COLLEGE OF VETERINARY MEDICINE

Dan Grooms, Dean of Veterinary Medicine

Jared A. Danielson, Senior Associate Dean for Academic and Student Programs Success and Innovation

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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 1500</td>
<td>Critical Thinking and Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2500</td>
<td>Written, Oral, Visual, and Electronic Composition</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 3020</td>
<td>Business Communication</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 3090</td>
<td>Proposal and Report Writing</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 3140</td>
<td>Technical Communication</td>
<td>3</td>
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</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>SPCM 2120</td>
<td>Fundamentals of Public Speaking</td>
<td>3</td>
</tr>
<tr>
<td>AGEDS 3110</td>
<td>Presentation and Sales Strategies for Agricultural Audiences</td>
<td>3</td>
</tr>
<tr>
<td>SPCM 3120</td>
<td>Business and Professional Speaking</td>
<td>3</td>
</tr>
<tr>
<td>COMST 2140</td>
<td>Professional Communication</td>
<td>3</td>
</tr>
</tbody>
</table>

**General Chemistry with Laboratory* 7 cr.**
One year series for science majors with one semester lab.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1770 &amp; 1770L</td>
<td>General Chemistry I and Laboratory in General Chemistry I</td>
<td>5</td>
</tr>
<tr>
<td>CHEM 1780</td>
<td>General Chemistry II</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>8</td>
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</tbody>
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**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.

<table>
<thead>
<tr>
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<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CHEM 3310</td>
<td>Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 3310L</td>
<td>Laboratory in Organic Chemistry I</td>
<td>1</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BBMB 3010</td>
<td>Survey of Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>BBMB 3160</td>
<td>Principles of Biochemistry</td>
<td>3</td>
</tr>
<tr>
<td>BBMB 4040</td>
<td>Biochemistry I</td>
<td>3</td>
</tr>
<tr>
<td>BBMB 4200</td>
<td>Mammalian Biochemistry</td>
<td>3</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 1310</td>
<td>General Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 1310L</td>
<td>General Physics I Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 1150</td>
<td>Physics for the Life Sciences</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 1150L</td>
<td>Laboratory in Physics for the Life Sciences</td>
<td>1</td>
</tr>
<tr>
<td>PHYS 2310</td>
<td>Introduction to Classical Physics I</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 2310L</td>
<td>Introduction to Classical Physics I Laboratory</td>
<td>1</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BIOL 2110</td>
<td>Principles of Biology I</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 2110L</td>
<td>Principles of Biology Laboratory I</td>
<td>1</td>
</tr>
<tr>
<td>BIOL 2120</td>
<td>Principles of Biology II</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 2120L</td>
<td>Principles of Biology Laboratory II</td>
<td>1</td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>8</td>
</tr>
</tbody>
</table>
**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.

- **Biology 3130** Principles of Genetics 3
- **Biology 3200** Genetics, Agriculture and Biotechnology 3
- **Biology 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.

- **Biology 3290** Anatomy and Physiology of Domestic Animals 3
- **Biology 4470** Introduction to Human Gross Anatomy 4
- **Biology 5380** Principles of Physiology 4
- **Agriculture 2140** Domestic Animal Physiology 3
- **Biology 1550** Human Biology 3
- **Biology 2550** Fundamentals of Human Anatomy 3
- **Biology 3350** Principles of Human and Other Animal Physiology 3
- **Biology 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/.

**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**

<table>
<thead>
<tr>
<th>Course</th>
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<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>BMS 7330</td>
<td>Principles of Morphology I</td>
<td>6</td>
</tr>
<tr>
<td>BMS 7331</td>
<td>Principles of Morphology II</td>
<td>4</td>
</tr>
<tr>
<td>BMS 7333</td>
<td>Biomedical Sciences I</td>
<td>6</td>
</tr>
<tr>
<td>BMS 7334</td>
<td>Biomedical Sciences II</td>
<td>6</td>
</tr>
</tbody>
</table>
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 7445 Case Study I 1
BMS 7446 Case Study II 1

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
VDPM 7312 Introduction to Animal Welfare 1
VDPM 4260 Veterinary Toxicology 3
VDPM 7445 Production Animal Clinical Medicine 3
VDPM 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
- VCS 7457 Equine Medicine 2
- 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
- VTH 7456 Necropsy Laboratory Practicum 2
- VTH 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.