

# Veterinary Medicine (DVM)

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## College of Natural Science and Mathematics

Veterinary Medicine Program (<https://www.uaf.edu/vmed/>)

907-474-1928

### DVM F480 Skeleton Articulation

1 Credit

Offered Spring

Skeleton assembly of species, from birds to mammals, depending on availability. The majority of this course is hands-on articulation of skeletons that have been cleaned and prepared prior to class. The lab will be supplemented with lectures covering bones, joint types, and biologically accurate limb and joint angles.

**Prerequisites:** BIOL F111X, BIOL F112X or BIOL F310.

**Lecture + Lab + Other:** 0 + 3 + 0

**Grading System:** Pass/Fail Grades

### DVM F603 Veterinary Science Research and Methods

1 Credit

Offered Fall

This course will illustrate the role of research in furthering the practice of veterinary medicine by presenting a series of lectures from clinical and basic science investigators, faculty and staff who will describe important elements of the research process. The course will also describe possible career opportunities to students in animal health research.

**Prerequisites:** Admittance to the professional veterinary program.

**Lecture + Lab + Other:** 1 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### DVM F606 Veterinary Immunology

3 Credits

Offered Fall

The aim of this course is to educate Veterinary Medicine students on fundamental aspects of immunology, including functional anatomy and mechanisms of the innate and adaptive immunity in animals, immunological mechanisms of animal disease, principles of vaccination, and how to apply immunology in diagnosis of diseases.

**Prerequisites:** Admittance to the professional veterinary program.

**Lecture + Lab + Other:** 3 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### DVM F610 Foundations of Veterinary Medicine

1 Credit

Offered Fall

The first semester of a four-course series in foundations of veterinary medicine. The full course series will encompass topics in ethics, communication, physical exam skills, surgical skills, clinical reasoning and professional development. This course will help you develop the professional skills necessary for the successful practice of veterinary medicine.

**Prerequisites:** Admittance to the professional veterinary program.

**Lecture + Lab + Other:** 1 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### DVM F611 Foundations of Veterinary Medicine II

1 Credit

Offered Spring

The second semester of a four-course series in foundations of veterinary medicine. The full course series will encompass topics in ethics, communication, physical exam skills, surgical skills, clinical reasoning and professional development. This course will help you develop the professional skills necessary for the successful practice of veterinary medicine.

**Prerequisites:** DVM F610.

**Lecture + Lab + Other:** 5 + 5 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### DVM F616 Functional Anatomy

8 Credits

Offered Fall

Introduction to veterinary anatomy including basic orientation, nomenclature, locomotion apparatus, circulatory system, digestive, respiratory apparatus, lymphatic organs and nervous system of domestic animals. Anatomical knowledge will be placed in a clinical context. General explanation and hands-on experience in anatomical preparation techniques.

**Prerequisites:** Admittance to the professional veterinary program.

**Lecture + Lab + Other:** 5 + 6 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### DVM F618 Veterinary Physiology and Histology

7 Credits

Offered Fall

The course will discuss the histology and physiology of domestic animal organ systems, tissues, cartilage, bone, muscle, arthrology, nervous system, hematopoiesis, lymphatic, cardiovascular, respiratory and digestive systems; the renal system and physiology. The course will help to place the knowledge in histology and physiology in a clinical context.

**Prerequisites:** Admittance to the professional veterinary program.

**Lecture + Lab + Other:** 6 + 3 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### DVM F619 Veterinary Neurobiology

4 Credits

Offered Spring

Students will learn information on neurologic conditions in domesticated animals. A problem-oriented approach makes it easy to diagnose and treat neurologic problems in domesticated animals. The coverage of disorders by problem, not by established disease diagnosis, emulates how animals present to the veterinary hospital and simplifies the formulation of a correct diagnosis.

**Prerequisites:** Successful completion of first-semester veterinary courses.

**Lecture + Lab + Other:** 3 + 3 + 0

**Grading System:** Letter Grades with option of Plus/Minus

### DVM F623 Veterinary Nutrition and Metabolism

2 Credits

Offered Spring

This course will examine the nutritional needs of major species of veterinary importance. The discussion will revolve around specific nutritional needs as they relate to life stages and the production status of monogastric and ruminant animals. Course topics deal with the classification and function of nutrients, digestive processes and evaluation.

**Prerequisites:** Successful completion of first-semester veterinary courses.

**Lecture + Lab + Other:** 2 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F625 Principles of Diagnostic Imaging**

2 Credits

Offered Fall

This course will include an introduction to radiographic anatomy of small and large animals; introduction to X-ray, MRI and CT. The course will help to place the anatomical knowledge into clinical context.

**Prerequisites:** Admittance to the professional veterinary program.

**Lecture + Lab + Other:** 2 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F637 Veterinary Bacteriology and Mycology**

2 Credits

Offered Spring

This course will discuss bacterial structure, differences between bacterial families, and fungi and their pathogenesis. The basic principles of bacterial and fungal pathogenesis will be presented. Host response to bacterial or fungal infection, immunity and the role of vaccines in disease prevention will be explained.

**Prerequisites:** Graduate standing.

**Cross-listed with** BIOL F632.

**Lecture + Lab + Other:** 2 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F639 Veterinary Virology**

2 Credits

Offered Spring

This course will explore current concepts in the field of veterinary virology, with an emphasis on the viral structure, viral genetic material and viral replication strategies of various animal viruses. In addition, mechanisms of viral pathogenesis, prevention and treatment of viral infection will be presented.

**Prerequisites:** Successful completion of first-semester veterinary courses.

**Cross-listed with** BIOL F639.

**Lecture + Lab + Other:** 2 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F640 Veterinary Pathology/Biology of Disease I**

5 Credits

Offered Spring

This course will discuss basic principles of disease with special emphasis on processes likely to be encountered in veterinary practice. We will discuss these topics organized by underlying disease mechanism. The discussions will move from general cell-mediated processes to more specific disease mechanisms.

**Prerequisites:** Successful completion of first-semester veterinary courses.

**Cross-listed with** BIOL F640.

**Lecture + Lab + Other:** 4 + 3 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F641 Professional Explorations Externship**

1 Credit

Offered Fall, Spring and Summer

This externship is designed for students to explore various aspects of veterinary medicine and gain hands-on experience and exposure to different areas of the profession. This course is an opportunity for students to apply their classroom learning in a practical or clinical setting.

**Prerequisites:** DVM F610 and permission of the instructor.

**Special Notes:** Available to DVM students after completion of the first semester.

**Lecture + Lab + Other:** 0 + 0 + 3

**Grading System:** Pass/Fail Grades

**Repeatable for Credit:** May be taken 3 times for up to 3 credits

**DVM F648 Food Animal Production and Food Safety**

2 Credits

Offered Spring

This course is designed to provide an understanding of food animal agriculture and food quality assurance. Students will explore contemporary production management systems of traditional and non-traditional food animal species. Animal welfare issues related to the raising of animals for food will be investigated. Students will learn where veterinary medicine fits into the protection of the human food supply.

**Prerequisites:** Successful completion of first-semester veterinary courses.

**Lecture + Lab + Other:** 2 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F681 Performance Dog Medicine and Surgery**

2 Credits

Offered As Demand Warrants

Designed to provide the student with a basic understanding of the different types of performance dog activities, to identify the unique demands, husbandry, management issues and basic physiological impacts of each category of performance exercise and to gain a basic understanding of commonly observed injuries and their prevention/treatment.

**Prerequisites:** Good standing in professional veterinary program.

**Special Notes:** This course is designed for veterinarians and veterinary students- the information provided is only partially covered during the regular DVM curriculum and hence no other prerequisites are required.

**Lecture + Lab + Other:** 2 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F710 Foundations of Veterinary Medicine III**

1 Credit

Offered Fall

Third in four-course series in foundations of veterinary medicine. Full series encompasses topics in: ethics, communication, physical exam skills, surgical skills, clinical reasoning, professional development. Expanded physical examination of companion animals and livestock is taught with special emphasis on advanced cardiopulmonary auscultation, mammary gland evaluation, otic exam and colic evaluation.

**Prerequisites:** DVM F611.

**Lecture + Lab + Other:** 0 + 3 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F711 Foundations of Veterinary Medicine IV**

1 Credit

Offered Spring

Fourth semester of four-course series. The full course series will encompass topics in ethics, communication, physical exam skills, surgical skills, clinical reasoning and professional development. Expanded physical examination of companion animals and livestock will be taught, with special emphasis on advanced techniques in reproduction, surgical skills, anesthesia and patient management.

**Prerequisites:** Successful completion of DVM F710.

**Lecture + Lab + Other:** 0 + 3 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F714 Preventative Veterinary Medicine**

4 Credits

Offered Fall

The course will provide understanding of host/disease/agent interaction and the essential steps in disease outbreak investigation. Clinical and herd-based scenarios will be used for discussion of epidemiologic principles, features of zoonotic disease, and specific biosecurity and infectious-control issues as they relate to food safety and livestock production.

**Prerequisites:** Veterinary medicine student in good standing.

**Lecture + Lab + Other:** 4 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F722 Veterinary Pharmacology**

4 Credits

Offered Fall

This course covers basic principles of pharmacology of common drugs and basic mechanisms of action. Individual agents will be introduced as examples. As a medicine course, the proper and effective use of drugs will be reviewed, including basics of veterinary therapeutics for selected classes of agents across selected species.

**Prerequisites:** Successful completion of all required first-year courses in DVM program, including advancement to year two.

**Lecture + Lab + Other:** 4 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F724 Veterinary Bioanalytical Pathology**

6 Credits

Offered Fall

Professional veterinary program requirement studying pathology, hematology, biochemistry and cytopathology.

**Prerequisites:** Successful completion of first year professional veterinary medical program.

**Lecture + Lab + Other:** 5 + 2 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F726 Principles of Imaging Interpretation**

2 Credits

Offered Spring

This is the first of a two-part series in imaging interpretation. This course covers gastrointestinal, thoracic and cardiac imaging. The second part of the course is held in the fall of the third year at Colorado State (VM728) and will cover equine and small-animal musculoskeletal, urinary tract and neurological imaging.

**Prerequisites:** Good standing in professional veterinary program.

**Lecture + Lab + Other:** 1 + 0 + 1

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F733 Principles of Surgery**

2 Credits

Offered Spring

This course teaches principles and concepts of general and orthopedic surgery, including aseptic technique, surgical instrumentation, suture patterns, tissue healing and wound management. These topics comprise core material that prepares veterinary students for specific surgery.

**Prerequisites:** Successful completion of first-year veterinary medical program; good standing in professional veterinary medicine program.

**Lecture + Lab + Other:** 1 + 3 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F735 Animal Welfare**

2 Credits

Offered Fall

This course will provide knowledge, skill development and tools necessary for professionals to assess and promote animal welfare and to analyze its associated challenges. It will stress the need for perpetual reassessment of animal welfare knowledge and reinforce the professional's role in staying up-to-date and proactive.

**Prerequisites:** Completion of first year of veterinary school, or graduate student with approval of instructor.

**Lecture + Lab + Other:** 2 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F737 Principles of Veterinary Anesthesia**

3 Credits

Offered Spring

This course is an introduction to the principles of clinical anesthesia. This course serve as a foundation that supports and reinforces your knowledge of the basic sciences, and provide you with the opportunity to begin to get a feel for integrating those disciplines into making medical judgments in veterinary anesthesia.

**Prerequisites:** Good standing in the professional veterinary program.

**Lecture + Lab + Other:** 2 + 2 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F741 Biology of Disease II- Pathology of Organ Systems**

4 Credits

Offered Fall

The course will discuss basic principles of disease with special emphasis on organ system diseases most likely to be encountered in veterinary practice.

The discussions will move from general cell-mediated processes to more specific disease mechanisms in a variety of domestic and exotic species.

**Prerequisites:** Successful completion of first year of courses in the professional veterinary curriculum.

**Lecture + Lab + Other:** 3 + 2 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F742 Biology of Disease III - Pathology of Organ Systems II**

3 Credits

Offered Spring

The course will discuss principles of disease with emphasis on organ disease likely to be encountered in veterinary practice. The discussions will move from general cell-mediated processes to more specific disease mechanisms. The goals for this course are to enable students to apply this knowledge and become competent veterinary practitioners.

**Prerequisites:** Good standing in the professional veterinary program.

**Lecture + Lab + Other:** 2 + 2 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F744 Theriogenology**

3 Credits

Offered Spring

Will familiarize students with reproductive organs of large and small animals: regulation of function, reproductive endocrinology, reproductive cycles, and the physiology and pathology of reproduction.

**Prerequisites:** Successful completion of first year veterinary medical program; good standing in professional veterinary medicine program.

**Lecture + Lab + Other:** 3 + 2 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F745 Clinical Sciences I**

5 Credits

Offered Spring

This course is an introduction to clinical reasoning and problem solving as a diagnostician. Diagnostic approaches to common medical problems of cardiovascular, urinary and digestive-hepatic systems.

**Prerequisites:** Second year professional veterinary medicine program; student in good standing.

**Lecture + Lab + Other:** 10 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F747 Clinical Sciences II**

5 Credits

Offered Spring

Continuation of clinical reasoning and problem-solving as a diagnostician. Diagnostic approaches to common medical problems of cardiac and pulmonary systems and fluid and electrolyte disorders of small and large animals.

**Prerequisites:** Second year professional veterinary medicine program; student in good standing.

**Lecture + Lab + Other:** 10 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F751 Veterinary Clinical Toxicology**

2 Credits

Offered Fall

This course will provide an overview of clinical toxicology relevant to veterinarians.

**Prerequisites:** Successful completion of all required first-year courses in DVM program, including advancement to year two.

**Lecture + Lab + Other:** 2 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus

**DVM F776 Veterinary First Principles**

2 Credits

Offered Spring Even-numbered Years

This course teaches students how to approach veterinary medicine from first principles of form and function. Building on anatomy and physiology knowledge, DVM students will develop a standard operating procedure for logical problem-solving in veterinary medicine. This course will teach critical thinking and clinical reasoning through facilitated discussion.

**Prerequisites:** Completion of first semester of veterinary school.

**Lecture + Lab + Other:** 2 + 0 + 0

**Grading System:** Pass/Fail Grades

**DVM F777 Strategies for Establishing and Maintaining Well-being in the Veterinary Profession**

1 Credit

Offered Fall

This course will investigate and demonstrate methods for maintaining well-being while managing the stress associated with membership in the veterinary profession. Strategies for time management, life balance, nutrition, exercise and recovery will be discussed as means of enhancing well-being and preventing professional burnout, which is widespread in the profession today.

**Prerequisites:** Good standing in the professional veterinary program.

**Lecture + Lab + Other:** 1 + 0 + 0

**Grading System:** Letter Grades with option of Plus/Minus