VETERINARY TECHNOLOGY

Description

This degree program is appropriate for licensed or license-eligible veterinary technicians desiring a broader education than offered in an AAS degree program.

The bachelor of science in veterinary technology degree (BS-VETH) curriculum integrates the baccalaureate degree requirements with any American Veterinary Medical Association (AVMA) accredited veterinary technician program. There are three general requirements to earn the BS-VETH degree:

1. Successfully earn a Veterinary Technician Associates of Applied Science (AAS) degree from an AVMA-accredited program;
2. Pass the Veterinary Technician National Examination (VTNE);
3. Complete the BS-VETH degree requirements in any of the options offered under that baccalaureate degree program.

Students may matriculate at UNL as a Veterinary Technology (VETH) major before meeting the first two general requirements. But the BS-VETH degree cannot be awarded until all three general requirements have been met.

The University of Nebraska–Lincoln does not offer an AAS Veterinary Technician program. A complete listing of AVMA-accredited AAS Veterinary Technician program may be found at the AVMA website: https://www.avma.org.

The Veterinary Science Option is designed for VETH majors wishing to qualify academically for admission to a veterinary school. It incorporates the Professional Program in Veterinary Medicine pre-veterinary medicine academic requirements in it, but it can be modified to qualify for any American Veterinary Medical Association-accredited veterinary school to which the student wishes to make application.

The Science Option is designed for students who wish to continue their science education at the baccalaureate degree level.

The Business Option is designed for students who wish to continue their baccalaureate education focusing on business and management making it possible to become a practice management.

Students wishing to earn the BS-VETH degree should expect it to take four to five years, including the time needed to earn the AAS degree. The AAS degree will take two years to complete. The time it will take to complete the VB-VETH degree requirements depends upon several factors, including how many course equivalencies are brought from the AAS program and which of the BS-VET degree options is selected. If the student is not prepared to start the science-intensive Veterinary Technology program, its completion will take longer. Adequate preparation includes math proficiency, as indicated by the Nebraska Math Proficiency Examination (MPE). Students who do not place into at least MATH 102 College Trigonometry may take longer to complete the baccalaureate degree. Students are encouraged to discuss their particular situation with their VETH advisor.

Veterinary technology graduates may pursue careers in veterinary medicine as veterinary technicians or practice managers. They can pursue careers in the biomedical sciences as research technicians, veterinary medical educators, drug or feed manufacturing sales or technical representatives. They can also be animal care managers or technicians in industry, academia, animal rescue organizations, animal shelters, or zoological gardens.

College Requirements

College Admission

Requirements for admission into the College of Agricultural Sciences and Natural Resources (CASNR) are consistent with general University admission requirements (one unit equals one high school year): 4 units of English, 4 units of mathematics, 3 units of natural sciences, 3 units of social studies, and 2 units of foreign language. Students must also meet performance requirements (ACT composite of 20 or higher OR combined SAT score of 950 or higher OR rank in the top one-half of graduating class; transfer students must have a 2.0 (on a 4.0 scale) cumulative grade point average and 2.0 on the most recent term of attendance. For students entering the PGA Golf Management degree program, a certified golf handicap of 12 or better (e.g., USGA handicap card) or written ability (MS Word file) equivalent to a 12 or better handicap by a PGA professional or high school golf coach is required. For more information, please visit: http://pgm.unl.edu/requirements.

Admission Deficiencies/Removal of Deficiencies

Students who are admitted to CASNR with core course deficiencies must remove these deficiencies within the first 30 credit hours at UNL, or within the first calendar year at UNL, whichever takes longer, excluding foreign languages. Students have up to 60 credit hours to remove foreign language deficiencies. College-level course work taken to remove deficiencies may be used to meet degree requirements in CASNR.

Deficiencies in the required entrance subjects can be removed by completion of specified courses in the University or by correspondence.

The Office of Admissions, Alexander Building (south entrance), City Campus, provides information to new students on how deficiencies can be removed.

College Degree Requirements

Curriculum Requirements

The curriculum requirements of the College consist of three areas: ACE (Achievement-Centered Education); College of Agricultural Sciences and Natural Resources Core; and Degree Program requirements and electives. All three areas of the College Curriculum Requirements are incorporated within the description of the Major/Degree Program sections of the catalog. The individual major/degree program listings of classes insure that a student will meet the minimum curriculum requirements of the College.

Foreign Languages/Language Requirement

Two units of a foreign language are required. This requirement is usually met with two years of high school language.

Minimum Hours Required for Graduation

The College grants the bachelors degree in programs associated with agricultural sciences, natural resources and related programs. Students working toward a degree must earn at least 120 semester hours of credit. A minimum cumulative grade point average of C (2.0 on a 4.0 scale) must be maintained throughout the course of studies and is required for graduation.

Grade Rules

Removal of C-, D and F Grades

Only the most recent letter grade received in a given course will be used in computing a student's cumulative grade point average if the student
Dual Degree Programs

A to B Programs
The A to B Program, a joint academic program offered by the CASNR and participating community colleges, allows students to complete the first two years of a degree program at the participating community college and continue their education and study in a degree program leading toward a bachelor of science degree.

The A to B Program provides a basic knowledge plus specialized course work. Students transfer into CASNR with junior standing.

Depending on the community college, students enrolled in the A to B Program may complete the requirements for an associate of science at the community college, transfer to UNL, and work toward a bachelor of science degree.

Participating community colleges include:

- Central Community College
- Metropolitan Community College
- Mid-Plains Community College
- Nebraska College of Technical Agriculture
- Northeast Community College
- Southeast Community College
- Western Nebraska Community College

3+2 Programs
Two specialized degree programs in animal science and veterinary science are offered jointly with an accredited college or school of veterinary medicine. These two programs permit CASNR animal science or veterinary science students to receive a bachelor of science degree from UNL with a degree in animal science or veterinary science after successfully completing two years of the professional curriculum in veterinary medicine at an accredited veterinary school. Students who successfully complete the 3+2 Program, must complete the “Application for Degree” form and provide transcripts to the Credentials Clerk, Office of the University Registrar, 107 Canfield Administration Building, UNL. Students should discuss these degree programs with their academic advisor.

Cooperative Degree Programs
Academic credit from UNL and a cooperating institution is applied towards a four-year degree from either UNL (UNL degree-granting program) or the cooperating institution (non UNL degree-granting program). All have approved programs of study.

UNL Degree-Granting Programs
A UNL degree-granting program is designed to provide students the opportunity to complete a two-year program of study at one of the four-year institutions listed below, transfer to CASNR and complete the requirements for a bachelor of science degree.

Chadron State College. Chadron State College offers a 2+2 program leading to a grassland ecology and management degree program and a transfer program leading to a Bachelor of Science in Agricultural Education in the teaching option.

Wayne State College. Wayne State College offers a 3+1 program leading to a Bachelor of Science in Plant Biology in the ecology and management option.
University of Nebraska at Kearney. Transfer programs are available for students pursuing degree programs leading to a bachelor of science degree.

University of Nebraska at Omaha. The University of Nebraska at Omaha (UNO) cooperates with CASNR in providing four-semester pre-agricultural sciences, pre-natural resources, pre-food science and technology, pre-horticulture and pre-turfgrass and landscape management transfer programs.

A student enrolled in these programs may transfer all satisfactorily completed academic credits identified in the suggested program of study, and enter CASNR to study toward a degree program leading to a bachelor of science degree. The total program would require a minimum of four years or eight semesters (16 credit hours/semester or 120 credit hours).

UNL CASNR faculty teach horticulture and food science and technology courses at UNO to assist an urban population in better understanding the food processing, horticulture, and landscape horticulture industries.

For more information, contact the CASNR Dean’s Office, 800-472-8800, ext. 2541.

Non UNL Degree-Granting Programs
The CASNR cooperates with other institutions to provide course work that is applied toward a degree at the cooperating institution. Pre-professional programs offered by CASNR allow students to complete the first two or three years of a degree program at UNL prior to transferring and completing a degree at the cooperating institution.

Chadron State College–Range Science. The 3+1 Program in range science allows Chadron State College students to pursue a range science degree through Chadron State College. Students complete three years of course work at Chadron State College and one year of specialized range science course work (32 credit hours) at CASNR.

Dordt College (Iowa) – Agricultural Education: Teaching Option. This program allows students to pursue an Agricultural Education Teaching Option degree leading toward a bachelor of science in agricultural education. Students at Dordt College will complete 90 credit hours in the Agricultural Education: Teaching Option Transfer Program.

Residency
Students must complete at least 30 of the total hours for their degree using UNL credits. At least 18 of the 30 credit hours must be in courses offered through CASNR\(^1\) (>299) including the appropriate ACE 10 degree requirement or an approved ACE 10 substitution offered through another UNL college and excluding independent study regardless of the number of hours transferred. Credit earned during education abroad may be used toward the residency requirement if students register through UNL and participate in prior-approved education abroad programs. UNL open enrollment and summer independent study courses count toward residence.

1. Includes courses taught by CASNR faculty through interdisciplinary prefixes (e.g., LIFE, MBIO, ENVIR, SOIL, EAEP, HRTM, ENSC) and CASNR crosslisted courses taught by non-CASNR faculty.

Online and Distance Education
There are many opportunities to earn college credit online through the University of Nebraska–Lincoln. Some of these credits may be applicable not only as elective credits, but also toward the fulfillment of the College’s education requirements. Credits earned online may count toward residency. However, certain offerings may not be counted toward scholarship requirements or academic recognition criteria.

For further information, contact:
Office of Online and Distance Education
University of Nebraska–Lincoln
305 Brace Labs
Lincoln, NE 68588-0109
402-472-4681
http://online.unl.edu/

Independent Study Rules
Students wishing to take part in independent studies must obtain permission; complete and sign a contract form; and furnish copies of the contract to the instructor, advisor, departmental office, and the Dean's Office. The contract should be completed before registration. Forms are available in 103 Agricultural Hall or online at the CASNR website.

Independent study projects include research, literature review or extension of course work under supervision and evaluation of a departmental faculty member.

Students may only count 12 hours of independent study toward their degrees and no more than 6 hours can be counted during their last 36 hours earned, excluding senior thesis, internships, and courses taught under an independent study number.

Other College Degree Requirements

Capstone Course Requirement
A capstone course is required for each CASNR degree program. A capstone course is defined as a course in which students are required to integrate diverse bodies of knowledge to solve a problem or formulate a policy of societal importance.

ACE Requirements
All students must fulfill the Achievement Centered Education (ACE) requirements. Information about the ACE program may be viewed at www.ace.unl.

The minimum requirements of CASNR reflect the common core of courses that apply to students pursuing degrees in the college. Students should work with an advisor to satisfy ACE outcomes 1, 2, 3, 4, 6 and 10 with the college requirements.

Catalog Rule
Students must fulfill the requirements stated in the catalog for the academic year in which they are first admitted to UNL or when they were first admitted to a Joint Academic Transfer Program. In consultation with advisors, a student may choose to follow a subsequent catalog for any academic year in which they are admitted to and enrolled as a degree-seeking student at UNL in the College of Agricultural Sciences and Natural Resources. Students must complete all degree requirements from a single catalog year. The catalog which a student follows for degree requirements may not be more than 10 years old at the time of graduation.

Learning Outcomes

Majors in veterinary technology will be able to:

1. Demonstrate general knowledge of animal health and disease.
2. Build on their associate of applied science, veterinary technician option degree to acquire a bachelor of science degree.
3. Increase employment and advancement opportunities in veterinary technology.
4. With business option, will be prepared to manage a personal business or veterinary office.
5. With veterinary science option, can prepare to apply to veterinary school.
6. Converse in a knowledgeable and professional manner with employers and colleagues.

**Major Requirements**

**Veterinary Technology Core Requirements**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCIL 101</td>
<td>Science and Decision-Making for a Complex World</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 3

**Veterinary Science**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>VBMS 101</td>
<td>Success in Veterinary Science</td>
<td>1</td>
</tr>
<tr>
<td>VBMS 403</td>
<td>Integrated Principles and Prevention of Livestock Diseases (Capstone Course (ACE 10))</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 5

**Natural Sciences**

**CASNR Approved Life Sciences**

Select one sequence of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIFE 120 &amp; LIFE 120L</td>
<td>Fundamentals of Biology I and Fundamentals of Biology I Laboratory</td>
<td>4</td>
</tr>
<tr>
<td>BIOS 101 &amp; BIOS 101L</td>
<td>General Biology and General Biology Laboratory</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 8

**Natural Sciences**

**Physical Sciences**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 109</td>
<td>General Chemistry I</td>
<td>4</td>
</tr>
</tbody>
</table>

Select one sequence of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>PHYS 141</td>
<td>Elementary General Physics I ²</td>
<td>2</td>
</tr>
<tr>
<td>or PHYS 141H Honors: Elementary General Physics I</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PHYS 211</td>
<td>General Physics I</td>
<td>3</td>
</tr>
<tr>
<td>or PHYS 211H Honors: General Physics I</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>PHYS 151 &amp; PHYS 153</td>
<td>Elements of Physics and Elements of Physics Laboratory ²</td>
<td>5</td>
</tr>
<tr>
<td>MSYM 109 &amp; MSYM 109L</td>
<td>Physical Principles in Agriculture and Life Sciences and Physical Principles in Agriculture and Life Sciences Laboratory</td>
<td>8</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 13

**Mathematics and Statistics**

Select 5-6 credits of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 102</td>
<td>Trigonometry</td>
<td>3</td>
</tr>
<tr>
<td>MATH 103</td>
<td>College Algebra and Trigonometry (2 of 5 credits count)</td>
<td>2</td>
</tr>
<tr>
<td>MATH 104</td>
<td>Applied Calculus (ACE 3)</td>
<td>3</td>
</tr>
<tr>
<td>MATH 106</td>
<td>Calculus I (ACE 3)</td>
<td>3</td>
</tr>
<tr>
<td>STAT 218</td>
<td>Introduction to Statistics (ACE 3)</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 5

**Communications**

**Written Communication (ACE 1)**

Select two of the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 150</td>
<td>Writing and Inquiry or ENGL 150H Honors Writing: Writing and Inquiry</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 151</td>
<td>Writing and Argument or ENGL 151H Honors Writing: Writing and Argument</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 254</td>
<td>Writing and Communities or ENGL 254H Writing and Communities</td>
<td>3</td>
</tr>
<tr>
<td>JGEN 120</td>
<td>Basic Business Communication or JGEN 120H</td>
<td>3</td>
</tr>
<tr>
<td>JGEN 200</td>
<td>Technical Communication I or JGEN 200H</td>
<td>3</td>
</tr>
<tr>
<td>JGEN 300</td>
<td>Technical Communication II</td>
<td>3</td>
</tr>
<tr>
<td>ALEC 102</td>
<td>Interpersonal Skills for Leadership</td>
<td>2</td>
</tr>
<tr>
<td>COMM 101 or COMM 101H Honors: Communication in the 21st Century</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM 109 or COMM 109H Honors: Fundamentals of Human Communication</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM 209 or COMM 209H Honors: Public Speaking</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM 210 or COMM 210H</td>
<td>Communicating in Small Groups</td>
<td>3</td>
</tr>
<tr>
<td>COMM 215</td>
<td>Visual Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 283</td>
<td>Interpersonal Communication</td>
<td>3</td>
</tr>
<tr>
<td>COMM 286</td>
<td>Business and Professional Communication</td>
<td>3</td>
</tr>
<tr>
<td>JGEN 300</td>
<td>Technical Communication II</td>
<td>3</td>
</tr>
<tr>
<td>MRKT 257</td>
<td>Sales Communication</td>
<td>3</td>
</tr>
<tr>
<td>NRES 301</td>
<td>Environmental Communication Skills</td>
<td>3</td>
</tr>
<tr>
<td>TMFD 121</td>
<td>Visual Communication and Presentation</td>
<td>3</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 9

**Economics, Humanities and Social Sciences**

Select one course each from ACE outcomes 5, 7, 8, and 9:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AECN 141</td>
<td>Introduction to the Economics of Agriculture</td>
<td>3</td>
</tr>
<tr>
<td>ECON 200</td>
<td>Economic Essentials and Issues</td>
<td>3</td>
</tr>
<tr>
<td>ECON 211 or ECON 211H Honors: Principles of Macroeconomics</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ECON 212 or ECON 212H Honors: Principles of Microeconomics</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 12

Total Credit Hours: 50

¹ Biomedical courses are not acceptable for the Veterinary Science or Science Option.
² Physics course(s) taken should meet pre-veterinary and additional course prerequisites if application to professional school is intended. Consult your advisor regarding which courses fulfill this requirement.

**Veterinary Science Option**

**Life Sciences**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 312</td>
<td>Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOS 314</td>
<td>Microbiology Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>
LIFE 121 & LIFE 121L  
Fundamentals of Biology II and Fundamentals of Biology II Laboratory  
AGRO 215  
Genetics  
Credit Hours Subtotal: 12

**Physical Sciences**

CHEM 110  
General Chemistry II  
CHEM 251  
Organic Chemistry I  
CHEM 253  
Organic Chemistry I Laboratory  
CHEM 252  
Organic Chemistry II  
CHEM 254  
Organic Chemistry II Laboratory  
PHYS 142  
Elementary General Physics II  
Credit Hours Subtotal: 17

**Biological Chemistry**

Select one sequence of the following: 4-5

- BIOC 321 & BIOC 321L  
Elements of Biochemistry and Laboratory for Elements of Biochemistry
- BIOS 431 / BIOS 431 / CHEM 431 & BIOC 433 / BIOS 433 / CHEM 433  
Structure and Metabolism and Biochemistry Laboratory  
Credit Hours Subtotal: 5

**Business**

Select two courses from any two of the following five areas: 5-7

- ACCT 201  
Introductory Accounting I
- ACT 1103  
ACCOUNTING I  
- AIT 80 & AIT 1092  
INTRO TO COMPUTERS I and INTRODUCTION TO SPREADSHEETS
- AECN 452  
Agricultural Finance
- FINA 260  
Personal Finance
- FINA 361  
Finances
- ABM 2403  
AG FINANCE
- AECN 201  
Farm and Ranch Management
- MNGT 121 / ENTR 121  
Introduction to Entrepreneurial Management
- MNGT 306  
Managing Behavior in Organizations
- MNGT 361  
Human Resource Management
- MGT 2103  
MGT CONCEPTS
- MGT 2503  
HUMAN RESOURCES MGT
- ASCI 340  
Animal Physiological Systems
- BIO 213  
Human Physiology
- BIO 213L  
Human Physiology
- BIO 214  
Human Anatomy
- VBMS 307  
Introduction to Veterinary Anatomy

Credit Hours Subtotal: 7

**Science Option**

**Life Sciences**

Select one sequence of the following: 4

- BIOS 112  
Introduction to Zoology
- BIOC 321 & BIOC 321L  
Elements of Biochemistry and Laboratory for Elements of Biochemistry
- LIFE 121 & LIFE 121L  
Fundamentals of Biology II and Fundamentals of Biology II Laboratory
- BIOS 312  
Microbiology
- BIOS 314  
Microbiology Laboratory
- AGRO 215  
Genetics

Credit Hours Subtotal: 12

**Physical Sciences**

- CHEM 110  
General Chemistry II  
- CHEM 251  
Organic Chemistry I  
- CHEM 253  
Organic Chemistry I Laboratory  
- CHEM 254  
Organic Chemistry II  
- CHEM 252  
Organic Chemistry II Laboratory  
Credit Hours Subtotal: 8

**Biological Chemistry**

BIOC 321 & BIOC 321L  
Elements of Biochemistry and Laboratory for Elements of Biochemistry

Credit Hours Subtotal: 4

**Anatomy and Physiology**

Select from the following courses, one in either physiology or anatomy is required, but one course in each subject area is recommended: 4-9

- ASCI 340  
Animal Physiological Systems
- BIO 213  
Human Physiology
- BIO 213L  
Human Physiology
- BIO 214  
Human Anatomy
- VBMS 307  
Introduction to Veterinary Anatomy

Credit Hours Subtotal: 4

**Business**

Select two courses from any two of the following five areas: 5-7

- ACCT 201  
Introductory Accounting I
- ACT 1103  
ACCOUNTING I
- AIT 80 & AIT 1092  
INTRO TO COMPUTERS I and INTRODUCTION TO SPREADSHEETS
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<td>Personal Finance</td>
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<td>FINA 361</td>
<td>Finance</td>
</tr>
<tr>
<td>ABM 2403</td>
<td>AG FINANCE 1</td>
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<td>AECN 201</td>
<td>Farm and Ranch Management</td>
</tr>
<tr>
<td>MNGT 121 / ENTR 121</td>
<td>Introduction to Entrepreneurial Management</td>
</tr>
<tr>
<td>MNGT 360</td>
<td>Managing Behavior in Organizations</td>
</tr>
<tr>
<td>MNGT 361</td>
<td>Human Resource Management</td>
</tr>
<tr>
<td>MGT 2103</td>
<td>MGT CONCEPTS 1</td>
</tr>
<tr>
<td>MGT 2503</td>
<td>HUMAN RESOURCES MGT 1</td>
</tr>
<tr>
<td>AECN 225 / EAEP 225 / MRKT 225</td>
<td>Agribusiness Entrepreneurship in Food Products Marketing</td>
</tr>
<tr>
<td>AECN 325 / MRKT 325</td>
<td>Marketing of Agricultural Commodities</td>
</tr>
<tr>
<td>MRKT 341 / ABUS 341</td>
<td>Marketing</td>
</tr>
<tr>
<td>AECN 256</td>
<td>Legal Aspects in Agriculture</td>
</tr>
<tr>
<td>AECN 316</td>
<td>Agribusiness Management</td>
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<tr>
<td>CHEM 110</td>
<td>General Chemistry II</td>
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<td>AECN 452</td>
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<td>HUMAN RESOURCES MGT 1</td>
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<td>FINA 361</td>
<td>Finance</td>
</tr>
<tr>
<td>ABM 2403</td>
<td>AG FINANCE 1</td>
</tr>
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<td>MRKT 347</td>
<td>Marketing Communication Strategy</td>
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<tr>
<td>MRKT 458</td>
<td>Sales Force Management</td>
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**Credit Hours Subtotal:** 120

<table>
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<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRO 215</td>
<td>Genetics</td>
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<tr>
<td>CHEM 110</td>
<td>General Chemistry II</td>
</tr>
<tr>
<td>ASCI 240</td>
<td>Anatomy and Physiology of Domestic Animals 1</td>
</tr>
<tr>
<td>or VTS 1404</td>
<td>ANATOMY &amp; PHYSIOLOGY</td>
</tr>
</tbody>
</table>

**Credit Hours Subtotal:** 35

**Core Requirements**

Complete requirements

**Credit Hours Subtotal:** 50

**Total Credit Hours:** 120

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**Business Option**

**Life Sciences**

<table>
<thead>
<tr>
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</tbody>
</table>

**Credit Hours Subtotal:** 4

**Veterinary Technology**

Select 32 credits of equivalent courses

**Credit Hours Subtotal:** 32

**Core Requirements**

Complete requirements

**Credit Hours Subtotal:** 50

**Total Credit Hours:** 120

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1 Courses offered at NCTA, Curtis, NE. Business courses listed have not yet been granted equivalency status and cannot be freely substituted in other majors. Credit for majors in the College of Business Administration is not guaranteed.
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ADDITIONAL MAJOR REQUIREMENTS

Grade Rules
C- and D Grades
A grade of P or a letter grade of C or better is required for all VBMS courses.

Pass/No Pass
All courses taken to meet PVET requirements must be taken for a letter grade, unless the course is offered only Pass/No Pass.

GPA Requirements
A cumulative GPA of 2.00 or better is required for the degree.

Veterinary Science Option:
Most veterinary schools require a grade of at least a C in each course.
Exact course grade requirements for admission should be determined for each veterinary school to which application is to be made.
A minimum cumulative GPA of 2.50 is generally required for application to a veterinary school. The exact GPA requirement for admission should be obtained for each veterinary school to which application is to be made.

VBMS 101 Success in Veterinary Science
Description: General skills for success in college are discussed. Student involvement and campus resources are emphasized. Survey of careers for students interested in going on to veterinary school or any other science related area.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Format: LEC

VBMS 303 Principles and Prevention of Livestock Diseases
Prerequisites: Juniors and seniors; ASCI 240 or BIOS 213 and BIOS 213L. BIOS 300 or BIOS 312 recommended, or permission
Description: Management techniques in the control of metabolic, infectious, and parasitic diseases of domestic animals and understanding of basic concepts of the important diseases of livestock.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC

VBMS 307 Introduction to Veterinary Anatomy
Prerequisites: LIFE 120 & LIFE 120L and LIFE 121 & LIFE 121L or equivalent, and junior standing
Description: Gross anatomy of the mammalian body, using domestic dog as the model. Macroscopic anatomy of organs and organ systems emphasizing structural and functional relationships, and their contribution to homeostasis of domestic animals. Incorporates detailed study of prospected cadavers and skeletal preparations.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
Offered: SPRING

VBMS 403 Integrated Principles and Prevention of Livestock Diseases
Prerequisites: ASCI 240 or BIOS 213 and BIOS 213L, BIOS 312, CHEM 251
Description: Emphasizes integrated management techniques of livestock, and understanding the basic integrated concepts of the important diseases of domestic animals. Biotechnology in animal health and current issues in management practices to control diseases.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
ACE: ACE 10 Integrated Product

VBMS 408 Functional Histology
Croslist with: BIOS 408, BIOS 808, VBMS 808
Prerequisites: BIOS 101 and 101L or LIFE 120 and 120L or BIOS 112; BIOS 213 or ASCI 240. BIOS 315 recommended.
Description: Microscopic anatomy of the tissues and organs of major vertebrate species, including humans. Normal cellular arrangements of tissues and organs as related to their macroscopic anatomy and function, with reference to sub-cellular characteristics and biochemical processes. Functional relationships among cells, tissues, organs and organ systems, contributory to organismal well being. General introduction to pathological processes and principles underlying some diseases.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC

VBMS 410 General Pharmacology and Toxicology
Prerequisites: BIOS 213, ASCI 240, or ASCI 340; BIOC 321 or BIOC/BIOS/CHEM 431/831; or equivalent. Recommended: CHEM 252 and 254; BIOC/BIOS/CHEM 432/832 and 433/833.
Description: Basic principles and sciences of drug action (as therapeutic agents) and of adverse (toxic) effects of harmful chemical substances. Discussion of these concepts as they relate to animal production and care, regulatory concerns, legal and ethical decisions, human and animal health hazards, food safety, and environmental contamination.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Offered: FALL

VBMS 417 Neurobiology: Cells to Senses
Prerequisites: Two semesters each of Biology and Chemistry recommended. Permission of the instructor required.
Notes: Capstone course. Active participation in classroom discussion expected.
Description: Neurobiology, by its very nature, integrates the studies of biology, chemistry, physics, biochemistry, physiology, and anatomy. Introduction to cellular and systems neurobiology, culminating in individual projects focusing on the effects of neuropathological disorders or diseases.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Format: LEC
ACE: ACE 10 Integrated Product
VBMS 424 Basic Molecular Infectious Diseases
Crosslisted with: VBMS 824
Prerequisites: BIOS 312 or permission.
Description: Introduction to the molecular, genetic and cellular aspects of microbial pathogenesis in humans and animals.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC

VBMS 441 Pathogenic Microbiology
Crosslisted with: BIOS 441, BIOS 841, VBMS 441H, VBMS 841
Prerequisites: BIOS 312 and either 313 or 314, or permission.
Description: Fundamental principles involved in host-microorganism interrelationships. Identification of pathogens, isolation, propagation, mode of transmission, pathogenicity, symptoms, treatment, prevention of disease, epidemiology, and methods of control.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC

VBMS 441H Pathogenic Microbiology
Crosslisted with: BIOS 441, BIOS 841, VBMS 441, VBMS 841
Prerequisites: BIOS 312 and either 313 or 314, or permission.
Description: Fundamental principles involved in host-microorganism interrelationships. Identification of pathogens, isolation, propagation, mode of transmission, pathogenicity, symptoms, treatment, prevention of disease, epidemiology, and methods of control.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC

VBMS 441L Pathogenic Microbiology Laboratory
Crosslisted with: VBMS 841L
Prerequisites: BIOS 312 and 313 (314) or permission.
Description: Application of diagnostic microbiological techniques to the isolation, propagation and identification of common pathogens of human beings and animals. Case studies used, in the laboratory setting, to explore and test fundamentals of transmission, epidemiology and pathogenesis of selected infectious agents and to relate these to disease signs, treatments and methods of control.
Credit Hours: 1
Max credits per semester: 1
Max credits per degree: 1
Format: LAB

VBMS 488 Exploration of Production Medicine
Prerequisites: Acceptance to an accredited college of veterinary medicine.
Description: Introduction to production medicine and animal health management that weaves together the interrelationship of pasture ecology, animal nutrition, animal well-being, environmental assessment, worker safety, and pre-harvest food safety. Emphasis on the interrelationships between scientific disciplines, and sustainable agriculture. Assessment of normal production potential and health of food producing animals (beef cattle, swine, and sheep) and indicators of abnormal health. Introduction to techniques used to evaluate animal well-being, to computerized information management, and to the veterinarian's role in sustainable agriculture.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Format: LEC

VBMS 496 Independent Study in Veterinary Science
Prerequisites: 12 hrs veterinary science or closely related areas and permission.
Description: Individual or group projects in research, literature review, or extension of course work under supervision and evaluation of a departmental faculty member.
Credit Hours: 1-5
Min credits per semester: 1
Max credits per semester: 5
Max credits per degree: 12
Format: IND

VBMS 499H Honors Thesis
Prerequisites: Admission to the University Honors Program and permission, AGRI 299H recommended.
Description: Conduct a scholarly research project and write a University Honors Program or undergraduate thesis.
Credit Hours: 3-6
Min credits per semester: 3
Max credits per semester: 6
Max credits per degree: 6
Format: IND

Please note
This document represents a sample 4-year plan for degree completion with this major. Actual course selection and sequence may vary and should be discussed individually with your college or department academic advisor. Advisors also can help you plan other experiences to enrich your undergraduate education such as internships, education abroad, undergraduate research, learning communities, and service learning and community-based learning.

Veterinary Technology - Business
Icon Legend: Critical

13 HR TERM 1
ACE 4 Life Science
complete LIFE 120, LIFE 120L

4hr
Completion of either the CHEM Sequence or LIFE Sequence becomes critical to your success in the major if not completed by the second term of enrollment.

**Mathematics**

complete MATH 104

Completion of a MATH course becomes critical to your success in the major if not completed by the second term of enrollment.

**ACE 1 Written**

complete 1 from ENGL 150, ENGL 151, JGEN 120, JGEN 200, JGEN 300

Complete an ACE 5, 7, 8, or 9 requirement this term.

**16 HR TERM 2**

**ACE 4 Chemistry**

complete CHEM 109

Completion of either the CHEM Sequence or LIFE Sequence becomes critical to your success in the major if not completed by the second term of enrollment.

**Mathematics**

complete STAT 218

**ACE 1 Written**

complete 1 from ENGL 150, ENGL 151, JGEN 120, JGEN 200, JGEN 300

Complete an ACE 5, 7, 8, or 9 requirement this term.

**3 HR TERM 3**

**ACE 6 Economics**

complete 1 from ECON 211, AECN 141, ECON 200, ECON 211, ECON 212

**14 HR TERM 4**

**Chemistry**

complete CHEM 110

Completion of either the CHEM Sequence or LIFE Sequence becomes critical to your success in the major if not completed by the second term of enrollment.

**ACE 4 Physics**

complete 1 from MSYM 109L, MSYM 109, PHYS 141, PHYS 151, PHYS 153

Complete an ACE 5, 7, 8, or 9 requirement this term.

**ACE 8 Ethical Principles**

complete 1 from ACE8

Complete an ACE 5, 7, 8, or 9 requirement this term.

**Accounting**

complete ACCT 201

**14 HR TERM 5**

**Genetics**

complete AGRO 215

**Management**

complete either MNGT 360 or MNGT 361

**Marketing**

complete 1 from AECN 225, AECN 325, MRKT 341
Veterinary Technology

Farm/Ranch Management
complete AECN 201

12 HR TERM 6

Business Electives
complete 2 from ACCT 202, AECN 256, AECN 316, AECN 452, BLAW 300, BLAW 371, FINA 260, FINA 361, MRKT 347, MRKT 458

Electives
complete Any Course

12 HR TERM 7

ACE 10 Capstone
complete VBMS 403

Completion of the ACE 10 course becomes critical to your success in the major if not completed by the sixth term of enrollment.

Electives
complete Any Course

Graduation Requirements
1. Performance Measure: 2.00 GPA required for graduation.
2. ***Total Credits Applying Toward 120 Total Hours***
3. Completion of the ACE 10 course becomes critical to your success in the major if not completed by the sixth term of enrollment.

16 HR TERM 2

Mathematics
complete STAT 218

ACE 7 Arts
complete 1 from ACE7

Completion of an ACE 5, 7, 8, or 9 requirement this term.

ACE 1 Written
complete 1 from ENGL 150, ENGL 151, JGEN 120, JGEN 200, JGEN 300

ACE 6 Economics
complete 1 from ECON 211, AECN 141, ECON 200, ECON 211, ECON 212

Life Sciences
complete LIFE 121, LIFE 121L

Veterinary Technology - Science
Icon Legend: Critical

15 HR TERM 1

ACE 4 Life Science
complete LIFE 120, LIFE 120L

Completion of either the CHEM Sequence or LIFE Sequence becomes critical to your success in the major if not completed by the second term of enrollment.

ACE 5 Humanities
complete 1 from ACE5
Completion of either the CHEM Sequence or LIFE Sequence becomes critical to your success in the major if not completed by the second term of enrollment.

**15 HR TERM 3**

**ACE 4 Chemistry**
complete CHEM 109

**ACE 8 Ethical Principles**
complete 1 from ACE8

Complete an ACE 5, 7, 8, or 9 requirement this term.

**ACE 4 Physics**
complete 1 from MSYM 109, MSYM 109L, PHYS 141, PHYS 151, PHYS 153

**Electives**
complete Any Course

**14 HR TERM 4**

**Chemistry**
complete CHEM 110

Completion of either the CHEM Sequence or LIFE Sequence becomes critical to your success in the major if not completed by the second term of enrollment.

**Life Sciences**
complete AGRO 215

**Business Requirement**
complete 1 from ACCT 201, AECN 452, FINA 260, FINA 361, AECN 201, MNGT 121, MNGT 360, MNGT 361, AECN 225, AECN 325, MRKT 341

**Electives**
complete Any Course

**14 HR TERM 5**

**Chemistry/Organic Chem**
complete CHEM 251, CHEM 253

**Life Sciences**
complete BIOS 312, BIOS 314

**Business Requirement**
complete 1 from ACCT 201, AECN 452, FINA 260, FINA 361, AECN 201, MNGT 121, MNGT 360, MNGT 361, AECN 225, AECN 325, MRKT 341

**Electives**
complete Any Course

**8 HR TERM 6**

**Biochemistry/Lab**
complete BIOC 321, BIOC 321L

**ACE 10 Capstone**
complete VBMS 403

Completion of the ACE 10 course becomes critical to your success in the major if not completed by the sixth term of enrollment.

**Electives**
complete Any Course

**Graduation Requirements**
1. Performance Measure: 2.00 GPA required for graduation.
2. ***Total Credits Applying Toward 120 Total Hours***

**Career Information**
The following represents a sample of the internships, jobs and graduate school programs that current students and recent graduates have reported.
Jobs of Recent Graduates

• Veterinary Technician (further schooling needed), The Animal Clinic - Hastings NE
• Lab Technician, Zoetis - Lincoln NE
• Specialist, Berringer Ingelheim Zetmetica - St. Joseph MO

Internships

• Veterinary Technician Intern, Wachal Pet Health Center - Lincoln NE

Grad Schools

• Veterinary Medicine, Professional Program in Veterinary Medicine - UNL/ISU - Ames IA
• PhD, South Dakota State University - Brookings SD