

BACHELOR OF SCIENCE DEGREE

ANIMAL SCIENCE

COORDINATE MAJOR

FOR ADDITIONAL INFORMATION, PLEASE CONTACT THE **DEPARTMENT OF ANIMAL SCIENCE**

(1) UNIVERSITY REQUIREMENTS

Writing Requirement

Tier I: LB 133 4
 Tier II: Satisfied by completing the Lyman Briggs College History, Philosophy and Sociology of Science and Senior requirements listed below.

Integrative Studies in Arts & Humanities (IAH)

IAH 201-210* 4
 IAH 211-241*†# 4

Integrative Studies in Social, Behavioral & Economic Sciences (ISS)

ISS 200-level course* 4
 ISS 300-level course*†@ 4

*National, International, & Multicultural Diversity
 Students must include at least one "N" course and one "I" course in their Integrative Studies programs. A "D" course may meet either an "N" or an "I" requirement, but not both.

†Summer 2013 to Summer 2017: LB 331, 333, and 336 will fulfill the IAH "B" university requirement (IAH 211 or higher). Please consult your LBC Academic Advisor for specific details for your program.

‡Summer 2013 to Summer 2017; LB 332, 334, and 335 will fulfill the ISS 300-level university requirement. Please consult your LBC Academic Advisor for specific details for your program.

Beginning Fall 2017; LB 321a, 322a, 323a, 324a, 325a, 326a and 327a will fulfill the IAH university requirement (IAH 211 or higher).

@ Beginning Fall 2017; LB 321b, 322b, 323b, 324b, 325b, 326b and 327b will fulfill the ISS 300-level university requirement.

Please contact your LBC Academic Advisor for specific details for your program. If you fulfilled the LB 331, 332, 333, 334, 335 or 336 requirement you do not need the new Fall 2017 courses.

Mathematics, Biological and Physical Sciences

Satisfied by the Lyman Briggs College requirements in Mathematics, Biological and Physical Sciences (see next section).

(2) LYMAN BRIGGS COLLEGE REQUIREMENTS

Biological Sciences (9 cr.)

Complete ONE of the following groups of courses
 (1) LB 144 & 145* 9
 (2) BS 161, 162, 171, & 172^ 10

Chemistry (8-9 cr.)

Complete ONE of the following groups of courses
 (1) LB 171 & 171L 8†
 (2) CEM 141 & 161 7†

Physics (8 cr.)

Complete ONE of the following groups of courses
 (1) LB 273, 274* 8
 (2) PHY 231, 232, 251, & 252^ 8

Mathematics (6-7 cr.)

Complete ONE of the following groups of courses
 (1) LB 118 & STT 231 7
 (2) MTH 132 & STT 231 7

History, Philosophy & Sociology of Science (10-12 cr.)

LB 133 4
 LB 321-327, 330-336, 355, 490E; ENG 473A; HST 425; SOC 368 7-8

Senior Seminar (4 cr.)

LB 492 4

^Biology, Chemistry, Mathematics and Physics courses also meet graduation requirements for major

†LBC Chemistry requirement met with completion of Organic Chemistry. See an academic advisor for more information.

Minimum number of credits required: 120

Minimum cumulative and major grade point average: 2.0

(3) MAJOR REQUIREMENTS

Complete ALL of the following courses (20 cr.)

ANS	101	Professional Development in ANS I	1
ANS	110	Introductory Animal Agriculture	4
ANS	301 prefer	Professional Development in ANS II	2
ANS	313	Principles of Animal Feeding/Nutrition	4
ANS	314	Genetic Improvement of Dom. Animals.	4
ANS	315	Anatomy & Physiology of Farm Animals	4
ANS	401	Issues in Animal Agriculture	1

Complete ONE of the following courses (3-4 cr.)

CEM	143	Survey of Organic Chemistry	4
CEM	251	Organic Chemistry I	3

Complete ONE of the following courses (3 cr.)

ANS	222	Intro Beef Cattle Management	3
ANS	232	Intro Dairy Cattle Management	3
ANS	242	Intro Horse Management	3
ANS	252	Intro to Management of Avian Species	3
ANS	262	Intro Sheep Management	3
ANS	272	Intro Swine Management	3
ANS	282	Intro Companion Animal Management	3

Complete ONE of the following concentrations

(1) Animal Industry (23-34 cr.) code: 2737

ANS	210	Animal Products	4
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Complete ONE of the following courses (2-3 cr.)

CSE	101	Computing Concepts & Competencies	3
CSS	110	Computer Applications in Agronomy	2

Complete ONE of the following courses (3 cr.)

ABM	100	Decision-making in the Agri-Food System	3
ABM	130	Farm Management I	3

Complete ONE of the following courses (3 cr.)*

ANS	222	Intro Beef Cattle Management	3
ANS	232	Intro Dairy Cattle Management	3
ANS	242	Intro Horse Management	3
ANS	252	Intro to Management of Avian Species	3
ANS	262	Intro Sheep Management	3
ANS	272	Intro Swine Management	3
ANS	282	Intro Companion Animal Management	3

*Must be different from course used for major requirements above

Complete ONE of the following courses (3 cr.)

ANS	422	Advanced Beef Cattle Management	3
ANS	432	Advanced Dairy Cattle Management	3
ANS	442	Advanced Horse Management	3
ANS	472	Advanced Swine Management	3
ANS	482	Advanced Companion Animal Mgmt.	3

Complete THREE of the following courses (6-12 cr.)

ANS	305	Applied Animal Behavior	3
ANS	309	Health & Hygiene of Livestock	3
ANS	404	Advanced Animal Genetics	2
ANS	405	Endocrinology of Reproduction	4
ANS	407	Food & Animal Toxicology	3
ANS	413	Monogastric Animal Nutrition	3
ANS	414	Advanced Animal Breeding	2
ANS	415	Growth & Musculoskeletal Biology	3
ANS	416	Meat Science & Muscle Biology	2
ANS	418	Comprehensive Nutrient Mgmt. Planning	3
ANS	435	Mammary Physiology	4
ANS	445	Equine Exercise Physiology	4
ANS	455	Avian Physiology	4

ANS	483	Ruminant Nutrition	3
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Complete ONE of the following courses (2-6 cr.)

ANS	493	Professional Internship in An. Sci.	3
ANS	300A	Advanced Livestock Judging	2
ANS	300C	Advanced Dairy Cattle Judging	2
ANS	300D	Advanced Horse Judging	2

Six credits in an approved Study Abroad program can be used to fulfill this requirement.

(2) Animal Biology & Preveterinary (39-50 cr.) code: 2738

Complete ALL of the following courses (16cr.)

ANS	210	Animal Products	4
ANS	425	Principles of Animal Biotechnology	3
BMB	401	Basic Biochemistry	4
CEM	252	Organic Chemistry II	3
CEM	255	Organic Chemistry Laboratory	2

Complete THREE of the following courses (7-11 cr.)

ANS	404	Advanced Animal Genetics	2
ANS	405	Endocrinology of Reproduction	4
ANS	413	Monogastric Animal Nutrition	3
ANS	415	Growth & Musculoskeletal Biology	3
ANS	416	Meat Science & Muscle Biology	2
ANS	435	Mammary Physiology	4
ANS	483	Ruminant Nutrition	3

Complete a minimum of 8 credits from the following courses

ANS	305	Applied Animal Behavior	3
ANS	309	Health & Hygiene of Livestock	3
ANS	407	Food & Animal Toxicology	3
ANS	414	Advanced Animal Breeding	2
ANS	418	Comprehensive Nutrient Mgmt Planning	3
ANS	445	Equine Exercise Physiology	4
ANS	455	Avian Physiology	4
MMG	301	Introductory Microbiology	3
MMG	302	Intro Lab for General & Allied Health Microbiology	1
MMG	409	Eukaryotic Cell Biology	3
PHM	450	Introduction to Chemical Toxicity	3
IBIO	313	Animal Behavior	3
IBIO	341	Fundamental Genetics	4

Complete ONE of the following courses (3-6 cr.)

ANS	492	Undergraduate Research in An. Sci.	3
ANS	493	Professional Internship in An. Sci.	3

Six credits in an approved Study Abroad program can be used to fulfill this requirement.

(3) Companion and Exotic Animal Biology (43-52 cr.) code: 2739

Complete ALL of the following courses (15 cr.)

ANS	282	Companion Animal Biology & Mgmt.	3
ANS	482	Advanced Companion Animal Mgmt.	3
CEM	252	Organic Chemistry II	3
CEM	255	Organic Chemistry Laboratory	2
IBIO	328	Comparative Anatomy & Biology of Vertebrates	4

Complete ONE of the following courses (4 cr.)

BMB	200	Introduction to Biochemistry	4
BMB	401	Basic Biochemistry	4

Complete TWO of the following courses (6 to 8 cr.)

ANS	305	Applied Animal Behavior	3
ANS	405	Endocrinology of Reproduction	4
ANS	413	Monogastric Animal Nutrition	3
ANS	435	Mammary Physiology	4
ANS	483	Ruminant Nutrition	3

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Complete FOUR of the following courses (11-15 cr.)

ANS	404	Advanced Genetics	2
ANS	407	Food and Animal Toxicology	3
ANS	415	Growth & Musculoskeletal Biology	3
ANS	418	Comprehensive Nutrient Mgmt Planning	3
ANS	425	Principles of Animal Biotechnology	3
ANS	445	Equine Exercise Physiology	4
ANS	455	Avian Physiology	4
IBIO	313	Animal Behavior	3
IBIO	341	Fundamental Genetics	4
IBIO	355	Ecology	3
IBIO	369	Intro to Zoo & Aquarium Science	3

Complete ONE of the following courses (3-6 cr.)

ANS	492	Undergraduate Research in An. Sci.	3
ANS	493	Professional Internship in An. Sci.	3

Six credits in an approved Study Abroad program can be used to fulfill this requirement.

(4) Production Animal Scholars (52-55 cr.) code: 2740

Complete ALL of the following courses (20 cr.)

ANS	201	Animal Products	4
BMB	401	Basic Biochemistry	4
CEM	252	Organic Chemistry II	3
CEM	255	Organic Chemistry Laboratory	2
MMG	301	Introductory Microbiology	3
MMG	302	Intro Lab for General and Allied Health Microbiology	1
MMG	409	Eukaryotic Cell Biology	3

Complete ONE of the following courses (3 cr.)*

ANS	222	Intro Beef Cattle Management	3
ANS	232	Intro Dairy Cattle Management	3
ANS	252	Intro to Mgmt of Avian Species	3
ANS	262	Intro Sheep Management	3
ANS	272	Intro Swine Management	3

*Must be different from course used for major requirements above

Complete TWO of the following courses (6 cr.)

ABM	435	Financial Mgmt in the Agri-Food System	3
ABM	437	Agribusiness Strategic Management	3
ANS	413	Monogastric Animal Nutrition	3
ANS	483	Ruminant Nutrition	3

Complete ONE of the following courses (3-4 cr.)

ANS	305	Applied Animal Behavior	3
ANS	405	Endocrinology of Reproduction	4
ANS	415	Growth & Musculoskeletal Biology	3
ANS	425	Principles of Animal Biotechnology	3
ANS	435	Mammary Physiology	4

Complete ONE of the following courses (3 cr.)

ANS	422	Advanced Beef Cattle Management	3
ANS	432	Advanced Dairy Cattle Management	3
ANS	472	Advanced Swine Management	3

Complete ONE of the following courses (2-4 cr.)

ANS	404	Advanced Animal Genetics	2
ANS	407	Food & Animal Toxicology	3
ANS	414	Advanced Animal Breeding	2
ANS	416	Meat Science & Muscle Biology	2
ANS	418	Comprehensive Nutrient Mgmt Planning	3
ANS	455	Avian Physiology	4
IBIO	313	Animal Behavior	3
IBIO	341	Fundamental Genetics	4

Complete the following course (2 cr.)

ANS	390	Animal Science Practicum	2
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IMPORTANT: This advising guide is presented for planning purposes only. It is the student's responsibility for knowing and following University, college and departmental requirements as stated in the [Academic Programs Catalog](#).

The Academic Advisors will provide information and suggest others based on expressed interests. It is the student's responsibility for enrolling in classes and selecting the number of credits per semester for success. Appointments are made using the [Student Success Dashboard](#).