BEHAVIORAL BIOLOGY PROGRAM

http://krieger.jhu.edu/behavioralbiology (http://krieger.jhu.edu/behavioralbiology/)

The David S. Olton Behavioral Biology Program seeks to establish a greater understanding of the relations of brain and behavior through an interdisciplinary program of study. Students in the Behavioral Biology Program examine the complex interplay between environment and behavior, and the processes and mechanisms that underlie behavior. One goal of the program is for students to learn how to integrate scientific discoveries from the wide array of scientific fields of inquiry that contribute to the study of behavioral biology, from molecular biology to sociology.

The interdisciplinary characteristics of the Behavioral Biology Program provide an excellent preparation for post-graduate work. For those interested in the health professions, behavioral biology can be integrated into a premedical curriculum that will provide a broad, humanistic perspective. For those who wish to pursue scientific careers in psychopharmacology, behavioral neuroscience, and physiological psychology, the program provides excellent preparation. Students interested in the fields of organismal or integrative biology should also consider this major.

Many students ask about the similarities and differences between the behavioral biology major and the neuroscience major. Both of these programs are interdepartmental, and a majority of professors teach courses that are listed for both majors. Behavioral Biology majors can explore many aspects of the biology of behavior, including the neural mechanisms of behavior (which overlaps with the neuroscience major), but also biomechanical, evolutionary, ecological, and social aspects of behavior. The behavioral biology major also has fairly liberal course requirements which provide students with an opportunity to explore more choices in their liberal arts education. Students majoring in neuroscience focus directly on the brain and on neural function/mechanisms. Generally speaking, the systems neuroscience focus area in the neuroscience major has the most overlap with behavioral biology.

Programs

- Behavioral Biology, Bachelor of Arts (https://e-catalogue.jhu.edu/arts-sciences/full-time-residential-programs/degree-programs/behavioral-biology/behavioral-biology-bachelor-arts/)

For current course information and registration go to https://sis.jhu.edu/classes/

Courses

AS.290.101. Human Origins. 4 Credits.
This course examines the origins of human structure, function and behavior from an evolutionary perspective. It includes study of the evolution, behavior and behavioral ecology of nonhuman primates, hominid evolution (including the paleontological and archaeological records), and the origins of human cognition, social behavior and culture.
Distribution Area: Natural Sciences, Social and Behavioral Sciences
AS Foundational Abilities: Science and Data (FA2), Citizens and Society (FA4)
EN Foundational Abilities: Engagement with Society (FA4)

AS.290.301. Topics in Human Evolutionary Biology. 3 Credits.
Discussion of behavioral, anatomical, and physiological adaptations and the process of adaptation using examples from various areas of human evolutionary biology.
Prerequisite(s): AS.290.101
AS Foundational Abilities: Science and Data (FA2)
EN Foundational Abilities: Engagement with Society (FA4)

AS.290.303. Animal Behavior and Communication Lab. 3 Credits.
In this course, students DO science through experiments in animal behavior and animal communication. Students will learn how to design experiments, analyze results and write scientific papers in publication form. Students will work on one class experiment for their first paper and then design and conduct their own experiment for their second paper. The course is held in the Undergraduate Teaching Laboratory on campus.
Prerequisite(s): AS.200.208 OR AS.200.344
Distribution Area: Natural Sciences, Social and Behavioral Sciences
AS Foundational Abilities: Writing and Communication (FA1), Science and Data (FA2), Projects and Methods (FA6)
Writing Intensive

AS.290.304. Comparative Neuroanatomy. 3 Credits.
This course examines the phylogenetic and developmental history of the central nervous system across the vertebrate tree of life, with emphasis on the deep history of those features that characterize the human brain. We will study how our understanding of non-human vertebrates (both model and non-model organisms) can provide important insights into the structure and function of the modern human brain.
Prerequisite(s): AS.080.306 OR AS.200.141
Distribution Area: Natural Sciences
AS Foundational Abilities: Science and Data (FA2)

AS.290.305. Útila Island: Behavior, Natural History and Conservation. 3 Credits.
Tropical ecosystems are immensely diverse in organisms and behaviors. Islands although frequently understudied, are conservation hotspots because they often have species with adaptations that are specific and separate from adjacent main land. This course will begin over intersession where we will travel as a group for 12 days to a neotropical island- Útila Island Honduras. There we will have lectures and conduct field research on two main taxa: iguanas and bats. Each taxon team will collect audio, video and/or still images that will then be analyzed during the spring semester. The ultimate goal of each team is to produce a natural history guide as well as a website for the public to learn about Utila's biological diversity. For bats this will include providing the first ever documentation of bat species using acoustic recordings. For the Iguana team you will focus on the behavior and natural history of the Útila spiny-tailed iguana – an endemic critically endangered species that is the only iguana species that specializes on mangrove habitats. At the end of this course you will have gained first-hand experience in field research, ethology and scientific communication. The costs of the trip are included for all students with no fees required. Admission will be through instructor permission. Note this class can count towards a Behavioral Biology elective course or to satisfy?research?credit.
Prerequisite(s): AS.200.208 AND AS.290.302
Distribution Area: Natural Sciences
AS Foundational Abilities: Writing and Communication (FA1), Science and Data (FA2), Projects and Methods (FA6)
Writing Intensive

AS.290.306. Behavioral Evolution Lab. 3 Credits.
This course examines the evolution of behavior via natural and sexual selection using model organisms (e.g., fish, insects) in the laboratory. Students will learn how to design and run experiments, analyze results, and write scientific papers in publication form. Students will work on multiple research projects throughout the semester. The course is held in the Undergraduate Teaching Laboratory on campus.
Distribution Area: Natural Sciences, Social and Behavioral Sciences
AS Foundational Abilities: Writing and Communication (FA1), Science and Data (FA2), Projects and Methods (FA6)
Writing Intensive

AS.290.307. Evolution & Human Behavior. 3 Credits.
The course examines human behavior from an evolutionary perspective. Lectures and seminar-based discussion of the primary literature will cover some of the major approaches and areas of study within the fields of (1) evolutionary anthropology, (2) evolutionary psychology, (3) human behavioral ecology, and (4) evolutionary medicine.
Prerequisite(s): AS.290.101 OR AS.200.208
Distribution Area: Natural Sciences, Social and Behavioral Sciences
AS Foundational Abilities: Writing and Communication (FA1), Science and Data (FA2), Citizens and Society (FA4)
EN Foundational Abilities: Engagement with Society (FA4)
Writing Intensive

AS.290.330. Human Sexuality. 3 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. Open to Juniors & Seniors within the following majors/minors: Behavioral Biology; Biology; Cognitive Science; Medicine, Science & the Humanities; Molecular & Cellular Bio; Neuroscience; Psychological & Brain Sciences; Public Health; Sociology; Study of Women, Gender, & Sexuality.
Distribution Area: Natural Sciences, Social and Behavioral Sciences
AS Foundational Abilities: Science and Data (FA2), Citizens and Society (FA4)
EN Foundational Abilities: Engagement with Society (FA4)

AS.290.400. Comparative Neural Systems and Behavior Research Discussions. 1 Credit.
This course is required concurrently with research in the Comparative Neural Systems Research and Behavior lab. During the scheduled meetings we will discuss scientific papers, policies and procedures, research ethics and other information related to activities in the lab. At the end of the semester, students will present their research in groups. This course is only open to students doing research in the Neural Systems and Behavior Lab.
Prerequisite(s): Students who have taken AS.200.431 may not take AS.290.400
Distribution Area: Natural Sciences
AS Foundational Abilities: Science and Data (FA2)

AS.290.420. Human Sexual Orientation. 3 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. Priority given to Behavioral Biology majors.
Prerequisite(s): Students may receive credit for AS.200.204 or AS.290.330 or AS.290.420, but only ONE can count towards the upper level SOCSCI in Behavioral Biology
Distribution Area: Social and Behavioral Sciences
AS Foundational Abilities: Democracy (FA4.1), Ethics and Foundations (FA5)
EN Foundational Abilities: Engagement with Society (FA4)

AS.290.450. Undergraduate Teaching Assistant in Behavioral Biology. 1 - 3 Credits.
Qualified students can serve as undergraduate Teaching Assistants for behavioral biology courses they have already taken at Hopkins (by faculty instructor invitation only). Each individual faculty instructor will determine TA responsibilities based upon departmental policy. Upon invitation, potential Teaching Assistants should forward the instructor invitation to the Director of Undergraduate Studies (Dr. Bohn) and make a request in SIS to add the course using the instructor's section number.
Distribution Area: Social and Behavioral Sciences
AS Foundational Abilities: Science and Data (FA2)

AS.290.480. Communicating Science for Career Development. 1.5 Credits.
How do you translate your research and experience into a coherent professional narrative that shows evidence of readiness (skills and record of achievement), mission alignment (how your goals connect with institutions or funders), and impact (why your work matters beyond your field)? In research and clinical fields, this narrative forms the foundation of your scientific identity: how peers, mentors, and evaluators perceive your development, contributions, and potential for future work. Designed for students currently engaged in or recently completing research, this course provides structured opportunities to practice communicating your own research through authentic professional materials. Through guest lectures from scientific professionals, guided exercises, peer feedback and individualized mentoring you'll learn to articulate your professional identity across different formats—including your CV, personal statement, research summary, online presence, and public communication. By the end of the course, you will have strengthened your writing and communication skills and refined your scientific voice to better reflect your expertise and career aspirations.
Distribution Area: Natural Sciences, Social and Behavioral Sciences
AS Foundational Abilities: Writing and Communication (FA1), Science and Data (FA2), Projects and Methods (FA6)

AS.290.490. Senior Seminar: Behavioral Biology. 1 Credit.
Great ideas in Behavioral Biology. Discussion of classic and cutting edge articles in the original literature. Student presentations and reaction papers. Capstone course for senior Behavioral Biology majors.
Prerequisite(s): AS.290.101 AND AS.200.208 AND AS.200.208 AND AS.200.208, or Instructor permission.;AS.200.141 AND AS.200.208 AND AS.290.101 or instructor permission.;(AS.290.101 AND AS.200.208 AND AS.200.141) or Instructor permission.;(AS.200.141 AND AS.200.208 AND AS.290.101) OR Instructor Permission.
Distribution Area: Social and Behavioral Sciences
AS Foundational Abilities: Science and Data (FA2), Ethics and Foundations (FA5)

AS.290.495. Connections in Behavioral Biology. 0.5 Credits.
In this seminar, students discuss the intellectual merit of current or potential future research, internship and outreach activities in Behavioral Biology. This course is designed to 1) expose Behavioral Biology majors to new knowledge in the field, 2) provide the opportunity to develop oral and written communication skills, and 3) build community among students in the major. Students will make oral presentations and write a short paper/news piece or prepare a webpage. This class will meet twice during the semester. The first meeting will run until 6 p.m. and the second meeting until ~8 p.m. The two meeting dates will be announced at the beginning of the spring semester.
Distribution Area: Natural Sciences, Social and Behavioral Sciences
AS Foundational Abilities: Science and Data (FA2)

AS.290.501. Behavioral Biology Research - Freshmen. 1 - 3 Credits.
Students will receive a hands-on experience conducting Behavioral Biology Research with the faculty member listed on this section who must approve your enrollment. In addition to participating in laboratory research students are required to submit a research style paper summarizing their work that is approved by their mentor. Information on the paper, research credits and how to enroll can be found at https://krieger.jhu.edu/behavioralbiology/research/ . Students working in Dr. Moss's lab must also register for AS.290.400 Comparative Neural Systems and Behavior Research Discussions.
Prerequisite(s): You must request Customized Academic Learning using the Customized Academic Learning form found in Student Self-Service: Registration > Online Forms.
AS Foundational Abilities: Science and Data (FA2), Projects and Methods (FA6)

AS.290.503. Behavioral Biology Research-Behavioral Biology Majors. 1 - 3 Credits.
Students will receive a hands-on experience conducting Behavioral Biology Research with the faculty member listed on this section who must approve your enrollment. In addition to participating in laboratory research students are required to submit a research style paper summarizing their work that is approved by their mentor. Information on the paper, research credits and how to enroll can be found at https://krieger.jhu.edu/behavioralbiology/research/ . Students working in Dr. Moss's lab must also register for AS.290.400 Comparative Neural Systems and Behavior Research Discussions.
Prerequisite(s): You must request Customized Academic Learning using the Customized Academic Learning form found in Student Self-Service: Registration > Online Forms.
AS Foundational Abilities: Science and Data (FA2), Projects and Methods (FA6)

AS.290.505. Behavioral Biology DUS Approved Research. 1 - 3 Credits.
Students will receive a hands-on experience conducting Behavioral Biology Research with a faculty member that does not have a Behavioral Biology research section. Pre-approval by the DUS of Behavioral Biology is required. In addition to participating in laboratory research students are required to submit a research style paper summarizing their work that is approved by their mentor and submitted to the DUS. Information on the paper, research credits and how to enroll can be found at https://krieger.jhu.edu/behavioralbiology/research/.
Prerequisite(s): You must request Customized Academic Learning using the Customized Academic Learning form found in Student Self-Service: Registration > Online Forms.
AS Foundational Abilities: Science and Data (FA2), Projects and Methods (FA6)

AS.290.519. Independent Study. 1 - 3 Credits.
An independent study is when you pursue a topic of special interest within Behavioral Biology. You must initiate the process. The independent study project must be pre-approved by the DUS of Behavioral Biology and must culminate in a substantial research or topic paper submitted to the DUS. For more information visit https://krieger.jhu.edu/behavioralbiology/research/.
Prerequisite(s): You must request Customized Academic Learning using the Customized Academic Learning form found in Student Self-Service: Registration > Online Forms.
AS Foundational Abilities: Science and Data (FA2), Projects and Methods (FA6)

AS.290.590. Behavioral Biology Internship. 1 Credit.
Students who have found a Behavioral Biology related unpaid internship can enroll in this section for up to 1 credit with the DUS of Behavioral Biology pre-approval. Students are required to submit a paper summarizing their internship experience that is a approved by their internship mentor and submitted to the DUS. For more information visit https://krieger.jhu.edu/behavioralbiology/research/.
Prerequisite(s): You must request Customized Academic Learning using the Customized Academic Learning form found in Student Self-Service: Registration > Online Forms.
AS Foundational Abilities: Science and Data (FA2), Projects and Methods (FA6)

Cross Listed Courses

Biology

AS.020.153. General Biology Laboratory I. 1 Credit.
This course reinforces the topics covered in AS.020.151. Students participate in a semester-long project, identifying bacteria from Homewood campus soils using molecular biology techniques. Other laboratory exercises cover aspects of evolution, genomics and biochemistry. Students who have credit for AP Biology but take General Biology Lab I will lose four credits of AP Biology credit. This course is offered in fall terms only.
Prerequisite(s): Students must have completed Lab Safety training prior to registering for this class. To access the tutorial, login to myLearning and enter Laboratory Safety Introductory Course in the Search Box to access the proper course. Click here to access the Laboratory Safety Introductory Course (https://johnshopkins.csod.com/ui/lms-learning-details/app/curriculum/66847e20-c695-4e54-a6be-8c94465b8a70/);AS.020.151 can be taken prior to or at the same time as AS.020.153.
Distribution Area: Natural Sciences
AS Foundational Abilities: Science and Data (FA2)

First Year Seminars

AS.001.104. FYS: The Science of Color. 3 Credits.
This First-Year Seminar is designed to introduce students to the fundamental physical and chemical origins of color and how we perceive them - from the vivid palette provided by the natural world to the brightly colored clothing we wear. Beginning with the basic principles of light and color, we will embark on an interdisciplinary investigation of color, including, but not limited to: color chemistry; color in biology; the physiology of the eye; how color affects human psychology; the history of color and light; and the use of color in art. Discover the physical and chemical explanations behind several noteworthy phenomena such as sunsets, color-blindness, rainbows, fireworks, chameleons and the Aurora Borealis.

AS.001.109. FYS: Why'd Your Brain Sign You up for This?. 3 Credits.
This First-Year Seminar will explore the neuroscience of choice. In addition to exploring the neurobiology of choice, we will dabble with philosophical ideas of free will and determinism. We will also touch on questions related to culpability. For example, are people who break the law but suffer from brain damage responsible for their actions? Sound interesting? Well, why stop there? Let's sit back, eat some popcorn and take a look at how popular culture depicts the neuroscience of choice in the movies. Yes, with your help, we can do it all – but will you choose to???

AS.001.115. FYS: Illusions, Delusions, and Other Confusions. 3 Credits.
Most people think the strongest kind of evidence in a criminal case is a confident eyewitness. Most students think re-reading textbook materials or class notes is the best way to prepare for an exam. And all too many people think that measles vaccines cause autism. All three of these ideas are wrong. In this First-Year Seminar, we will explore what modern psychology has uncovered about how our intuitions concerning human nature deceive us, and lead to incorrect ideas such as the ones just mentioned. We will discuss a wide variety of topics including "the attention economy," groupthink, and subliminal perception.

AS.001.165. FYS: Biology in Deep Time. 3 Credits.
This First-Year Seminar will explore seminal ideas in macroevolutionary theory through both classic and cutting-edge studies. Topics will include the relationship between evolution and development, how fossils shape our understanding of biological systems, and the logical basis of evolutionary inference. Students will also gain an appreciation for the historical development of these ideas and their application in modern science and beyond. This course will explore these topics using foundational texts in biology, such as The Origin of Species and writings by the evolutionary biologist Stephen Jay Gould. It will feature guest lectures from curators from natural history museums across the country as well as offer students their own opportunity to go into the field to collect fossils here in Maryland.

AS.001.167. FYS: The Natural History of the Homewood Campus. 3 Credits.
Johns Hopkins University Homewood campus and its surroundings is a wonderful green space in the middle of Baltimore City. This First-Year Seminar will introduce students to both the visible and cryptic organisms living above- and belowground. A combination of observational and sampling techniques will be used to demonstrate how ecologists collect data about plants, insects, and other organisms. In the classroom, these field observations, combined with reading material will be used to discuss global environmental issues including climate change on biodiversity, invasive species, and human impacts on the landscape. By the end of the course students will be able to generate research questions based upon field observations and appreciate the diverse life forms both in Earth and in our backyard. Students should be prepared to spend many hours outside.

AS.001.200. FYS: Great Adaptations in the Animal Kingdom. 3 Credits.
Animals have evolved a vast array of sensory systems that support a rich repertoire of natural behaviors. Some animals live in dark environments and use tactile, chemical, electrical and auditory sensors that allow them to operate in the absence of light. Other animals rely heavily on vision and take advantage of colors that humans cannot see. In this First-Year Seminar, we will explore extraordinary adaptations of sensory systems in animals that live on land and under water. Our focus will be on sensory systems that guide navigation and foraging behaviors in species as diverse as star-nosed moles, weakly electric fish, honeybees, and echolocating bats. As we delve into understanding the extraordinary sensory systems of selected species, we will also consider how these animals have inspired literary and visual artists. We aim to introduce students to a rich interdisciplinary experience that opens their eyes to new areas of inquiry as they take advantage of local resources, such as the National Aquarium, Baltimore Zoo, Wyman Park, Peabody School of Art, and Baltimore Museum of Art.

AS.001.233. FYS: The Science of Human Individuality. 3 Credits.
How we become unique is one of the deepest questions that we can ask. The answers, where they exist, inform how we think about morality, public policy, faith, health care, education, and the law. Although investigating the origins of individuality is not just an endeavor for biologists, many of this topic's most important aspects involve fundamental questions about the development, genetics, and plasticity of the nervous system. The good news is that recent scientific findings are illuminating this question in ways that are exciting and sometimes counterintuitive. The better news is that it doesn't just boil down to the same tiresome nature-versus-nurture debate that has been impeding progress and boring people for years. Genes are built to be modified by experience. That experience is not just the obvious stuff, like how your parents raised you, but more complicated and fascinating things like the diseases you've had (or those that your mother had while she was carrying you in utero), the foods you've eaten, the bacteria that reside in your body, the weather during your early development, and the long reach of culture and technology.So, let's dig into the science together. Our sources will be not only books and articles but also visits by guest scientists and artists as well as engagement with films and stories that explore human individuality.
It can be controversial stuff. Questions about the origins of human individuality challenge our concepts of nation, gender, and race. They are inherently political and incite strong passions. Given this fraught backdrop, we'll do our best to play it straight and synthesize the current scientific consensus (where it exists), examine the controversies, and point out where the sidewalk of our understanding simply ends.

AS.001.255. FYS: Lab Animals. 3 Credits.
This First-Year Seminar explores the scientific-technological, philosophical, social, and ethical dimensions of using animals for scientific research from the early nineteenth century to present. Why did scientists use animals and how did they choose "the right animal for the job"? How did philosophers define a "model organism"? What were the political economies formed within research communities sharing research animals? How did financial and material infrastructure take shape for large-scale, long-term maintenance of genetically standardized mice or zebrafish? How did the interpretations of animals reflect the social imaginaries of researchers and our society? And how did animals "speak" back? These are questions we are going to examine through reading scholarly publications, watching documentaries, visiting laboratories, and doing mini research projects together.

AS.001.282. FYS: Explorations in Biological Anthropology - What it Means to be Human. 3 Credits.
"This First-Year Seminar is an introduction to the field of biological anthropology, which is broadly a mixture of social studies and biological studies that focus on human evolution and human biosocial variation. We will explore evolutionary theory and mechanisms of inheritance, the diversity of living primates, the fossil record, human evolution, and modern human biological variation. We will begin the semester by learning the basic principles of evolution and natural selection as proposed by Charles Darwin. We will then move on to consider the primate condition across species and through time. This involves examining the taxonomy of extant monkeys and apes as well as the fossil and archaeological record of our hominin ancestors that begins some 7 million years ago. This will involve excursions to local zoos and museums, as well as visits to labs right here at Hopkins. Following a survey of human biocultural evolution, we will consider how this history has influenced contemporary human biological variation.

Neuroscience

AS.080.301. Behavioral Assessment of Animal Models of Cognition and Neuropsychiatric Disorders. 3 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, with a focus on rodent models. Topics will include motor function, emotional and motivational states, cognition, and disorders such as dementia and schizophrenia, among others. 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. Through this process students learn to assess animal models, to critique results presented in original research articles, and learn about the various techniques used in neuroscience to generate and evaluate various animal models.
Prerequisite(s): AS.200.141 OR AS.080.306 OR instructor permission.
Distribution Area: Social and Behavioral Sciences
AS Foundational Abilities: Science and Data (FA2)

AS.080.304. Neuroscience Learning and Memory. 3 Credits.
This course is an advanced survey of the scientific study of learning and memory. Different perspectives will be used to review the science of learning and memory including the cellular-molecular basis of synaptic plasticity, the functional circuitry involved in learning and memory and memory systems in the brain. The course is designed to provide a deep understanding of the issues and current debates in learning and memory research and focuses specifically on animal models of memory and memory impairment. This is an interactive lecture course with a strong emphasis on student participation.
Prerequisite(s): AS.200.141 OR AS.080.306 OR (AS.020.312 AND AS.020.306) or instructor permission.
Distribution Area: Natural Sciences
AS Foundational Abilities: Science and Data (FA2)

AS.080.308. Neuroeconomics. 3 Credits.
Every day decisions often require us to weigh the costs and benefits of engaging in a particular course of action in order to obtain some expected outcome. Unfortunately, we often lack the information necessary to obtain our desired goal with complete certainty. Economists have long been interested in understanding human decision-making under these circumstances. In parallel, neuroscientists have made great strides at describing the underlying neural basis of simple decision-making. However, despite much progress in both fields, our understanding of how the brain makes decisions is incomplete. In order to strengthen and further research in both fields, the interdisciplinary field of Neuroeconomics arose. This course will survey the field of Neuroeconomics focusing on theoretical concepts developed by economists and the role these theories are playing in guiding current experimental neuroscience.
Prerequisite(s): AS.080.306 OR AS.200.141 OR AS.020.312
Distribution Area: Natural Sciences
AS Foundational Abilities: Science and Data (FA2), Ethics and Foundations (FA5)

AS.080.328. Behavioral Neuroscience Lab. 3 Credits.
Class designed to give students first-hand knowledge of the behavioral procedures and techniques used to study behavior in the field of neuroscience. Students will gain hands-on experience by carrying out some of the behavioral tasks used to assess animals under specific behavioral domains, discuss why certain aspects (i.e. genotype, environment conditions, group size, etc.) are important factors to consider when designing, planning, and carrying out such experiments, and learn the relevance of behavioral research in translational medicine. Note, this course can NOT be substituted for, or take the place of, the Neuroscience Lab core course requirement for the Neuroscience or Behavior Biology majors.
Prerequisite(s): AS.200.141 OR AS.200.250 OR AS.080.301 OR AS.080.306 or permission by instructor.
Distribution Area: Natural Sciences
AS Foundational Abilities: Science and Data (FA2), Projects and Methods (FA6)

Psychological & Brain Sciences

AS.200.141. Foundations of Brain, Behavior and Cognition. 3 Credits.
A survey of neuropsychology relating the organization of behavior to the integrative action of the nervous system.
Distribution Area: Natural Sciences, Social and Behavioral Sciences
AS Foundational Abilities: Science and Data (FA2), Ethics and Foundations (FA5)

AS.200.208. Animal Behavior. 3 Credits.
This course examines how and why animal behaviors are produced across the animal kingdom. Neurobiological, hormonal and developmental mechanisms and adaptive function of behaviors are examined in an evolutionary context. Behaviors include survival, acquiring food, reproduction, communication, parental care, and cooperation. Students will also learn how to develop hypotheses and predictions for scientific questions and interpret graphical results.
Prerequisite(s): AS.200.141 OR Permission of Instructor.
Distribution Area: Natural Sciences, Social and Behavioral Sciences
AS Foundational Abilities: Science and Data (FA2), Ethics and Foundations (FA5)

AS.200.334. Human Memory Psychology. 3 Credits.
This class will survey the behavioral and biological science of human memory. Historical perspectives as well as modern controversies will be discussed. Intersections with other fields such as law, education, medicine, and technology will be highlighted. The course will be a mixture of lectures and group discussions.
Distribution Area: Humanities, Social and Behavioral Sciences
AS Foundational Abilities: Science and Data (FA2)

AS.200.344. Behavioral Endocrinology. 3 Credits.
This course examines both the evolution and mechanisms of hormonal effects on behavior across animals, including humans. Topics will include the effects of hormones on sexual differentiation, reproductive behavior, parental behavior, stress and social behavior. Additionally, this course emphasizes developing skills in hypothesis testing and critically assessing the scientific literature. Course Recommendations: Introductory or advanced courses in biology and an introductory course in neuroscience (e.g. Foundations of Brain Behavior and Cognition) are highly recommended for success in this course.
Distribution Area: Natural Sciences, Social and Behavioral Sciences
AS Foundational Abilities: Science and Data (FA2), Ethics and Foundations (FA5)

For current faculty and contact information go to http://krieger.jhu.edu/behavioralbiology/faculty_directory/