<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZOO 126</td>
<td>Human Biology</td>
<td>3</td>
<td>Consideration of selected problems in human biology. Cross-listed with BIOL 126. Does not count toward major or minor.</td>
</tr>
<tr>
<td>ZOO 126L</td>
<td>Human Biology Laboratory</td>
<td>1</td>
<td>See Biological Sciences (Biology) for description. Does not count toward major or minor.</td>
</tr>
<tr>
<td>ZOO 194</td>
<td>Individual Study</td>
<td>1-5</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 196</td>
<td>Field Experience</td>
<td>1-15</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 199</td>
<td>Special Topics</td>
<td>1-5</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 280</td>
<td>Comparative Chordate Morphology</td>
<td>4</td>
<td>Introduction to the systematics, history, and structure of chordates, especially the vertebrates. Prereq: BIOL 151, BIOL 151L.</td>
</tr>
<tr>
<td>ZOO 291</td>
<td>Seminar</td>
<td>1-5</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 292</td>
<td>Study Abroad</td>
<td>1-15</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 293</td>
<td>Undergraduate Research</td>
<td>1-5</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 294</td>
<td>Individual Study</td>
<td>1-5</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 296</td>
<td>Field Experience</td>
<td>1-15</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 299</td>
<td>Special Topics</td>
<td>1-5</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 315</td>
<td>Genetics</td>
<td>3</td>
<td>Study of the basis of heredity with emphasis on structure and function of DNA and Mendelian genetics. 3 lectures. Cross-listed with BIOL 315, BOT 315, and PLSC 315. F, S.</td>
</tr>
<tr>
<td>ZOO 315L</td>
<td>Genetics Laboratory</td>
<td>1</td>
<td>Study of the basis of heredity with emphasis on structure and function of DNA and Mendelian genetics. 1 two-hour laboratory. Cross-listed with BIOL 315L, BOT 315L, and PLSC 315L. F, S.</td>
</tr>
<tr>
<td>ZOO 360</td>
<td>Animal Behavior</td>
<td>3</td>
<td>Description of the principal behavior patterns of animals with consideration of ecological, evolutionary, and internal mechanisms. Prereq: BIOL 151, BIOL 151L. Cross-listed with PSYC 360. S (even years).</td>
</tr>
<tr>
<td>ZOO 364</td>
<td>General Ecology</td>
<td>3</td>
<td>Ecological principles associated with organism environment interactions, populations, communities, and ecosystems. Quantitative approach with examples (animal, plant, microbial) included. Prereq: BIOL 150 or BIOL 151. Cross-listed with BIOL 364.</td>
</tr>
<tr>
<td>ZOO 370</td>
<td>Cell Biology</td>
<td>3</td>
<td>Structure and function of cells, including cell surfaces, membranes, organelles, cytoskeleton, cell division, cell physiology, and methods used in cell studies. Prereq: BIOL 150, BIOL 150L.</td>
</tr>
<tr>
<td>ZOO 379</td>
<td>Study Tour Abroad</td>
<td>1-6</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 380</td>
<td>Vertebrate Histology</td>
<td>3</td>
<td>Study of the microscopic anatomy of vertebrate tissues and organs, especially mammals. Prereq: BIOL 150, BIOL 150L. S (odd years).</td>
</tr>
<tr>
<td>ZOO 391</td>
<td>Seminar</td>
<td>1-3</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 392</td>
<td>Study Abroad</td>
<td>1-15</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 393</td>
<td>Undergraduate Research</td>
<td>1-5</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 394</td>
<td>Individual Study</td>
<td>1-5</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 396</td>
<td>Field Experience</td>
<td>1-15</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 397</td>
<td>Fe/Coop Ed/Internship</td>
<td>1-4</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 399</td>
<td>Special Topics</td>
<td>1-5</td>
<td>Rather than a specific description.</td>
</tr>
<tr>
<td>ZOO 431</td>
<td>Intermediate Genetics</td>
<td>3</td>
<td>Expansion of classical and molecular concepts of genetics; basic concepts of Mendelian, quantitative, population, molecular, and evolutionary genetics. 2 lectures. Prereq: PLSC 315. Cross-listed with BOT 431 and PLSC 431. F (Also offered for graduate credit - see ZOO 631.).</td>
</tr>
<tr>
<td>ZOO 450</td>
<td>Invertebrate Zoology</td>
<td>4</td>
<td>Survey of the biology, classification, and evolution of invertebrates. Emphasis on major phyla, marine, and parasitic taxa. Prereq: BIOL 151, BIOL 151L. S (Also offered for graduate credit - see ZOO 650.).</td>
</tr>
<tr>
<td>ZOO 452</td>
<td>Ichthyology</td>
<td>3</td>
<td>Biology and taxonomy of fishes. Prereq: BIOL 151, 151L. F (even years) (Also offered for graduate credit - see ZOO 652.).</td>
</tr>
</tbody>
</table>
ZOO 454. Herpetology. 3 Credits.
Primarily a field and laboratory course focusing on amphibians and reptiles. Students must make a commitment to participate in at least one of two 4-day field trips plus an independent review project. Prereq: BIOL 151, BIOL 151L. F/2 (odd years) (Also offered for graduate credit - see ZOO 654.).

ZOO 456. Ornithology. 3 Credits.
Introduction to the biology, classification, and identification of birds, especially local forms. Early morning field trips required. Prereq: BIOL 151, BIOL 151L. F (Also offered for graduate credit - see ZOO 656.).

ZOO 458. Mammalogy. 3 Credits.
Biology and taxonomy of mammals. Prereq: BIOL 151, BIOL 151L. F (Also offered for graduate credit - see ZOO 658.).

ZOO 460. Animal Physiology. 3 Credits.
Study of the physical and chemical principles that govern cell, tissue, organ, organ system, and organismal function. Prereq: BIOL 150, BIOL 151, CHEM 121, CHEM 122. (Also offered for graduate credit - see ZOO 660.).

ZOO 462. Physiological Ecology. 3 Credits.
Study of the physiological mechanisms underlying life-history trade-offs and constraints in an ecological and evolutionary context. Prereq: BIOL 151, BIOL 151L. S (Also offered for graduate credit - see ZOO 662.).

ZOO 463. Physiology of Reproduction. 3 Credits.
Comparative anatomy, physiology, and endocrinology of reproduction in mammals. Cross-listed with ANSC 463. (Also offered for graduate credit - see ZOO 663.).

ZOO 463L. Physiology of Reproduction Laboratory. 1 Credit.
Anatomy, physiology and demonstration and utilization of techniques in large animal reproductive management. Cross-listed with ANSC 463L. Prereq: ANSC 463. (Also offered for graduate credit - see ZOO 663L.).

ZOO 464. Endocrinology. 3 Credits.
Physiology and anatomy of endocrine glands; chemistry and interrelations of their secretions. Prereq: BIOL 151, BIOL 151L. F/2 (odd years) (Also offered for graduate credit - see ZOO 664.).

ZOO 465. Hormones and Behavior. 3 Credits.
Study of the organizational and activational role endocrine systems play in regulating animal behaviors. These studies will be explored within an ecological and evolutionary framework. Prereq: BIOL 150 and BIOL 151. (Also offered for graduate credit - see ZOO 665.).

ZOO 470. Limnology. 4 Credits.
Biological, physical, and chemical features of freshwater ecosystems. Prereq: BIOL 151, BIOL 151L, BIOL 364, one year chemistry. F/2 (odd years) (Also offered for graduate credit - see ZOO 670.).

ZOO 475. Conservation Biology. 3 Credits.
Integrative approach to the study and conservation of biodiversity. Application of principles from various sub-disciplines of the biological and social sciences to current conservation problems. Prereq: ZOO 315, ZOO 315L. F (Also offered for graduate credit - see ZOO 675.).

ZOO 476. Wildlife Ecology and Management. 3 Credits.
Application of ecological principles to management of game and non-game wildlife populations. Prereq: BIOL 364. S (Also offered for graduate credit - see ZOO 676.).

ZOO 477. Wildlife and Fisheries Management Techniques. 3 Credits.
Students will learn techniques used in the study and management of fish and wildlife populations. Students will design an independent field research project to be executed during a field trip (typically 2-4 days in length). (Also offered for graduate credit - see ZOO 677.).

ZOO 482. Developmental Biology. 3 Credits.
Analysis of the processes of development, with an emphasis on animal development. Topics range from classical embryology to the cellular and molecular basis of development. Prereq: BIOL 150, BIOL 150L, BIOL 151, BIOL 151L. F/2 (even years) (Also offered for graduate credit - see ZOO 682.).

ZOO 491. Seminar. 1-5 Credits.

ZOO 492. Study Abroad. 1-15 Credits.

ZOO 493. Undergraduate Research. 1-5 Credits.

ZOO 494. Individual Study. 1-5 Credits.

ZOO 496. Field Experience. 1-15 Credits.

ZOO 499. Special Topics. 1-5 Credits.

ZOO 631. Intermediate Genetics. 3 Credits.
Expansion of classical and molecular concepts of genetics; basic concepts of Mendelian, quantitative, population, molecular, and evolutionary genetics. 2 lectures. Cross-listed with BOT 631 and PLSC 631. F (Also offered for undergraduate credit - see ZOO 431.).

ZOO 650. Invertebrate Zoology. 4 Credits.
Survey of the biology, classification, and evolution of invertebrates. Emphasis on major phyla, marine, and parasitic taxa. S (Also offered for undergraduate credit - see ZOO 450.).
ZOO 652. Ichthyology. 3 Credits.
Biology and taxonomy of fishes. (even years) {Also offered for undergraduate credit - see ZOO 452.}.

ZOO 654. Herpetology. 3 Credits.
Primarily a field and laboratory course focusing on amphibians and reptiles. Students must make a commitment to participate in at least one of two 4-day field trips plus an independent review project. F/2 (odd years) {Also offered for undergraduate credit - see ZOO 454.}.

ZOO 656. Ornithology. 3 Credits.
Introduction to the biology, classification, and identification of birds, especially local forms. Early morning field trips required. F {Also offered for undergraduate credit - see ZOO 456.}.

ZOO 658. Mammalogy. 3 Credits.
Biology and taxonomy of mammals. F {Also offered for undergraduate credit - see ZOO 458.}.

ZOO 660. Animal Physiology. 3 Credits.
Study of the physical and chemical principles that govern cell, tissue, organ, organ system, and organismal function. {Also offered for undergraduate credit - see ZOO 460.}.

ZOO 662. Physiological Ecology. 3 Credits.
Study of the physiological mechanisms underlying life-history trade-offs and constraints in an ecological and evolutionary context. S {Also offered for undergraduate credit - see ZOO 462.}.

ZOO 663. Physiology of Reproduction. 3 Credits.
Comparative anatomy, physiology, and endocrinology of reproduction in mammals. Cross-listed with ANSC 663. {Also offered for undergraduate credit - see ZOO 463.}.

ZOO 663L. Physiology of Reproduction Laboratory. 1 Credit.
Anatomy, physiology and demonstration and utilization of techniques in large animal reproductive management. Cross-listed with ANSC 663L. {Also offered for undergraduate credit - see ZOO 463L.}.

ZOO 664. Endocrinology. 3 Credits.
Physiology and anatomy of endocrine glands; chemistry and interrelations of their secretions. F/2 (odd years) {Also offered for undergraduate credit - see ZOO 464.}.

ZOO 665. Hormones and Behavior. 3 Credits.
Study of the organizational and activational role endocrine systems play in regulating animal behaviors. These studies will be explored within an ecological and evolutionary framework. {Also offered for undergraduate credit - see ZOO 465.}.

ZOO 670. Limnology. 4 Credits.
Biological, physical, and chemical features of freshwater ecosystems. F/2 (odd years) {Also offered for undergraduate credit - see ZOO 470.}.

ZOO 675. Conservation Biology. 3 Credits.
Integrative approach to the study and conservation of biodiversity. Application of principles from various sub-disciplines of the biological and social sciences to current conservation problems. F {Also offered for undergraduate credit - see ZOO 475.}.

ZOO 676. Wildlife Ecology and Management. 3 Credits.
Application of ecological principles to management of game and non-game wildlife populations. S {Also offered for undergraduate credit - see ZOO 476.}.

ZOO 677. Wildlife and Fisheries Management Techniques. 3 Credits.
Students will learn techniques used in the study and management of fish and wildlife populations. Students will design an independent field research project to be executed during a field trip (typically 2-4 days in length). {Also offered for undergraduate credit - see ZOO 477.}.

ZOO 682. Developmental Biology. 3 Credits.
Analysis of the processes of development, with an emphasis on animal development. Topics range from classical embryology to the cellular and molecular basis of development. F/2 (even years) {Also offered for undergraduate credit - see ZOO 482.}. 
ZOO 690. Graduate Seminar. 1-3 Credits.
ZOO 695. Field Experience. 1-15 Credits.
ZOO 696. Special Topics. 1-5 Credits.
ZOO 790. Graduate Seminar. 1-3 Credits.
ZOO 791. Temporary/Trial Topics. 1-5 Credits.
ZOO 793. Indiv Study/Tutorial. 1-5 Credits.
ZOO 795. Field Experience. 1-15 Credits.
ZOO 796. Special Topics. 1-5 Credits.
ZOO 797. Master's Paper. 1-3 Credits.
ZOO 798. Master's Thesis. 1-10 Credits.
ZOO 820. Advanced Cell Biology. 3 Credits.
ZOO 850. Advanced Conservation Biology. 3 Credits.
This class will cover recent developments in the field of conservation biology, with a specific focus on recent literature. Areas of focus will include Evolutionary Conservation and Conservation Genetics.
ZOO 860. Evolutionary Ecology. 3 Credits.
Lecture-discussion course on recent developments in evolutionary theory and their implications in the study of animal adaptation, ecology, and behavior. S/2 (odd years).
ZOO 866. Advanced Animal Behavior. 3 Credits.
This course investigates current concepts and research areas in animal behavior, with a focus on topics that lie at the interface between animal behavior, ecology and evolution. Cross-listed with BIOL 766.
ZOO 870. Aquatic Community Ecology. 4 Credits.
Nature and ecological roles of the freshwater biota. Discussion of contemporary issues in aquatic ecology. F/2 (even years).
ZOO 895. Field Experience. 1-15 Credits.
ZOO 899. Doctoral Dissertation. 1-15 Credits.