

Animal Science Major Requirements

For Students Beginning Fall Semester 2018

www.ansci.umn.edu/UndergraduateProgram

Student *must* select or will be admitted to one emphasis area:

1) Industry & Business, 2) Production, 3) Companion Animal, 4) Equine or 5) Pre-Vet/Science

Writ	1301	(4)	ALL	Freshman Writing
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FOUNDATION REQUIREMENTS

Biol	1009	(4)	ALL*	General Biology ^x
Comm	1101	(3)	F,S,SS*	Intro to Public Speaking ^x
Writ	3562W	(4)	ALL	Technical & Prof Writing ^{#x}
Math	1031	(3)	ALL	College Algebra ^x
or Math	1142	(4)	ALL*	Short Calculus ^x
or Math	1271	(4)	ALL*	Calculus I ^x

PROFESSIONAL REQUIREMENTS

AnSc	1101	(4)	F/S	Intro Animal Science
AnSc	2401	(3)	F	Animal Nutrition
AnSc	3011	(4)	F, S	Statistics for Animal Scientists
AnSc	3301	(3)	F, S	Human & Animal Phys Lec
AnSc	3302	(1)	F, S	Human & Animal Phys Lab
AnSc	3221	(4)	F	Animal Breeding
AnSc	4096	(3)	ALL	Prof Exp Program: Internship
or AnSc	4009W	(6)	ALL	Undergrad Research Thesis

Choose at least 1 course/course grouping from Management courses

AnSc	4601	(4)	F/odd	Pork Prod Systems Mgmt
AnSc	4602	(4)	S	Sheep Prod Systems Mgmt
AnSc	4603	(4)	F	Beef Prod Systems Mgmt
AnSc	4604	(4)	S	Dairy Prod Systems Mgmt
VCS	4606	(3)	F,S	Small Animal Mgmt
AnSc	2055	(2)	F	Horse Mgmt <i>and</i>
and AnSc	2056	(2)	F	Horse Mgmt Practicum

Approved course from Midwest Poultry Consortium

SCIENCES REQUIRED

All non-Pre-vet/Science Emphases

Chem	1015	(3)	ALL	Intro Chemistry Lec ^x (<i>online only</i>)
Chem	1017	(1)	ALL*	Intro Chemistry Lab ^x
BioC	2011	(3)	F*, S*	Biochem for Ag & Health Sci
or Hort	2100	(3)	F	Agricultural Biochemistry

Pre-Vet /Science

Chem	1061	(3)	ALL*	Chemistry Principles I Lec ^x
Chem	1065	(1)	ALL*	Chemistry Principles I Lab
Chem	1062	(3)	ALL*	Chemistry Principles II Lec
Chem	1066	(1)	ALL*	Chemistry Principles II Lab
Chem	2301	(3)	ALL*	Organic Chemistry I Lec
OR Chem	1081	(3)	F*	Chemistry for Life Sciences
Chem	1065	(1)	All*	Chemistry Principles I Lab
Chem	1082	(3)	S*	Chemistry for Life Sciences II
Chem	1066	(1)	S*	Chemistry for Life Sciences II Lab
Chem	2081	(3)	F*	Chemistry for Life Sciences III
Chem	2085	(2)	F*	Chemistry for Life Sciences III Lab
Bioc	3021	(3)	F*, S	Biochemistry

And at least 7 credits from the following:

Chem	2311	(4)	ALL*	Organic Chemistry Lab
GCD	3022	(3)	F,S*	Genetics
VBS	2032	(5)	F,S*	General Microbiology w/Lab (<i>lec & lab campus locations may differ</i>)
or FScN	2021	(4)	F, S	Intro Microbiology w/Lab
Phys	1101W	(4)	F*S*	Introductory College Physics I ^x
Phys	1102W	(4)	S*	Introductory College Physics II ^x

Pre-veterinarian students must account for all of the course requirements of the respective professional vet schools for which they plan to apply. Visit http://aaavmc.org/College-Specific-Requirements/College-Specific-Requirements_College-Specifications.aspx.

APPROVED ELECTIVE COURSES

Courses cannot fulfill two areas unless also a liberal education requirement.

AnSc	1011	(3)	F	Animals & Society ^x
AnSc	1201	(3)	S	Backyard Chickens–Sci and Practice
AnSc	1403	(3)	S	Companion Animal Nutrition & Care
AnSc	1511	(3)	F	Food Animal Prod for Consumers
AnSc	1701	(3)	F	Hist. Influence of Horse on Society ^x
AnSc	2012	(3)	S	Livestock & Carcass Evaluation
Ansc	2015	(3)	S	Animal Welfare Science/Ethics
Ansc	2016	(3)	S	Intro. to Applied Animal Behavior
AnSc	2055	(2)	F	Horse Mgmt
AnSc	2056	(2)	F	Horse Mgmt Practicum
AnSc	3007	(3)	S	Equine Nutrition
Ansc	3015	(3)	F	Adv. Animal Welfare Judging
AnSc	3203W	(3)	S	Environ, Global Food Prod & Citizen ^x
AnSc	3305	(4)	F	Repro Biology in Health & Disease
AnSc	3307	(1)	S	Artificial Insemination Techniques
AnSc	3403	(3)	F	Companion Animal Hot Button Issues
AnSc	3509	(4)	F	Animal Biotechnology
AnSc	3511	(3)	S	Animal Growth & Development
AnSc	3609	(2)	F/S	Business Planning for Animal Enterprises
AnSc	3801	(3)	S	Livestock Merchandising
AnSc	4011	(3)	S	Dairy Cattle Genetics
AnSc	4305	(2)	S	Companion & Wild Species Repro
AnSc	4401	(3)	F	Swine Nutrition
AnSc	4403	(3)	S	Ruminant Nutrition
AnSc	4404	(2)	F	Applied Dairy Nutrition
AnSc	4601	(4)	F/odd	Pork Production Systems Mgmt
AnSc	4602	(4)	S	Sheep Production Systems Mgmt
AnSc	4603	(4)	F	Beef Production Systems Mgmt
AnSc	4604	(4)	S	Dairy Production Systems Mgmt
AnSc	4613	(2)	F	Advanced Beef Prod Systems Mgmt
AnSc	4614	(4)	S	Advanced Dairy Prod Systems Mgmt
CFAN	3091V	(3)	F	Research Proposals: Ideas/Strategic Planning
AFEE	2051	(3)	F	Current Technical Competencies
Agro	1103	(4)	F	Crops, Environment & Society ^x
ApEc	1101	(4)	F,S	Principles of Microeconomics ^x
ApEc	1251	(3)	F	Principles of Accounting
ApEc	3411	(3)	F	Commodity Marketing
ApEc	3451	(3)	S	Food and Agricultural Sales
ApEc	3811	(3)	F	Principles of Farm Management
CFAN	1501	(3)	S	Biotech, People & the Environment ^{xΩ}
Ent	3281	(3)	F	Veterinary Entomology
FScN	1102	(3)	F, S	Food: Safety, Risks, & Technology ^{xΩ}
FScN	2021	(4)	F,S	Gen Microbiology w/Lab
GCD	3022	(3)	F,S	Genetics
Soil	2125	(4)	F, S	Basic Soil Science ^x
VBS	2032	(5)	F,S*	Intro Microbiology w/Lab (<i>lecture & lab campus locations may differ</i>)
VBS	2100	(3)	S	Comp. Animal Anatomy w/ Dissection
VCS	4606	(3)	F,S	Small Animal Management

EMPHASES AREAS-MUST SELECT ONE

1) INDUSTRY & BUSINESS

ApEc 1101 (4) F, S Principles of Microeconomics*

Choose at least 12 credits from:

AnSc 3801 (3) S Livestock Merchandising
 ApEc 1102 (3) S Principles of Macroeconomics
 ApEc 1251 (3) F Principles of Accounting
 ApEc 3001 (4) F, S Appl Microecon: Consrms, etc.^
 ApEc 3002 (4) F, S Appl Microecon: Mgmt Econ
 ApEc 3411 (3) F Commodity Marketing
 ApEc 3451 (3) S Food & Agricultural Sales
 ApEc 3501 (3) F Agribusiness Finance
 ApEc 3811 (3) F Principles of Farm Mgmt
 ApEc 3821 (3) S Retail Center Mgmt
 ApEc 4451W (3) F Food Marketing Economics
 ApEc 4821W (3) S Business Economics & Strategy
 Comm 3411 (3) ALL* Intro to Small Group Comm
 Jour 3201 (3) ALL* Princ of Strategic Com: Advert
 Jour 4551 (3) ALL* New Media and Culture
 Writ 3152W (4) F*, S* Writing on Issues in Sci & Tech*
 Writ 3257 (3) ALL Scientific & Tech Presentations

AND

Choose at least 6 credits from the “Approved Elective Courses” list.

2. PRODUCTION

AnSc 3609 (2) F,S Business Planning for Animal Enterprises
 ApEc 1101 (4) F,S Principles of Microeconomics*
 Agro 1103 (4) F Crops, Environment & Society*

AND

Choose at least 18 credits from the “Approved Elective Courses” list. (Students should choose a concentration area in at least one species via the approved list of electives. Consult an advisor with questions.)

3. COMPANION ANIMAL

Students in this emphasis are encouraged to take VCS 4606 Small Animal Management to meet the management course requirement.

AnSc 3609 (2) F,S Business Planning for Animal Enterprises

AND

Choose at 6 credits from the companion animal offerings:

AnSc 1403 (3) S Comp. Animal Nut. and Care
 AnSc 3403 (3) F Comp. Animal Hot Button Issues
 AnSc 4305 (2) S Comp. and Wild Specie Reprod.
 VBS 2100 (3) S Comp. Animal Anatomy w/ Dissect.

AND

Choose at least 11 credits from the “Approved Electives Courses” list

4. EQUINE

Students in this emphasis are encouraged to take AnSc 2055 Horse Management and AnSc 2056 Horse Management Practicum to meet the management course requirement.

Agro 1103 (4) F Crops, Environment & Society*
 ApEc 1101 (4) F,S Principles of Microeconomics*

AND

Choose at least two of the following courses:

AnSc 3609 (2) F,S Business Planning for Animal Enterprises
 ApEc 1251 (3) F Principles of Accounting
 ApEc 3451 (3) S Food & Agricultural Sales
 AnSc 1701 (3) F Historical Influence of the Horse*
 AnSc 3007 (3) S Equine Nutrition

AND

Choose at least 8 credits from the “Approved Electives Courses” list

5. PRE-VET/SCIENCE

Choose at least 12 credits from the “Approved Elective Courses” list.

Pre-veterinarian students should/must account for the course requirements of the respective College of Veterinary Medicine Schools they hope to apply to when choosing other electives.

The requirements for Animal Science degree do not account for 120 total credits. The student is responsible for finding remaining credits to meet the 120 required by the University for a bachelor’s degree based upon emphasis chosen.

**Liberal Education Requirements of the University must also be met:
 (Some of these areas are met by required courses in this major)**

Biological and Physical Sciences with Lab (4 cr/each), Humanities/Literature (6 cr), Social Science, Historical Perspectives, Mathematical (3 cr/each), and four of the following: Environment, Diversity, Global, Civic Ethics, Tech and Society (3 credits each), and freshman/University writing and four writing-intensive courses.

A “W” after any course number indicates the class is approved as writing intensive

F = Fall; S = Spring; SS = Summer

ALL = Fall, Spring & Summer

***Class held on Minneapolis campus**

×Meets lib ed requirement

#Counts as two upper division writing intensive courses

^Calculus required ΩMeets College Interdisciplinary Requirement

Specie Concentration Course Suggestions

Dairy

AnSc 1511	(3)	F	Food Animal Products for Consumers
AnSc 2012	(3)	S	Livestock and Carcass Evaluation
AnSc 4011	(3)	S	Dairy Cattle Genetics
AnSc 4403	(3)	S	Ruminant Nutrition
AnSc 4404	(2)	F	Applied Dairy Nutrition
AnSc 4604	(4)	S	Dairy Production Systems Management [±]
AnSc 4614	(4)	S	Advanced Dairy Production Systems Management

Beef

AnSc 1511	(3)	F	Food Animal Products for Consumers
AnSc 2012	(3)	S	Livestock and Carcass Evaluation
AnSc 3801	(3)	S	Livestock Merchandising [±]
AnSc 4099	(2)	F	Special Workshop-Feeding and Managing Cattle in the Feedlot
AnSc 4403	(3)	S	Ruminant Nutrition
AnSc 4603	(4)	F	Beef Production Systems Management [±]
AnSc 4613	(2)	F	Advanced Beef Production Systems Management

Companion Animal

AnSc 1403	(3)	S	Companion Animal Nutrition and Care [±]
AnSc 3403	(3)	F	Companion Animal Hot Button Issues [±]
AnSc 4305	(2)	S	Companion and Wild Specie Reproduction [±]
VBS 2100	(3)	S	Small Animal Anatomy with Dissection Lab [±]
VCS 4606	(3)	S	Small Animal Management [±]

Equine

AnSc 1701	(3)	F	Historical Influence of the Horse on Society [±]
AnSc 2055	(2)	F	Horse Management [±]
AnSc 2056	(2)	F	Horse Management Practicum [±]
AnSc 3007	(3)	S	Equine Nutrition [±]
VPM 2500	(2)	S	Equine Breeding and Genetics

Poultry

AnSc 1511	(3)	F	Food Animal Products for Consumers
AnSc 1201	(3)	S	Backyard Chickens, Science and Practice
AnSc 2012	(3)	S	Livestock and Carcass Evaluation
AnSc 4099	(2)	F	Special Workshop-Introduction to Poultry Production

Midwest Poultry Consortium courses (up to six courses totaling 18 credits may be taken over two summers in Madison, WI. See your advisor for more information or visit www.mpc.com)

Sheep

AnSc 1511	(3)	F	Food Animal Products for Consumers
AnSc 2012	(3)	S	Livestock and Carcass Evaluation
AnSc 3801	(3)	S	Livestock Merchandising [±]
AnSc 4403	(3)	S	Ruminant Nutrition
AnSc 4602	(4)	S	Sheep Production Systems Management [±]

Swine

AnSc 1511	(3)	F	Food Animal Products for Consumers
AnSc 2012	(3)	S	Livestock and Carcass Evaluation
AnSc 3801	(3)	S	Livestock Merchandising [±]
AnSc 4401	(3)	F	Swine Nutrition
AnSc 4601	(4)	F	Pork Production Systems Management [±]

Zoo/Exotic

Biol 2012	(4)	F,S	Zoology
Biol 3411	(3)	F,S	Introduction to Animal Behavior
FW 2003	(3)	S	Marine Biology
FW 4101	(3)	S	Herpetology
FW 4103	(3)	S	Wildlife Management
FW 5603 W	(3)	F	Habitats and Regulation of Wildlife

Individualized

Courses may be selected in a discipline concentration according to the students' interest(s) in consultation with an Animal Science advisor.

[±]Course may not count in two areas unless liberal education or interdisciplinary