

Animal Science (BS): Science Concentration

The degree of Bachelor of Science in Animal Science may be obtained by selecting one of three concentrations offered by the Department of Animal Science in the College of Agriculture and Life Sciences: Veterinary Bioscience, Science, and Industry.

The Science concentration is designed for students with an interest in advanced study, such as MS and PhD programs, in disciplines such as physiology, nutrition, or genetics. This concentration gives students more flexibility to select courses that fit their disciplinary interests. There are many opportunities to gain undergraduate research experience with an Animal Science faculty member, to participate in one of the animal-related clubs, and to engage globally by participating in one of our Animal Science Study Abroad experiences.

Accelerated Graduate Opportunities

Advanced undergraduates have the opportunity to complete the **Accelerated Bachelor's/Master's degrees**, which allows students to earn both the BS and the Master's of Animal Science degrees within five years. See listing of graduate degrees offered in the Graduate School (<https://grad.ncsu.edu/>).

For more information about our program, visit our website (<https://cals.ncsu.edu/animal-science/students/undergraduate/#bachelor-of-science>).

Contact

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Plan Requirements

Use of animals and animal specimens is critical to our educational program. To obtain full credit for Animal Science courses, students are required to participate in laboratory procedures involving animals and animal specimens. All activities with live animals are IACUC (Institutional Animal Care and Use Committee) approved. Many lectures also incorporate animals or animal specimens into the course.

Code	Title	Hours
Orientation		
ALS 103 or ALS 303	First-year Success in Agriculture and Life Sciences Transfer Success in Agriculture and Life Sciences	1
Communication		
Pre-vet students: this course also meets a vet school requirement.		
Select one of the following:		3

COM 110	Public Speaking	
COM 112	Interpersonal Communication	
COM 211	Argumentation and Advocacy	
Mathematical & Natural Sciences		
MA 107	Precalculus I ¹	3
ST 311 or ST 350	Introduction to Statistics Economics and Business Statistics	3
BIO 181	Introductory Biology: Ecology, Evolution, and Biodiversity	4
BIO 183	Introductory Biology: Cellular and Molecular Biology	4
CH 101 & CH 102	Chemistry - A Molecular Science and General Chemistry Laboratory ¹	4
ANS 215 or GN 311	Agricultural Genetics ³ Principles of Genetics	3
Major Requirements		
ANS 150 & ANS 151	Introduction to Animal Science and Introduction to Animal Science Lab ¹	4
ANS 205 & ANS 206	Physiology of Domestic Animals and Anatomy of Domestic Animals Lab	4
ANS 220 & ANS 221	Reproductive Physiology and Reproductive Physiology Lab	4
ANS 230 & ANS 231	Animal Nutrition and Animal Nutrition Lab	4
Select one of the following Animal Management courses:		3
ANS 400	Companion Animal Management	
ANS 402	Beef Cattle Management	
ANS 403	Swine Management	
ANS 404	Dairy Cattle Management	
ANS 407	Livestock Grazing Management	
ANS 408	Small Ruminant Management	
ANS 410	Equine Breeding Farm Management	
ANS 411	Management of Growing and Performance Horses	
Animal Science Discipline Courses (p. 2)		6
Animal Science Electives (p. 2)		5
Select one of the following Economics courses:		3
ARE 201	Introduction to Agricultural & Resource Economics	
ARE 201A	Introduction to Agricultural & Resource Economics	
EC 201	Principles of Microeconomics	
EC 202	Principles of Macroeconomics	
EC 205	Fundamentals of Economics	
Science Option Requirements		
Select one of the following Calculus I courses:		3
MA 121	Elements of Calculus	
MA 131	Calculus for Life and Management Sciences A	
MA 141	Calculus I	
CH 201 & CH 202	Chemistry - A Quantitative Science and Quantitative Chemistry Laboratory	4
CH 221 & CH 222	Organic Chemistry I and Organic Chemistry I Lab	4
CH 223 & CH 224	Organic Chemistry II and Organic Chemistry II Lab	4
MB 351 or MB 360	General Microbiology Scientific Inquiry in Microbiology: At the Bench	3

Select one of the following Physics courses: 4

PY 131	Conceptual Physics	
PY 201	University Physics I	
PY 205 & PY 206	Physics for Engineers and Scientists I and Physics for Engineers and Scientists I Laboratory	
PY 211	College Physics I	

GEP Courses

ENG 101	Academic Writing and Research ¹	4
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/) ⁴		6
GEP Social Sciences (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/)		3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		2
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)		5
GEP Elective (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/)		3
GEP Global Knowledge (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-global-knowledge/) (verify requirement)		
GEP Foundations of American Democracy (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-fad/) (verify requirement)		
World Language Proficiency (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/world-language-proficiency/) (verify requirement)		

CALS Group A, B, or C

Students who are planning to apply to a College of Veterinary Medicine should take BCH 451 (Principles of Biochemistry) and a business course (BUS, ARE, EC, or ACC prefix) to fill the A,B,C elective category. Many Graduate schools also require Biochemistry. Other students: take any courses from the College of Agriculture and Life Sciences Group A, Group B, or Group C electives.

CALS Group A, B, or C (p. 3) 9

Free ElectivesFree Electives (12 Hr S/U Lmt) ^{2,4} 8**Total Hours** 120¹ A grade of C- or higher is required.² Students should consult their academic advisors to determine which courses fill this requirement.³ Students are required to take ANS 215 Agricultural Genetics or GN 311 Principles of Genetics. Students who choose to take both should take ANS 215 before GN 311. For students who choose to take both, ANS 215 will count as an Animal Science department elective or a CALS group A elective. Pre-vet students: GN 311 is a vet-school required course.⁴ Students are encouraged to take an Ethics course as part of their Humanities, Additional Breadth, Interdisciplinary Perspectives, or Free Electives.**Animal Science Discipline Elective**

Code	Title	Hours
ANS 415	Comparative Nutrition	3
ANS 425	Feed Manufacturing Technology	3
ANS 435	Stress Physiology in Animals	3
ANS 437	Precision Livestock Farming Systems	3
ANS 439	Comparative Animal Exercise Physiology	3
ANS 440	Animal Genetic Improvement	3
ANS 452	Comparative Reproductive Physiology and Biotechnology	3
ANS 453	Physiology and Genetics of Growth and Development	3
ANS 454	Lactation, Milk and Nutrition	3
ANS 515	Comparative Nutrition	3
ANS 525	Feed Manufacturing Technology	3
ANS 540	Animal Genetic Improvement	3
ANS 550	Applied Ruminant Nutrition	3
ANS 552	Comparative Reproductive Physiology and Biotechnology	3
ANS 553	Physiology and Genetics of Growth and Development	3
ANS 554	Lactation, Milk and Nutrition	3
ANS 561	Equine Nutrition	3
ANS 571	Regulation of Metabolism	3
ANS 590	Topical Problems in Animal Science	1-3
BCH 571	Regulation of Metabolism	3
FM 425	Feed Manufacturing Technology	3
FM 525	Feed Manufacturing Technology	3
NTR 415	Comparative Nutrition	3
NTR 419	Human Nutrition and Chronic Disease	3
NTR 425	Feed Manufacturing Technology	3
NTR 454	Lactation, Milk and Nutrition	3
NTR 515	Comparative Nutrition	3
NTR 525	Feed Manufacturing Technology	3
NTR 550	Applied Ruminant Nutrition	3
NTR 561	Equine Nutrition	3
PHY 452		3
PHY 552	Comparative Reproductive Physiology and Biotechnology	3
PO 415	Comparative Nutrition	3
PO 425	Feed Manufacturing Technology	3
PO 515	Comparative Nutrition	3
PO 525	Feed Manufacturing Technology	3
VMP 420	Disease of Farm Animals	3

Animal Science Electives

Code	Title	Hours
Animal Science Electives		
VMP 420	Disease of Farm Animals	3
Any ANS Courses Not Planned		
AEE 208	Agricultural Biotechnology: Issues and Implications	3
ANS 105	Introduction to Companion Animal Science	3
ANS 110	Introduction to Equine Science	3

ANS 150	Introduction to Animal Science	3
ANS 151	Introduction to Animal Science Lab	1
ANS 201	Techniques of Animal Care	2
ANS 205	Physiology of Domestic Animals	3
ANS 206	Anatomy of Domestic Animals Lab	1
ANS 208	Agricultural Biotechnology: Issues and Implications	3
ANS 215	Agricultural Genetics	3
ANS 220	Reproductive Physiology	3
ANS 221	Reproductive Physiology Lab	1
ANS 230	Animal Nutrition	3
ANS 231	Animal Nutrition Lab	1
ANS 240	Livestock Merchandising	3
ANS 240A	Livestock Merchandising	3
ANS 241	Introduction to Meat and Poultry Processing	3
ANS 241A	Introduction to Meat and Poultry Processing	3
ANS 242	Value Added Meat and Poultry Processing	3
ANS 242A	Value Added Meat and Poultry Processing	3
ANS 243	Meat Safety and Quality Systems	3
ANS 243A	Meat Safety and Quality Systems	3
ANS 260	Basic Swine Science	2
ANS 261	Swine Health and Biosecurity	1
ANS 262	Swine Breeding and Gestation Management	1
ANS 263	Farrowing Management	1
ANS 264	Swine Nursery and Finishing Management	1
ANS 265	Contemporary Issues in the Swine Industry	1
ANS 266	Swine Environment Management	1
ANS 267	Swine Manure and Nutrient Management	1
ANS 268	Employee Management for the Swine Industry	1
ANS 269	Internship in the Swine Industry	1
ANS 270	Pork Export Markets from a Swine Production Perspective	1
ANS 271	Swine Nutrition	1
ANS 281	Professional Development of PreVeterinary Track Students	1
ANS 290	Professional Development for Animal Science Careers	2
ANS 303	Principles of Equine Evaluation	2
ANS 304	Dairy Cattle Evaluation	2
ANS 309	Livestock Evaluation	3
ANS 322	Muscle Foods and Eggs	3
ANS 324	Milk and Dairy Products	3
ANS 330	Laboratory Animal Science	3
ANS 395	Animal Science Study Abroad	1-6
ANS 400	Companion Animal Management	3
ANS 402	Beef Cattle Management	3
ANS 403	Swine Management	3
ANS 404	Dairy Cattle Management	3
ANS 408	Small Ruminant Management	3
ANS 410	Equine Breeding Farm Management	3
ANS 411	Management of Growing and Performance Horses	3
ANS 415	Comparative Nutrition	3
ANS 425	Feed Manufacturing Technology	3
ANS 440	Animal Genetic Improvement	3

ANS 452	Comparative Reproductive Physiology and Biotechnology	3
ANS 453	Physiology and Genetics of Growth and Development	3
ANS 454	Lactation, Milk and Nutrition	3
ANS 495	Special Topics in Animal Science	1-3
ANS 515	Comparative Nutrition	3
ANS 525	Feed Manufacturing Technology	3
ANS 540	Animal Genetic Improvement	3
ANS 550	Applied Ruminant Nutrition	3
ANS 552	Comparative Reproductive Physiology and Biotechnology	3
ANS 553	Physiology and Genetics of Growth and Development	3
ANS 554	Lactation, Milk and Nutrition	3
ANS 561	Equine Nutrition	3
ANS 571	Regulation of Metabolism	3
ANS 590	Topical Problems in Animal Science	1-3
BCH 571	Regulation of Metabolism	3
FM 425	Feed Manufacturing Technology	3
FM 525	Feed Manufacturing Technology	3
FS 322	Muscle Foods and Eggs	3
FS 324	Milk and Dairy Products	3
FS 435	Food Safety Management Systems	3
FS 535	Food Safety Management Systems	3
HS 215	Agricultural Genetics	3
NTR 415	Comparative Nutrition	3
NTR 419	Human Nutrition and Chronic Disease	3
NTR 425	Feed Manufacturing Technology	3
NTR 454	Lactation, Milk and Nutrition	3
NTR 515	Comparative Nutrition	3
NTR 525	Feed Manufacturing Technology	3
NTR 550	Applied Ruminant Nutrition	3
NTR 561	Equine Nutrition	3
PB 208	Agricultural Biotechnology: Issues and Implications	3
PHY 452		3
PHY 552	Comparative Reproductive Physiology and Biotechnology	3
PO 322	Muscle Foods and Eggs	3
PO 415	Comparative Nutrition	3
PO 425	Feed Manufacturing Technology	3
PO 515	Comparative Nutrition	3
PO 525	Feed Manufacturing Technology	3

CALS Group A, B, or C

Code	Title	Hours
Group A - Biological Sciences		
AEC 360	Ecology	4
AEC 420	Introduction to Fisheries Science	3
AEC 423	Introduction to Fisheries Sciences Laboratory	1
AEE 208	Agricultural Biotechnology: Issues and Implications	3
ANS 105	Introduction to Companion Animal Science	3
ANS 110	Introduction to Equine Science	3

ANS 150	Introduction to Animal Science	3	BIO 181	Introductory Biology: Ecology, Evolution, and Biodiversity	4
ANS 151	Introduction to Animal Science Lab	1	BIO 267	Research in the Life Sciences I: Research Skills	3
ANS 205	Physiology of Domestic Animals	3	BIO 414	Cell Biology	3
ANS 206	Anatomy of Domestic Animals Lab	1	BIO 434	Hormones and Behavior	3
ANS 208	Agricultural Biotechnology: Issues and Implications	3	BIO 440	The Human Animal: An Evolutionary Perspective	3
ANS 215	Agricultural Genetics	3	BIT 410	Manipulation of Recombinant DNA	4
ANS 220	Reproductive Physiology	3	BIT 463	Fermentation of Recombinant Microorganisms	2
ANS 221	Reproductive Physiology Lab	1	BIT 464	Protein Purification	2
ANS 230	Animal Nutrition	3	BIT 466	Animal Cell Culture Techniques	2
ANS 231	Animal Nutrition Lab	1	BIT 467	PCR and DNA Fingerprinting	2
ANS 240	Livestock Merchandising	3	BIT 476	Applied Bioinformatics	2
ANS 240A	Livestock Merchandising	3	BIT 481	Plant Tissue Culture and Transformation	2
ANS 241	Introduction to Meat and Poultry Processing	3	BIT 501	Ethical Issues in Biotechnology	1
ANS 241A	Introduction to Meat and Poultry Processing	3	BIT 563	Fermentation of Recombinant Microorganisms	2
ANS 242	Value Added Meat and Poultry Processing	3	BIT 564	Protein Purification	2
ANS 242A	Value Added Meat and Poultry Processing	3	BIT 566	Animal Cell Culture Techniques	2
ANS 243	Meat Safety and Quality Systems	3	BIT 567	PCR and DNA Fingerprinting	2
ANS 243A	Meat Safety and Quality Systems	3	CHE 463	Fermentation of Recombinant Microorganisms	2
ANS 281	Professional Development of PreVeterinary Track Students	1	CHE 563	Fermentation of Recombinant Microorganisms	2
ANS 290	Professional Development for Animal Science Careers	2	ENT 201	Insects and People	3
ANS 395	Animal Science Study Abroad	1-6	ENT 207	Insects and Human Disease	3
ANS 407	Livestock Grazing Management	3	ENT 402	Forest Entomology	3
ANS 415	Comparative Nutrition	3	ENT 425	General Entomology	3
ANS 435	Stress Physiology in Animals	3	FOR 402	Forest Entomology	3
ANS 437	Precision Livestock Farming Systems	3	FS 231	Principles of Food and Bioprocess Engineering	4
ANS 439	Comparative Animal Exercise Physiology	3	FS 301	Introduction to Human Nutrition	3
ANS 452	Comparative Reproductive Physiology and Biotechnology	3	FS 401	Advanced Nutrition and Metabolism	3
ANS 453	Physiology and Genetics of Growth and Development	3	FS 402	Chemistry of Food and Bioprocessed Materials	4
ANS 454	Lactation, Milk and Nutrition	3	FS 403	Analytical Techniques in Food & Bioprocessing Science	4
ANS 515	Comparative Nutrition	3	FS 405	Food Microbiology	3
ANS 552	Comparative Reproductive Physiology and Biotechnology	3	FS 406	Food Microbiology Lab	1
ANS 553	Physiology and Genetics of Growth and Development	3	FS 501	Advanced Nutrition and Metabolism	3
ANS 554	Lactation, Milk and Nutrition	3	FS 502	Chemistry of Food and Bioprocessed Materials	4
BCH 101	Introduction to Microbiology and Biochemistry Laboratory Practices	3	FS 505	Food Microbiology	3
BCH 220	Role of Biotechnology in Society	3	FS 506	Food Microbiology Lab	1
BCH 351	General Biochemistry	3	FW 313	Mountain Wildlife Ecology and Management	1
BCH 451	Principles of Biochemistry	4	FW 353	Wildlife Management	3
BCH 452	Introductory Biochemistry Laboratory	2	FW 403	Urban Wildlife Management	3
BCH 453	Biochemistry of Gene Expression	3	FW 404	Wildlife Habitat Management	3
BCH 454	Advanced Biochemistry Laboratory	4	FW 453	Principles of Wildlife Science	4
BCH 455	Proteins and Molecular Mechanisms	3	HS 215	Agricultural Genetics	3
BCH 553	Biochemistry of Gene Expression	3	MB 101	Introduction to Microbiology and Biochemistry Laboratory Practices	3
BCH 555	Proteins and Molecular Mechanisms	3	MB 405	Food Microbiology	3
BEC 463	Fermentation of Recombinant Microorganisms	2	MB 406	Food Microbiology Lab	1
BEC 563	Fermentation of Recombinant Microorganisms	2	MB 505	Food Microbiology	3
			MB 506	Food Microbiology Lab	1
			NTR 301	Introduction to Human Nutrition	3
			NTR 401	Advanced Nutrition and Metabolism	3
			NTR 415	Comparative Nutrition	3
			NTR 419	Human Nutrition and Chronic Disease	3

NTR 454	Lactation, Milk and Nutrition	3	BIO 227	Understanding Structural Diversity through Biological Illustration	3
NTR 501	Advanced Nutrition and Metabolism	3	BIO 315	General Parasitology	3
NTR 515	Comparative Nutrition	3	BIO 330	Evolutionary Biology	3
PB 103	Perspectives on Botany	1	BIO 361	Developmental Biology	3
PB 200	Plant Life	4	BIO 370	Developmental Anatomy of the Vertebrates	3
PB 205	Our Green World	3	BIO 375	Developmental Anatomy Laboratory	2
PB 208	Agricultural Biotechnology: Issues and Implications	3	BIO 405	Functional Histology	3
PB 213	Plants and Civilization	3	BIO 414	Cell Biology	3
PB 215	Medicinal Plants	3	BIO 424	Endocrinology	3
PB 219	Plants in Folklore, Myth, and religion	3	BIO 482	Capstone Course in Molecular, Cellular, and Developmental Biology	3
PB 220	Local Flora	3	BIO 483	Capstone Course in Integrative Physiology and Neurobiology	3
PB 250	Plant Biology	4	BIO 484	Capstone Course in Human Biology	3
PB 277	Space Biology	3	BIO 485	Capstone Course in Ecology, Evolution, and Conservation Biology	3
PB 321	Introduction to Whole Plant Physiology	3	BIO 488	Neurobiology	3
PB 360	Ecology	4	BIO 588	Neurobiology	3
PB 400	Plant Diversity and Evolution	4	BIT 210	Phage Hunters	3
PB 403	Systematic Botany	4	BIT 211	Phage Genomics	2
PB 413	Plant Anatomy	2	BIT 463	Fermentation of Recombinant Microorganisms	2
PB 421	Plant Physiology	3	BIT 563	Fermentation of Recombinant Microorganisms	2
PB 445	Paleobotany	4	BME 301	Human Physiology : Electrical Analysis	3
PB 464	Rare Plants of North Carolina	3	BME 302	Human Physiology: Mechanical Analysis	4
PB 480	Introduction to Plant Biotechnology	3	CHE 463	Fermentation of Recombinant Microorganisms	2
PB 481	Plant Tissue Culture and Transformation	2	CHE 563	Fermentation of Recombinant Microorganisms	2
PB 503	Systematic Botany	4	CS 211	Plant Genetics	3
PB 513	Plant Anatomy	2	ENT 425	General Entomology	3
PB 545	Paleobotany	4	FS 301	Introduction to Human Nutrition	3
PB 564	Rare Plants of North Carolina	3	FS 405	Food Microbiology	3
PB 580	Introduction to Plant Biotechnology	3	FS 406	Food Microbiology Lab	1
PHY 452		3	FS 505	Food Microbiology	3
PHY 552	Comparative Reproductive Physiology and Biotechnology	3	FS 506	Food Microbiology Lab	1
PO 415	Comparative Nutrition	3	FW 353	Wildlife Management	3
PO 466	Animal Cell Culture Techniques	2	GN 301	Genetics in Human Affairs	3
PO 515	Comparative Nutrition	3	GN 311	Principles of Genetics	4
PO 566	Animal Cell Culture Techniques	2	GN 312	Elementary Genetics Laboratory	1
PP 150	Introduction to Plant Molecular Biology	3	GN 421	Molecular Genetics	3
PP 222	Kingdom of Fungi	3	GN 423	Population, Quantitative and Evolutionary Genetics	3
Group A - Biological Sciences			GN 425	Advanced Genetics Laboratory	2
AEC 419	Freshwater Ecology	4	GN 434	Genes and Development	3
AEC 420	Introduction to Fisheries Science	3	GN 441	Human and Biomedical Genetics	3
AEC 423	Introduction to Fisheries Sciences Laboratory	1	GN 451	Genome Science	3
AEC 441	Biology of Fishes	3	GN 490	Genetics Colloquium	1
AEC 442	Biology of Fishes Laboratory	1	GN 521	Molecular Genetics	3
AEC 460	Field Ecology and Methods	4	GN 541	Human and Biomedical Genetics	3
AEC 519	Freshwater Ecology	4	HS 215	Agricultural Genetics	3
ANS 215	Agricultural Genetics	3	HS 451	Plant Nutrition	3
ANS 415	Comparative Nutrition	3	HS 551	Plant Nutrition	3
ANS 515	Comparative Nutrition	3	MB 180	Introduction to Microbial Bioprocessing	3
BEC 463	Fermentation of Recombinant Microorganisms	2	MB 200	The Fourth Horseman: Plagues that Changed the World	3
BEC 563	Fermentation of Recombinant Microorganisms	2			
BIO 140		3			
BIO 141		1			

MB 210	Phage Hunters	3
MB 211	Phage Genomics	2
MB 351	General Microbiology	3
MB 352	General Microbiology Laboratory	1
MB 354	Inquiry-Guided Microbiology Lab	1
MB 405	Food Microbiology	3
MB 406	Food Microbiology Lab	1
MB 411	Medical Microbiology	3
MB 412	Medical Microbiology Laboratory	1
MB 414	Microbial Metabolic Regulation	3
MB 420	Fundamentals of Microbial Cell Biotransformations	2
MB 441	Immunology	3
MB 451	Microbial Diversity	3
MB 452	Microbial Diversity Lab	2
MB 455	Microbial Biotechnology	3
MB 461	Molecular Virology	3
MB 480	Current Issues in Microbiology	1
MB 505	Food Microbiology	3
MB 506	Food Microbiology Lab	1
MB 520	Fundamentals of Microbial Cell Biotransformations	2
MEA 200	Introduction to Oceanography	3
MEA 210	Oceanography Lab	1
MEA 220	Marine Biology	3
MEA 250	Introduction to Coastal Environments	3
MEA 251	Introduction to Coastal Environments Laboratory	1
MEA 369	Life on Earth: Principles of Paleontology	3
NTR 301	Introduction to Human Nutrition	3
NTR 415	Comparative Nutrition	3
NTR 419	Human Nutrition and Chronic Disease	3
NTR 490	Senior Capstone Experience in Nutrition	4
NTR 515	Comparative Nutrition	3
PO 404	Avian Anatomy and Physiology	4
PO 415	Comparative Nutrition	3
PO 504	Avian Anatomy and Physiology	4
PO 515	Comparative Nutrition	3
SSC 200	Soil Science	3
SSC 201	Soil Science Laboratory	1
SSC 332	Environmental Soil Microbiology	3
SSC 470	Wetland Soils	3
SSC 570	Wetland Soils	3
ZO 233	Human-Animal Interactions	3
ZO 250	Animal Anatomy and Physiology	4
ZO 317	Primate Ecology and Evolution	3
ZO 333	Captive Animal Biology	3
ZO 350	Animal Phylogeny and Diversity	4
ZO 402	Invertebrate Biology	4
ZO 410	Introduction to Animal Behavior	3
ZO 486	Capstone Course in Zoology	3

Group A - Biological Sciences

BIT 100	Current Topics in Biotechnology	4
BIT 465	Real-time PCR Techniques	2
BIT 471	RNA Interference and Model Organisms	2

BIT 473	Protein Interactions	2
BIT 474	Plant Genetic Engineering	2
BIT 565	Real-time PCR Techniques	2
BIT 571	RNA Interference and Model Organisms	2
BIT 573	Protein Interactions	2
BIT 574	Plant Genetic Engineering	2
ENT 305	Introduction to Forensic Entomology	3

Group A - Physical Sciences

AEE 226	Computer Applications and Information Technology in Agricultural & Extension Ed	3
BAE 200	Computer Methods in Biological Engineering	2
BMA 573	Mathematical Modeling of Physical and Biological Processes I	3
BMA 574	Mathematical Modeling of Physical and Biological Processes II	3
BUS 340	Information Systems Management	3
BUS 350	Economics and Business Statistics	3
CE 435	Engineering Geology	3
CE 479	Air Quality	3
CE 581	Fluid Mechanics in Natural Environments	3
CH 230	Computational Chemistry Lab I	1
CH 232	Computational Chemistry Lab II	1
CH 315	Quantitative Analysis	3
CH 316	Quantitative Analysis Laboratory	1
CH 331	Introductory Physical Chemistry	4
CH 401	Systematic Inorganic Chemistry I	3
CH 403	Systematic Inorganic Chemistry II	3
CH 415	Analytical Chemistry II	3
CH 431	Physical Chemistry I	3
CH 433	Physical Chemistry II	3
CH 435	Introduction to Quantum Chemistry	3
CH 437	Physical Chemistry for Engineers	4
CH 441	Forensic Chemistry	3
CH 442	Advanced Synthetic Techniques	4
CH 444	Advanced Synthetic Techniques II	4
CH 452	Advanced Measurement Techniques I	4
CH 454	Advanced Measurement Techniques II	4
CH 463	Molecular Origins of Life	3
CH 563	Molecular Origins of Life	3
CSC 110	Computer Science Principles - The Beauty and Joy of Computing	3
CSC 111	Introduction to Computing: Python	3
CSC 112	Introduction to Computing-FORTRAN	3
CSC 113	Introduction to Computing - MATLAB	3
CSC 116	Introduction to Computing - Java	3
CSC 216	Software Development Fundamentals	3
CSC 217	Software Development Fundamentals Lab	1
CSC 226	Discrete Mathematics	3
CSC 230	C and Software Tools	3
CSC 236	Computer Organization and Assembly Language for Computer Scientists	3
CSC 246	Concepts and Facilities of Operating Systems for Computer Scientists	3

CSC 251	Python Applications	1	CSC 522	Automated Learning and Data Analysis	3
CSC 255		1	CSC 530	Computational Methods for Molecular Biology	3
CSC 281	Foundations of Interactive Game Design	3	CSC 533	Privacy in the Digital Age	3
CSC 295	Special Topics in Computer Science	1-3	CSC 540	Database Management Concepts and Systems	3
CSC 302	Introduction to Numerical Methods	3	CSC 541	Advanced Data Structures	3
CSC 316	Data Structures and Algorithms	3	CSC 546	Management Decision and Control Systems	3
CSC 326	Software Engineering	4	CSC 547	Cloud Computing Technology	3
CSC 333	Automata, Grammars, and Computability	3	CSC 548	Parallel Systems	3
CSC 342	Applied Web-based Client-Server Computing	3	CSC 554	Human-Computer Interaction	3
CSC 379	Ethics in Computing	1	CSC 555	Social Computing and Decentralized Artificial Intelligence	3
CSC 401	Data and Computer Communications Networks	3	CSC 561	Principles of Computer Graphics	3
CSC 402	Networking Projects	3	CSC 562	Introduction to Game Engine Design	3
CSC 405	Computer Security	3	CSC 563	Visual Interfaces for Mobile Devices	3
CSC 406	Architecture Of Parallel Computers	3	CSC 565	Graph Theory	3
CSC 411	Introduction to Artificial Intelligence	3	CSC 568	Enterprise Storage Architecture	3
CSC 412	Compiler Construction	3	CSC 570	Computer Networks	3
CSC 415	Software Security	3	CSC 573	Internet Protocols	3
CSC 416	Introduction to Combinatorics	3	CSC 574	Computer and Network Security	3
CSC 417	Theory of Programming Languages	3	CSC 575	Introduction to Wireless Networking	3
CSC 422	Automated Learning and Data Analysis	3	CSC 576	Networking Services: QoS, Signaling, Processes	3
CSC 427	Introduction to Numerical Analysis I	3	CSC 577	Switched Network Management	3
CSC 428	Introduction to Numerical Analysis II	3	CSC 579	Introduction to Computer Performance Modeling	3
CSC 431	File Organization and Processing	3	CSC 580	Numerical Analysis I	3
CSC 440	Database Management Systems	3	CSC 582	Computer Models of Interactive Narrative	3
CSC 442	Introduction to Data Science	3	CSC 583	Introduction to Parallel Computing	3
CSC 450	Web Services	3	CSC 584	Building Game AI	3
CSC 453	Introduction to Internet of Things (IoT) Systems	3	CSC 591	Special Topics In Computer Science	1-6
CSC 454	Human-Computer Interaction	3	E 531	Dynamic Systems and Multivariable Control I	3
CSC 455	Social Computing and Decentralized Artificial Intelligence	3	ECE 406	Architecture Of Parallel Computers	3
CSC 456	Computer Architecture and Multiprocessors	3	ECE 460		3
CSC 461	Computer Graphics	3	ECE 506	Architecture Of Parallel Computers	3
CSC 462	Advanced Computer Graphics Projects	3	ECE 514	Random Processes	3
CSC 467	Introduction to Quantum Algorithms	3	ECE 517	Object-Oriented Design and Development	3
CSC 474	Network Security	3	ECE 547	Cloud Computing Technology	3
CSC 481	Game Engine Foundations	3	ECE 560		3
CSC 482	Advanced Computer Game Projects	3	ECE 570	Computer Networks	3
CSC 484	Building Game AI	3	ECE 573	Internet Protocols	3
CSC 492	Senior Design Project	3	ECE 574	Computer and Network Security	3
CSC 495		1-6	ECE 575	Introduction to Wireless Networking	3
CSC 499	Independent Research in Computer Science	1-6	ECE 576	Networking Services: QoS, Signaling, Processes	3
CSC 501	Operating Systems Principles	3	ECE 577	Switched Network Management	3
CSC 503	Computational Applied Logic	3	ECE 579	Introduction to Computer Performance Modeling	3
CSC 505	Design and Analysis Of Algorithms	3	ECG 528	Options and Derivatives Pricing	3
CSC 506	Architecture Of Parallel Computers	3	ET 320	Fundamentals of Air Pollution	3
CSC 510	Software Engineering	3	FIM 528	Options and Derivatives Pricing	3
CSC 512	Compiler Construction	3	FIM 548	Monte Carlo Methods for Financial Math	3
CSC 513	Electronic Commerce Technology	3	FIM 549	Financial Risk Analysis	3
CSC 515	Software Security	3	GIS 582	Geospatial Modeling	3
CSC 517	Object-Oriented Design and Development	3	ISE 441	Introduction to Simulation	3
CSC 519	DevOps: Modern Software Engineering Practices	3	ISE 505	Linear Programming	3
CSC 520	Artificial Intelligence I	3	ISE 546	Management Decision and Control Systems	3

LOG 201	Logic	3	MA 515	Analysis I	3
LOG 335	Symbolic Logic	3	MA 518	Geometry of Curves and Surfaces	3
MA 105	Mathematics of Finance	3	MA 520	Linear Algebra	3
MA 225	Foundations of Advanced Mathematics	3	MA 521	Abstract Algebra I	3
MA 242	Calculus III	4	MA 522	Computer Algebra	3
MA 302	Numerical Applications to Differential Equations	1	MA 523	Linear Transformations and Matrix Theory	3
MA 303	Linear Analysis	3	MA 524	Combinatorics I	3
MA 305	Introductory Linear Algebra and Matrices	3	MA 526	Mathematical Analysis II	3
MA 315	Mathematics Methods in Atmospheric Sciences	4	MA 528	Options and Derivatives Pricing	3
MA 325	Introduction to Applied Mathematics	3	MA 531	Dynamic Systems and Multivariable Control I	3
MA 331	Differential Equations for the Life Sciences	3	MA 532	Ordinary Differential Equations I	3
MA 335	Symbolic Logic	3	MA 534	Introduction To Partial Differential Equations	3
MA 341	Applied Differential Equations I	3	MA 537	Nonlinear Dynamics and Chaos	3
MA 351	Introduction to Discrete Mathematical Models	3	MA 540	Uncertainty Quantification for Physical and Biological Models	3
MA 401	Applied Differential Equations II	3	MA 544	Computer Experiments In Mathematical Probability	3
MA 402	Mathematics of Scientific Computing	3	MA 546	Probability and Stochastic Processes I	3
MA 403	Introduction to Modern Algebra	3	MA 547	Stochastic Calculus for Finance	3
MA 405	Introduction to Linear Algebra	3	MA 548	Monte Carlo Methods for Financial Math	3
MA 407	Introduction to Modern Algebra for Mathematics Majors	3	MA 549	Financial Risk Analysis	3
MA 408	Foundations of Euclidean Geometry	3	MA 551	Introduction to Topology	3
MA 410	Theory of Numbers	3	MA 555	Introduction to Manifold Theory	3
MA 412	Long-Term Actuarial Models	3	MA 561	Set Theory and Foundations Of Mathematics	3
MA 413	Short-Term Actuarial Models	3	MA 565	Graph Theory	3
MA 416	Introduction to Combinatorics	3	MA 573	Mathematical Modeling of Physical and Biological Processes I	3
MA 421	Introduction to Probability	3	MA 574	Mathematical Modeling of Physical and Biological Processes II	3
MA 425	Mathematical Analysis I	3	MA 580	Numerical Analysis I	3
MA 426	Mathematical Analysis II	3	MA 583	Introduction to Parallel Computing	3
MA 427	Introduction to Numerical Analysis I	3	MA 584	Numerical Solution of Partial Differential Equations--Finite Difference Methods	3
MA 428	Introduction to Numerical Analysis II	3	MA 587	Numerical Solution of Partial Differential Equations--Finite Element Method	3
MA 430	Mathematical Models in the Physical Sciences	3	MA 591	Special Topics	1-6
MA 432	Mathematical Models in Life Sciences	3	MBA 528	Options and Derivatives Pricing	3
MA 437	Applications of Algebra	3	MEA 100	Earth System Science: Exploring the Connections	4
MA 444	Problem Solving Strategies for Competitions	1	MEA 101	Geology I: Physical	3
MA 450	Methods of Applied Mathematics I	3	MEA 110	Geology I Laboratory	1
MA 451	Methods of Applied Mathematics II	3	MEA 130	Introduction to Weather and Climate	3
MA 491	Reading in Honors Mathematics	1-6	MEA 135	Introduction to Weather and Climate Laboratory	1
MA 493	Special Topics in Mathematics	1-6	MEA 202	Geology II: Historical	3
MA 494	Major Paper in Mathematics	1	MEA 211	Geology II Laboratory	1
MA 499	Independent Research in Mathematics	1-6	MEA 300	Environmental Geology	4
MA 501	Advanced Mathematics for Engineers and Scientists I	3	MEA 312	Atmospheric Thermodynamics	4
MA 502	Advanced Mathematics for Engineers and Scientists II	3	MEA 315	Mathematics Methods in Atmospheric Sciences	4
MA 504	Introduction to Mathematical Programming	3	MEA 320	Fundamentals of Air Pollution	3
MA 505	Linear Programming	3	MEA 321	Fundamentals of Air Quality and Climate Change	3
MA 507	Survey of Real Analysis	3	MEA 323	Geochemistry of Natural Waters	3
MA 508	Survey of Geometry	3	MEA 409	Watershed Forensics	3
MA 509	Survey of Abstract Algebra	3	MEA 410	Introduction to Mineralogy	4
MA 510	Selected Topics In Mathematics For Secondary Teachers	1-6	MEA 411	Marine Sediment Transport	3
MA 511	Advanced Calculus I	3	MEA 412	Atmospheric Physics	3
MA 513	Introduction To Complex Variables	3			

MEA 415	Climate Dynamics	3
MEA 421	Atmospheric Dynamics I	3
MEA 422	Atmospheric Dynamics II	3
MEA 425	Introduction to Atmospheric Chemistry	3
MEA 440	Igneous and Metamorphic Petrology	4
MEA 443	Synoptic Weather Analysis and Forecasting	4
MEA 444	Mesoscale Analysis and Forecasting	4
MEA 449	Principles of Biological Oceanography	3
MEA 450	Introductory Sedimentology and Stratigraphy	4
MEA 451	Structural Geology	4
MEA 454	Marine Physical-Biological Interactions	3
MEA 455	Micrometeorology	3
MEA 458	Introduction to Tropical Meteorology	3
MEA 459	Field Investigation of Coastal Processes	5
MEA 460	Principles of Physical Oceanography	3
MEA 462	Observational Methods and Data Analysis in Marine Physics	3
MEA 463	Fluid Physics	3
MEA 464	Ocean Circulation Systems	3
MEA 465	Geologic Field Camp	4
MEA 466	Preparatory Course for Field Camp	1
MEA 467	Marine Meteorology	3
MEA 469	Ecology of Coastal Resources	3
MEA 470	Introduction to Geophysics	3
MEA 471	Exploration and Engineering Geophysics	3
MEA 473	Principles of Chemical Oceanography	3
MEA 476	Worldwide River and Delta Systems: Their Evolution and Human Impacts	3
MEA 479	Air Quality	3
MEA 481	Geomorphology: Earth's Dynamic Surface	3
MEA 485	Introduction to Hydrogeology	3
MEA 488	Meteorology for Media	3
MEA 493	Special Topics in MEAS	1-6
MEA 495	Junior Seminar in the Marine, Earth, and Atmospheric Sciences	1
MEA 498	Internship in MEAS	1-6
MEA 507	Discipline-based Education Research in the Geosciences	3
MEA 510	Air Pollution Meteorology	3
MEA 511	Introduction to Meteorological Remote Sensing	3
MEA 514	Advanced Physical Meteorology	3
MEA 515	Climate Dynamics	3
MEA 517	Fundamentals of Climate Change Science	3
MEA 518	Adaptation to Climate Change	3
MEA 519	Barriers to Climate Change Literacy	3
MEA 525	Introduction to Atmospheric Chemistry	3
MEA 540	Principles of Physical Oceanography	3
MEA 549	Principles of Biological Oceanography	3
MEA 553	Estuarine Biogeochemistry	3
MEA 554	Marine Physical-Biological Interactions	3
MEA 562	Marine Sediment Transport	3
MEA 570	Geological Oceanography	3
MEA 573	Principles of Chemical Oceanography	3

MEA 574	Advanced Igneous Petrology	3
MEA 577	Electron Microprobe Analysis of Geologic Material	2
MEA 579	Principles of Air Quality Engineering	3
MEA 580	Air Quality Modeling and Forecasting	4
MEA 581	Fluid Mechanics in Natural Environments	3
MEA 582	Geospatial Modeling	3
MEA 585	Physical Hydrogeology	3
MEA 591	Special Topics in Marine Science	1-6
MEA 592	Special Topics in Earth Sciences	1-6
MEA 593	Special Topics in Atmospheric Science	1-6
MEA 599	Regional Geology of North America	1-6
OR 504	Introduction to Mathematical Programming	3
OR 505	Linear Programming	3
OR 531	Dynamic Systems and Multivariable Control I	3
OR 565	Graph Theory	3
OR 579	Introduction to Computer Performance Modeling	3
PSY 240	Introduction to Behavioral Research I	3
PSY 241	Introduction to Behavioral Research I Lab	1
PSY 242	Introduction to Behavioral Research II	3
PSY 243	Introduction to Behavioral Research II Lab	2
PY 414	Electromagnetism I	3
PY 415	Electromagnetism II	3
PY 514	Electromagnetism I	3
PY 515	Electromagnetism II	3
ST 350	Economics and Business Statistics	3
ST 412	Long-Term Actuarial Models	3
ST 413	Short-Term Actuarial Models	3
ST 442	Introduction to Data Science	3
ST 546	Probability and Stochastic Processes I	3
Group A - Physical Sciences		
BME 201	Computer Methods in Biomedical Engineering	3
CSC 442	Introduction to Data Science	3
EC 351	Econometrics I	3
ECE 489	Solid State Solar and Thermal Energy Harvesting	3
ECE 589	Solid State Solar and Thermal Energy Harvesting	3
ECG 561	Applied Econometrics I	3
EMS 519	Teaching and Learning of Statistical Thinking	3
GPH 404	Epidemiology and Statistics in Global Public Health	3
MA 412	Long-Term Actuarial Models	3
MA 413	Short-Term Actuarial Models	3
MA 546	Probability and Stochastic Processes I	3
MA 555	Introduction to Manifold Theory	3
MEA 150	Environmental Issues in Water Resources	4
MEA 463	Fluid Physics	3
MSE 489	Solid State Solar and Thermal Energy Harvesting	3
MSE 589	Solid State Solar and Thermal Energy Harvesting	3
NE 528	Introduction to Plasma Physics and Fusion Energy	3
NE 529	Plasma Physics and Fusion Energy II	3
PSY 240	Introduction to Behavioral Research I	3
PSY 241	Introduction to Behavioral Research I Lab	1
PSY 242	Introduction to Behavioral Research II	3

PSY 243	Introduction to Behavioral Research II Lab	2	ST 401	Experiences in Data Analysis	4
PY 123	Stellar and Galactic Astronomy	3	ST 404	Epidemiology and Statistics in Global Public Health	3
PY 124	Solar System Astronomy	3	ST 405	Applied Nonparametric Statistics	3
PY 125	Astronomy Laboratory	1	ST 412	Long-Term Actuarial Models	3
PY 131	Conceptual Physics	4	ST 413	Short-Term Actuarial Models	3
PY 203	University Physics III	4	ST 421	Introduction to Mathematical Statistics I	3
PY 301	Introduction to Quantum Mechanics	3	ST 422	Introduction to Mathematical Statistics II	3
PY 328	Stellar and Galactic Astrophysics	3	ST 430	Introduction to Regression Analysis	3
PY 341	Relativity, Gravitation and Cosmology	3	ST 431	Introduction to Experimental Design	3
PY 401	Quantum Physics I	3	ST 432	Introduction to Survey Sampling	3
PY 402	Quantum Physics II	3	ST 433	Applied Spatial Statistics	3
PY 407	Introduction to Modern Physics	3	ST 434	Applied Time Series	3
PY 411	Mechanics I	3	ST 435	Statistical Methods for Quality and Productivity Improvement	3
PY 412	Mechanics II	3	ST 437	Applied Multivariate and Longitudinal Data Analysis	3
PY 413	Thermal Physics	3	ST 440	Applied Bayesian Analysis	3
PY 414	Electromagnetism I	3	ST 442	Introduction to Data Science	3
PY 415	Electromagnetism II	3	ST 445	Introduction to Statistical Computing and Data Management	3
PY 452	Advanced Physics Laboratory	3	ST 446	Intermediate SAS Programming with Applications	3
PY 489	Solid State Solar and Thermal Energy Harvesting	3	ST 491	Statistics in Practice	3
PY 495	Special Topics in Physics	1-4	ST 495	Special Topics in Statistics	1-6
PY 499	Independent Research in Physics	1-6	ST 498	Independent Study In Statistics	1-6
PY 501	Quantum Physics I	3	ST 501	Fundamentals of Statistical Inference I	3
PY 502	Quantum Physics II	3	ST 502	Fundamentals of Statistical Inference II	3
PY 506	Nuclear and Subatomic Physics	3	ST 503	Fundamentals of Linear Models and Regression	3
PY 507	Elementary Particle Physics	3	ST 505	Applied Nonparametric Statistics	3
PY 509	General Relativity	3	ST 507	Statistics For the Behavioral Sciences I	3
PY 511	Mechanics I	3	ST 511	Statistical Methods For Researchers I	3
PY 512	Mechanics II	3	ST 512	Statistical Methods For Researchers II	3
PY 514	Electromagnetism I	3	ST 513	Statistics for Management and Social Sciences I	3
PY 515	Electromagnetism II	3	ST 514	Statistics For Management and Social Sciences II	3
PY 516	Physical Optics	3	ST 515	Experimental Statistics for Engineers I	3
PY 517	Atomic and Molecular Physics	3	ST 516	Experimental Statistics For Engineers II	3
PY 519	Biological Physics	3	ST 517	Applied Statistical Methods I	3
PY 525	Computational Physics	3	ST 519	Teaching and Learning of Statistical Thinking	3
PY 528	Introduction to Plasma Physics and Fusion Energy	3	ST 520	Statistical Principles of Clinical Trials	3
PY 529	Plasma Physics and Fusion Energy II	3	ST 533	Applied Spatial Statistics	3
PY 543	Astrophysics	3	ST 534	Applied Time Series	3
PY 552	Condensed Matter Physics I	3	ST 535	Statistical Methods for Quality and Productivity Improvement	3
PY 570	Polymer Physics	3	ST 537	Applied Multivariate and Longitudinal Data Analysis	3
PY 581	Matter & Interactions for Teachers I	3	ST 540	Applied Bayesian Analysis	3
PY 582	Matter & Interactions for Teachers II	3	ST 542	Statistical Practice	3
PY 589	Solid State Solar and Thermal Energy Harvesting	3	ST 544	Applied Categorical Data Analysis	3
PY 590	Special Topics In Physics	1-6	ST 546	Probability and Stochastic Processes I	3
PY 599	Special Topics in Physics	1-6	ST 555	Statistical Programming I	3
SSC 200	Soil Science	3	ST 556	Statistical Programming II	3
SSC 201	Soil Science Laboratory	1	ST 557	Using Technology to Teach and Learn with Data	3
ST 311	Introduction to Statistics	3	ST 558	Data Science for Statisticians	3
ST 312	Introduction to Statistics II	3			
ST 370	Probability and Statistics for Engineers	3			
ST 371	Introduction to Probability and Distribution Theory	3			
ST 372	Introduction to Statistical Inference and Regression	3			

ST 561	Applied Econometrics I	3
ST 562	Data Mining with SAS Enterprise Miner	3
ST 563	Introduction to Statistical Learning	3
ST 590	Special Topics	1-6
ST 701	Statistical Theory I	3
ST 702	Statistical Theory II	3
ST 705	Linear Models and Variance Components	3
TE 570	Polymer Physics	3
Group B - Economics & Business		
ACC 210	Concepts of Financial Reporting	3
ACC 220	Introduction to Managerial Accounting	3
ACC 280	Survey of Financial and Managerial Accounting	3
ACC 310	Intermediate Financial Accounting I	3
ACC 311	Intermediate Financial Accounting II	3
ACC 330	An Introduction To Income Taxation	3
ACC 340	Accounting Information Systems	3
ACC 411	Business Valuation	3
ACC 420	Cost Accounting for Effective Management	3
ACC 440	Enterprise Resource Planning Systems: Implementation, Risk, and Analytics	3
ACC 450	Auditing and Assurance Services	3
ACC 451	Internal Auditing	3
ACC 460	Governmental and Nonprofit Accounting	3
ARE 215	Small Business Accounting	3
ARE 301	Intermediate Microeconomics	3
ARE 303	Farm Management	3
ARE 304	Agribusiness Management	3
ARE 306	Agricultural Law	3
ARE 309	Environmental Law & Economic Policy	3
ARE 311	Agricultural Markets	3
ARE 312	Agribusiness Marketing	3
ARE 321	Agricultural Financial Management	3
ARE 336	Introduction to Resource and Environmental Economics	3
ARE 345	Global Agribusiness Management	3
ARE 404	Advanced Agribusiness Management	3
ARE 413	Applied Agribusiness Marketing	3
ARE 433	U.S. Agricultural Policy	3
ARE 490	Career Seminar in Agriculture & Resource Economics	1
BUS 225	Personal Finance	3
BUS 320	Financial Management	3
BUS 340	Information Systems Management	3
BUS 360	Marketing Methods	3
BUS 370	Operations and Supply Chain Management	3
BUS 420	Financial Management of Corporations	3
BUS 422	Investments and Portfolio Management	3
BUS 425	Advanced Personal Financial Management	3
BUS 426	International Financial Management	3
BUS 440	Database Management	3
BUS 441	Business Data Communications and Networking	3
BUS 442	Information Systems Development	3
BUS 443	Web Development for Business Applications	3

BUS 444	Systems Analysis and Design	3
BUS 461	Channel and Retail Marketing	3
BUS 462	Marketing Research	3
BUS 464	International Marketing	3
BUS 465	Traditional and Digital Brand Promotion	3
BUS 466	Personal Selling	3
BUS 467	Product and Brand Management	3
BUS 468	Marketing Strategy	3
BUS 469	Digital Marketing Practicum	3
BUS 470	Operations Modeling and Analysis	3
BUS 472	Operations Planning and Control Systems	3
BUS 473	Supply Chain Strategy	3
BUS 475	Purchasing and Supply Management	3
BUS 479	Supply Chain Management Undergraduate Practicum	3
EC 301	Intermediate Microeconomics	3
EC 336	Introduction to Resource and Environmental Economics	3
FTM 482	Global Brand Management in Textiles and Apparel	3
M 100	Personal and Professional Identity Development	1
MIE 201	Introduction to Business	3
MIE 305	Legal and Regulatory Environment	3
MIE 330	Managing People	3
MIE 335	Organizational Behavior	3
MIE 432	Employee Relations	3
MIE 434	Rewards and Relationship Management	3
MIE 435	Leading in a Changing World	3
MIE 436	Consultative Skills	3
MIE 438	Talent Management	3
MIE 480	Business Policy and Strategy	3
PRT 406	Sports Law	3
Group B - Economics & Business		
ACC 220	Introduction to Managerial Accounting	3
ACC 280	Survey of Financial and Managerial Accounting	3
ARE 301	Intermediate Microeconomics	3
ARE 332	Human Resource Management for Agribusiness	3
ARE 336	Introduction to Resource and Environmental Economics	3
ARE 412	Advanced Agribusiness Marketing	3
BUS 340	Information Systems Management	3
BUS 449	Information Technology Practicum	3
BUS 474	Logistics Management	3
EC 202	Principles of Macroeconomics	3
EC 301	Intermediate Microeconomics	3
EC 302	Intermediate Macroeconomics	3
EC 305	A Closer Look at Capitalism	3
EC 336	Introduction to Resource and Environmental Economics	3
EC 348	Introduction to International Economics	3
EC 351	Econometrics I	3
EC 404	Money, Financial Markets, and the Economy	3
EC 410	Public Finance	3
EC 413	Industrial Organization	3

EC 431	Labor Economics	3	ANS 151	Introduction to Animal Science Lab	1
EC 449	International Finance	3	ANS 201	Techniques of Animal Care	2
EC 451	Econometrics II	3	ANS 208	Agricultural Biotechnology: Issues and Implications	3
EC 474	Economics of Financial Institutions and Markets	3	ANS 225	Principles of Animal Nutrition	3
EC 490	Research Seminar in Economics	3	ANS 303	Principles of Equine Evaluation	2
FTM 482	Global Brand Management in Textiles and Apparel	3	ANS 304	Dairy Cattle Evaluation	2
MIE 412	Finance and Accounting for Entrepreneurs	3	ANS 309	Livestock Evaluation	3
MIE 413	New Venture Planning	3	ANS 322	Muscle Foods and Eggs	3
MIE 419	Entrepreneurship Practicum	3	ANS 324	Milk and Dairy Products	3
PRT 406	Sports Law	3	ANS 400	Companion Animal Management	3
Group C - Applied Sci & Tech			ANS 402	Beef Cattle Management	3
AEE 101	Introduction to Career and Technical Education	1	ANS 403	Swine Management	3
AEE 208	Agricultural Biotechnology: Issues and Implications	3	ANS 404	Dairy Cattle Management	3
AEE 230	Introduction to Cooperative Extension	3	ANS 408	Small Ruminant Management	3
AEE 303	Administration and Supervision of Student Organizations	3	ANS 410	Equine Breeding Farm Management	3
AEE 311	Communication Methods and Media	3	ANS 425	Feed Manufacturing Technology	3
AEE 322	Experiential Learning in Agriculture	3	ANS 440	Animal Genetic Improvement	3
AEE 323	Leadership Development in Agriculture and Life Sciences	3	ANS 453	Physiology and Genetics of Growth and Development	3
AEE 325	Planning and Delivering Non-Formal Education	3	ANS 454	Lactation, Milk and Nutrition	3
AEE 326	Teaching Diverse Learners in AED	3	ANS 525	Feed Manufacturing Technology	3
AEE 327	Conducting Summer Programs in Agricultural Education	1	ANS 540	Animal Genetic Improvement	3
AEE 350	Personal Leadership Development in Agriculture and Life Sciences	3	ANS 553	Physiology and Genetics of Growth and Development	3
AEE 360	Developing Team Leadership in Agriculture and Life Sciences	3	ANS 554	Lactation, Milk and Nutrition	3
AEE 423	Practicum in Agricultural Extension/Industry	8	BAE 100	Introduction to Biological and Agricultural Engineering and Technology	1
AEE 424	Planning Agricultural Educational Programs	3	BAE 202	Introduction to Biological and Agricultural Engineering Methods	4
AEE 426	Methods of Teaching Agriculture	3	BAE 302	Transport Phenomena	3
AEE 427	Student Teaching in Agriculture	8	BAE 322	Introduction to Food Process Engineering	3
AEE 433	Leadership and Management of Volunteers in Agricultural and Extension Education	3	BAE 361	Analytical Methods in Engineering Design	3
AEE 435	Professional Presentations in Agricultural Organizations	3	BAE 371	Fundamentals of Hydrology for Engineers	3
AEE 460	Organizational Leadership Development in Agriculture and Life Sciences	3	BAE 401	Sensors and Controls	3
AEE 478	Advanced Issues in Extension Education	3	BAE 435	Precision Agriculture Technology	3
AEE 490	Seminar in Agricultural and Extension Education	1	BAE 451	Engineering Design I	2
AEE 533	Leadership and Management of Volunteers in Agricultural and Extension Education	3	BAE 452	Engineering Design II	2
BAET 201	Shop Processes and Management	3	BAE 462	Machinery Design and Applications	3
BAET 323	Water Management	3	BAE 472	Irrigation and Drainage	3
BAET 332	Management of Animal Environments	4	BAE 473	Introduction to Hydrologic and Water Quality Modeling	3
BAET 333	Processing Agricultural Products	4	BAE 474	Principles and Applications of Ecological Engineering	3
BAET 343	Agricultural Electrification	4	BAE 481	Structures & Environment	3
BAET 411	Agricultural Machinery and Power Units	4	BAE 501	Sensors and Controls	3
BAET 432	Agricultural and Environmental Safety and Health	3	BAE 535	Precision Agriculture Technology	3
BAET 443	Environmental Restoration Implementation	3	BAE 572	Irrigation and Drainage	3
ALS 110	Academic and Career Skills Seminar	1	BAE 573	Introduction to Hydrologic and Water Quality Modeling	3
ANS 105	Introduction to Companion Animal Science	3	BEC 330	Principles and Applications of Bioseparations	2
ANS 110	Introduction to Equine Science	3	BEC 436	Introduction to Downstream Process Development	2
ANS 150	Introduction to Animal Science	3	BEC 536	Introduction to Downstream Process Development	2
			BME 207	Biomedical Electronics	4

BME 365	Linear Systems in Biomedical Engineering	3	BBS 201	Introduction to Biopharmaceutical Science	3
BME 385	Bioinstrumentation	3	BBS 301	Process Validation Science	3
BME 412	Biomedical Signal Processing	3	BBS 426	Upstream Biomanufacturing Laboratory	2
BME 425	Bioelectricity	3	BBS 526	Upstream Biomanufacturing Laboratory	2
BME 525	Bioelectricity	3	BCH 220	Role of Biotechnology in Society	3
CS 470	Advanced Turfgrass Pest Management	2	BEC 426	Upstream Biomanufacturing Laboratory	2
ECI 424	Student Teaching in Modern Foreign Languages	12	BEC 483		2
ENT 470	Advanced Turfgrass Pest Management	2	BEC 526	Upstream Biomanufacturing Laboratory	2
FM 425	Feed Manufacturing Technology	3	BEC 583		2
FM 525	Feed Manufacturing Technology	3	BME 375	Biomedical Microcontroller Applications	3
FS 322	Muscle Foods and Eggs	3	BME 444	Orthopaedic Biomechanics	3
FS 324	Milk and Dairy Products	3	BME 451	BME Senior Design: Product Development	3
FS 435	Food Safety Management Systems	3	BME 452	BME Senior Design: Product Implementation and Strategy	3
FS 535	Food Safety Management Systems	3	BME 466	Polymeric Biomaterials Engineering	3
NTR 425	Feed Manufacturing Technology	3	BME 467	Mechanics of Tissues & Implants Requirements	3
NTR 454	Lactation, Milk and Nutrition	3	BME 483	Tissue Engineering Technologies	2
NTR 525	Feed Manufacturing Technology	3	BME 484	Fundamentals of Tissue Engineering	3
PB 208	Agricultural Biotechnology: Issues and Implications	3	BME 544	Orthopaedic Biomechanics	3
PO 322	Muscle Foods and Eggs	3	BME 566	Polymeric Biomaterials Engineering	3
PO 425	Feed Manufacturing Technology	3	BME 583	Tissue Engineering Technologies	2
PO 525	Feed Manufacturing Technology	3	BME 584	Fundamentals of Tissue Engineering	3
PP 470	Advanced Turfgrass Pest Management	2	CS 200	Introduction to Turfgrass Management	4
SSC 440	Geographic Information Systems (GIS) in Soil Science and Agriculture	3	CS 210	Lawns and Sports Turf	3
SSC 473	Introduction to Hydrologic and Water Quality Modeling	3	CS 213	Crop Science	3
SSC 540	Geographic Information Systems (GIS) in Soil Science and Agriculture	3	CS 216	Southern Row Crop Production - Cotton, Peanuts, and Tobacco	3
SSC 573	Introduction to Hydrologic and Water Quality Modeling	3	CS 218	Southern Row Crop Production - Corn, Small Grains and Soybeans	3
USC 291	Service Learning Program Leader Development I	1	CS 230	Introduction to Agroecology	3
USC 292	Service Learning Program Leader Development II	2	CS 400	Turf Cultural Systems	3
Group C - Applied Sci & Tech			CS 411		3
AEC 420	Introduction to Fisheries Science	3	CS 413	Plant Breeding	2
AEE 206	Introduction to Teaching Agriculture	3	CS 414	Weed Science	4
AEE 303	Administration and Supervision of Student Organizations	3	CS 415	Integrated Pest Management	3
AEE 322	Experiential Learning in Agriculture	3	CS 424	Seed Physiology	3
AEE 327	Conducting Summer Programs in Agricultural Education	1	CS 430	Advanced Agroecology	4
AEE 424	Planning Agricultural Educational Programs	3	CS 465	Turf Management Systems and Environmental Quality	3
AEE 426	Methods of Teaching Agriculture	3	CS 524	Seed Physiology	3
AEE 427	Student Teaching in Agriculture	8	CS 565	Turf Management Systems and Environmental Quality	3
ANS 322	Muscle Foods and Eggs	3	CSSC 490	Senior Seminar in Crop Science and Soil Science	1
ANS 324	Milk and Dairy Products	3	ECI 424	Student Teaching in Modern Foreign Languages	12
ANS 330	Laboratory Animal Science	3	ENT 203	An Introduction to the Honey Bee and Beekeeping	3
ANS 411	Management of Growing and Performance Horses	3	ENT 401	Honey Bee Biology and Management	3
ANS 425	Feed Manufacturing Technology	3	ES 100	Introduction to Environmental Sciences	3
ANS 525	Feed Manufacturing Technology	3	ES 200	Climate Change and Sustainability	3
BAE 325	Introductory Geomatics	3	ES 300	Energy and Environment	3
BAE 425	Industrial Microbiology and Bioprocessing	3	ES 400	Analysis of Environmental Issues	3
BAE 525	Industrial Microbiology and Bioprocessing	3	FM 425	Feed Manufacturing Technology	3
BAE 535	Precision Agriculture Technology	3	FM 460	Feed Mill Operations and Leadership	3
			FM 480	Feed Quality Assurance & Formulation	3

FM 490	Feed Science Seminar	1	NR 420	Watershed and Wetlands Hydrology	4
FM 525	Feed Manufacturing Technology	3	NR 460	Renewable Natural Resource Management and Policy	3
FOR 318	Forest Pathology	3	NR 520	Watershed and Wetlands Hydrology	4
FOR 420	Watershed and Wetlands Hydrology	4	NR 560	Renewable Natural Resource Management and Policy	3
FOR 472	Forest Soils	4	NTR 425	Feed Manufacturing Technology	3
FOR 520	Watershed and Wetlands Hydrology	4	NTR 525	Feed Manufacturing Technology	3
FS 201	Introduction to Food Science	3	PO 322	Muscle Foods and Eggs	3
FS 290	Careers in Food and Bioprocessing Sciences	1	PO 424	Poultry Meat Production	3
FS 322	Muscle Foods and Eggs	3	PO 425	Feed Manufacturing Technology	3
FS 324	Milk and Dairy Products	3	PO 435	Poultry Incubation & Breeding	4
FS 330	Science of Food Preparation	3	PO 525	Feed Manufacturing Technology	3
FS 352	Introduction to Microbiological Food Safety Hazards	3	PP 318	Forest Pathology	3
FS 354	Food Sanitation	3	SSC 440	Geographic Information Systems (GIS) in Soil Science and Agriculture	3
FS 416	Quality Control in Food and Bioprocessing	3	SSC 462	Soil-Crop Management Systems	3
FS 421	Food Preservation	3	SSC 540	Geographic Information Systems (GIS) in Soil Science and Agriculture	3
FS 426	Upstream Biomanufacturing Laboratory	2	TE 466	Polymeric Biomaterials Engineering	3
FS 435	Food Safety Management Systems	3	TE 467	Mechanics of Tissues & Implants Requirements	3
FS 453	Food Laws and Regulations	3	TE 566	Polymeric Biomaterials Engineering	3
FS 462	Postharvest Physiology	3	VMP 401	Poultry Diseases	4
FS 475	Problems and Design in Food and Bioprocessing Science	3	VMP 420	Disease of Farm Animals	3
FS 516	Quality Control in Food and Bioprocessing	3	Group C - Applied Sci & Tech		
FS 521	Food Preservation	3	AEC 419	Freshwater Ecology	4
FS 526	Upstream Biomanufacturing Laboratory	2	AEC 423	Introduction to Fisheries Sciences Laboratory	1
FS 535	Food Safety Management Systems	3	AEC 519	Freshwater Ecology	4
FS 553	Food Laws and Regulations	3	BAET 323	Water Management	3
FS 562	Postharvest Physiology	3	ANS 322	Muscle Foods and Eggs	3
FW 221	Conservation of Natural Resources	3	ANS 425	Feed Manufacturing Technology	3
FW 311	Piedmont Wildlife Ecology and Management	3	ANS 525	Feed Manufacturing Technology	3
FW 312	Fisheries Techniques and Management	1	BIO 227	Understanding Structural Diversity through Biological Illustration	3
FW 313	Mountain Wildlife Ecology and Management	1	BME 204		3
FW 314	Coastal Ecology and Management	1	BME 217	Biomedical Electronics Laboratory	1
FW 353	Wildlife Management	3	BME 298	Biomedical Engineering Design and Manufacturing I	2
FW 403	Urban Wildlife Management	3	BME 398	Biomedical Engineering Design and Manufacturing II	2
FW 411	Human Dimensions of Wildlife and Fisheries	3	CS 470	Advanced Turfgrass Pest Management	2
FW 453	Principles of Wildlife Science	4	CSSC 490	Senior Seminar in Crop Science and Soil Science	1
FW 460	International Wildlife Management and Conservation	3	ENT 470	Advanced Turfgrass Pest Management	2
FW 465	African Ecology and Conservation	4	FM 425	Feed Manufacturing Technology	3
FW 511	Human Dimensions of Wildlife and Fisheries	3	FM 525	Feed Manufacturing Technology	3
FW 560	International Wildlife Management and Conservation	3	FOR 318	Forest Pathology	3
FW 565	African Ecology and Conservation	4	FOR 420	Watershed and Wetlands Hydrology	4
GPH 201		3	FOR 472	Forest Soils	4
HS 432	Introduction to Permaculture	3	FOR 520	Watershed and Wetlands Hydrology	4
HS 462	Postharvest Physiology	3	FS 322	Muscle Foods and Eggs	3
HS 532	Introduction to Permaculture	3	FS 435	Food Safety Management Systems	3
HS 562	Postharvest Physiology	3	FS 462	Postharvest Physiology	3
IDS 303	Humans and the Environment	3	FS 535	Food Safety Management Systems	3
NR 303	Humans and the Environment	3			
NR 350	International Sustainable Resource Use	4			
NR 406	Conservation of Biological Diversity	3			

FS 562	Postharvest Physiology	3
FW 221	Conservation of Natural Resources	3
FW 404	Wildlife Habitat Management	3
FW 460	International Wildlife Management and Conservation	3
FW 560	International Wildlife Management and Conservation	3
HS 200	Home Horticulture	3
HS 201	The World of Horticulture: Principles and Practices	3
HS 203	Home Plant Propagation	3
HS 242	Landscape Design Introduction	3
HS 250	Home Landscape Design: Creating Garden Spaces	3
HS 252	Landscape Design Graphic Communication	2
HS 272	Landscape Design/Build	6
HS 290	Horticulture: Careers and Opportunities	1
HS 301	Plant Propagation	4
HS 302	Gardening with Herbaceous Perennials	3
HS 303	Ornamental Plant Identification I	3
HS 304	Ornamental Plant Identification II	3
HS 357	Landscape Design Grading and Drainage	4
HS 400	Residential Landscaping	6
HS 411	Nursery Management	3
HS 416	Landscape Planting Design	4
HS 421	Temperate-Zone Tree Fruits: Physiology and Culture	3
HS 422	Small Fruit Production	3
HS 431	Vegetable Production	4
HS 440	Greenhouse Management	3
HS 442	Floriculture Crop Production	3
HS 462	Postharvest Physiology	3
HS 471	Landscape Ecosystem Management	4
HS 516	Landscape Planting Design	4
HS 521	Temperate-Zone Tree Fruits: Physiology and Culture	3
HS 562	Postharvest Physiology	3
IDS 303	Humans and the Environment	3
NR 300	Natural Resource Measurements	4
NR 303	Humans and the Environment	3
NR 400	Natural Resource Management	4
NR 420	Watershed and Wetlands Hydrology	4
NR 421	Wetland Science and Management	3
NR 460	Renewable Natural Resource Management and Policy	3
NR 484	Environmental Impact Assessment	4
NR 500	Natural Resource Management	4
NR 520	Watershed and Wetlands Hydrology	4
NR 521	Wetland Science and Management	3
NR 560	Renewable Natural Resource Management and Policy	3
NTR 425	Feed Manufacturing Technology	3
NTR 525	Feed Manufacturing Technology	3
PO 201	Poultry Science and Production	3

PO 201A	Poultry Science and Production	3
PO 202	Poultry Science and Production Laboratory	1
PO 202A	Poultry Science and Production Laboratory	1
PO 290	Exploring Opportunities in Poultry Science	1
PO 322	Muscle Foods and Eggs	3
PO 340	Live Poultry and Poultry Product Evaluation, Grading, and Inspection	3
PO 410	Production and Management of Game Birds in Confinement	3
PO 411	Agrosecurity	3
PO 421	Commercial Egg Production	3
PO 425	Feed Manufacturing Technology	3
PO 433	Poultry Processing and Products	3
PO 525	Feed Manufacturing Technology	3
PO 533	Poultry Processing and Products	3
PP 315	Principles of Plant Pathology	4
PP 318	Forest Pathology	3
PP 470	Advanced Turfgrass Pest Management	2
SSC 185	Land and Life	3
SSC 341	Soil Fertility and Nutrient Management	3
SSC 342	Soil and Plant Nutrient Analysis	1
SSC 421		3
SSC 440	Geographic Information Systems (GIS) in Soil Science and Agriculture	3
SSC 442	Soil and Environmental Biogeochemistry	3
SSC 452	Soil Classification	4
SSC 461	Soil Physical Properties and Plant Growth	3
SSC 462	Soil-Crop Management Systems	3
SSC 470	Wetland Soils	3
SSC 540	Geographic Information Systems (GIS) in Soil Science and Agriculture	3
SSC 570	Wetland Soils	3
TOX 201	Poisons, People and the Environment	3
TOX 401	Principles of Toxicology	4
TOX 415	Ecotoxicology	4
TOX 501	Principles of Toxicology	4
GOH 201	Foundations of Global One Health	3

Semester Sequence

This is a sample.

First Year

Fall Semester		Hours
ALS 103	First-year Success in Agriculture and Life Sciences ¹	1
ANS 150	Introduction to Animal Science ²	3
ANS 151	Introduction to Animal Science Lab	1
BIO 181	Introductory Biology: Ecology, Evolution, and Biodiversity	4
ENG 101	Academic Writing and Research ²	4
MA 107	Precalculus I ²	3
Hours		16

Spring Semester

CH 101	Chemistry - A Molecular Science ²	3
CH 102	General Chemistry Laboratory	1
Animal Science Course (p. 2)		3
MA 121 or MA 131	Elements of Calculus or Calculus for Life and Management Sciences A	3
BIO 183	Introductory Biology: Cellular and Molecular Biology	4
Hours		14

Second Year**Fall Semester**

ANS 205	Physiology of Domestic Animals	3
ANS 206	Anatomy of Domestic Animals Lab	1
Select one of the following:		3
ANS 215	Agricultural Genetics	
CALS Group A, B, or C Elective (p. 3)		
Economics Course (p. 1)		3
CH 221	Organic Chemistry I	3
CH 222	Organic Chemistry I Lab	1
Communications Course (p. 1) ⁶		3
Hours		17

Spring Semester

ANS 220	Reproductive Physiology	3
ANS 221	Reproductive Physiology Lab	1
CH 223	Organic Chemistry II	3
CH 224	Organic Chemistry II Lab	1
ST 311	Introduction to Statistics	3
GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)		3
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1
Hours		15

Third Year**Fall Semester**

ANS 230	Animal Nutrition	3
ANS 231	Animal Nutrition Lab	1
CH 201	Chemistry - A Quantitative Science	3
CH 202	Quantitative Chemistry Laboratory	1
MB 351 or MB 360	General Microbiology or Scientific Inquiry in Microbiology: At the Bench	3
PY 211 or PY 131	College Physics I or Conceptual Physics	4
Hours		15

Spring Semester

Select one of the following		4
GN 311	Principles of Genetics	
CALS Group A, B, or C Elective (p. 3)		
CALS Group A, B, or C Elective (p. 3) ^{4,5}		4
GEP Health and Exercise Studies (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-health-exercise-studies/)		1

GEP Humanities (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-humanities/)	3
ANS Animal Management Elective (p. 1)	3

Hours	15
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Fourth Year**Fall Semester**

ANS Discipline Course Elective (p. 2)	3
GEP Social Sciences (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-social-sciences/)	3
GEP Interdisciplinary Perspectives (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/gep-interdisciplinary-perspectives/)	6
Free Elective ⁴	3

Hours	15
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Spring Semester

ANS Discipline Course Elective (p. 2)	3
Animal Science Course (p. 2)	2
GEP Elective (http://catalog.ncsu.edu/undergraduate/gep-category-requirements/)	3
Free Elective ⁴	5

Hours	13
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Total Hours	120
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- ¹ Use of animals and animal specimens is critical to our educational program. To obtain full credit for Animal Science courses, students are required to participate in laboratory procedures involving animals and animal specimens. All activities with live animals are IACUC (Institutional Animal Care and Use Committee) approved. Many lectures also incorporate animals or animal specimens into the course.
- ² ANS 150 Introduction to Animal Science, MA 107 Precalculus I, ENG 101 Academic Writing and Research, and CH 101 Chemistry - A Molecular Science must be completed with a grade of C-minus or higher, and the student should repeat the course in the semester following the initial attempt if less than a C-minus is earned.
- ³ Pre-vet students: this course also meets a vet school requirement.
- ⁴ Students are encouraged to take an Ethics course as part of their Humanities, Additional Breadth, Interdisciplinary Perspectives, or Free Electives.

Career Opportunities

Career Titles

- Agricultural Research Technician
- Animal Breeder
- Animal Science Instructor
- Animal Nutritionist
- Sales Representative of Animal Health/Animal Products

Learn More About Careers

NCcareers.org (<https://nccareers.org/>)

Explore North Carolina's central online resource for students, parents, educators, job seekers and career counselors looking for high quality job and career information.

Occupational Outlook Handbook (<https://www.bls.gov/ooh/>)

Browse the Occupational Outlook Handbook published by the Bureau of Labor Statistics to view state and area employment and wage statistics.

You can also identify and compare similar occupations based on your interests.

Career One Stop Videos (<https://www.careeronestop.org/>)

View videos that provide career details and information on wages, employment trends, skills needed, and more for any occupation.

Sponsored by the U.S. Department of Labor.

Focus 2 Career Assessment (<https://careers.dasa.ncsu.edu/explore-careers/career-assessments/>) (NC State student email address required)

This career, major and education planning system is available to current NC State students to learn about how your values, interests, competencies, and personality fit into the NC State majors and your future career. An NC State email address is required to create an account. Make an appointment with your career counselor (<https://careers.dasa.ncsu.edu/about/hours-appointments/>) to discuss the results.

Focus 2 Apply Assessment (<https://www.focus2career.com/Portal/Register.cfm?SID=1929>) (Available to prospective students)

A career assessment tool designed to support prospective students in exploring and choosing the right major and career path based on your unique personality, interests, skills and values. Get started with Focus 2 Apply and see how it can guide your journey at NC State.