

Animal Science Species Specialization

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| <p>Key: □: Impacted courses ○: recommended prerequisite **: This course cannot be used towards Specialization if you are freshman student admitted in Fall 2020, or a transfer student admitted Fall 2022 or after. : prerequisite can be taken concurrently</p> | <p>EOY: every other year, e- even, o- odd NCO not currently offered F: Fall Quarter W: Winter quarter S: Spring Quarter SU: Summer Session</p> |
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Please Note: All Specialization courses must be approved by your Faculty Advisor.

Aquatic Animals

| Course | Title | Units | Quarter | Prereqs |
|----------|--|-------|---------|--|
| ANS 18 | Introductory Aquaculture | 4 | F | None |
| ABT 161 | Water Quality Management for Aquaculture | 3 | W EOY-E | BIS 2B, CHE 2B, MAT 16B |
| ENT 116 | Freshwater Macroinvertebrates | 3 | S | BIS 2B or equivalent |
| ESP 116N | Oceanography | 3 | W | GEL 001 or GEL 002 or GEL 016 or GEL 050 |
| ESP 155 | Wetland Ecology | 4 | F | BIS 2A (ESP 100 or EVE 101 rec.) |
| ETX 120 | Perspectives in Aquatic Toxicology | 4 | W EOY-O | BIS 2A, CHE 8B |
| EVE 112L | Biology of Invertebrates Laboratory | 2 | W | BIS 1B or BIS 2BC, EVE 112 (conc. ok) |
| EVE 115 | Marine Ecology | 4 | W EOY-O | BIS 2B, ESP 100/EVE 101 |
| NPB 123 | Comparative Vertebrate Organology | 4 | F | BIS 2AB |
| MCB 150 | Developmental Biology | 4 | W | BIS 101 |

Avian Sciences

| Course | Title | Units | Quarter | Prereqs |
|----------|--|-------|---------|---|
| AVS 13 | Birds, Humans, and the Environment | 3 | F | Lower Division Students Only |
| AVS 115 | Raptor Biology | 3 | SU | BIS 2A |
| NPB 102 | Animal Behavior | 3 | F,W,SU | BIS 2ABC |
| WFC 111 | Biology and Conservation of Wild Birds | 3 | F | BIS 2ABC (upper division ecology course rec.) |
| WFC 111L | Laboratory in Biology and Conservation of Wild Birds | 3 | F | BIS 2ABC (upper division ecology course rec.), WFC 111 (conc. ok) |
| WFC 136 | Ecology of Waterfowl and Game Birds | 4 | W EOY-E | BIS 2A, CHE 8B |

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Companion and Captive Animals

| Course | Title | Units | Quarter | Prereqs |
|------------|--|-------|---------|---|
| ANG 185 □ | The Science of Captive Breeding and Reintroduction | 1 | S | Upper-Division Standing |
| ANS 42□ | Introductory Companion Animal Biology | 4 | W | None |
| ANS 104**□ | Domestic Animal Behavior | 4 | F, S | ANS 2 or BIS 2B |
| ANS 107□ | Zoo Biology and Research | 3 | SU | BIS 2B |
| ANS 150**□ | Animal Health and Disease | 4 | W,S | ANS 2 or BIS 2B |
| ANS 170**□ | Ethics of Animal Use | 4 | F,S | One course in composition or speech, or completion of College English requirement |
| ANS 142□ | Companion Animal Care and Management | 4 | F,W | ANS 42, BIS 101, ANS 100/NPB 101,ABI 103○ |
| ANT 154A | The Evolution of Primate Behavior | 5 | F | ANT 1 or ANT 54 or EVE 10 rec. |
| ANT 154C | Primate Behavior: Methods & Experimental Design | 2 | S | ANT 54 or ANT 154A or NPB 102, STA 100, and ANT 154CL (conc. ok) |
| ANT 155 | Primate Conservation Biology | 4 | S | ANT 1 or ANT 54 rec. |
| NUT 115**□ | Animal Nutrition | 4 | W,S | CHE 8B or consent from instructor |
| NUT 141** | Comparative Nutrition and Metabolism | 4 | F,S | ABI 103; (NUT 115 or NUT 116A or NUT 116B); or Consent of Instructor |
| NUT 142 | Companion Animal Nutrition | 4 | S | ABI 102, NUT 115, ANS 42 recommended |
| PHR 106 | Human-Animal Interactions: Benefits and Issues | 2 | W | Upper-Division Standing |
| VME 158 | Disease Ecology | 3 | W,S | BIS 2ABC, EVE 100□ |
| WFC 110 | Biology and Conservation of Wild Animals | 3 | S | BIS 2ABC; EVE 101 or ESP 100 |
| WFC 110L | Laboratory in Biology and Conservation of Wild Animals | 3 | S | BIS 2ABC;EVE 101 or ESP 100, WFC 110□ |
| WFC 134 | Herpetology | 3 | W | BIS2ABC (EVE 101 or ESP 100 recommended) |
| WFC 134L | Herpetology Lab | 3 | W | BIS2ABC (EVE 101 or ESP 100 recommended), WFC 134 (conc. Ok) |

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Equine Science

| Course | Title | Units | Quarter | Prereqs |
|-----------|--------------------------------------|-------|---------|---|
| ANS 15 | Introductory Horse Husbandry | 3 | W | None |
| ANS 108 | Equine Behavior and Welfare | 3 | W | None |
| ANS 115 | Advanced Horse Production | 4 | F | ANS 15, BIS 101, ANS 100/NPB 101 an upper-division NUT course |
| ANS 125 | Equine Exercise Physiology | 3 | W EOY O | ANS 100/NPB 101 |
| ANS 126 | Equine Nutrition | 3 | W EOY E | ANS 15, NUT 115 |
| ANS 127 | Advanced Equine Reproduction | 3 | S | ANS 100/NPB 101, ANS 115 |
| ANS 141 | Equine Enterprise Management (GE SS) | 4 | S | ANS 115, ECN 1AB○ |
| ANG 105 | Horse Genetics | 3 | W EOY O | ANS 15, BIS 101 |
| NUT 115** | Animal Nutrition | 4 | W, S | CHE 8B or consent of instructor |

Laboratory Animals

| Course | Title | Units | Quarter | Prereqs |
|------------|---------------------------------------|-------|---------|----------------------------------|
| ANS 42□ | Introductory Companion Animal Biology | 4 | W | None |
| ANS 103□ | Animal Welfare | 4 | W | ANS 104 or NPB 102 or equivalent |
| ANS 104**□ | Domestic Animal Behavior | 4 | F,S | ANS 2 or BIS 2B |
| ANS 140 | Management of Laboratory Animals | 4 | F | ANS 100/NPB 101 |
| NUT 115** | Animal Nutrition | 4 | W,S | CHE 8B or consent of instructor |
| NPB 102 | Animal Behavior | 3 | F,W, SU | BIS 2ABC |
| NPB 123 | Comparitive Vertebrate Organology | 4 | F | BIS 2AB |

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Livestock and Dairy

| Course | Title | Units | Quarter | Prereqs |
|-----------|---|-------|---------|--|
| ANS 112 | Sustainable Animal Agriculture (GE SS) | 3 | W | ANS 1 or BIS 2B, STA 100 or PLS 120 ^o |
| ANS 113 | Meat Safety and Hazard Analysis and Critical Control Points | 2 | F | ANS 2 or consent |
| ANS 120 | Principles of Meat Science | 3 | W | ANS 2 or consent |
| ANS 120L | Meat Science Laboratory | 2 | W | ANS 2 or consent, ANS 120 concurrent ok |
| ANS 129 | Environmental Stewardship in Animal Production Systems | 3 | W EOY O | BIS 2ABC, CHE 2AB, CHE 8AB |
| ANS 143 | Pig and Poultry Care and Management | 4 | F EOY O | ANS 41, NUT 115, ANS 100/NPB 101 |
| ANS 144 | Beef Cattle and Sheep Production | 4 | S | ANS 41, NUT 115 or consent, ANG 107 ^o |
| ANS 146 | Dairy Cattle Production | 5 | S | NUT 115, or consent |
| ANS 148 | Enterprise Analysis in Animal Industries | 4 | S | Upper-division standing |
| NUT 115** | Animal Nutrition | 4 | W,S | CHE 8B or consent of instructor |

Poultry

| Course | Title | Units | Quarter | Prereqs |
|----------|---|-------|---------|---|
| AVS 13 | Birds, Humans, and the Environment | 3 | F | Lower-division students only |
| ANS 113 | Meat Safety and Hazard Analysis and Critical Control Points | 2 | F | ANS 2 or consent |
| ANS 120 | Principles of Meat Science | 3 | W | ANS 2 or consent |
| ANS 120L | Meat Science Laboratory | 2 | W | ANS 2 or consent, ANS 120 concurrent ok |
| ANS 143 | Pig and Poultry Care and Management | 4 | F EOY O | ANS 41, NUT 115, ANS 100/NPB 101 |
| WFC 136 | Ecology of Waterfowl and Game Birds | 4 | W EOY E | WFC 111, WFC 111L ^o |

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Courses That may be used Towards any Specialization

| Course | Title | Units | Quarter | Prereqs |
|---------------|--|-------|---------|---|
| ANS 103□ | Animal Welfare | 4 | W | ANS 104 or NPB 102 |
| ANS 104**□ | Domestic Animal Behavior | 4 | F,S | ANS 2 or BIS 2B |
| ANS 112 | Sustainable Animal Agriculture | 3 | S | ANS 1 or BIS 2B, STA 100 or PLS 120 recommended |
| ANS 120 | Principles of Meat Science | 3 | W | ANS 2, or consent |
| ANS 120L | Meat Science Laboratory | 2 | W | ANS 2 or consent, ANS 120 (concurrent okay) |
| ANS 128 | Agricultural Applications of Linear Programming | 4 | W | Upper-division standing, PLS 21 or ECS 15 |
| ANS 129 | Environmental Stewardship in Animal Production Systems | 3 | W EOY O | BIS 2ABC, CHE 2AB, CHE 8AB or CHE 118AB |
| ANS 148 | Enterprise Analysis in Animal Industries (GE SS) | 4 | S | Upper-division standing |
| ANS 150**□ | Health and Disease Issues in Animals | 4 | W,S | ANS 2 recommended |
| ANS 170**□ | Ethics of Animal Use | 4 | F,S | One course in composition or speech, or completion of College English Requirement |
| EVE 107 | Animal Communication | 4 | E EYO O | BIS 2B |
| EVE 181 | Ecology and Evolution of Plant-Animal Interactions | 4 | F | BIS 2Bm BIS 2C (concurrent okay) |
| NPB 102 | Animal Behavior | 3 | F,W,SU | BIS 2ABC |
| NPB 123 | Comparative Vertebrate Organology | 4 | F | BIS 2AB |
| NPB 152 | Hormones and Behavior | 3 | S, SU | ANS 100 or NPB 101, NPB 102 |
| NUT 115**□ | Animal Nutrition | 4 | W,S | CHE 8AB |
| NUT 141**□ | Comparative Nutrition and Metabolism | 4 | F,S | ABI 102, 103; NUT 115 or NUT 116A or NUT 116B; or consent |
| NUT 142 | Companion Animal Nutrition | 4 | S | ABI 102, NUT 115, ANS 42 recommended |
| PMI 126 | Fundamentals of Immunology | 3 | W | ABI 102 or BIS 102, or consent of instructor |
| PMI 127 | Medical Bacteria and Fungi | 3 | S | Microbiology course with lab |
| PMI 128 | Biology of Animal Viruses | 3 | S | ABI 102 or BIS 102 |
| VMB 101V or Y | Principles of Pharmacology and Toxicology | 3 | F,S | Upper-division standing, BIS 2ABC, CHE 8AB or CHE 118AB |
| VME 158 | Infectious Disease in Ecology and Conservation | 3 | W,S | BIS 2ABC |
| WFC 160 | Animal Coloration | 3 | W EOY O | BIS 2ABC |