

COLLEGE OF VETERINARY MEDICINE

Dan Grooms, Dean 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, Veterinary Education and Technology Services and Office of Curricular and Student Assessment. 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 engage in extensive food supply veterinary medicine experiences and 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. While a Bachelor's degree is not required for admissions to the College of Veterinary Medicine, 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 applications 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 the applicant seeks 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 150	Critical Thinking and Communication	3
ENGL 250	Written, Oral, Visual, and Electronic Composition	3
ENGL 302	Business Communication	3
ENGL 309	Proposal and Report Writing	3
ENGL 314	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.

SP CM 212	Fundamentals of Public Speaking	3
AGEDS 311	Presentation and Sales Strategies for Agricultural Audiences	3
SP CM 312	Business and Professional Speaking	3
COMST 214	Professional Communication	3

General Chemistry with Laboratory* 7 cr.

One year series for science majors with one semester lab.

CHEM 177 & 177L	General Chemistry I and Laboratory in General Chemistry I	5
CHEM 178	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 331	Organic Chemistry I	3
CHEM 331L	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 301	Survey of Biochemistry	3
BBMB 316	Principles of Biochemistry	3
BBMB 404	Biochemistry I	3
BBMB 420	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 131	General Physics I	4
PHYS 131L	General Physics I Laboratory	1
PHYS 115	Physics for the Life Sciences	4
PHYS 115L	Laboratory in Physics for the Life Sciences	1
PHYS 231	Introduction to Classical Physics I	4
PHYS 231L	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 211	Principles of Biology I	3
BIOL 211L	Principles of Biology Laboratory I	1
BIOL 212	Principles of Biology II	3
BIOL 212L	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 313	Principles of Genetics	3
GEN 320	Genetics, Agriculture and Biotechnology	3
AN S 352	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.

B M S 329	Anatomy and Physiology of Domestic Animals	3
B M S 447	Introduction to Human Gross Anatomy	4
B M S 538	Principles of Physiology	4
AN S 214	Domestic Animal Physiology	3
BIOL 155	Human Biology	3
BIOL 255	Fundamentals of Human Anatomy	3
BIOL 335	Principles of Human and Other Animal Physiology	3
BIOL 351	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.

Approximately 60 positions are reserved for Iowa residents. The remaining positions are allotted to the following: Professional Program in Veterinary Medicine with the University of Nebraska-Lincoln (~26), contract with the State of North Dakota (~4) and the non-resident applicant pool (~71). The non-resident applicant pool includes international applicants. Consideration is given equally to all applicants without regard to race, color, national origin, gender, religion, disability, or age, political beliefs, or marital or familial status.

For further information on these programs and contracts, 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 (V C S 495 Grand Rounds Presentations).

Required Courses in the Professional Program

B M S 330	Principles of Morphology I	6
B M S 331	Principles of Morphology II	4
B M S 333	Biomedical Sciences I	6
B M S 334	Biomedical Sciences II	6
B M S 335	Molecular and Cellular Basis of Disease	1
B M S 336	Veterinary Nutrition	2

B M S 337	Neuroanatomy	3
B M S 339	Clinical Foundations I	1
B M S 345	Case Study I	1
B M S 346	Case Study II	1
B M S 354	General Pharmacology	3
B M S 443	Pharmacology and Therapeutics	3
V C S 311	Veterinarian in Society I	R
V C S 313	Veterinarian in Society III	1
V C S 314	Veterinarian in Society IV	1
V C S 315	Veterinarian in Society V	1
V C S 339	Clinical Foundations I	1
V C S 385	Grand Rounds	R
V C S 391	Clinical Imaging	1
V C S 393	Principles of Surgery	3
V C S 394	Principles of Surgery Laboratory	1
V C S 395	Small Animal Surgery	2
V C S 398	Anesthesiology	2
V C S 399	Ophthalmology	1
V C S 436	Small Animal Internal Medicine	3
V C S 440	Introduction to Clinics	R
V C S 444	Small Animal Medicine	4
V C S 445	Equine Medicine	2
V C S 448	Diagnostic Imaging and Radiobiology	3
V C S 449	Junior Surgery Laboratory	3
VDPAM 312	Introduction to Animal Welfare	1
VDPAM 426	Veterinary Toxicology	3
VDPAM 445	Production Animal Clinical Medicine	3
VDPAM 450	Disturbances of Reproduction	4
V MPM 378	Case Study IV	2
V MPM 380	Veterinary Immunology	2
V MPM 386	Veterinary Microbiology	5
V MPM 387	Veterinary Virology	3
V MPM 388	Public Health and the Role of the Veterinary Profession	3
V MPM 437	Infectious Diseases and Preventive Medicine	3
V PTH 342	Anatomic Pathology I	3
V PTH 372	Anatomic Pathology II	4
V PTH 376	Veterinary Parasitology	4
V PTH 377	Case Study III	2
V PTH 409	Introduction to Veterinary Cytology and Laboratory Techniques	1
V PTH 425	Clinical Pathology	4

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/>:

V C S 453	Small Animal Medicine I	2
V C S 455	Small Animal Soft Tissue Surgery	2
or V C S 456	Small Animal Orthopedic Surgery	
Must have one equine course as assigned by the schedule optimizer:		2
V C S 457	Equine Medicine	
or V C S 464	Equine Field Services	
or V C S 458	Equine Surgery	
V C S 460	Radiology	2
V C S 463	Primary Care	2
V C S 466	Anesthesiology	2
V C S 468	Intensive Care	4
V C S 495	Grand Rounds Presentations	R
VDPAM 477	Food Animal and Camelid Medicine and Surgery	2
V PTH 456	Necropsy Laboratory Practicum	2
& V PTH 457	and Clinical Pathology Laboratory Practicum	
(Taken together as one 2-week block)		

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.