

# 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.

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>.

## 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.

### 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. 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 ensure 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.

### Experiential Learning

All undergraduates in the College of Agricultural Sciences and Natural Resources must take an Experiential Learning (EL) designated course. This may include 0-credit courses designed to document co-curricular activities recognized as Experiential Learning.

### 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 their 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 the 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.

## 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<sup>1</sup> (>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 the University of Nebraska–Lincoln and participate in prior-approved education abroad programs. The University of Nebraska–Lincoln open enrollment and summer independent study courses count toward residence.

<sup>1</sup> Includes courses taught by CASNR faculty through interdisciplinary prefixes (e.g., LIFE, MBIO, ENVR, SCIL, EAEP, 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 coursework under the 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](http://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. Students transferring from a community college, but without admission to a Joint Academic Transfer Program, may be eligible to fulfill the requirements as stated in the catalog for an academic year in which they were enrolled at the community college prior to attending the University of Nebraska–Lincoln. This decision should be made in consultation with academic advisors, provided the student a) was enrolled in a community college during the catalog year they are utilizing, b) maintained continuous enrollment at the previous institution for 1 academic year or more, and c) continued enrollment at the University of Nebraska–Lincoln within 1 calendar year from their last term at the previous institution. 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 the University of Nebraska–Lincoln 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. Apply to the veterinary school of the student's choice.
5. Converse in a knowledgeable and professional manner with employers and colleagues.

## Major Requirements

### Core Requirements

#### College Integrative Courses

SCIL 101	Science and Decision-Making for a Complex World	3
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Credit Hours Subtotal:	3
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#### Veterinary Science

PVET 101	Success in Veterinary Science	1
VBMS 403	Integrated Principles and Prevention of Livestock Diseases (Capstone Course (ACE 10))	4

Credit Hours Subtotal:	5
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#### Natural Sciences

##### CASNR Approved Life Sciences

LIFE 120 & 120L	Fundamentals of Biology I and Fundamentals of Biology I laboratory (ACE 4)	4
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##### Physical Sciences

CHEM 109A & CHEM 109L	General Chemistry I and General Chemistry I Laboratory	4
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Select one of the following:	5
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AGST 109 & 109L	Physical Principles in Agriculture and Life Sciences and Physical Principles in Agriculture and Life Sciences Laboratory	
PHYS 141	Physics for Life Sciences I <sup>1</sup>	
or PHYS 141H	Honors: Physics for Life Sciences I	
PHYS 151 & PHYS 153	Elements of Physics and Elements of Physics Laboratory <sup>1</sup>	
PHYS 211	General Physics I	
or PHYS 211H	Honors: General Physics I	
Credit Hours Subtotal:		13
<b>Mathematics and Statistics</b>		
Select 5-6 hours from the following:		5-6
MATH 102	Trigonometry	
MATH 103	College Algebra and Trigonometry (2 of 5 credits count)	
MATH 104	Applied Calculus (ACE 3)	
MATH 106	Calculus I (ACE 3)	
STAT 218	Introduction to Statistics (ACE 3)	
Credit Hours Subtotal:		5
<b>Communications</b>		
<i>Written Communication (ACE 1)</i>		
Select two of the following:		6
ENGL 150	Writing and Inquiry	
or ENGL 150H	Honors Writing: Writing and Inquiry	
ENGL 151	Writing for Change	
or ENGL 151H	Honors Writing: Writing for Change	
ENGL 254	Writing and Communities	
or ENGL 254H	Honors: Writing and Communities	
JGEN 120	Basic Business Communication	
JGEN 200	Technical Communication I	
JGEN 300	Technical Communication II	
<i>Oral Communication (ACE 2)</i>		
Select one of the following:		3
ALEC 102	Interpersonal Skills for Leadership	
COMM 101	Communication in the 21st Century	
or COMM 101H	Honors: Communication in the 21st Century	
COMM 209	Public Speaking	
or COMM 209H	Honors: Public Speaking	
COMM 210	Communicating in Small Groups	
COMM 215	Visual Communication	
COMM 283	Interpersonal Communication	
COMM 286	Business and Professional Communication	
JGEN 300	Technical Communication II	
MRKT 257	Sales Communication	
NRES 301	Environmental Communication Skills	
TMFD 121	Visual Communication with Animation	
Credit Hours Subtotal:		9
<b>Economics (ACE 6)</b>		
Select one of the following:		3
AECN 141	Introduction to the Economics of Agriculture	
ECON 200	Economic Essentials and Issues	

ECON 211	Principles of Macroeconomics	
or ECON 211H	Honors: Principles of Macroeconomics	
ECON 212	Principles of Microeconomics	
or ECON 212H	Honors: Principles of Microeconomics	
Credit Hours Subtotal:		3
<b>ACE Requirement</b>		
Select one course each from ACE outcomes 5, 7, 8, and 9		12
Credit Hours Subtotal:		12
<b>Total Credit Hours</b>		<b>50</b>

<sup>1</sup> Physics course(s) taken should meet pre-veterinary and additional course prerequisites if an application to professional school is intended. Consult your advisor regarding which courses fulfill this requirement.

#### Life Sciences

BIOS 312	Microbiology	3
BIOS 314	Microbiology Laboratory	1
LIFE 121	Fundamentals of Biology II	3
LIFE 121L	Fundamentals of Biology II Laboratory	1
PLAS 215	Genetics	4
or BIOS 201	General Genetics	
Credit Hours Subtotal:		12

#### Physical Sciences

CHEM 110A & CHEM 110L	General Chemistry II and General Chemistry II Laboratory	4
CHEM 251	Organic Chemistry I	3
CHEM 253	Organic Chemistry I Laboratory	1
Credit Hours Subtotal:		8

#### Biological Chemistry

BIOC 401 & 401L	Elements of Biochemistry and Laboratory for Elements of Biochemistry	4
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:

ASCI 340	Animal Physiological Systems	
BIOS 213 & 213L	Human Physiology and Human Physiology Laboratory	
BIOS 214	Human Anatomy	
VBMS 407	Introduction to Veterinary Anatomy	
Credit Hours Subtotal:		4

#### Free Electives

Select 9-12 hours	9-12
Credit Hours Subtotal:	10

#### Veterinary Technology

Select 32 hours of equivalent courses	32
Credit Hours Subtotal:	32

#### Core Requirements

Complete requirements	50
Credit Hours Subtotal:	50
<b>Total Credit Hours</b>	<b>120</b>



## ADDITIONAL MAJOR REQUIREMENTS

### Grade Rules

#### GPA Requirements

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

#### Grading

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

**Crosslisted with:** PVET 250

**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 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 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 406 Introduction to the Principles of Biosecurity and Disease Transmission

**Crosslisted with:** VMED 506, VBMS 806

**Prerequisites:** VBMS 406: Open to juniors or seniors who have completed LIFE 120 & LIFE 121. VBMS 806: Open to graduate students enrolled in the UNL Graduate College. VMED 506: Open to veterinary professional students.

**Description:** An introduction into biosecurity and the principles of disease transmission. Covering the concepts of infectious disease transmission with practical applications for control and prevention.

**Credit Hours:** 2

**Max credits per semester:** 2

**Max credits per degree:** 2

**Grading Option:** Graded with Option

**Offered:** SPRING

#### 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

**Offered:** SPRING

**Course and Laboratory Fee:** \$60

#### VBMS 408 Functional Histology

**Crosslisted with:** BIOS 408, BIOS 808, VBMS 808

**Prerequisites:** BIOS 101 and 101L or LIFE 120 and 120L; 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

**Course and Laboratory Fee:** \$15

**VBMS 410 General Pharmacology and Toxicology**

**Prerequisites:** BIOS 213, ASCI 240, or ASCI 340; BIOC 401 or BIOC/BIOS/CHEM 431/831; or equivalent.

**Notes:** Recommended: CHEM 252 and 254; BIOC/BIOS/CHEM 432/832 and CHEM 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 425 Wildlife Health**

**Crosslisted with:** NRES 425

**Prerequisites:** LIFE 120 and LIFE 121; Junior standing and above

**Description:** Introduction to ecological, social, and institutional issues. Engage in discussions of important zoonotic diseases, diseases of conservation concern, non-infectious threats, and strategies for assessing and managing wildlife health.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded

**Offered:** SPRING

**VBMS 440 Microbial Physiology**

**Crosslisted with:** BIOS 440, BIOS 840, VBMS 840, MBIO 440

**Prerequisites:** BIOS 312; BIOS 314.

**Description:** Molecular approaches to the study of prokaryotic cell structure and physiology, including growth, cell division, metabolism, and alternative microbial life styles.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded with Option

**Course and Laboratory Fee:** \$20

**VBMS 441 Pathogenic Microbiology**

**Crosslisted with:** BIOS 441, BIOS 841, 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

**Offered:** SPRING

**Prerequisite for:** VBMS 805; VBMS 949

**Course and Laboratory Fee:** \$25

**VBMS 443 Immunology**

**Crosslisted with:** BIOS 443, BIOS 843, VBMS 843, MBIO 443

**Prerequisites:** BIOS 201; CHEM 251 or CHEM 261.

**Description:** Fundamental consideration of cellular and humoral mechanisms of immunity, the structure and function of immunoglobulins, antigen-antibody interactions; hypersensitivity; transplantation and tumor immunity; immune and autoimmune disorders.

**Credit Hours:** 3

**Max credits per semester:** 3

**Max credits per degree:** 3

**Grading Option:** Graded with Option

**Prerequisite for:** VBMS 908; VBMS 910; VBMS 948; VBMS 949

**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

**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

**Min credits per semester:** 3

**Max credits per semester:** 6

**Max credits per degree:** 6

**Grading Option:** Graded

## 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, 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