

**Department of Animal Science (ANSC) – B.S. Degree
Required Courses**

The Department of Animal Science offers six areas of interest within the ANSC B.S. degree program: **Pre-Vet/Pre-Grad, Animal Biotechnology, Food Science, Equine Science, Business and Production**. Only required courses are listed below; please refer to the Undergraduate Catalog for additional ANSC courses offered.

Note: See pages 2 and 3 for courses recommended for each Area of Interest. ANSC required courses listed on page 4.

Typical scheduling for ANSC required courses. Required courses fill quickly; students unable to enroll in a given semester should register for the course as soon as possible.

ANSC Group A – Example of Eight Semester Schedule

First Semester

ANSC 1001 Introduction to Animal Sciences
BIOL 1107 Principles of Biology I
Then add courses in: ENGL, UNIV (FYE & LC),
GERs (*General Education Requirements*)

Second Semester

ANSC 1111 Principles of Animal Nutrition and Feeding
BIOL 1108 Principles of Biology II
Then add courses in: CHEM, ENGL,
GERs (*General Education Requirements*)

Third Semester

PVS 2100 Anatomy and Physiology of Animals
ANSC 3121 Principles of Animal Genetics
Then add courses in: CHEM, ANSC Group B/C,
GERs (*General Education Requirements*)

Fourth Semester

ANSC3122 Reproductive Physiology
ANSC 3194 Seminar
Then add courses in: CHEM, ANSC Group B/C,
GERs (*General Education Requirements*)

Fifth Semester

Then add courses in: CHEM, ANSC Group B/C,
GERs (*General Education Requirements*)

Sixth Semester

ANSC Group B/C, GERs (*General Education Requirements*)

Seventh and Eight Semesters

Complete ANSC Group B/C and ANSC W Requirements

● **Pre-Vet/Pre-Grad, Biotechnology or Food Science interest:**

(Complete as scheduled above or as soon as possible)

Required: ENGL 1010 or 1011 or 2011 (only one course required)
CHEM 1127Q, 1128Q, 2443, 2444, 2445 (2445 Organic Lab is required for Pre-Vet)

Recommended for Freshmen in their first semester:
UNIV 1810 (ANSC Learning Community) or UNIV 1800 or UNIV 1820

● **Equine, Business or Production interest:**

(Complete as scheduled above or as soon as possible)

Required: ENGL 1010 or 1011 or 2011 (only one course required)
CHEM 1122, 2241

Recommended for Freshmen in their first semester:
UNIV 1810 (FYE; ANSC Learning Community) or UNIV 1800 or UNIV 1820

ANSC Group B, C and W courses:

Group B **Fall:** ANSC 2251, 3261, 3273

Spring: ANSC 2251, ANSC 2271, 3272

Group C **Fall:** ANSC 3313, 3323, 3343, 4311

Spring: ANSC 3311, 3316, 3641, 4341

W Courses **Fall:** ANSC 3314W, 3324W, 3344W, 4312W

Spring: ANSC 3312W 3317W, 3642W, 4342W, 4662W

Note that 1 cr. W courses are taken concurrently with associated Group C lecture course.

Department of Animal Science (ANSC)
Recommended Sequence of Courses
Pre-Vet/Pre-Grad, Biotechnology or Food Science Interest

The following courses are recommended for specific interests. Note that completion of additional courses beyond these recommendations will be necessary to meet additional University requirements, such as a minimum of 120 credits to complete a B.S. degree. Courses are listed in approximate chronological order in order to incorporate pre-requisite requirements; when pre-reqs are not involved more latitude in semester scheduling can be incorporated into academic progress.

If you are interested in **Pre-Vet/Pre-Grad**, recommended courses are*:

| Course | | Credits | Recommended Semester |
|------------|---|---------|----------------------|
| MATH 1131Q | Calculus I | 4 | 1 or 2 |
| MATH 1132Q | Calculus II | 4 | 2 or 3 |
| PHYS 1201Q | General Physics | 4 | 1 or 2 |
| PHYS 1202Q | General Physics | 4 | 2 or 3 |
| MCB 2610 | Fundamentals of Microbiology | 4 | 5 or 6 |
| ANSC 3313 | Growth Biology and Metabolism of Domestic Animals | 3 | 5 or 7 |
| ANSC 3323 | Animal Embryology and Biotechnology | 3 | 5 or 7 |
| ANSC 3311 | Comparative Exercise Physiology | 3 | 6 or 8 |
| MCB 2000 | Biochemistry | 4 | 7 |
| ANSC 3316 | Endocrinology of Farm Animals | 3 | 6 or 8 |

*Check with advisor for requirements of particular veterinary schools

If you are interested in a **Biotechnology** focus, recommended courses are:

| | | | |
|------------|---|-----|--------|
| ANSC 1602 | Behavior and Training of Domestic Animals | 3 | 2 |
| COMM 1100 | Principles of Public Speaking | 3 | 1 or 2 |
| STAT 1100Q | Elementary Concepts of Statistics | 4 | 1 or 2 |
| MCB 2410 | Genetics | 3 | 3 or 4 |
| MCB 2610 | Fundamentals of Microbiology | 4 | 5 or 6 |
| MCB 2000 | Introduction to Biochemistry | 4 | 5 or 6 |
| ANSC 3323 | Animal Embryology and Biotechnology | 3 | 5 or 7 |
| MCB 3412 | Genetic Engineering and Functional Genomics | 3 | 5 or 7 |
| ANSC 5619 | Signaling Pathways | 3 | 5 or 7 |
| ANSC 2699 | Independent Study (Research Project) | Var | 7 or 8 |

If you are interested in a **Food Science** focus, recommended courses are:

| | | | |
|------------|---|---|--------|
| STAT 1100Q | Elementary Concepts of Statistics | 4 | 1 or 2 |
| NUSC 1167 | Food, Culture and Society | 3 | 1 or 3 |
| ANSC 1645 | The Science of Food | 3 | 2 or 4 |
| ANSC 3343 | Animal Food Products | 3 | 5 or 7 |
| MCB 2610 | Fundamentals of Microbiology | 4 | 5 or 6 |
| MCB 2000 | Introduction to Biochemistry | 4 | 5 or 6 |
| NUSC 3233 | Food Composition and Preparation | 3 | 5 or 7 |
| ANSC 3318 | Probiotics and Prebiotics | 3 | 6 or 8 |
| ANSC 3641 | Animal Food Products: Dairy Technology | 3 | 6 or 8 |
| ANSC 4241 | Food Microbiology and Safety | 3 | 6 or 8 |
| ANSC 4642 | Food Microbiology Laboratory (<i>meets in even years</i>) | 1 | 6 or 8 |
| ANSC 5618 | Probiotics and Prebiotics | 3 | 6 or 8 |
| ANSC 5641 | Food Chemistry | 3 | 8 |

Department of Animal Science
Recommended Sequence of Courses
Equine, Business or Production Interest

The following courses are recommended for specific interests. Note that completion of additional courses beyond these recommendations will be necessary to meet additional University requirements, such as a minimum of 120 credits to complete a B.S. degree. Courses are listed in approximate chronological order in order to incorporate pre-requisite requirements; when pre-reqs are not involved more latitude in semester scheduling can be incorporated into academic progress.

If you are interested in an **Equine** focus, recommended courses are:

| Course | Credits | Recommended Semester |
|---|---------|----------------------|
| MATH 1030Q Elementary Discrete Mathematics | 3 | 1 or 2 |
| PYSC 1100 General Psychology I | 3 | 1 or 2 |
| ANSC 1602 Behavior and Training of Domestic Animals | 3 | 2 |
| ANSC 2251 Horse Science | 3 | 3 or 4 |
| PSYC 3201 Animal Behavior | 3 | 3 or 4 |
| ANSC 3453 Pleasure Horse Appreciation and Use | 1 | 3 or 5 |
| PVS 2301 Health and Disease Management of Animals | 3 | 4 |
| ANSC 3452 Horse Breeding Farm Management | 3 | 4 or 6 |
| ARE 3215 Business Management | 3 | 5 or 6 |
| ANSC 3455 Developing the Driving Horse | 2 | 5 or 7 |
| ANSC 3273 Livestock Management | 4 | 5 or 7 |
| ANSC 3311 Comparative Exercise Physiology | 3 | 6 or 8 |
| ANSC 3456 Light Horse Training and Management | 2 | 6 or 8 |
| ANSC 3454 Horse Selection and Evaluation | 2 | 6 or 8 |
| ANSC 4457 Methods of Equitation Instruction | 2 | 8 |

If you are interested in a **Business** focus, recommended courses are:

| | | |
|--|---|--------|
| ECON 1202 Principles of Macroeconomics | 3 | 1 or 2 |
| MATH 1070Q Mathematics for Business and Economics | 3 | 1 or 2 |
| COMM 1100 Principles of Public Speaking | 3 | 1 or 2 |
| STAT 1100Q Elementary Concepts of Statistics | 4 | 1 or 2 |
| ARE 1150 Principles of Agriculture and Resource Economics | 3 | 2 or 3 |
| ECON 1201 Principles of Microeconomics | 3 | 2 or 3 |
| MATH 1071Q Calculus for Business and Economics | 3 | 2 or 3 |
| ACCT 2001 Principles of Financial Accounting | 3 | 3 or 4 |
| ARE 3215 Business Management | 3 | 5 or 6 |
| ARE 3225 Price Analysis and Futures Trading | 3 | 5 or 7 |
| MKTG 3101 Introduction to Marketing Management | 3 | 5 or 6 |
| BLAW 3175 Legal and Ethical Environment of Business | 3 | 5 |
| MGMT 3101 Managerial and Interpersonal Behavior | 3 | 5 or 6 |
| BLAW 3671 Contract and Property Law | 3 | 6 |
| ARE 3221 Business Strategies and Policy in Food Industries | 3 | 5 or 7 |
| ARE 4217 Business Finance In Food and Resource Industries | 3 | 5 or 7 |
| ARE 4275 Managerial Economics | 3 | 5 or 7 |
| ARE 3260 Food Policy | 3 | 6 or 8 |

If you are interested in a **Production** focus, recommended courses are:

| | | |
|---|---|--------|
| ECON 1201 Principles of Microeconomics | 3 | 1 or 2 |
| ECON 1202 Principles of Macroeconomics | 3 | 2 or 3 |
| ANSC 1602 Behavior and Training of Domestic Animals | 3 | 2 or 4 |
| ARE 1150 Principles of Agriculture and Resource Economics | 3 | 2 or 3 |
| PVS 2301 Health and Disease Management of Animals | 3 | 2 or 4 |
| ANSC 2271 Principles of Poultry Management | 3 | 2 or 4 |
| ANSC 3273 Livestock Management | 4 | 5 or 7 |
| ANSC 3261 Dairy Cattle Management | 3 | 5 or 7 |
| ARE 4311 Advanced Nutrition | 3 | 5 or 7 |
| ANSC 3343 Animal Food Products | 3 | 5 or 7 |
| ARE 3215 Business Management | 3 | 5 or 6 |
| ANSC 3313 Growth Biology and Metabolism of Domestic Animals | 3 | 5 or 7 |
| ANSC 3674 Livestock and Carcass Evaluation | 2 | 6 or 8 |

Animal Science Required Courses – B.S. Degree

The departmental requirements are listed in three groups, Group A (all courses required), Group B (at least one course required) and Group C (at least one course required). Further, one additional Group B or Group C course must be completed. A single class cannot be used to satisfy more than one degree requirement.

Group A: ANSC 1001, 1111, 3121, 3122, 3194

BIOL 1107, 1108

CHEM 1122 or 1127Q or both 1124Q and 1125Q

CHEM 2241 or CHEM 2443 and 2444

PVS 2100

One of the following: ANSC 4341 (4312W can be taken concurrently for “W” credit), MCB 2000 or MCB 2610

Group B: ANSC 2251, 2271, 3261, 3272, 3273

Group C: ANSC 3311, 3313, 3316, 3323, 3343, 3641, 4311, 4341 (if not already taken to fulfill group A req.)

Course Titles, credits and semester offered:

| Group | Designation | Title | Credits | Semester Taught |
|-------|-------------|---|---------|-----------------|
| A | ANSC 1001 | Introduction to Animal Science | 3 | Fall |
| A | ANSC 1111 | Principles of Animal Nutrition and Feeding | 3 | Spring |
| A | ANSC 3121 | Principles of Animal Genetics | 3 | Fall |
| A | ANSC 3122 | Reproductive Physiology | 4 | Spring |
| A | ANSC 3194 | Seminar | 1 | Spring |
| A/C | ANSC 4341 | Food Microbiology and Safety | 3 | Spring |
| A | BIOL 1107 | Principles of Biology I | 4 | Fall, Spring |
| A | BIOL 1108 | Principles of Biology II | 4 | Fall, Spring |
| A | CHEM 1122 | Chemical Principles and Applications | 4 | Fall, Spring |
| A | CHEM 1124Q | Fundamentals of General Chemistry I | 4 | Fall, Spring |
| A | CHEM 1125Q | Fundamentals of General Chemistry II | 4 | Fall, Spring |
| A | CHEM 2241 | Organic Chemistry | 3 | Fall, Spring |
| A | CHEM 2443 | Organic Chemistry | 3 | Fall, Spring |
| A | CHEM 2444 | Organic Chemistry | 3 | Fall, Spring |
| A | MCB 2000 | Introduction to Biochemistry | 4 | Fall, Spring |
| A | MCB 2610 | Fundamentals of Microbiology | 4 | Fall, Spring |
| A | PVS 2100 | Anatomy and Physiology of Animals | 4 | Fall |
| B | ANSC 2251 | Horse Science | 3 | Fall, Spring |
| B | ANSC 2271 | Principles of Poultry Science | 3 | Spring |
| B | ANSC 3261 | Dairy Cattle Management | 3 | Fall |
| B | ANSC 3272 | Laboratory Animal Science | 4 | Spring |
| B | ANSC 3273 | Livestock Management | 4 | Fall |
| C | ANSC 3311 | Comparative Exercise Physiology | 3 | Spring |
| C | ANSC 3313 | Growth Biology and Metabolism of Domestic Livestock | 3 | Fall |
| C | ANSC 3316 | Endocrinology of Farm Animals | 3 | Spring |
| C | ANSC 3323 | Animal Embryology and Biotechnology | 3 | Fall |
| C | ANSC 3343 | Animal Food Products | 3 | Fall |
| C | ANSC 3641 | Animal Food Products: Dairy Technology | 3 | Spring |
| C | ANSC 4311 | Advanced Animal Nutrition | 3 | Fall |

W Requirement: The University requires that students complete at least one writing-intensive course in their major. All ANSC Group C courses have an associated W course. In addition, the W requirement may be satisfied by completing ANSC 4662W, Dairy Herd Management, a 3 credit course taught in Spring semester.

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