

BEHAVIOR SPECIALIZATION: 2018-2019 Course Suggestions (20 unit requirement)

Students are strongly encouraged to take at least 3 courses from the below list:

COURSE	COURSE TITLE	Description	UNITS	QTR	Prereqs
ANS 103	Animal Welfare	The application of principles of animal behavior and physiology to assessment and improvement of the welfare of wild, captive, and domestic animals. Topics include animal pain, stress, cognition, motivation, emotions, and preferences; as well as environmental enrichment methods.	4	W	ANS 104 or NPB 102 or WFC 101 or consent of instructor
ANS 104	Principles and Applications of Domestic Animal Behavior	Basic principles of animal behavior as applied to domesticated species. Emphasis placed on application of the principles of animal behavior.	4	F,S	ANS 2 or BIS 2B
ANT 154A	Evolution of Primate Behavior	Examines ecological diversity and evolution of social systems of prosimians, monkeys, and apes, placing the social behavior of the primates in the context of appropriate ecological and evolutionary theory.	5	F	ANT 1 or ANT 54 or EVE 10 rec.
EVE 107	Animal Communication	How animals use songs, dances, colors, chemicals, electricity and vibrations to communicate. Mechanisms of signal production and detection (sensory systems), theory of information transfer and signal design, and the role of natural selection in shaping communication.	4	F, EOY Odd	BIS 2B
NPB 102	Animal Behavior	Basic principles of behavioral organization in vertebrate and invertebrate animals. Underlying physiological and ethological mechanisms. The evolution of behavior, with special emphasis on behavior under natural conditions. Not open if NPB 155 taken.	3	F,W,S	BIS 2ABC
NPB 124/ PSC 124	Comparative Neuroanatomy	Overview of the neuroanatomy of the nervous system in a variety of mammalian and non-mammalian vertebrates. Examine changes or modifications to neural structures as a result of morphological or behavioral specializations	4	W	PSC 101 or NPB 100 or NPB 101/ANS100
NPB 150/ PSC 122	Advanced Animal Behavior	Advanced integrative survey of biological principles of behavioral organization, emphasizing historical roots, current research direction, conceptual issues, and controversies. Laboratory exercise on the description and analysis of the behavior of captive and free-living animals.	4	NCO	NPB 102 or PSC 101
NPB 152/ PSC 123	Hormones & Behavior	Endocrine physiology with an emphasis on the principles of behavior. Fundamental relationships between hormones and various behaviors engaged in by the organism during its lifetime. Role of hormones in the behavioral homeostasis, social behavior, reproductive behavior, parental behavior, adaptation to stress.	3	S, SuI	NPB101 or ANS100 or NPB 110C, and NPB 102 or PSC 101

**EOY = "Every other year"

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NPB 162	Neural Mechanisms of Behavior	The relationship between brain and behavior. Identification and analysis of the relevant neural circuits involved. Examples of systems to be considered are birdsong, locomotion, echolocation.	3	F	NPB 100 or NPB101/ANS100 or NPB110B
PSC 101	Introduction to Psychobiology	Survey and integration of the relationship between behavior and biological processes, including physiology, genes, development, ecology, and evolution.	4	F,W,S,SuI	PSC 1 and 41
PSC 121	Physiological Psychology	Relationship of brain structure and function to behavior, motivation, emotion, language, and learning in humans and other animals. Methodology of physiological psychology and neuroscience. Pass 1 major restricted.	4	F,W,S	PSC 1, 41, and 101
PSC 125	Behavioral Genetics & Epigenetics	Review of basic principles in genetics and select topics in epigenetics with an emphasis on behavior. Use of modern molecular methods to outline complex relationships between genes, environment, and behavior.	3	F,W	PSC 101
WFC 141	Behavioral Ecology	Basic theories underlying the functional and evolutionary significance of behavior, and the role of ecological constraints. Supporting empirical evidence taken namely from studies of wild vertebrates.	4	W*	EVE 101 or ESP100 or equiv.
NPB 108Y	Animal Behavior Lab	Hybrid course, consisting of limited in-person lectures and the rest laboratory exercises. The laboratory exercises will be online, and will require students to view and score videos of animal behavior in order to test behavioral hypotheses.	3	SuII	None

Remaining courses can be selected from this list (2 courses)

ANS 112	Sustainable Animal Agriculture	Current applications of sustainable animal agriculture including the challenges of animal production, animal needs, animal well-being, and protection of the environment and resources for future food supply systems. Various scenarios for meeting sustainability objectives are evaluated using computer models.	3	S	BIS 2B or ANS 1; STA 100 or PLS 120 rec.
ANS 170	Ethics of Animal Use	Ethical issues relating to animal use in contemporary society. Integration of philosophical theories with scientific evidence relating to animal behavior, mentality, research, and as companions. Ethical responsibilities regarding wildlife and the environment.	4	F,S	Writing Course

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ANS 198 (150)	Animal Health and Disease	Provides students basic concepts of animal immunology, microbiology, parasitology, epidemiology, vaccination, and how to improve animal health and prevent infection and disease. Health and disease issues relevant to various species, including sheep, cattle, pigs, poultry, fish, and companion animals.	4	S	ANS 2 preferred
NPB 130	Physiology of the Endocrine Glands	Advanced presentation of concepts in endocrinology with emphasis on the role of hormones in reproduction, metabolism, and disease.	4	F	NPB 101/ANS100
PHR 106	Animals in Society	The contributions of animals to human society, including historic, anthropologic, developmental, human health, and therapeutic perspectives, as well as effects of humans on animals. One field trip required.	2	W	Upper division standing
PSC 113	Developmental Psychobiology	The biology of behavioral development; survey and integration of the organismic and environmental processes that regulate the development of behavior.	4	W	PSC 101
WFC 110	Biology and Conservation of Wild Mammals	Origins, evolution, diversification, and geographical and ecological distributions of mammals. Morphological, physiological, reproductive, and behavioral adaptations of mammals to their environment.	3	S	BIS2ABC; EVE101 or ESP100

****Only 1 class from the list below may be used towards specialization****

ANS 140	Management of Laboratory Animals	Laboratory animal management procedures in view of animal physiology, health and welfare, government and regulations, and experimental needs. Clinical techniques using rodents and rabbits as models.	4	F	NPB 101/ANS100
ANS 142	Companion Animal Care and Management	Management and production of companion animals. Integration of the disciplinary principles of behavior, genetics, nutrition, and physiology as related to the care of companion animals.	4	F	ANS 42, BIS 101, NPB 101/ANS 100; ABI 102&103 rec.
ANS 143	Pig and Poultry Care and Management	Care and management of swine, broilers and turkeys are related to environmental physiology, nutrition and metabolism, disease management and reproduction.	4	F, EOY Odd	ANS 41, NUT 115, NPB101/ANS100

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ANS 144	Beef Cattle and Sheep Production	Genetics, physiology, nutrition, economics and business in beef cattle and sheep production, Resources used, species differences, range and feedlot operations. Emphasis on integration and information needed in methods for management of livestock enterprises.	4	S	ANS 41, NUT 115 ANG 107 rec.
ANS 146	Dairy Cattle Production	Scientific principles from genetics, nutrition, physiology, and related fields applied to conversion of animal feed to human food through dairy animals. Management and economic decisions are related to animal biology considering the environment and animal wellbeing.	5	S	NUT 115 or consent, ANG 107 rec.
WFC 134	Herpetology	The world-wide diversity of amphibians and reptiles with emphasis on behavior, ecology, functional morphology, and evolutionary history.	3	W	BIS2ABC
WFC 134L	Herpetology Laboratory	Diagnostic characteristics and functional attributes of amphibians and reptiles, emphasizing ecological, bio-geographic, and phylogenetic patterns. Field experience with common species of reptiles and amphibians in the Davis area.	3	W	WFC 134 (conc. ok)