ANIMAL SCIENCE, B.S.

Begin Campus: Any Penn State Campus
End Campus: University Park

Degree Requirements
For the Bachelor of Science degree in Animal Science, a minimum of 124 credits is required:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>45</td>
</tr>
<tr>
<td>Electives</td>
<td>0-13</td>
</tr>
<tr>
<td>Requirements for the Major</td>
<td>90-100</td>
</tr>
</tbody>
</table>

18-24 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 0-3 credits of GA courses; 9 credits of GN courses; 3-6 credits of GS courses; 6 credits of GQ courses.

General Education
Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Foundations (grade of C or better is required.)
- Quantification (GQ): 6 credits
- Writing and Speaking (GWS): 9 credits

Knowledge Domains
- Arts (GA): 6 credits
- Health and Wellness (GHW): 3 credits
- Humanities (GH): 6 credits
- Social and Behavioral Sciences (GS): 6 credits
- Natural Sciences (GN): 9 credits

Integrative Studies (may also complete a Knowledge Domain requirement)
- Inter-Domain or Approved Linked Courses: 6 credits

University Degree Requirements
First Year Engagement
All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3 credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

Cultures Requirement
6 credits are required and may satisfy other requirements
- United States Cultures: 3 credits
- International Cultures: 3 credits

Writing Across the Curriculum
3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits
A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work
Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition
The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80)). For more information, check the Suggested Academic Plan for your intended program.

Requirements for the Major
To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#82-44).

Common Requirements for the Major (All Options)
Courses taken as common requirements can not be used to meet requirements within the option.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prescribed Courses</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANSC 100</td>
<td>Introduction to Animal Industries</td>
<td>3</td>
</tr>
<tr>
<td>ANSC 290</td>
<td>Careers in Animal Agriculture</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 110</td>
<td>Biology: Basic Concepts and Biodiversity</td>
<td>4</td>
</tr>
<tr>
<td>BMB 211</td>
<td>Elementary Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>Prescribed Courses: Require a grade of C or better</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ANSC 201</td>
<td>Animal Science</td>
<td>4</td>
</tr>
<tr>
<td>ANSC 207</td>
<td>Animal Products Technology</td>
<td>2</td>
</tr>
<tr>
<td>ANSC 208</td>
<td>Animal Products Technology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>ANSC 300</td>
<td>Integrated Animal Biology</td>
<td>3</td>
</tr>
<tr>
<td>ANSC 301</td>
<td>Principles of Animal Nutrition</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Courses
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGBM 101</td>
<td>Economic Principles of Agribusiness Decision Making</td>
<td>3</td>
</tr>
<tr>
<td>or ECON 102</td>
<td>Introductory Microeconomic Analysis and Policy</td>
<td></td>
</tr>
<tr>
<td>ANSC 322</td>
<td>Animal Genetics and Selection</td>
<td>3</td>
</tr>
<tr>
<td>or BIOL 222</td>
<td>Genetics</td>
<td></td>
</tr>
<tr>
<td>CHEM 202</td>
<td>Fundamentals of Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>or CHEM 210</td>
<td>Organic Chemistry I</td>
<td></td>
</tr>
</tbody>
</table>

Select 6-8 credits from the following: 6-8

Select 3-4 credits from the following:
- MATH 21 College Algebra I
- MATH 22 College Algebra II and Analytic Geometry
- MATH 26 Plane Trigonometry
- MATH 41 Trigonometry and Analytic Geometry
- MATH 110 Techniques of Calculus I
- MATH 140 Calculus With Analytic Geometry I

Select 2-4 credits from the following:
- CMPSC 101 Introduction to Programming
- CMPSC 203 Introduction to Spreadsheets and Databases
- MATH 22 College Algebra II and Analytic Geometry
- MATH 111 Techniques of Calculus II
- MATH 141 Calculus with Analytic Geometry II
- STAT 200 Elementary Statistics
- STAT 250 Introduction to Biostatistics

Additional Courses: Require a grade of C or better

Select 6-8 credits from the following: 6-8
- ANSC 305 Companion Animal Nutrition
- ANSC 306 Swine Production and Management
- ANSC 308 Sheep and Goat Production and Management
- ANSC 309 Beef Cattle Production and Management
- ANSC 310 Dairy Cattle Production and Management
- ANSC 311 Poultry Production and Management
- ANSC 315 Small Animal Health and Disease
- ANSC 324 Value Determination of Meat Animals
- ANSC 327 Horse Production and Management

Supporting Courses and Related Areas
Select 3-5 credits in communication skills courses from department list 3-5

Requirements for the Option
Select an option 43-46

1 Certain courses may double count as general education courses; consult with your adviser.

Requirements for the Option
Business and Management Option (43-45 credits)

<table>
<thead>
<tr>
<th>Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ACCTG 211</td>
<td>Financial and Managerial Accounting for Decision Making</td>
<td>4</td>
</tr>
</tbody>
</table>

Additional Courses
- MICRB 106 Elementary Microbiology
- MICRB 107 and Elementary Microbiology Laboratory 4-5
- or MICRB 201 Introductory Microbiology
- & MICRB 202 and Introductory Microbiology Laboratory

Select 3 credits from the following: 3
- CHEM 101 Introductory Chemistry
- CHEM 110 Chemical Principles I
- CHEM 130 Introduction to General, Organic, and Biochemistry

Select 3 credits from the following: 3
- AGBM 102 Economics of the Food System
- BA 303 Marketing
- MKTG 301 Principles of Marketing

Select 3 credits from the following: 3
- AGBM 200 Introduction to Agricultural Business Management
- or MGMT 10 Survey of Management
- BA 304 Management and Organization
- MGMT 301 Basic Management Concepts

Select 3-4 credits from the following: 3-4
- ANSC 420 Animal Nutrition and Feed Technology
- ANSC 423 Comparative Physiology of Domestic Animals
- ANSC 427 Milk Secretion
- ANSC 431 Physiology of Animal Reproduction

Supporting Courses and Related Areas
Select 23 credits from department list (at least 9 credits of business, 9 credits of production courses, and 5 credits of either business or production courses) 23

1 12 credits must be 400-level courses; students may apply 6 credits of ROTC

Science Option (42-46 credits)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</tr>
</thead>
<tbody>
<tr>
<td>ANSC 423</td>
<td>Comparative Physiology of Domestic Animals</td>
<td>3</td>
</tr>
<tr>
<td>ANSC 431</td>
<td>Physiology of Animal Reproduction</td>
<td>4</td>
</tr>
<tr>
<td>BMB 212</td>
<td>Elementary Biochemistry Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>BMB 221</td>
<td>Applied Biochemistry</td>
<td>2</td>
</tr>
<tr>
<td>CHEM 110</td>
<td>Chemical Principles I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 111</td>
<td>Experimental Chemistry I</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 112</td>
<td>Chemical Principles II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 113</td>
<td>Experimental Chemistry II</td>
<td>1</td>
</tr>
<tr>
<td>MICRB 201</td>
<td>Introductory Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>MICRB 202</td>
<td>Introductory Microbiology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>PHYS 250</td>
<td>Introductory Physics I</td>
<td>4</td>
</tr>
</tbody>
</table>

Additional Courses
Select 3-5 credits from the following: 3-5
- CHEM 203 Fundamentals of Organic Chemistry II
- CHEM 212 Organic Chemistry II
- CHEM 213 and Laboratory in Organic Chemistry

Select 4 credits of the following: 4
- BIOL 220W Biology: Populations and Communities
- BIOL 230W Biology: Molecules and Cells
- BIOL 240W Biology: Function and Development of Organisms

Select 3 credits of the following: 3
- AGRO 28 Principles of Crop Management
- ANSC 211 Introduction to Avian Biology
- ANSC 213 Introduction to Animal Biotechnology
- SOILS 101 Introductory Soil Science
### Supporting Courses and Related Areas

| Select 5-7 credits of 400-level courses from department list | 5-7 |

1. Students may apply 6 credits of ROTC.