

COLLEGE OF VETERINARY MEDICINE

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vetmed.iastate.edu/ (<http://vetmed.iastate.edu/>)

Departments of the College

- Biomedical Sciences
- Veterinary Clinical Sciences
- Veterinary Diagnostic and Production Animal Medicine
- Veterinary Microbiology and Preventive Medicine
- Veterinary Pathology

Other units of the college include the Lloyd Veterinary Medical Center, Veterinary Diagnostic Laboratory, Veterinary Medical Research Institute, CVM Information Technology and The Office of Curricular Assessment and Teaching Support. The college participates in interdisciplinary graduate programs in genetics; molecular, cellular and developmental biology; toxicology; immunobiology; and neuroscience.

Objectives of the Curriculum

The instructional objective of the College of Veterinary Medicine is to enable students to assume vital roles in society as productive health care providers and biomedical scientists. Such an education provides students with general learning, communication, and problem solving abilities; veterinary medical practice and research skills; and professional and ethical values.

The curriculum incorporates basic biomedical and clinical principles, clinical decision making skills, and exceptional clinical experience in small animal medicine and surgery, equine medicine and surgery, food animal medicine and surgery, and production animal medicine. Companion animal medicine and surgery are provided within the regionally recognized referral hospital through the community practice unit and equine field services. The college is located in one of the most intensive livestock producing areas in the United States. Because of this, students have the opportunity to engage in extensive food supply veterinary medicine experiences and to experience numerous diagnostic cases.

The professional curriculum is a four-year course of study leading to the doctor of veterinary medicine degree. Each of the first three years of the curriculum consists of two semesters while the fourth year has three semesters. Students are admitted into the professional curriculum after

completing a minimum of 55 semester credits of required undergraduate coursework.

A strong and reputable basic science education during the first two years of the professional curriculum prepares veterinary students for a wide range of clinical experience during the last two years of the educational program. Fourth year students may choose to enhance their education by earning clinical elective credits at approved government agencies, research laboratories, veterinary practices and other university hospitals. Outstanding research programs in infectious diseases, food safety, neuroscience, immunoparasitology, evidence-based medicine, and many other areas provide opportunities for qualified students to participate in research.

Concurrent DVM/MS, DVM/PhD, DVM/MPH and DVM/MBA programs are available for qualified students who wish to obtain both veterinary and graduate degrees. Students must have a bachelor's degree or a minimum of 128 semester credits in undergraduate and professional curricula in order to participate in the concurrent DVM/graduate degree program. Admission to the concurrent degree program is subject to the approval of the deans of the College of Veterinary Medicine and the Graduate College.

The college is an important recruiting center for employers seeking veterinarians for private practice; industry; educational institutions; international agencies; federal, state and local governments; the armed forces; departments of public health; zoological gardens; and other related fields of professional activity. Graduates are highly sought after and typically have multiple employment offers upon graduation. Career services and an online job board are available for students.

Pre-Veterinary Medicine Preparation Admission Requirements

The College of Veterinary Medicine seeks students with diverse backgrounds and encourages students to enroll in baccalaureate programs in the college of their choice. A Bachelor's degree is not required for admission to the College of Veterinary Medicine. However, students must have a strong science foundation found in the required pre-veterinary coursework (<https://vetmed.iastate.edu/future-dvm-students/apply-to-the-college/pre-veterinary-requirements/course/>).

Veterinarians have varied career options. When deciding on an undergraduate major, the student should consider the area of veterinary medicine which interests them. For example, those who desire a career in clinical practice may wish to pursue a degree in biological science, animal science, agricultural economics, business, social science or humanities. Students with an interest in zoo or wildlife veterinary medicine may want to look at animal ecology, environmental studies or zoology. Future researchers may wish to consider genetics, molecular biology, microbiology, or biochemistry. Students who desire a career in public health (USDA, FDA, etc) or government (legislative/policy) may

find benefit in any of the biological sciences or in political science. A degree in education may be valuable to those who envision themselves as educators in a College of Veterinary Medicine. These examples are only suggestions and are but a few of the many possibilities.

For the most current information regarding application and admission to the College of Veterinary Medicine, please refer to the College web site at www.vetmed.iastate.edu/ (<http://www.vetmed.iastate.edu/>).

Applicants for admission to the College of Veterinary Medicine must have attended an accredited college or university and have completed 55 semester credits prior to the end of the spring term of the year in which they seek to be admitted to the College of Veterinary Medicine.

All science requirements should be fulfilled by the time of application or scheduled for completion by the end of the fall term in which the applicant applies. However, if necessary, the applicant may complete up to two required science courses after the fall term providing a transcript with the courses and grades listed is postmarked by July 1 of the year the applicant would enter. There is no maximum number of non-science required courses that may be completed but the deadline of having a transcript with these course grades posted by July 1 also applies. The July 1 deadline for transcripts and grades is firm.

Required courses must be completed with a grade of C (2.00) or better. A grade of C- (1.67) does not fulfill the requirement.

Credits earned must include the following Iowa State semester course offerings or their equivalents:

English Composition 6 cr.

One year of composition or writing emphasis courses. May include business or technical writing. Two of the following courses would fulfill the requirement.

ENGL 1500	Critical Thinking and Communication	3
ENGL 2500	Written, Oral, Visual, and Electronic Composition	3
ENGL 3020	Business Communication	3
ENGL 3090	Proposal and Report Writing	3
ENGL 3140	Technical Communication	3

Oral Communications 3 cr.

May include public speaking, interpersonal communication, group or organizational communication or speaking emphasis courses. One of the courses below will fulfill the requirement.

SPCM 2120	Fundamentals of Public Speaking	3
AGEDS 3110	Presentation and Sales Strategies for Agricultural Audiences	3
SPCM 3120	Business and Professional Speaking	3
COMST 2140	Professional Communication	3

General Chemistry with Laboratory* 7 cr.

One year series for science majors with one semester lab.

CHEM 1770 & 1770L	General Chemistry I and Laboratory in General Chemistry I	5
CHEM 1780	General Chemistry II	3
Total Credits		8

Organic Chemistry with Laboratory* 4 cr.

The first in a two-semester series of Organic Chemistry with lab. The second semester of organic chemistry will not fulfill this requirement.

CHEM 3310	Organic Chemistry I	3
CHEM 3310L	Laboratory in Organic Chemistry I	1
Total Credits		4

Biochemistry* 3 cr.

One semester (no lab required). One of the courses below will fulfill the requirement. Must be metabolic biochemistry and cannot be biochemistry of proteins and enzymes alone.

BBMB 3010	Survey of Biochemistry	3
BBMB 3160	Principles of Biochemistry	3
BBMB 4040	Biochemistry I	3
BBMB 4200	Mammalian Biochemistry	3

General Physics with Laboratory* 4 cr.

First semester of a two-semester series with lab. Must include mechanics, fluids, heat and thermodynamics, vibrations, waves and sound. The second semester of Physics will not fulfill this requirement.

PHYS 1310	General Physics I	4
PHYS 1310L	General Physics I Laboratory	1
PHYS 1150	Physics for the Life Sciences	4
PHYS 1150L	Laboratory in Physics for the Life Sciences	1
PHYS 2310	Introduction to Classical Physics I	4
PHYS 2310L	Introduction to Classical Physics I Laboratory	1

General Biology with Laboratory* 8 cr.

Two semester series with lab each semester. If a series is not available a course in organismal biology with lab and a course in cellular biology and lab will fulfill this requirement. In addition, a bachelor's degree in biology fulfills this requirement.

BIOL 2110	Principles of Biology I	3
BIOL 2110L	Principles of Biology Laboratory I	1
BIOL 2120	Principles of Biology II	3
BIOL 2120L	Principles of Biology Laboratory II	1
Total Credits		8

Genetics * 3 cr.

Must include Mendelian and molecular genetics. A general genetics course is preferred, but animal breeding/livestock improvement courses will be accepted. One of the courses below will fulfill the requirement.

BIOL 3130	Principles of Genetics	3
GEN 3200	Genetics, Agriculture and Biotechnology	3
ANS 3520	Genetic Improvement of Domestic Animals	3

Mammalian Anatomy or Physiology* 3 cr.

Human anatomy or physiology will also fulfill this requirement (no lab required). Must be an overview of all organ systems. If you take an Anatomy and/or Physiology I course, you must also take the second course, Anatomy and/or Physiology II, in order to fulfill the requirement. One of the courses below will fulfill the requirement.

BMS 3290	Anatomy and Physiology of Domestic Animals	3
BMS 4470	Introduction to Human Gross Anatomy	4
BMS 5380	Principles of Physiology	4
ANS 2140	Domestic Animal Physiology	3
BIOL 1550	Human Biology	3
BIOL 2550	Fundamentals of Human Anatomy	3
BIOL 3350	Principles of Human and Other Animal Physiology	3
BIOL 3510	Comparative Chordate Anatomy	5

Humanities or Social Sciences 6 cr.**Electives 8 cr.****Total Credits Required 60 cr.**

Courses above marked with an asterisk (*) are the required science courses. The required science course GPA is calculated from these courses.

Credits in the previously specified courses will normally be earned on the traditional four-letter grading system with A as the highest grade and D as the lowest passing grade. All required courses must be completed with a grade of C (2.0) or better. It is generally expected that required courses have been completed within the past eight (8) years. AP or CLEP credits must be documented by original scores submitted to the College of Veterinary Medicine. CLEP credits may be accepted only for arts, humanities and social sciences. Credits in the preceding specified courses will not be accepted if earned under the pass-not pass grading system or similar options. Please see COVID-19 exceptions (<https://vetmed.iastate.edu/sites/default/files/COVID-19-ImpactStatementRevised-10-23-2020.pdf>).

Application and Admission

Applicants must apply using the Veterinary Medical College Application Service (VMCAS). The VMCAS application may be found online at the

VMCAS website (<https://www.aavmc.org/becoming-a-veterinarian/how-to-apply/>).

Those applying through VMCAS also need to complete the ISU Supplemental Application (<https://vetmed.iastate.edu/future-dvm-students/apply-to-the-college/application-requirements/supplemental-application/>) found at the College of Veterinary Medicine website. The deadline for filing the VMCAS and Supplemental Application is typically mid-September.

A list of courses in progress at the time of submission and/or scheduled for completion by the end of spring term should be entered in the VMCAS application. Undergraduate college credits must average at least 2.50 on a 4.00 marking system for the application to be eligible for review. The preceding scholastic requirements are minimum and do not assure admission even though these requirements have been fulfilled.

Admission to the College of Veterinary Medicine is on a competitive and selective basis. GPA, animal, veterinary, research and other employment experiences, essays, recommendations and personal development (leadership, citizenship, volunteerism, etc.) are given consideration in the selection of candidates.

Positions are available to applicants in several applicant pools, including Iowa residents, participants in the Professional Program in Veterinary Medicine with the University of Nebraska-Lincoln, participants in the contract with the State of North Dakota, participants in other institution-specific contracts, and all other applicants including non-Iowan US citizens and international applicants. Consideration for admission is given equally without regard to race, color, national origin, gender, religion, disability, or age, political beliefs, or marital or familial status.

For further information, please visit the College of Veterinary Medicine at <https://vetmed.iastate.edu/future-dvm-students> (<https://vetmed.iastate.edu/future-dvm-students/>).

**Curriculum in Veterinary Medicine
Graduation Requirements**

To be awarded the degree Doctor of Veterinary Medicine, candidates must have passed all required courses in the curriculum in veterinary medicine, earned a minimum 2.0 grade-point average in the veterinary medicine curriculum, and earned at least 4 elective credits during the VM1-3 years. Candidates must also have given a grand rounds presentation (VCS 7495 Grand Rounds Presentations).

Required Courses in the Professional Program

BMS 7330	Principles Of Morphology I	6
BMS 7331	Principles of Morphology II	4
BMS 7333	Biomedical Sciences I	6
BMS 7334	Biomedical Sciences II	6

BMS 7335	Molecular and Cellular Basis of Disease	1
BMS 7336	Veterinary Nutrition	2
BMS 7337	Neuroanatomy	3
BMS 7339	Clinical Foundations I	1
BMS 7345	Case Study I	1
BMS 7346	Case Study II	1
BMS 7354	General Pharmacology	3
BMS 7443	Pharmacology and Therapeutics	3
VCS 7311	Careers in Veterinary Medicine	arr †
VCS 7313	Veterinary Medical Ethics	1
VCS 7314	Communication and Leadership in Veterinary Medicine	1
VCS 7315	Veterinary Law	1
VCS 7339	Clinical Foundations I	1
VCS 7385	Grand Rounds	arr †
VCS 7391	Clinical Imaging	1
VCS 7393	Principles of Surgery	3
VCS 7394	Principles of Surgery Laboratory	1
VCS 7395	Small Animal Surgery	2
VCS 7398	Anesthesiology	2
VCS 7399	Ophthalmology	1
VCS 7436	Small Animal Internal Medicine	3
VCS 7440	Introduction to Clinics	arr †
VCS 7444	Small Animal Medicine	4
VCS 7445	Equine Medicine	2
VCS 7448	Diagnostic Imaging and Radiobiology	3
VCS 7449B	Junior Surgery Laboratory: Traditional Curriculum	3
VDPAM 7312	Introduction to Animal Welfare	1
VDPAM 4260	Veterinary Toxicology	3
VDPAM 7445	Production Animal Clinical Medicine	3
VDPAM 7450	Disturbances of Reproduction	4
VMPM 7378	Case Study IV	2
VMPM 7380	Veterinary Immunology	2
VMPM 7386	Veterinary Microbiology	5
VMPM 7387	Veterinary Virology	3
VMPM 7388	Public Health and the Role of the Veterinary Profession	3
VMPM 7437	Infectious Diseases and Preventive Medicine	3
VPTH 7342	Anatomic Pathology I	3
VPTH 7372	Anatomic Pathology II	4

VPTH 7376	Veterinary Parasitology	4
VPTH 7377	Case Study III	2
VPTH 7409	Introduction to Veterinary Cytology and Laboratory Techniques	1
VPTH 7425	Clinical Pathology	4

† Arranged with instructor.

Fourth Year

The fourth year of the veterinary medical curriculum is designed to be flexible yet provide a broad-based clinical education involving all domestic species of animals. All students participate in rotations that are considered fundamental to any species orientation that the student might choose. In addition, students choose one of four options for additional study, including the Small Animal, Equine, Mixed Animal, or Food Animal Options. Students may obtain clinical elective credits by repeating on-campus rotations or participating in approved off-campus preceptorships at government, private or public agencies; other universities; or private veterinary practices.

The following rotations are required of all fourth-year students in addition to the requirements of the track they choose. A complete listing of track-specific requirements can be found at: <http://vetmed.iastate.edu/>:

VCS 7453	Small Animal Medicine I	2
VCS 7455	Small Animal Soft Tissue Surgery	2
or VCS 7456	Small Animal Orthopedic Surgery	
Must have one equine course as assigned by the schedule optimizer.		2
VCS 7457	Equine Medicine	
or VCS 7464	Equine Field Services	
or VCS 7458	Equine Surgery	
VCS 7460	Radiology	2
VCS 7463	Primary Care	2
VCS 7466	Anesthesiology	2
VCS 7468	Intensive Care	4
VCS 7495	Grand Rounds Presentations	arr †
VDPAM 7477	Food Animal and Camelid Medicine and Surgery	2
VPTH 7456	Necropsy Laboratory Practicum	2
& VPTH 7457	and Clinical Pathology Laboratory Practicum	
(Taken together as one 2-week block)		

† Arranged with instructor.

Reinstatement

Any student who voluntarily withdraws from the College of Veterinary Medicine or who is dismissed from the College of Veterinary Medicine, after having successfully completed one or more semesters forfeits his/

her standing and must make written application for reinstatement to this college a minimum of 60 days prior to the opening of the semester for which they seek to re-enter. Any student who voluntarily withdraws from the College of Veterinary Medicine prior to completion of one semester must re-apply for admission to the college in the general applicant pool.