

ANIMAL SCIENCE B.S.

All students must meet the University Requirements. (http://catalogue.uvm.edu/undergraduate/academicinfo/degree_requirements/)

All students must meet the College Requirements. (http://catalogue.uvm.edu/undergraduate/agricultureandlifesciences/#requirements_text)

Major Requirements - Common to all Concentrations

ANIMAL AND VETERINARY SCIENCES		
ASCI 001	Introductory Animal Sciences	3
ASCI 043	Intro to Animal Nutrition	3
ASCI 111	Animal Anatomy	4
ASCI 120	General Physiology	3
ASCI 122	Animals in Soc/Animal Welfare	3
ASCI 168	Animal Genetics	3
ASCI 215	Physiology of Reproduction	3
ASCI 242	Advanced Animal Nutrition	4
RESTRICTED ELECTIVES		
Choose 9 credits from the following options:		9
ASCI 108	Equine Enterprise Management	
ASCI 117	Horse Health and Disease	
ASCI 118	Appl Animal Health	
ASCI 119	Equine Training Techniques	
ASCI 121	Equus	
ASCI 125	Equine Instructing Techniques	
ASCI 129	Horse Barn Coop Exec Committee	
ASCI 134	CREAM	
ASCI 135	CREAM	
ASCI 143	Forage and Pasture Mgmt	
ASCI 147	SU:Wildlife Hlth & Consvration	
ASCI 154	Canine Behavior	
ASCI 156	Dairy Management Seminar	
ASCI 171	Zoos, Exotics & Endang Species	
ASCI 192	Intermediate Special Topics	
or ASCI 191	Intermediate Special Topics	
ASCI 193	Independent Study	

ASCI 194	Teaching Assistantship	
ASCI 195	Internship	
ASCI 198	Undergraduate Research	
ASCI 208	Equine Industry Issues	
ASCI 216	Endocrinology	
ASCI 220	Lactation Physiology	
ASCI 221	Lameness in Horses	
ASCI 225	Equus Advising	
ASCI 234	Advanced Dairy Management	
ASCI 235	CREAM Advising	
ASCI 263	Clin Top:Companion Animal Med	
ASCI 264	Clin Topics:Livestock Medicine	
ASCI 265	Clin Topics Equine Med & Surg	
ASCI 272	Adv Top:Zoo,Exotic,Endang Spec	
ASCI 277	Animal and Human Parasitology	
ASCI 278	Molecular Epidemiol Infect Dis	
ASCI 279	One Health: Antimicrob Resist	
ASCI 294	Teaching Assistantship	
ASCI 296	Undergraduate Research	
ASCI 298	Advanced Special Topics	
or ASCI 297	Advanced Special Topics	
BIOL 217	Mammalogy	
CDAE 102	Sustainable Community Dev	
CDAE 157	Consumer Law and Policy	
CDAE 166	Intro to Comm Entrepreneurship	
CDAE 167	Fin Mgmt: Comm Entrepreneurs	
CDAE 168	SU:Marketing:Com Entrepreneurs	
CDAE 266	Dec Making:Comm Entrepreneurs	
CDAE 267	Strat Plan:Comm Entrepreneurs	
FS 101	U.S. Food Policy and Politics	
MMG 101	Microbiol & Infectious Disease	
MMG 223	Immunology	
NFS 113	U.S. Food Policy and Politics	
NFS 213	Food Microbiology Lab	
NFS 253	Food Regulation	

NR 103	Ecology, Ecosystems & Environ	
PSS 161	SU: Fundmntls of Soil Science	
PSYS 111	Learning, Cognition & Behavior	
PSYS 115	Biopsychology	
WFB 130	Ornithology	
WFB 131	Field Ornithology	
WFB 141	Field Herpetology	
WFB 174	Prin of Wildlife Management	
WFB 224	Conservation Biology	
WFB 232	Ichthyology	
WFB 275	Wildlife Behavior	
WFB 283	Terrestrial Wildlife Ecology	
WFB 295	Advanced Special Topics	
ANIMAL HEALTH		
Choose 1 of the following health options:		3 or 4
ASCI 117	Horse Health and Disease	
ASCI 118	Appl Animal Health	
ASCI 263	Clin Top:Companion Animal Med	
ASCI 264	Clin Topics:Livestock Medicine	
ASCI 265	Clin Topics Equine Med & Surg	
ASCI 277	Animal and Human Parasitology	
MMG 101	Microbiol & Infectious Disease	
BIOLOGY		
BCOR 011 & BCOR 012	Exploring Biology and Exploring Biology	8
CHEMISTRY		
CHEM 023	Outline of General Chemistry	4
or CHEM 031	General Chemistry 1	
CHEM 026	Outline of Organic & Biochem	4
or CHEM 042	Intro Organic Chemistry	
or CHEM 141	Organic Chemistry 1	
MATHEMATICS		
MATH 009	QR: College Algebra (or higher)	3
STATISTICS		
STAT 111	QR: Elements of Statistics	3

or STAT 141	QR:Basic Statistical Methods I
or STAT 211	QR: Statistical Methods I

Additional courses are selected with the help of the faculty advisor. See specific academic offerings for additional course requirements.

PLAN OF STUDY

This page includes descriptions of the four Animal & Veterinary Sciences focus areas:

- Dairy Production (p. 2)
- Equine Science (p. 3)
- Zoo, Exotic, and Companion Animal (p. 4)
- Pre-Veterinary/Pre-Professional (p. 5)

DAIRY PRODUCTION

Designed for the student seeking in-depth training in dairy herd management and milk production with strong links to agribusiness. Experiential learning is emphasized through the Cooperative for Real Education in Agricultural Management (CREAM) program and the Vermont Technical College/UVM 2+2 FARMS program. Students may also enroll in dairy courses at the Miner Agricultural Research Institute in Chazy, New York. Students with an interest in agribusiness could also consider a minor in Community Entrepreneurship from the Department of Community Development and Applied Economics (CDAE).

For students interested in dairy production, the Vermont Technical College/UVM 2+2 FARMS program provides Vermont residents with scholarships and the opportunity to earn a bachelor's degree after a two-year associate degree in Dairy Farm Management from the Vermont Technical College.

A potential plan of study for the dairy production concentration is outlined below but programs are highly individualized by students working with the faculty advisors.

First Year	Credits
ASCI 001 Introductory Animal Sciences	3
ASCI 043 Intro to Animal Nutrition	3
CALS 001 Foundations:Communication Meth	3
CALS 002 Foundation:Information Tech	3
BCOR 011 Exploring Biology	4
BCOR 012 Exploring Biology	4
CHEM 023 Outline of General Chemistry	4
CHEM 026 Outline of Organic & Biochem	4

Choose either Mathematics (MATH 009 or higher) or Diversity or Sustainability or Electives	3-6
Year Total:	31-34
Sophomore	Credits
ASCI 111 Animal Anatomy	4
ASCI 118 Appl Animal Health	3
ASCI 120 General Physiology	3
ASCI 122 Animals in Soc/Animal Welfare	3
ASCI 134 CREAM	4
STAT 111 QR: Elements of Statistics	3
ENGS 001 FW: Written Expression or ENGS 002 FW: Written Expression: Theme	3
Choose either Mathematics (MATH 009 or higher) or Diversity or Sustainability or Electives	6-12
Year Total:	29-35
Junior	Credits
ASCI 135 CREAM	4
ASCI 143 Forage and Pasture Mgmt	4
ASCI 156 Dairy Management Seminar	2
ASCI 168 Animal Genetics	3
ASCI 215 Physiology of Reproduction	3
ASCI 220 Lactation Physiology	3
ASCI 242 Advanced Animal Nutrition	4
Choose either Mathematics (MATH 009 or higher) or Diversity of Sustainability or Electives	7-13
Year Total:	30-36
Senior	Credits
ASCI 156 Dairy Management Seminar	2
ASCI 192 Intermediate Special Topics (Artificial Insemination)	1
ASCI 216 Endocrinology	3
ASCI 234 Advanced Dairy Management (@ Miner Institute)	15
ASCI 264 Clin Topics:Livestock Medicine	3
Choose either Mathematics (MATH 009 or higher) or Diversity or Sustainability or Electives	5-9

Year Total:	29-33
Total Credits in Sequence:	119-138

EQUINE SCIENCE

Specialized courses are offered on the care, management, breeding, training, and health of horses. Students can focus in either equine management and industry and/or equine health.

The UVM Morgan Horse Farm at Weybridge, VT, about 45 minutes from campus, is also part of the department and offers opportunities for study and research. Students may also enroll in equine courses at the Miner Agricultural Research Institute in Chazy, New York. Students with an interest in equine business could also consider a minor in Community Entrepreneurship from the Department of Community Development and Applied Economics (CDAE).

A potential plan of study for the equine science concentration is outlined below but programs are highly individualized by students working with the faculty advisors.

First Year	Credits
ASCI 001 Introductory Animal Sciences	3
ASCI 043 Intro to Animal Nutrition	3
CALS 001 Foundations:Communication Meth	3
CALS 002 Foundation:Information Tech	3
BCOR 011 Exploring Biology	4
BCOR 012 Exploring Biology	4
ASCI 005 Intro to the Horse	3
CHEM 023 Outline of General Chemistry	4
CHEM 026 Outline of Organic & Biochem	4
Choose either Mathematics (MATH 009 or higher) or Diversity or Sustainability or Electives	0-5
Year Total:	31-36
Sophomore	Credits
ASCI 108 Equine Enterprise Management	3
ASCI 111 Animal Anatomy	4
ASCI 117 Horse Health and Disease	3
ASCI 119 Equine Training Techniques	3
ASCI 120 General Physiology	3
ASCI 122 Animals in Soc/Animal Welfare	3

STAT 111 QR: Elements of Statistics	3
ENGS 001 FW: Written Expression or ENGS 002 FW: Written Expression: Theme	3
Choose either Mathematics (MATH 009 or higher) or Diversity or Sustainability or Electives	6-10
Year Total:	31-35
Junior	Credits
ASCI 121 Equus	2-4
ASCI 125 Equine Instructing Techniques	2
ASCI 143 Forage and Pasture Mgmt	4
ASCI 168 Animal Genetics	3
ASCI 192 Intermediate Special Topics (Equine Repro Workshop)	1
ASCI 215 Physiology of Reproduction	3
ASCI 242 Advanced Animal Nutrition	4
Choose either Mathematics (MATH 009 or higher) or Diversity or Sustainability or Electives	9-11
Year Total:	28-32
Senior	Credits
ASCI 195 Internship	15
ASCI 208 Equine Industry Issues	3
ASCI 221 Lameness in Horses	4
ASCI 265 Clin Topics Equine Med & Surg	3
Choose either Mathematics (MATH 009 or higher) or Diversity or Sustainability or Electives	5-11
Year Total:	30-36
Total Credits in Sequence:	120-139

ZOO, EXOTIC, AND COMPANION ANIMAL

This concentration is designed for students who are primarily interested in zoo, exotic, and companion animal focused careers. Courses are offered on the management, care, breeding, health, and training of zoo, exotic, and companion animals. Hands-on experiences are available locally and through summer and winter course work and internships. A potential study plan is outlined below but individual plans can be designed by the student and advisor. Students could also consider a minor in either Psychological Science from the Department of Psychological Science, a minor in Community Entrepreneurship from the Department of Community

Development and Applied Economics (CDAE) or a minor in Wildlife Biology from the The Rubenstein School of Environment and Natural Resources.

A potential plan of study for the zoo, exotic and companion animal concentration is outlined below but programs are highly individualized by students working with the faculty advisors.

First Year	Credits
ASCI 001 Introductory Animal Sciences	3
ASCI 006 Companion Animal Care & Mgmt	3
ASCI 043 Intro to Animal Nutrition	3
CALS 001 Foundations:Communication Meth	3
CALS 002 Foundation:Information Tech	3
CHEM 023 Outline of General Chemistry	4
CHEM 026 Outline of Organic & Biochem	4
BCOR 011 Exploring Biology	4
BCOR 012 Exploring Biology	4
Choose either Mathematics (MATH 009 or higher) or Diversity or Sustainability or Electives	0-3
Year Total:	31-34
Sophomore	Credits
ASCI 038 Understanding & Speaking Dog	3
ASCI 111 Animal Anatomy	4
ASCI 118 Appl Animal Health	3
ASCI 120 General Physiology	3
ASCI 122 Animals in Soc/Animal Welfare	3
ENGS 001 FW: Written Expression or ENGS 002 FW: Written Expression: Theme	3
STAT 111 QR: Elements of Statistics	3
NR 103 Ecology, Ecosystems & Environ or BCOR 102 SU:Ecology and Evolution	3
Choose either Mathematics (MATH 009 or higher) or Diversity or Sustainability or Electives	3-12
Year Total:	28-37
Junior	Credits
ASCI 143 Forage and Pasture Mgmt	4
ASCI 154 Canine Behavior	3

ASCI 168 Animal Genetics	3
ASCI 171 Zoos, Exotics & Endang Species	3
ASCI 215 Physiology of Reproduction	3
ASCI 242 Advanced Animal Nutrition	4
MMG 101 Microbiol & Infectious Disease	4
WFB 174 Prin of Wildlife Management	3
Choose either Mathematics (MATH 009 or higher) or Diversity or Sustainability or Electives	3-9
Year Total:	30-36
Senior	Credits
ASCI 272 Adv Top:Zoo,Exotic,Endang Spec	3
ASCI 263 Clin Top:Companion Animal Med	3
ASCI 216 Endocrinology	3
WFB 130 Ornithology	3
WFB 283 Terrestrial Wildlife Ecology	4
Choose either Mathematics (MATH 009 or higher) or Diversity or Sustainability or Electives	3-10
Year Total:	19-26
Total Credits in Sequence:	108-133

PRE-VETERINARY/PRE-PROFESSIONAL

This option is for students who intend to enter veterinary, professional, or graduate school. It provides the necessary background in the sciences, as well as opportunities for advanced study related to production, companion, and zoo animals.

A potential plan of study for the pre-veterinary/pre-professional science concentration is outlined below but programs are highly individualized by students working with the faculty advisors.

First Year	Credits
ASCI 001 Introductory Animal Sciences	3
ASCI 043 Intro to Animal Nutrition	3
CALS 001 Foundations:Communication Meth	3
CALS 002 Foundation:Information Tech	3
CHEM 031 General Chemistry 1	4
CHEM 032 General Chemistry 2	4
BCOR 011 Exploring Biology	4

BCOR 012 Exploring Biology	4
ASCI 005 Intro to the Horse or ASCI 006 Companion Animal Care & Mgmt	3
Choose either Mathematics (MATH 019 or higher) or Diversity or Sustainability or Electives	0-3
Year Total:	31-34
Sophomore	Credits
ASCI 111 Animal Anatomy	4
ASCI 122 Animals in Soc/Animal Welfare	3
ASCI 120 General Physiology	3
CHEM 141 Organic Chemistry 1	4
CHEM 142 Organic Chemistry 2	4
ENGS 001 FW: Written Expression or ENGS 002 FW: Written Expression: Theme	3
STAT 141 QR:Basic Statistical Methods 1	3
ASCI 117 Horse Health and Disease	3
ASCI 118 Appl Animal Health	3
Choose either Mathematics (MATH 019 or higher) or Diversity or Sustainability or Electives	0-5
Year Total:	30-35
Junior	Credits
ASCI 168 Animal Genetics	3
ASCI 215 Physiology of Reproduction	3
ASCI 242 Advanced Animal Nutrition	4
MMG 101 Microbiol & Infectious Disease	4
BCOR 103 Molecular and Cell Biology	4
ASCI 038 Understanding & Speaking Dog	3
ASCI 154 Canine Behavior	3
ENGS 050 The Art of the Essay or ENGS 053 Intro to Creative Writing	3
Choose either Mathematics (MATH 019 or higher) or Diversity or Sustainability or Electives	6-8
Year Total:	33-35
Senior	Credits
BIOC 201 Fundamentals of Biochemistry	3

(optional corresponding lab, BCOR 295)	1
ASCI 263 Clin Top:Companion Animal Med	3
ASCI 264 Clin Topics:Livestock Medicine	3
ASCI 265 Clin Topics Equine Med & Surg	3
ASCI 216 Endocrinology	3
ASCI 220 Lactation Physiology	3
Physics	8-10
Choose either Mathematics (MATH 019 or higher) or Diversity or Sustainability or Electives	3-5
Year Total:	30-34
Total Credits in Sequence:	124-138