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 Nebraska 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 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 deficiencies must remove these deficiencies within the first 30 credit hours at the University of Nebraska–Lincoln, or within the first calendar year at Nebraska, 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 insures 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. Some degree programs have a higher cumulative grade point average required for graduation. Please check the degree program on its graduation cumulative grade point average.
**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 has completed the course more than once and previously received a grade or grades below C in that course.

The previous grade (or grades) will not be used in the computation of the cumulative grade point average, but it will remain a part of the academic record and will appear on any transcript.

A student can remove from his/her cumulative average a course grade of C-, D+, D, D- or F if the student repeats the same course at the University of Nebraska and receives a grade other than P (pass), I (incomplete), N (no pass), W (withdrew), or NR (no report). If a course is no longer being offered, it is not eligible for the revised grade point average computation process.

For complete procedures and regulations, see the Office of the University Registrar website at http://www.unl.edu/regrec/course-repeats.

**Pass/No Pass**

Students in CASNR may take any course offered on a Pass/No Pass basis within the 24-hour limitation established by the Faculty Senate. However, a department may specify that the Pass/No Pass status of its courses be limited to non-majors or may choose to offer some courses for letter grades only.

**GPA Requirements**

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. Some degree programs have a higher cumulative grade point average required for graduation. Please check the degree program on its graduation cumulative grade point average.

**Transfer Credit Rules**

To be considered for admission, a transfer student, Nebraska resident or nonresident, must have an accumulated average of C (2.0 on a 4.0 scale) and a minimum C average in the last semester of attendance at another college. Transfer students who have completed less than 12 credit hours of college study must submit either ACT or SAT scores.

Ordinarily, credits earned at an accredited college are accepted by the University. The College, however, will evaluate all hours submitted on an application for transfer and reserves the right to accept or reject any of them. Sixty (60) is the maximum number of hours the University will accept on transfer from a two-year college. Ninety (90) is the maximum number of hours the University will accept from a four-year college. Transfer credit in the degree program must be approved by the degree program advisor on a Request for Substitution Form to meet specific course requirements, group requirements, or course level requirements in the major. At least 9 hours in the major field, including the capstone course, must be completed at the University of Nebraska–Lincoln regardless of the number of hours transferred.

The College will accept no more than 10 semester hours of C-, D+, D and D- grades from other schools. The C, D+, D and D- grades can only be applied to free electives. This policy does not apply to the transfer of grades from UNO or UNK to the University of Nebraska–Lincoln.

**Joint Academic Transfer Programs**

The College of Agricultural Sciences and Natural Resources has agreements with many institutions to support joint academic programs. The transfer programs include dual degree programs and cooperative degree programs. Dual degree programs offer students the opportunity to receive a degree from a participating institution and also to complete requirements for a bachelor of science degree in CASNR. Cooperative programs result in a single degree from either the University of Nebraska–Lincoln or the cooperating institution.

**Dual Degree Programs**

**A to B Programs**

The A to B Program, a joint academic program offered by the CASNR and cooperating 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 the University of Nebraska–Lincoln, 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 the University of Nebraska–Lincoln 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. Students should discuss these degree programs with their academic advisor.

**Cooperative Degree Programs**

Academic credit from the University and a cooperating institution is applied towards a four-year degree from either the University of Nebraska–Lincoln (University degree-granting program) or the cooperating institution (non University degree-granting program). All have approved programs of study.

**UNL Degree-Granting Programs**

A University of Nebraska–Lincoln 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).

Nebraska 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 University of Nebraska–Lincoln 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 the University 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 University of Nebraska–Lincoln credits. At least 18 of the 30 credit hours must be in courses offered through CASNR¹ (>299) including the appropriate ACE 10 degree requirement or an approved ACE 10 substitution offered through another Nebraska 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. University of Nebraska–Lincoln 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, SSCI, 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 ace.unl.edu (https://ace.unl.edu).

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 the University of Nebraska–Lincoln 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 Nebraska 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

College Integrative Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</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 Code</th>
<th>Course Title</th>
<th>Credit Hours</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

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIFE 120</td>
<td>Fundamentals of Biology I and Fundamentals of Biology I Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>BIOS 101</td>
<td>General Biology and General Biology Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 4

Physical Sciences

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

Select one of the following: 5

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 141</td>
<td>Elementary General Physics I</td>
<td>2</td>
</tr>
<tr>
<td>PHYS 211</td>
<td>General Physics I</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 151</td>
<td>Elements of Physics and Elements of Physics Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>MSYM 109</td>
<td>Physical Principles in Agriculture and Life Sciences and Physical Principles in Agriculture and Life Sciences Laboratory</td>
<td>2</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 13

Mathematics and Statistics

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 102</td>
<td>Trigonometry</td>
<td>5-6</td>
</tr>
<tr>
<td>MATH 103</td>
<td>College Algebra and Trigonometry (2 of 5 credits count)</td>
<td>5</td>
</tr>
<tr>
<td>MATH 104</td>
<td>Applied Calculus (ACE 3)</td>
<td></td>
</tr>
<tr>
<td>MATH 106</td>
<td>Calculus I (ACE 3)</td>
<td></td>
</tr>
<tr>
<td>STAT 218</td>
<td>Introduction to Statistics (ACE 3)</td>
<td>5</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 5

Communications

Written Communication (ACE 1)

Select two of the following: 6

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 150</td>
<td>Writing and Inquiry</td>
<td></td>
</tr>
<tr>
<td>or ENGL 150H</td>
<td>Honors Writing: Writing and Inquiry</td>
<td></td>
</tr>
<tr>
<td>ENGL 151</td>
<td>Writing and Argument</td>
<td></td>
</tr>
<tr>
<td>or ENGL 151H</td>
<td>Honors Writing: Writing and Argument</td>
<td></td>
</tr>
<tr>
<td>ENGL 254</td>
<td>Writing and Communities</td>
<td></td>
</tr>
<tr>
<td>or ENGL 254H</td>
<td>Writing and Communities</td>
<td></td>
</tr>
<tr>
<td>JGEN 120</td>
<td>Basic Business Communication</td>
<td></td>
</tr>
<tr>
<td>JGEN 200</td>
<td>Technical Communication I</td>
<td></td>
</tr>
<tr>
<td>JGEN 300</td>
<td>Technical Communication II</td>
<td></td>
</tr>
</tbody>
</table>

Oral Communication (ACE 2)

Select one of the following: 3

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALEC 102</td>
<td>Interpersonal Skills for Leadership</td>
<td></td>
</tr>
<tr>
<td>COMM 101</td>
<td>Communication in the 21st Century</td>
<td></td>
</tr>
<tr>
<td>or COMM 101H</td>
<td>Honors: Communication in the 21st Century</td>
<td></td>
</tr>
<tr>
<td>COMM 109</td>
<td>Fundamentals of Human Communication</td>
<td></td>
</tr>
<tr>
<td>or COMM 109H</td>
<td>Fundamentals of Human Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 209</td>
<td>Public Speaking</td>
<td></td>
</tr>
<tr>
<td>or COMM 209H</td>
<td>Public Speaking: Public Speaking</td>
<td></td>
</tr>
<tr>
<td>COMM 210</td>
<td>Communicating in Small Groups</td>
<td></td>
</tr>
<tr>
<td>COMM 215</td>
<td>Visual Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 283</td>
<td>Interpersonal Communication</td>
<td></td>
</tr>
<tr>
<td>COMM 286</td>
<td>Business and Professional Communication</td>
<td></td>
</tr>
<tr>
<td>JGEN 300</td>
<td>Technical Communication II</td>
<td></td>
</tr>
<tr>
<td>MRKT 257</td>
<td>Sales Communication</td>
<td></td>
</tr>
<tr>
<td>NRES 301</td>
<td>Environmental Communication Skills</td>
<td></td>
</tr>
<tr>
<td>TMFD 121</td>
<td>Visual Communication and Presentation</td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 9

Economics, Humanities and Social Sciences

Select one of the following (ACE 6): 3

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

Select one course each from ACE outcomes 5, 7, 8, and 9: 12

Credit Hours Subtotal: 15

Total Credit Hours: 50

1. BIOS 101/BIOS 101L are not acceptable for the Veterinary Science or Science Options.
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 Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<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>
<tr>
<td>LIFE 121</td>
<td>Fundamentals of Biology II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; LIFE 121L</td>
<td>and Fundamentals of Biology II Laboratory</td>
<td></td>
</tr>
<tr>
<td>AGRO 215</td>
<td>Genetics</td>
<td>4</td>
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Credit Hours Subtotal: 12

#### Physical Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CHEM 110</td>
<td>General Chemistry II</td>
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</tr>
<tr>
<td>CHEM 251</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 253</td>
<td>Organic Chemistry I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 252</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 254</td>
<td>Organic Chemistry II Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 142</td>
<td>Elementary General Physics II</td>
<td>5</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 17

#### Biological Chemistry

Select one sequence of the following: 4-5

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 321</td>
<td>Elements of Biochemistry</td>
<td></td>
</tr>
<tr>
<td>&amp; BIOC 321L</td>
<td>and Laboratory for Elements of Biochemistry</td>
<td></td>
</tr>
<tr>
<td>BIOC 431</td>
<td>Structure and Metabolism</td>
<td></td>
</tr>
<tr>
<td>BIOS 431</td>
<td>and Biochemistry Laboratory</td>
<td></td>
</tr>
<tr>
<td>CHEM 431</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&amp; BIOC 433</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOS 433</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CHEM 433</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 4

#### Business

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

- **Accounting**
  - ACCT 201 | Introductory Accounting I
  - ACT 1103 | ACCOUNTING I \(^2\)

- **Computing**
  - AIT 80  | INTRO TO COMPUTERS I
  & AIT 1092 | and INTRODUCTION TO SPREADSHEETS \(^1\)

- **Finance**
  - AECN 452 | Agricultural Finance
  - FINA 260 | Personal Finance
  - FINA 361 | Finance
  - ABM 2403 | AG FINANCE \(^1\)

- **Management**
  - AECN 201 | Farm and Ranch Management
  - MNGT 121 / ENTR 121 | Introduction to Entrepreneurial Management
  - MNGT 360 | Managing Behavior in Organizations
  - MNGT 361 | Human Resource Management
  - MGT 2103 | MGT CONCEPTS \(^1\)
  - MGT 2503 | HUMAN RESOURCES MGT \(^1\)

- **Marketing**
  - AECN 225 / EAEP 225 / MRKT 225 | Agribusiness Entrepreneurship in Food Products Marketing
  - AECN 325 / MRKT 325 | Marketing of Agricultural Commodities
  - MRKT 341 / ABUS 341 | Marketing

Credit Hours Subtotal: 7

### Free Electives

Select 0-4 hours

Credit Hours Subtotal: 4

### Veterinary Technology

Select 25 hours of equivalent courses \(^2\)

Credit Hours Subtotal: 25

### Core Requirements

Complete requirements

Credit Hours Subtotal: 50

### Science Option

#### Life Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIFE 121</td>
<td>Fundamentals of Biology II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; LIFE 121L</td>
<td>and Fundamentals of Biology II Laboratory</td>
<td></td>
</tr>
<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>
<tr>
<td>AGRO 215</td>
<td>Genetics</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 12

#### Physical Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 110</td>
<td>General Chemistry II</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 251</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 253</td>
<td>Organic Chemistry I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 252</td>
<td>Organic Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 254</td>
<td>Organic Chemistry II Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 8

#### Biological Chemistry

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 321</td>
<td>Elements of Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOC 321L</td>
<td>and Laboratory for Elements of Biochemistry</td>
<td></td>
</tr>
</tbody>
</table>

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
- BIOS 218 | Human Physiology
- & BIOS 213L | and Human Physiology Laboratory
- BIOS 214 | Human Anatomy
- VBMS 307 | Introduction to Veterinary Anatomy

Credit Hours Subtotal: 4

#### Business

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AECN 225</td>
<td>Agribusiness Entrepreneurship in Food Products Marketing</td>
<td>4</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 4

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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.

\(^2\) These credits, or the equivalent, will be transferred from NCTA or other accredited Veterinary Technology Programs for students who complete the entire program, qualify academically to receive an associate in applied science degree, and pass the national certification examination, or the equivalent, administered at their respective institution.
Select two courses from any two of the following five areas: 5-7

**Accounting**
- ACCT 201: Introductory Accounting I
- ACT 1103: ACCOUNTING I

**Computing**
- AIT 80 & AIT 1092: INTRO TO COMPUTERS I and INTRODUCTION TO SPREADSHEETS

**Finance**
- AECN 452: Agricultural Finance
- FINA 260: Personal Finance
- FINA 361: Finance
- ABM 2403: AG FINANCE

**Management**
- AECN 201: Farm and Ranch Management
- MNGT 121 / ENTR 121: Introduction to Entrepreneurial Management
- MNGT 360: Managing Behavior in Organizations
- MNGT 361: Human Resource Management
- MGT 2103: MGT CONCEPTS
- MGT 2503: HUMAN RESOURCES MGT

**Marketing**
- AECN 225 / EAEP 225 / MRKT 225: Agribusiness Entrepreneurship in Food Products Marketing
- AECN 325 / MRKT 325: Marketing of Agricultural Commodities
- MRKT 341 / ABUS 341: Marketing

**Business Electives**
Select at least two courses from the following areas: 6-7

**Accounting**
- ACCT 202: Introductory Accounting II
- ACT 1203: ACCOUNTING II

**Business and Agribusiness Management**
- AECN 316: Agribusiness Management

**Business Law**
- AECN 452: Agricultural Finance
- BLAW 300: Business, Government & Society
- BLAW 371: Legal Environment

**Finance**
- FINA 260: Personal Finance
- FINA 361: Finance
- ABM 2403: AG FINANCE

**Marketing and Salesmanship**
- MRKT 347: Marketing Communication Strategy
- MRKT 458: Sales Force Management

Credit Hours Subtotal: 19

**Free Electives**
Select 4-5 hours of Electives
Credit Hours Subtotal: 4-5

**Veterinary Technology**
Select 32 hours 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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**Business Option**

**Life Sciences**
- AGRO 215: Genetics

Credit Hours Subtotal: 4

**Physical Sciences**
- CHEM 110: General Chemistry II

Credit Hours Subtotal: 4

**Animal Science**
- ASCI 240: Anatomy and Physiology of Domestic Animals
  - or VTS 1404: ANATOMY & PHYSIOLOGY

Credit Hours Subtotal: 4

**Business**

**Core Courses**
Select one course from each of the following areas: 13

**Accounting**
- ACCT 201: Introductory Accounting I
- ACT 1103: ACCOUNTING I

**Business Management**
- AECN 201: Farm and Ranch Management

**Management**
- MNGT 360: Managing Behavior in Organizations
- MNGT 361: Human Resource Management
- MGT 2503: HUMAN RESOURCES MGT

**Marketing**
- AECN 225 / EAEP 225 / MRKT 225: Agribusiness Entrepreneurship in Food Products Marketing
- AECN 325 / MRKT 325: Marketing of Agricultural Commodities
- MRKT 341 / ABUS 341: Marketing

**BUSINESS ELECTIVES**
Select at least two courses from the following areas: 6-7

**Accounting**
- ACCT 202: Introductory Accounting II
- ACT 1203: ACCOUNTING II

**Business and Agribusiness Management**
- AECN 316: Agribusiness Management

**Business Law**
- AECN 452: Agricultural Finance
- BLAW 300: Business, Government & Society
- BLAW 371: Legal Environment

**Finance**
- FINA 260: Personal Finance
- FINA 361: Finance
- ABM 2403: AG FINANCE

**Marketing and Salesmanship**
- MRKT 347: Marketing Communication Strategy
- MRKT 458: Sales Force Management

Credit Hours Subtotal: 19

**Free Electives**
Select 4-5 hours of Electives
Credit Hours Subtotal: 4-5

**Veterinary Technology**
Select 35 hours of equivalent courses
Credit Hours Subtotal: 35

**Core Requirements**
Complete requirements
Credit Hours Subtotal: 50
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.

### 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 307 Introduction to Veterinary Anatomy

*Prerequisites:* LIFE 120 & LIFE 120L and LIFE 121 & LIFE 121L or equivalent.

*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 340 or BIOS 213 and BIOS 213L, BIOS 312, CHEM 251.

*Notes:* Capstone course.

*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

*Crosslisted 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 or ASCI 340.

*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.

*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 424 Basic Molecular Infectious Diseases
Crosslisted with: VBMS 824
Prerequisites: BIOS 312.
Notes: Offered spring semester of odd-numbered calendar years.
Description: Introduction to the molecular, genetic and cellular aspects of microbial pathogenesis in humans and animals. Critical reviews of original scientific literature and development of manuscript and proposal writing.
Credit Hours: 3
Max credits per semester: 3
Max credits per degree: 3
Format: LEC
Offered: SPRING

VBMS 441 Pathogenic Microbiology
Crosslisted with: BIOS 441, BIOS 841, VBMS 441H, VBMS 841
Prerequisites: BIOS 312
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
Prerequisite for: VBMS 805; VBMS 949

VBMS 441H Pathogenic Microbiology
Crosslisted with: BIOS 441, BIOS 841, VBMS 441, VBMS 841
Prerequisites: BIOS 312
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
Prerequisite for: VBMS 805; VBMS 949

VBMS 441L Pathogenic Microbiology Laboratory
Crosslisted with: VBMS 841L
Prerequisites: BIOS 312.
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.
Notes: 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
Veterinary Technology - Science

Veterinary Science
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, Berring Ingelheim Zetmetica - St. Joseph MO

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

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