

MAJOR IN ANIMAL SCIENCE

Requirements Effective Fall 2024

A minimum grade of 'C-' (1.667) is required for BMS 300, SOCR 330 and each of the ANEQ courses used to meet requirements for the major.

A maximum of five credits is allowed for the following:

ANEQ 352, ANEQ 353, ANEQ 354, ANEQ 355, ANEQ 356, ANEQ 357, ANEQ 361, ANEQ 363, and ANEQ 364.

A maximum of 12 credits is allowed for any combination of the following:

ANEQ 352, ANEQ 353, ANEQ 354, ANEQ 355, ANEQ 356, ANEQ 357, ANEQ 361, ANEQ 362, ANEQ 363, ANEQ 364, ANEQ 384, ANEQ 487A, ANEQ 495, and ANEQ 496.

Freshman

		AUCC	Credits
ANEQ 101	Food Animal Science		4
ANEQ 193	Student Seminar--Exploring Student Success		1
CO 150	College Composition (GT-CO2)	1A	3
LIFE 102	Attributes of Living Systems (GT-SC1)	3A	4
Select one course from the following:			1-4
ANEQ 105	Introduction to Large Animal Anatomy		
BMS 305	Domestic Animal Gross Anatomy		
Select one course from the following:			2-4
AREC 230	Agricultural Data Management and Analysis		
BUS 150	Business Computing Concepts and Applications		
CS 110	Personal Computing		
CS 152	Python for STEM		
Select one group from the following:			5
Group A:			
CHEM 107	Fundamentals of Chemistry (GT-SC2)	3A	
CHEM 108	Fundamentals of Chemistry Laboratory (GT-SC1)	3A	
Group B:			
CHEM 111	General Chemistry I (GT-SC2)	3A	
CHEM 112	General Chemistry Lab I (GT-SC1)	3A	
Select at least three credits from the following:			3-4
MATH 117	College Algebra in Context I (GT-MA1)	1B	
MATH 118	College Algebra in Context II (GT-MA1)	1B	
MATH 120	College Algebra (GT-MA1)	1B	
MATH 124	Logarithmic and Exponential Functions (GT-MA1)	1B	
MATH 125	Numerical Trigonometry (GT-MA1)	1B	
MATH 126	Analytic Trigonometry (GT-MA1)	1B	
MATH 127	Precalculus (GT-MA1)	1B	
MATH 141	Calculus in Management Sciences (GT-MA1)	1B	
MATH 155	Calculus for Biological Scientists I (GT-MA1)	1B	
Diversity, Equity, and Inclusion (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#diversity-equity-inclusion)			3
Electives			0-6
Total Credits			32

Sophomore

ANEQ 293	Professional Development and Career Success		1
ANEQ 310	Animal Reproduction	4B	3
ANEQ 320	Principles of Animal Nutrition	4B	3
SPCM 200	Public Speaking		3
Select one course from the following:			3

AREC 202	Agricultural and Resource Economics (GT-SS1)	3C	
ECON 202	Principles of Microeconomics (GT-SS1)	3C	
Select one course from the following:			3-4
ANEQ 230	Farm Animal Anatomy and Physiology		
ANEQ 305	Functional Large Animal Physiology		
BMS 300	Principles of Human Physiology		
Select one course from the following:			3
ANEQ 328	Foundations in Animal Genetics		
SOCR 330	Principles of Genetics		
Select one course from the following:			3
STAT 201	General Statistics (GT-MA1)	1B	
STAT 301	Introduction to Applied Statistical Methods		
STAT 307	Introduction to Biostatistics		
Business/Economics Elective ¹			3
Historical Perspectives (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#historical-perspectives)		3D	3
Total Credits			28-29
Junior			
ANEQ 321	Principles of Applied Animal Nutrition		1
ANEQ 330	Principles of Animal Breeding	4B	3
ANEQ 360	Principles of Meat Science	4B	3
Select one course from the following:			3
RS 300	Rangeland Conservation and Stewardship		
SOCR 320	Sustainable Forage Management for Livestock		
Applied Animal Science Elective (Select a minimum of 4 credits from a minimum of two courses – see list below)			4
Experience Animal Science Elective (Select a minimum of 2 credits from the following):			2
ANEQ 487A	Internship: Animal		
Department-approved Study Abroad			
Science Electives (Select 5-8 credits from a minimum of two courses below):			5-8
ANEQ 460	Meat Safety		
ANEQ 510	Bovine Reproduction Management		
ANEQ 522	Animal Metabolism		
ANEQ 545	Molecular Methods in Animal Genetics		
BC 351	Principles of Biochemistry		
BC 401	Comprehensive Biochemistry I		
BC 403	Comprehensive Biochemistry II		
BMS 325	Cellular Neurobiology		
CHEM 245	Fundamentals of Organic Chemistry		
CHEM 335	Introduction to Analytical Chemistry		
CHEM 341	Modern Organic Chemistry I		
CHEM 343	Modern Organic Chemistry II		
FTEC 447	Food Chemistry		
LIFE 205	Microbial Biology		
LIFE 206	Microbial Biology Laboratory		
LIFE 220/LAND 220	Fundamentals of Ecology (GT-SC2)	3A	
LIFE 320	Ecology		
MIP 300	General Microbiology		
Advanced Writing (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#advanced-writing)		2	3
Arts and Humanities (http://catalog.colostate.edu/general-catalog/all-university-core-curriculum/aucc/#arts-humanities)		3B	6

Electives 0-3

Total Credits 33**Senior**

Select one course from the following: 3-4

ANEQ 313 Prevention and Control of Livestock Diseases

ANEQ 346 Equine Disease Management

Select two courses from the following: 6-7

ANEQ 470 Meat Processing Systems 4A,4C

ANEQ 472 Sheep Systems 4A,4C

ANEQ 473 Dairy Systems 4A,4C

ANEQ 474 Swine Systems 4A,4C

ANEQ 476 Feedlot Systems 4A,4C

ANEQ 478 Beef Systems 4A,4C

Business/Economics Electives¹ 3Specialization Animal Science Electives (see list below)² 9Electives³ 3-6**Total Credits 26-27****Program Total Credits: 120****Specialization Animal Science Electives²****Code Title Credits**

Select a minimum of 9 credits from the following:

ANEQ 334 Principles of Equine Genetics 3

ANEQ 344 Principles of Equine Reproduction 3

May select one advanced judging evaluation course: 1-2

ANEQ 355 Advanced Livestock Evaluation

ANEQ 357 Advanced Dairy Evaluation

ANEQ 362 Advanced Meat Product Evaluation

ANEQ 364 Advanced Wool and Fiber Evaluation

ANEQ 450 Processed Meats 3

ANEQ 460 Meat Safety 2

ANEQ 470 Meat Processing Systems 4

ANEQ 472 Sheep Systems 3

ANEQ 473 Dairy Systems 3

ANEQ 474 Swine Systems 3

ANEQ 476 Feedlot Systems 3

ANEQ 478 Beef Systems 3

ANEQ 495 Independent Study Var.

ANEQ 496 Group Study Var.

ANEQ 505 Microbiome of Animal Systems 3

ANEQ 510 Bovine Reproduction Management 4

ANEQ 522 Animal Metabolism 3

ANEQ 525 Advanced Meat Science 3

ANEQ 531 Applied Bovine Respiratory Disease Management 1

ANEQ 532 Genetics of Bovine Respiratory Disease 1

ANEQ 545 Molecular Methods in Animal Genetics 3

ANEQ 551 Field Necropsy 2

ANEQ 565 Interpreting Animal Science Research 3

ANEQ 567 HACCP Meat Safety 2

ANEQ 575 Computational Biology in Animal Breeding 3

BC 463 Molecular Genetics 3

BC 465 Molecular Regulation of Cell Function 3

BMS 305 Domestic Animal Gross Anatomy 4

BMS 325 Cellular Neurobiology 3

BMS 330 Microscopic Anatomy 4

BMS 409 Human and Animal Reproductive Biology 3

BMS 430 Endocrinology 3

BMS 450 Pharmacology 3

BSPM 462/BZ 462/
MIP 462 Parasitology and Vector Biology 5

BZ 300 Animal Behavior 3

BZ 310 Cell Biology 4

BZ 311 Developmental Biology 4

BZ 430 Animal Behavior and Conservation 3

BZ 433 Behavioral Genetics 3

FSHN 300 Food Principles and Applications 3

FSHN 301 Food Principles and Applications
Laboratory 2

FTEC 400 Food Safety 3

FTEC 447 Food Chemistry 3

GES 450 Global Sustainability and Health 3

MIP 300 General Microbiology 3

MIP 302 General Microbiology Laboratory 2

MIP 334 Food Microbiology 3

MIP 335 Food Microbiology Laboratory 2

MIP 342 Immunology 4

MIP 343 Immunology Laboratory 2

MIP 432/ESS 432 Microbial Ecology 3

MIP 433/ESS 433 Microbial Ecology Laboratory 1

MIP 443 Microbial Physiology 4

MIP 450 Microbial Genetics 3

RS 452 Rangeland Herbivore Ecology and
Management 3

VS 331	Histology	4
VS 333	Domestic Animal Anatomy	4

Applied Animal Science Electives

Code	Title	Credits
Select a minimum of 4 credits from a minimum of two courses:		
ANEQ 250	Live Animal and Carcass Evaluation	3
ANEQ 286	Livestock Practicum	2
ANEQ 300A	Topics in Animal Sciences: Livestock Handling	1
ANEQ 300E	Topics in Animal Sciences: Family Ranching	1
ANEQ 300L	Topics in Animal Sciences: Quality Assurance	2
ANEQ 300N	Topics in Animal Sciences: Seedstock Management and Merchandising	3
ANEQ 300R	Topics in Animal Sciences: Calving and Calf Care	2
ANEQ 300U	Topics in Animal Sciences: Seedstock Sale Management–Sale Planning	1
ANEQ 300V	Topics in Animal Sciences: Seedstock Sale Management–Sale Management	1
ANEQ 322	Pet Nutrition	2
ANEQ 323	Zoo Nutrition	2
ANEQ 324	Principles of Applied Equine Nutrition	1
ANEQ 352	Introduction to Horse Evaluation	2
ANEQ 354	Introduction to Livestock Evaluation	3
ANEQ 356	Introduction to Dairy Evaluation	3
ANEQ 361	Introduction to Meat Product Evaluation	3
ANEQ 363	Introduction to Wool and Fiber Evaluation	1
ANEQ 366	Animal Welfare Evaluation	2
ANEQ 384	Supervised College Teaching	1-5
ANEQ 400	Exploring Meat Export Opportunities	2
ANEQ 401	Issues Management in the Food Animal Industry	1
ANEQ 410	Applied Food Animal Behavior	3
ANEQ 420	Applied Nutrition–Computer Diet Formulation	3
A maximum of one course, 1-3 credits, may be selected from the following courses):		1-3
ANEQ 115	Applied Equine Behavior	2
ANEQ 200	Applied Horsemanship and Equitation	2
ANEQ 201A	Preparation of Horses for Competition: Western	2
ANEQ 201B	Preparation of Horses for Competition: English	2
ANEQ 203	Equine Management	2
ANEQ 204	Equine Facilities Management	3
ANEQ 205	Equine Assessment, Evaluation and Retraining	2
ANEQ 249	Introduction to the Trail Riding Industry	1
ANEQ 303	Equine Digital Photography	3
ANEQ 325	Equine Exercise Physiology	2
ANEQ 340	Horse Training and Sale Preparation I	3

ANEQ 341	Horse Training and Sale Preparation II	3
ANEQ 349	Packing and Outfitting	2
ANEQ 351	Techniques in Therapeutic Riding	2
ANEQ 353	Advanced Horse Evaluation	3
ANEQ 358	Equine Event and Sales Management	2
ANEQ 359	Equine Sales Production	2
ANEQ 365	Principles of Teaching Therapeutic Riding	3
ANEQ 386B	Equine Practicum: Equine Reproductive Management	2
ANEQ 386C	Equine Practicum: Equine Farrier Management	1
ANEQ 442	Riding Instructor Training	2
ANEQ 445	Foaling Management	2
ANEQ 486	Therapeutic Riding Instructor Practicum	2
GES 201	Systems Thinking in Sustainability	3
LSPA 340	Spanish for Animal Health and Care Fields	3
SOCR 210	Microbiome Roles in a Sustainable Earth (GT-SC2)	3

¹ Select credits from any AREC, ECON, or business course, of which 3 credits may be a computer course. AREC 202, ECON 202, and CS 110 will not be accepted. Access granted for the following business courses: ACT 205, BUS 205, FIN 305, MGT 305, MKT 305.

² Select a total of 9 credits from the Specialization Animal Science List, or students may satisfy the requirement by completing a second major (Equine Science, Agricultural Business, Agricultural Education) or a minor (Agricultural Business or Business Administration).

³ Select enough elective credits to bring the program total to a minimum of 120 credits, of which at least 42 must be upper-division (300- to 400-level).