animal Cognition. 3.0 Credits.
Examine relations between brain, mind, and behavior in nonhuman animals, focusing on topics such as learning, memory, attention, decision-making, navigation, communication, and awareness. We will take a variety of approaches, including behavioral, computational, evolutionary, neurobiological, and psychological perspectives.
Prerequisites: AS.200.141 OR AS.200.208 OR AS.290.101 or Instructor permission.
Instructor(s): P. Holland
Area: Social and Behavioral Sciences.

AS.200.387. The Social Brain/The Visual Brain. 3.0 Credits.
We tend to feel that we are thinking the hardest in social situations. In contrast, we barely feel the complicated processing that produces our vivid and salient visual experiences; in fact, we cannot even access most of this processing directly. This course will explore the relationship between visual perception and social cognition, especially the ways that the visual system supplies crucial raw materials for more elaborate social processing, and the ways that our social agendas may, in turn, influence vision. Topics will include what we find physically attractive in mates (and why); the quick formation of social impressions; the neural, cognitive, and evolutionary basis of aesthetic perception; and the extent to which perception might be socially constructed (i.e. whether vision can be influenced from the 'top-down'). All readings will come from primary scientific literature, and students should have some experience reading this kind of material. Limited to juniors, seniors, and graduate students.
Instructor(s): J. Flombaum.
AS.200.388. Occupational Health Psychology. 3.0 Credits.
Occupational Health Psychology (OHP) concerns the application of psychology to improving the quality of work life, and to protecting and promoting the safety, satisfaction, health, and well-being of workers. This course will consider a broad range of topics in OHP including the role of work on well-being, job stress and burnout, diversity and work, safety climate, work-family balance, conflict, and counterproductive work behaviors. The emphasis will be on drawing connections between OHP theory and OHP practice and at the relationship between individual and organizational health and well-being. This class should be of interest to students interested in industrial/organizational psychology, social psychology, health psychology, clinical psychology, human factors, public health, preventive medicine, and industrial engineering.
Instructor(s): H. Roberts Fox
Area: Social and Behavioral Sciences.

AS.200.401. Careers in Psychology - Freshmen. 1.0 Credit.
An introduction to the varied career paths offered across the field of psychology, hosting a diverse representation of speakers from various Johns Hopkins institutions and the local Baltimore community.
Instructor(s): J. Halberda
Area: Social and Behavioral Sciences.

AS.200.402. Careers in Psychology - Sophomore. 1.0 Credit.
An introduction to the varied career paths offered across the field of psychology, hosting a diverse representation of speakers from various Johns Hopkins institutions and the local Baltimore community.
Instructor(s): J. Halberda
Area: Social and Behavioral Sciences.

AS.200.403. Careers in Psychology - Juniors. 1.0 Credit.
An introduction to the varied career paths offered across the field of psychology, hosting a diverse representation of speakers from various Johns Hopkins institutions and the local Baltimore community.
Instructor(s): J. Halberda
Area: Social and Behavioral Sciences.

AS.200.404. Careers in Psychology - Seniors. 1.0 Credit.
An introduction to the varied career paths offered across the field of psychology, hosting a diverse representation of speakers from various Johns Hopkins institutions and the local Baltimore community.
Instructor(s): J. Halberda
Area: Social and Behavioral Sciences.

AS.200.501. Psychological Research - Freshmen. 3.0 Credits.
S/U grading only.
Instructor(s): Staff.

AS.200.502. Psychology Research-Freshmen. 0.0 - 3.0 Credits.
Instructor(s): Staff.

AS.200.503. Psychological Research - Sophomores. 3.0 Credits.
S/U grading only
Instructor(s): Staff.

AS.200.504. Psychology Research-Sophomores. 0.0 - 3.0 Credits.
Grading Satisfactory/ Unsatisfactory only.
Instructor(s): Staff.

AS.200.506. Psychological Readings. 0.0 - 3.0 Credits.
Instructor(s): Staff.

AS.200.509. Internship-Psychology. 1.0 Credit.
S/U grading only.
Instructor(s): Staff.

AS.200.510. Psychology Internship. 0.0 - 3.0 Credits.
Grading Satisfactory/ Unsatisfactory only.
Instructor(s): Staff.

AS.200.511. Psychological Research - Juniors. 3.0 Credits.
S/U grading only.
Instructor(s): Staff.

AS.200.512. Psychology Research-Juniors. 0.0 - 4.0 Credits.
Grading Satisfactory/ Unsatisfactory only.
Instructor(s): Staff.

AS.200.513. Psychological Research - Seniors. 3.0 Credits.
The student chooses some research problem with the advice and approval of a faculty member. S/U grading only.
Instructor(s): Staff.

AS.200.514. Psychology Research-Seniors. 0.0 - 4.0 Credits.
Instructor(s): Staff.

AS.200.519. Seniors Honors Research. 3.0 Credits.
Seniors working on the honors thesis enroll with the approval of the undergraduate coordinator.
Instructor(s): Staff.

AS.200.520. Seniors Honors Research. 0.0 - 3.0 Credits.
Instructor(s): Staff.

AS.200.540. Independent Study-Seniors. 3.0 Credits.
Instructor(s): Staff.

AS.200.541. Independent Study - Juniors. 3.0 Credits.
Instructor(s): Staff.

AS.200.542. Independent Study - Sophomores. 3.0 Credits.
Instructor(s): Staff.

AS.200.595. Internship. 1.0 Credit.
Instructor(s): Staff.

AS.200.597. Psychology Research. 3.0 Credits.
Instructor(s): Staff.

AS.200.599. Independent Study. 1.0 - 3.0 Credits.
Instructor(s): Staff.

This is a journal club examining recent literature in the field related to the hippocampus and the medial temporal lobe memory system. Discussions are heavily based on animal models and theoretical accounts of the hippocampus’ role in learning and memory. Graduate students only.
Instructor(s): J. Knierim; M. Yassa
Area: Natural Sciences, Social and Behavioral Sciences.

An introduction to the fundamental principles of cognitive and physiological psychology. Required course of first-year graduate students. Graduate students only.
Instructor(s): P. Janak; S. Mysore
Area: Natural Sciences, Social and Behavioral Sciences.

Graduate students only or permission required.
Instructor(s): B. Anderson; K. Blacker.

Graduate student only.
Instructor(s): K. Blacker.
AS.200.616. Thought and Perception.  
This year's topic: Temporal Experience. Do we perceive time? If so, through what sense(s)? How long is the conscious "now"? Does the temporal order of our perceptions mirror the temporal order of what we perceive? Must the experience of a temporal duration itself be extended in time? What is the relation between the experience of time (for example, the experience of time's passage) and memory? Does our experience of time accurately represent temporal features of reality, or is it actually illusory? How does attending to time's passage affect its perceived rate of passage (and what is it to attend to time's passage)? We will explore these and other questions through an examination of both psychological and philosophical work. [This course meets jointly with Professor Gross's AS.150.476]  
Instructor(s): J. Flombaum; S. Gross  
Writing Intensive.

This is a required course for all first year PhD students in the Department of Psychological and Brain Sciences. The course covers foundational concepts and methods in cognition.  
Instructor(s): J. Flombaum.

Often, languages are described as sets of expressions. But in acquiring a language, a child acquires a procedure that generates expressions. If Linguistic expressions pair pronunciations with mental representations, then one task shared by linguists and psychology is to specify the forms of these representations. This seminar explores this relationship in detail.  
Instructor(s): J. Halberda.

AS.200.627. Graduate Seminar: Memory.  
Instructor(s): S. Courtney-Faruqee.

Current biological, behavioral, and cognitive research and theory concerning the motivation of behavior are examined. Both human and non-human animal research is reviewed. Topics include the role of genetics, arousal, biological regulatory systems, incentives, expectancies, attributions, social processes and self-actualization in the general of behavior. Course will meet with AS.200.343.  
Instructor(s): H. Petri.

This two-semester course will provide an overview of clinical, neuropsychological, imaging and neuropathological approaches to the study of cognitive systems altered in aging, AD and other neurodegenerative disorders. It will consider research using animal models as well as human subjects and clinical populations. The course is intended for graduate students and is open to advanced undergraduates only with permission of the professor.  
Instructor(s): M. Albert; M. Gallagher.

AS.200.649. Aging, Cognition, and Neurodegenerative Disorders II.  
Second part of a two-semester course. Course will provide an overview of clinical, neuropsychological, imaging and neuropathological approaches to the study of cognitive systems altered in aging, AD and other neurodegenerative disorders. It will consider research using animal models as well as human subjects and clinical populations. The course is intended for graduate students and is open to advanced undergraduates only with permission of the professor. Predoctoral and Postdoctoral students from A&S, SPH and SOM students participating in the NIA Training Program on Age-Related, Cognitive and Neuropsychiatric Disorders are required to take this course; meets concurrently with PH.330.802(01)  
Instructor(s): M. Albert; M. Gallagher.

AS.200.654. Psychological & Brain Sciences Core Topics A.  
This course is designed to introduce students to core topics in psychological and brain sciences. Students will read seminal and contemporary papers in topics that cover the breadth of the field. Graduate students in Psychological and Brain Sciences.  
Instructor(s): L. Feigenson.

AS.200.655. Psychological & Brain Sciences Core Topics B.  
This course is designed to introduce students to core topics in psychological and brain sciences. Students will read seminal and contemporary papers in topics that cover the breadth of the field. Graduate Students in Psychological & Brain Sciences.  
Instructor(s): L. Feigenson.

AS.200.661. Topics in Psychological & Brain Sciences.  
An introduction to postdoctoral activities (e.g., grant applications, journal article submission, meeting presentations, the politics of psychology and American science) for Ph.D. candidates in psychology.  
Instructor(s): L. Feigenson.

AS.200.662. Psychological and Brain Sciences: Career Development.  
Instructor(s): L. Feigenson.

How do children acquire knowledge about the world? In this seminar course, we will explore how children understand the world, looking at concepts of objects, number, space, and other people. Students will read both empirical and theoretical writing on these topics and complete writing assignments. Classes will primarily be discussion-based.  
Instructor(s): M. Kibbe.

This seminar will cover advanced topics in vision from the perspectives of several disciplines. Topics include human visual psychophysics, perception and cognition, and computational vision. Graduate students only.  
Instructor(s): H. Egeth; J. Flombaum; J. Halberda.

Instructor(s): L. Feigenson.

A cross-disciplinary investigation of space representation and navigation in a broad range of animal species. Topics will include sonar orientation, landmark use, the role of dead reckoning, spatial memory, long-distance migration, and map-making. Contact instructor for enrollment approval.  
Instructor(s): C. Moss.
**AS.200.801. Research Seminar: Learning and Memory.**
This laboratory meeting is for graduate students studying learning and memory mechanisms, alterations with age or neurologic disease, and advanced neuroimaging methods. Meetings will focus on experimental design, presentation of data, analytical techniques. Undergraduates allowed to add the course with permission as Satisfactory/Unsatisfactory only. Recommended Course Background: AS.200.370 or AS.200.141 or AS.080.305/AS.080.306 or AS.020.306.
Instructor(s): M. Yassa.

**AS.200.804. Topics in Neurocognitive Aging.**
This seminar will cover advanced topics in neurocognitive aging. Topics will include animal models of memory loss in normal aging and in Alzheimer’s disease (AD), including both behavioral and neurobiological findings. Special attention will be given to the relation between such findings and the effects of aging and AD on memory and the brain in man. Similar comparative analysis in other cognitive domains (e.g. attentional processes) will also be considered.
Instructor(s): M. Gallagher.

**AS.200.805. Topics in Attention and Cognition.**
Instructor(s): J. Flombaum.

**AS.200.808. Readings: Current Research in Cognitive Aging.**
Guided independent readings. The class is designed as a seminar including discussion of primary research articles of cognitive aging. Specific topics include human imaging and animal models of memory, aging, and neurodegenerative disease.
Instructor(s): R. Haberman.

**AS.200.810. Research in Psychology.**
Students plan and execute original research under guidance of advisers. Results are usually prepared in a form suitable for publication. Graduate students only.
Instructor(s): L. Feigenson.

**AS.200.811. Research Seminar: Human Performance.**
Instructor(s): H. Egeth.

**AS.200.813. Research Seminar: Cognitive Development.**
Instructor(s): L. Feigenson.

**AS.200.814. Research Seminar: Cognitive Development.**
Instructor(s): J. Halberda.

**AS.200.815. Research Seminar: Learning.**
Instructor(s): P. Holland.

**AS.200.817. Cognitive Lunch.**
Instructor(s): L. Feigenson.

**AS.200.818. Research Seminar: Neuroscience of Decision-making.**
Instructor(s): V. Stuphorn.

Instructor(s): J. Halberda.

**AS.200.820. Directed Readings & Research.**
Guided independent readings and research in special fields. Graduate Students only.
Instructor(s): L. Feigenson.

**AS.200.821. Research Seminar: Behavioral Neuroscience.**
Graduate students only.
Instructor(s): F. Madison; G. Ball.

**AS.200.822. Research seminar: Naturalistic memory and perception.**
Research seminar covering topics on human memory and perception in real-world settings.
Instructor(s): J. Chen.

**AS.200.825. Research Seminar: Psychobiology.**
Graduate students only.
Instructor(s): C. Moss; M. Gallagher; P. Holland; P. Janak.

**AS.200.826. Research Seminar: Neuroplasticity and Development.**
Graduate Students Only.
Instructor(s): M. Bedny.

**AS.200.828. Research Seminar: Perception.**
Graduate only.
Instructor(s): S. Yantis.

**AS.200.829. Research Seminar: Neural Circuits & Computations.**
Graduate Students Only
Instructor(s): S. Mysore.

**AS.200.830. Readings In Psychology.**
Instructor(s): J. Flombaum; J. Halberda.

**AS.200.831. Research Seminar: Neural Systems & Behavior.**
Graduate Students Only
Instructor(s): C. Moss.

**AS.200.832. Research Seminar: Neural Circuits & Behavio.**
Graduate Students Only.
Instructor(s): P. Janak.

**AS.200.833. Research Seminar: Perception & Mind.**
Research seminar covering topics related to perception & mind.
Instructor(s): C. Firestone.

**AS.200.834. Research Seminar: Dynamic Scene Perception.**
Research seminar covering topics on the behavioral and brain basis of perception in dynamic scenes.
Instructor(s): J. Fischer.

**AS.200.835. Research Seminar: Cognitive and Systems Neuroscience.**
Research seminar covering topics on cognitive and systems neuroscience.
Instructor(s): C. Honey.

**AS.200.836. Research Seminar: Hippocampal System.**
Research seminar covering topics on the behavioral neurophysiology of the hippocampal formation
Instructor(s): J. Knierim.

**AS.200.840. Research Seminar:Neural Systems.**
Graduate students only. Permission Required.
Instructor(s): S. Courtney-Faruqee.

**AS.200.841. Research Seminar: Neural Systems.**
Instructor(s): S. Courtney-Faruqee.

**AS.200.848. Current Advances in Psychological and Brain Sciences.**
Introduces advanced research topics to graduate students (as well as faculty) through a series of speakers and discussions.
Instructor(s): J. Flombaum.

**AS.200.849. Teaching Practicum.**
All candidates are required to obtain special experience in various aspects of undergraduate teaching. Graduate students only.
Instructor(s): L. Feigenson.

**AS.200.850. Advanced Teaching Practicum.**
Instructor(s): L. Feigenson.
AS.200.899. Psychology Internship/Practicum.
The Ph.D. program in Psychological & Brain Sciences trains students in psychological science through general and advanced seminars in the various subdisciplines of psychology and by active engagement in research. Registration in this course will be accompanied by the student's participation in an internship/practicum experience.
Instructor(s): L. Feigenson.

Cross Listed Courses

Cognitive Science
AS.050.102. Language and Mind. 3.0 Credits.
Introductory course dealing with theory, methods, and current research topics in the study of language as a component of the mind. What it is to "know" a language: components of linguistic knowledge (phonetics, phonology, morphology, syntax, semantics) and the course of language acquisition. How linguistic knowledge is put to use: language and the brain and linguistic processing in various domains. Cross-listed with Neuroscience and Psychology.
Instructor(s): C. Wilson
Area: Natural Sciences, Social and Behavioral Sciences.

AS.050.312. Cognitive Neuroimaging Methods in High-Level Vision. 3.0 Credits.
This course is an advanced seminar and research practicum course. It will provide the opportunity to learn about fMRI methods used in the field of vision science and for students to have hands-on experience to develop, design and analyze a research study on topics in the cognitive neuroscience field of high-level vision. In the first part of the course students will read recent fMRI journal papers and learn about common fMRI designs and analysis methods; in the second part of the course students will conduct a research study as a group to address a research question developed from readings. Students are expected to write a paper in a journal article format at the end of the course and to present their results in front of the class. Research topics will vary but with special focus on topics in object, scene and space recognition. Cross-listed with Neuroscience and Psychology. instructor’s permission required.
Instructor(s): S. Park
Area: Natural Sciences, Social and Behavioral Sciences.

AS.050.319. Visual Cognition. 3.0 Credits.
Vision is central to our daily interactions with the world: we can effortlessly navigate through a city, comprehend fast movie trailers, and find a friend in a crowd. While we take the visual experience for granted, visual perception involves a series of complicated cognitive processes beyond just opening our eyes. The goal of this course is to introduce students to the field of visual cognition, including existing theoretical frameworks and recent research findings. We will explore questions such as: How do we see the visual world? Do we see and remember correctly what's in the physical world? How many items can we keep track of and remember at a time? How is the visual system structured and what are the neural mechanisms underlying visual perception? Meets with AS.050.619.
Prerequisites: AS.200.101 OR AS.050.101 OR AS.080.203 OR AS.050.203
Instructor(s): S. Park
Area: Natural Sciences, Social and Behavioral Sciences.

AS.050.339. Cognitive Development. 3.0 Credits.
This is a survey course in developmental psychology designed for individuals with some basic background in psychology or cognitive science, but little or none in development. The course is strongly theoretically oriented, with emphasis on issues of nature, and development psychology as well as relevant empirical evidence. The principle focus will be early development, i.e., from conception through middle childhood. The course is organized topically, covering biological and prenatal development, perceptual and cognitive development, the nature and development of intelligence, and language learning.
Instructor(s): J. Yarmolinskaya
Area: Natural Sciences, Social and Behavioral Sciences.

AS.050.375. Probabilistic Models of the Visual Cortex. 3.0 Credits.
The course gives an introduction to computational models of the mammalian visual cortex. It covers topics in low-, mid-, and high-level vision. It briefly discusses the relevant evidence from anatomy, electrophysiology, imaging (e.g., fMRI), and psychophysics. It concentrates on mathematical modeling of these phenomena taking into account recent progress in probabilistic models of computer vision and developments in machine learning, such as deep networks. Co-listed with Computer Science as EN.601.485.
Prerequisites: AS.110.106 OR AS.110.108
Instructor(s): A. Yuille
Area: Quantitative and Mathematical Sciences.

Instructor’s permission required. (Also offered as AS.050.312.)
Instructor(s): S. Park
Area: Natural Sciences, Social and Behavioral Sciences.

The course gives an introduction to computational models of the mammalian visual cortex. It covers topics in low-, mid-, and high-level vision. It briefly discusses the relevant evidence from anatomy, electrophysiology, imaging (e.g., fMRI), and psychophysics. It concentrates on mathematical modeling of these phenomena taking into account recent progress in probabilistic models of computer vision and developments in machine learning, such as deep networks. Also offered as AS.050.375. Co-listed with Computer Science as EN.601.485.
Instructor(s): A. Yuille.

Neuroscience

AS.080.330. Brain Injury & Recovery. 3.0 Credits.
This course investigates numerous types of brain injuries and explores the responses of the nervous system to these injuries. The course’s primary focus is the cellular and molecular mechanisms of brain injury and the recovery of function. Discussions of traumatic brain injury, stroke, spinal cord, and tumors, using historical and recent journal articles, will facilitate students’ understanding of the current state of the brain injury field. Cross-listed with Psychological and Brain Sciences and Behavioral Biology.
Prerequisites: ( AS.080.305 AND AS.080.306) OR (AS.020.312 OR AS.020.306) OR (200.141 and 020.306) OR Permission of Instructor
Instructor(s): L. Gorman
Area: Natural Sciences
Writing Intensive.
AS.080.348. Science of Learning. 3.0 Credits.
Can what we know about the brain guide how we learn or teach in our schools? This seminar course is designed to address this question. In this course we will focus on the science of what we know about learning and teaching (and not the politics) to see if we can actually use the research to “optimize learning in society”. As we read the literature, we will look at some of the “neuromyths” that have been propagated thus far and discuss how to avoid creating new neuromyths by effectively communicating the research.
Prerequisites: Pre-reqs: AS.080.306 OR AS.200.141
Instructor(s): L. Gorman
Area: Natural Sciences, Social and Behavioral Sciences
Writing Intensive.

Behavioral Biology
AS.290.420. Human Sexual Orientation. 3.0 Credits.
This course will examine the historical and current theories of sexual orientation and sexual variation development by examining the biological, psychological and social contributing factors that influence the development of sexual orientations and variations along with treatment and modification of problematic sexual behaviors. Please note that the use of electronic devices is not permitted during this class, in order to promote the full interactive potential of this engaging seminar-style offering. Students may enroll in both AS.200.204 and AS.290.420, but cannot do so in the same semester. Enrollment is limited to Senior Majors & Minors in Behavioral Biology; Biology; Cognitive Science; Medicine, Science & the Humanities; Molecular & Cellular Bio; Neuroscience; Psychology; Public Health; Sociology; Study of Women, Gender, & Sexuality.
Corequisites: Students may enroll in both AS.200.204 and AS.290.420, but cannot do so in the same semester.
Instructor(s): C. Kraft
Area: Social and Behavioral Sciences
Writing Intensive.