VETERINARY TECHNOLOGY

Description
This degree program is appropriate for licensed or license-eligible veterinary technicians desiring a broader education than offered in an associates of applied science (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 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 programs may be found at the AVMA website: https://www.avma.org.

Science Option
This option is designed for students who wish to continue their science education at the baccalaureate degree level, as well as for students 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 an application.

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 sciences, and 2 units of world language. Students must also meet performance requirements: a 3.0 cumulative high school grade point average OR an ACT composite of 20 or higher, writing portion not required OR a score of 1040 or higher on the SAT Critical Reading and Math sections 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 (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 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 world language deficiencies. College-level coursework taken to remove deficiencies may be used to meet degree requirements in CASNR.

Deficiencies in the required entrance subjects can be removed by the 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 ensures that a student will meet the minimum curriculum requirements of the College.

World Languages/Language Requirement
Two units of a world language are required. This requirement is usually met with two years of high school language.

Minimum Hours Required for Graduation
The College grants the bachelor’s 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 (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 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 coursework. 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
- Nebraska Indian Community College
- 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 provide transcripts and complete the Application for Degree form via MyRED. Students without MyRED access may apply for graduation in person at Husker Hub in the Canfield Administration Building, or by mail. Students should discuss these degree programs with their academic advisor.

**Cooperative Degree Programs**
Academic credit from the University and a cooperating institution are 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 and a 3+1 program leading to a bachelor of science in Applied Science.

**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.** Transfer programs are available for students pursuing degree programs leading to a bachelor of science degree.

**Non University of Nebraska–Lincoln Degree-Granting Programs**
CASNR cooperates with other institutions to provide coursework that is applied towards 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 coursework at Chadron State College and one year of specialized range science coursework (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 CASNR 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 the University of Nebraska–Lincoln and participate in prior-approved education abroad programs. University of Nebraska–Lincoln open enrollment and summer independent study courses count toward residence.

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

Major Requirements

Core Requirements

College Integrative Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>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</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PVET 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 from the following: 4

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

**Physical Sciences**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 109A &amp; CHEM 109L</td>
<td>General Chemistry I and General Chemistry I Laboratory</td>
</tr>
</tbody>
</table>

Select one of the following: 5

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 141</td>
<td>Elementary General Physics I ²</td>
</tr>
<tr>
<td>or PHYS 141H</td>
<td>Honors: Elementary General Physics I</td>
</tr>
<tr>
<td>PHYS 211</td>
<td>General Physics I</td>
</tr>
<tr>
<td>or PHYS 211H</td>
<td>Honors: General Physics I</td>
</tr>
<tr>
<td>PHYS 151</td>
<td>Elements of Physics</td>
</tr>
<tr>
<td>&amp; PHYS 153</td>
<td>and Elements of Physics Laboratory ²</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>
</tr>
</tbody>
</table>

**Mathematics and Statistics**

Select 5-6 hours from the following: 5-6

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

**Communications**

Written Communication (ACE 1)

Select two of the following: 6

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

Oral Communication (ACE 2)

Select one of the following: 3

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALEC 102</td>
<td>Interpersonal Skills for Leadership</td>
</tr>
<tr>
<td>COMM 101</td>
<td>Communication in the 21st Century</td>
</tr>
<tr>
<td>or COMM 101H</td>
<td>Honors: Communication in the 21st Century</td>
</tr>
<tr>
<td>COMM 109</td>
<td>Fundamentals of Human Communication</td>
</tr>
<tr>
<td>or COMM 109H</td>
<td>Honors: Fundamentals of Human Communication</td>
</tr>
<tr>
<td>COMM 209</td>
<td>Public Speaking</td>
</tr>
<tr>
<td>or COMM 209H</td>
<td>Honors: Public Speaking</td>
</tr>
<tr>
<td>COMM 210</td>
<td>Communicating in Small Groups</td>
</tr>
<tr>
<td>COMM 215</td>
<td>Visual Communication</td>
</tr>
<tr>
<td>COMM 283</td>
<td>Interpersonal Communication</td>
</tr>
</tbody>
</table>

**Economics, Humanities and Social Sciences**

Select one of the following (ACE 6): 3

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

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

**Science Option**

**Life Sciences**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGRO 215 / HORT 215 / TLMT 215</td>
<td>Genetics</td>
</tr>
<tr>
<td>BIOS 312</td>
<td>Microbiology</td>
</tr>
<tr>
<td>BIOS 314</td>
<td>Microbiology Laboratory</td>
</tr>
<tr>
<td>LIFE 121 &amp; LIFE 121L</td>
<td>Fundamentals of Biology II and Fundamentals of Biology II Laboratory</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 12

**Physical Sciences**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 110A &amp; CHEM 110L</td>
<td>General Chemistry II and General Chemistry II Laboratory</td>
</tr>
<tr>
<td>CHEM 251</td>
<td>Organic Chemistry I</td>
</tr>
<tr>
<td>CHEM 253</td>
<td>Organic Chemistry Laboratory</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 8

**Biological Chemistry**

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOC 401 &amp; BIOC 401L</td>
<td>Elements of Biochemistry and Laboratory for Elements of Biochemistry</td>
</tr>
</tbody>
</table>

Credit Hours Subtotal: 4

**Anatomy and Physiology**

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

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASCI 340</td>
<td>Animal Physiological Systems</td>
</tr>
<tr>
<td>BIOS 213</td>
<td>Human Physiology</td>
</tr>
<tr>
<td>&amp; BIOS 213L</td>
<td>and Human Physiology Laboratory</td>
</tr>
<tr>
<td>BIOS 214</td>
<td>Human Anatomy</td>
</tr>
<tr>
<td>VBMS 407</td>
<td>Introduction to Veterinary Anatomy</td>
</tr>
</tbody>
</table>
ADDITIONAL MAJOR REQUIREMENTS

Grade Rules

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

Grading for 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 250 Breeds, Signalment, and Vitals of Domestic Animals
Description: Fundamentals of signalment assessment including identification of domestic animal breeds, description of coat, color and markings, terms used when describing species, age, gender, reproductive status, and collections of animals, and introduction to species-specific life history and vital signs.
Credit Hours: 2
Max credits per semester: 2
Max credits per degree: 2
Grading Option: Graded

VBMS 291 Special Topics in Veterinary Science
Notes: Six (6) hours maximum VBMS 291 special topics hours total. May be repeated up to three times so long as the topics are different.
Description: Special topics in veterinary medicine and biomedical sciences. Topics vary each term.
Credit Hours: 1-3
Min credits per semester: 1
Max credits per semester: 3
Max credits per degree: 6
Grading Option: Graded with Option

VBMS 303 Principles and Prevention of Livestock Diseases
Prerequisites: Juniors and seniors; ASCI 240 or ASCI 340 or BIOS 213 and BIOS 213L.
Notes: BIOS 300 or BIOS 312 recommended.
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
Grading Option: Graded with Option

VBMS 391 Advanced Special Topics in Veterinary Science
Prerequisites: Junior or Senior standing
Notes: Eight (8) hours maximum VBMS 391 special topics hours total. May be repeated up to three times so long as the topics are different.
Description: Advanced topics in veterinary medicine and biomedical sciences. Topics vary each term.
Credit Hours: 1-4
Min credits per semester: 1
Max credits per semester: 4
Max credits per degree: 8
Grading Option: Graded with Option

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
Grading Option: Graded with Option
ACE: ACE 10 Integrated Product

VBMS 407 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 prosected cadavers and skeletal preparations.
Credit Hours: 4
Max credits per semester: 4
Max credits per degree: 4
Grading Option: Graded with Option

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
Grading Option: Graded with Option
**VBMS 410 General Pharmacology and Toxicology**  
**Prerequisites:** BIOS 213, ASCI 240, or ASCI 340; BIOC 401 or BIOC/BIOS/CHM 431/831; or equivalent.  
**Notes:** Recommended: CHEM 252 and 254; BIOC/BIOS/CHM 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  
**Grading Option:** Graded with Option  
**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  
**Grading Option:** Graded with Option  
**Offered:** SPRING

**VBMS 441 Pathogenic Microbiology**  
**Crosslisted with:** VBMS 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  
**Grading Option:** Graded with Option  
**Prerequisite for:** VBMS 805; VBMS 949

**VBMS 441H Pathogenic Microbiology**  
**Crosslisted with:** VBMS 441, VBMS 441L, 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:** 2  
**Max credits per semester:** 1  
**Max credits per degree:** 1  
**Grading Option:** Graded with Option  

**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  
**Grading Option:** Graded with Option

**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  
**Grading Option:** Graded with Option

**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  
**Max credits per semester:** 1  
**Max credits per degree:** 5  
**Grading Option:** Graded with Option

**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  
**Max credits per semester:** 3  
**Max credits per degree:** 6  
**Grading Option:** Graded

**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  
**Max credits per semester:** 3  
**Max credits per degree:** 6  
**Grading Option:** Graded

**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 - 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, Berringer 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