COLLEGE OF VETERINARY MEDICINE

The Carlson College of Veterinary Medicine at Oregon State University was established in 1975 with three major areas of responsibility—teaching, research, and public service. The college is fully accredited by the American Veterinary Medical Association's Council on Education.

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Administration
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Teaching
The college was established in 1975 and began its professional education program in 1979. Approximately 40 residents of Oregon and 32 nonresident students are selected to enter the OSU Carlson College of Veterinary Medicine. These students will complete all four years of their professional education in Corvallis. Completion of the professional program leads to the Doctor of Veterinary Medicine (DVM) degree.

There are two departments supporting the DVM doctoral program: Biomedical Sciences and Clinical Sciences.

Comprehensive research training is provided through graduate programs leading to the MS degree in Comparative Health Sciences.

Post-DVM residency training leading to board eligibility in several clinical disciplines and pathology is also available.

Research
Biomedical research is conducted in the college, supported by federal agencies such as NIH, USDA, DOE, as well as by a number of foundations. Collaboration with the OSU Agricultural Experiment Station, colleges of Pharmacy, Public Health and Human Sciences, Engineering and many other colleges, is part of the program. The research is of economic and public health significance, aimed at improving the health of animals and people.

The college emphasizes research of infectious diseases, such as those caused by Mycobacteria, Chlamydia, Clostridia, Vibrio, Mycoplasma, Cryptosporidium, herpesvirus, respiratory syncytial virus, influenza virus, and HIV-1 virus. Research is also conducted on immunity and nutrition, neuroscience, cancer, cardiovascular diseases, diabetes, reproductive diseases, and diseases of terrestrial and aquatic wildlife.

Public Service
The service programs focus on the diagnosis, prevention, treatment, and control and prevention of animal diseases. The college assists veterinary practitioners, animal owners, and the general public through the Oregon Veterinary Diagnostic Laboratory and the Veterinary Teaching Hospital.

The Oregon Veterinary Diagnostic Laboratory is a full-service facility providing a wide range of animal disease diagnostic testing services to veterinarians, animal owners, and public agencies. The laboratory offers testing and expertise in pathology, clinical pathology, bacteriology, and virology, and is accredited by the American Association of Veterinary Laboratory Diagnosticians.

The Veterinary Teaching Hospital serves as learning centers where senior veterinary students and residents study animal disease, diagnosis, treatment, and prevention.

Providing continuing education for veterinarians is also considered a major responsibility of the college. One- to three-day intensive courses of instruction on specific topics are offered periodically.

Career Opportunities in Veterinary Medicine
Opportunities for employment in veterinary medicine are excellent. Nearly 80 percent of the professionally active veterinarians in the United States are engaged in private practice. Some practices are limited to types of animals, such as food animal, equine, or companion animal practices. Others involve specialties such as surgery, ophthalmology, cardiology, or radiology. In addition to private practice, there are numerous teaching and research opportunities in academic, government, and industrial settings. Expanding areas include laboratory animal medicine and public health.

Veterinary Student Expenses
Oregon resident students registered in the Carlson College of Veterinary Medicine will pay tuition and fees of approximately $8,507 per term. Students from the WICHE (http://www.wiche.edu/states/) states will pay the same fees as Oregon resident students. Nonresident student fees currently are $16,263 per term.

Veterinary students must provide required professional attire, as well as dissection, surgical, and diagnostic instruments, and notes and books.

Occasional field trips are scheduled in the veterinary curriculum. Transportation is provided by the university for required trips, but students must provide their own food and lodging. For optional trips, the student is usually expected to provide transportation, lodging, and food. All other expenses, such as residence hall and living expenses, are the same as for students in other colleges of the university.

Students desiring additional information about veterinary medicine should write to the Office of the Dean, Carlson College of Veterinary Medicine, Oregon State University, 200 Magruder Hall, Corvallis, Oregon.
Policy on Laboratory and Duty Hours

During the professional curriculum, several laboratory exercises in the preclinical years require the use of live animals. The exercises are designed to complement didactic lectures and demonstrations through hands-on experience with various species of animals. In all instances, the animals are humanely treated and anesthetized if the procedures are potentially painful.

During the clinical years, animals are used in laboratory exercises in the teaching of basic surgical skills and medical procedures. In most instances, the animals are anesthetized. Strict protocol is enforced regarding the animals’ well-being in exercises requiring post-operative recovery. All use of animals in teaching is approved by the university’s Institutional Animal Care and Use committee.

During the fourth year of the veterinary curriculum, students complete rotations in sections of the Veterinary Teaching Hospital and Oregon Veterinary Diagnostic Laboratory. Emergency services are offered to the public on a 24-hour basis, seven days a week. Student assignments in the clinical blocks are demanding, and students are required to spend time at night, weekends, and holidays in the delivery of health care to patients. Hospital operations continue seven days per week, and students are responsible for their assigned tasks regardless of time and day of the week.

DVM and MPH Dual Degree

Students enrolled in the Doctor of Veterinary Medicine (DVM) degree program wishing also to complete a Master’s of Public Health Degree may do so if successfully admitted to the Graduate School and the College of Public Health and Human Sciences (CPHHS). Using pre-approved and cross-listed courses as electives, veterinary students may complete the MPH degree (http://health.oregonstate.edu/degrees/graduate/public-health/mph/dvm-mph-dual-degree/) with an additional (5th) year of study.

The CPHHS offers an MPH degree in six tracks: Biostatistics; Epidemiology; Environment, Safety and Health; Health Management and Policy; Health Promotion and Health Behavior; and International Health.

In order to maximize use of elective courses in the dual degree program, it is important that veterinary students enter the dual degree option as early in their studies as possible.

The five core MPH courses are offered through distance education. In consultation with the student’s MPH adviser, internships, culminating activities and senior papers should be coordinated as well. The student’s MPH adviser must approve all veterinary courses counted toward the graduate (MPH) degree.

Biomedical Sciences

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Faculty
Professors Ackermann, Bermudez, Bildfell, Hall, Häsle, Jin, Kent, Löhr, Magnusson, Rockey, Sarker, Tornquist
Associate Professors Danelishvili, Dolan, Gorman, Jolles, Medlock, Moulton, O’Reilly, Pastey, Ramsey, Russell, Shulzenko
Assistant Professors Beechler, Chappell, J. Johns, Miller-Morgan, Nagussie, Puttachary, Sanders, Schubiger, Spagnoli
Instructors Alcantar, Mansouri, Sona
Adjunct Fu, Uehling
Emeriti Blythe, Gelberg, Heidel, Valentine
Courtesy Alnajjar, Banawas, Esfandiari, Steinauer, Trevejo, White, Constance

Clinical Sciences

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Faculty
Professors Cebra, de Morais, Estill, Huber, McKenzie, Riebold, Semevolos
Associate Professors Baltzer, Gordon, Mandsager, Milovancev, Parker, Ruaux, Scollan, Stieger-Vanegas, Warnock, Zellmer
Assistant Professors Biskup, Bracha, Cooley, Curran, Holder, Klopfenstein, LeBlanc, Leeper, Mecham, Montilla, Nemanic, Pacheco, Palmer, Schlipf, Townsend, Vanegas, Whitter
Instructor Husby, Miller
Emeriti Crisman, Pearson, Sisson, Watrous
Adjunct Campbell
Courtesy Brown, Ottman

Professional Programs
- Doctor of Veterinary Medicine (http://catalog.oregonstate.edu/college-departments/veterinary-medicine/veterinary-medicine-dvm/)

Veterinary Medicine Biomedical (VMB)
VMB 110, PREVETERINARY MEDICINE, 1 Credit
Introduction to the profession’s role in society. Graded P/N.
Equivalent to: VM 110

VMB 112, THE ONE HEALTH PARADIGM AND AUDIENCE CONNECTIONS, 3 Credits
Present, discuss and communicate current research papers and ongoing projects in concise, audience appropriate formats using techniques from entrepreneurship, grant proposal writing and Hollywood storytelling.
This course is repeatable for 6 credits.

VMB 401, RESEARCH AND SCHOLARSHIP, 1-16 Credits
This course is repeatable for 16 credits.
VMB 415, ONE HEALTH IN PRACTICE, 3 Credits
One health is the concept that human, animal and environmental health are all intertwined. Utilizes current one health issues such as disease outbreaks and antimicrobial resistance to encourage students from diverse fields to develop interdisciplinary collaboration and communication skills. CROSSLISTED as BHS 415/VMB 415.
Equivalent to: BHS 415

VMB 499, SPECIAL TOPICS, 1-16 Credits
Special studies course to allow different instructors the ability to teach a new class or one time class. Graded P/N.
This course is repeatable for 16 credits.

VMB 501, RESEARCH, 1-16 Credits
Graded P/N.
Equivalent to: VM 501
This course is repeatable for 16 credits.

VMB 503, THESIS, 1-12 Credits
Equivalent to: VM 503
This course is repeatable for 999 credits.

VMB 504, WRITING AND CONFERENCE (NON-THESIS), 1-9 Credits
This course is repeatable for 9 credits.

VMB 505, READING AND CONFERENCE, 1-16 Credits
Graded P/N.
Equivalent to: VM 505
This course is repeatable for 16 credits.

VMB 507, SEMINAR, 1-16 Credits
Graded P/N.
Equivalent to: VM 507
This course is repeatable for 16 credits.

VMB 512, THE ONE HEALTH PARADIGM AND AUDIENCE CONNECTIONS, 3 Credits
Present, discuss and communicate current research papers and ongoing projects in concise, audience appropriate formats using techniques from entrepreneurism, grant proposal writing and Hollywood storytelling.
This course is repeatable for 6 credits.

VMB 517, VETERINARY PHYSIOLOGY, 5 Credits
Physiology of body fluids, muscles, membranes, intermediary metabolism, cardiovascular system, and metabolism.
Equivalent to: VM 517

VMB 518, VETERINARY PHYSIOLOGY, 5 Credits
Physiology of gastrointestinal, endocrine and reproductive systems.
Prerequisite: VMB 517 with C or better
Equivalent to: VM 518

VMB 519, VETERINARY PHYSIOLOGY, 4 Credits
Physiology of respiratory and renal systems and acid-base balance.
Prerequisite: VMB 518 with C or better
Equivalent to: VM 519

VMB 521, ANIMAL MODELS, 3 Credits
Selection/use criteria for models describing animal or human diseases or processes with emphasis on experimental design, validation, transgenic technology, population dynamics, husbandry, and ethics.

VMB 523, ZOONOSES, 3 Credits
Interactive examination of the molecular basis of diseases that are transmissible between animals and humans. Emphasis on bacterial, viral and parasitic pathogens of animals and humans.

VMB 601, RESEARCH, 1-16 Credits
Graded P/N.
Equivalent to: VM 601
This course is repeatable for 16 credits.

VMB 603, THESIS, 1-16 Credits
Equivalent to: VM 603
This course is repeatable for 999 credits.

VMB 604, WRITING AND CONFERENCE (NON-THESIS), 1-9 Credits
This course is repeatable for 9 credits.

VMB 605, READING AND CONFERENCE, 1-16 Credits
Equivalent to: VM 605
This course is repeatable for 16 credits.

VMB 606, PROJECTS, 1-16 Credits
Graded P/N.
Equivalent to: VM 606
This course is repeatable for 16 credits.

VMB 607, SEMINAR, 1-16 Credits
One-credit section; VMB 607 Sect. 1. Graded P/N.
Equivalent to: VM 607
This course is repeatable for 16 credits.

VMB 611, VETERINARY GROSS ANATOMY, 4 Credits
Systematic and topographic study and dissection of the dog, cat, horse, ruminant, pig, and chicken.
Equivalent to: VM 611

VMB 612, VETERINARY GROSS ANATOMY, 4 Credits
Systematic and topographic study and dissection of the dog, cat, horse, ruminant, pig, and chicken.
Equivalent to: VM 612
VMB 613, VETERINARY GROSS ANATOMY, 4 Credits
Systematic and topographic study and dissection of the dog, cat, horse, ruminant, pig, and chicken.
Equivalent to: VM 613

VMB 614, VETERINARY MICROSCOPIC ANATOMY, 4 Credits
Structure and development of cells, tissues, organs, and organ systems of animals.
Equivalent to: VM 614

VMB 615, VETERINARY MICROSCOPIC ANATOMY, 3 Credits
Structure and development of cells, tissues, organs, and organ systems of animals.
Equivalent to: VM 615

VMB 616, VETERINARY NEUROSCIENCES, 4 Credits
Structural and functional relationships of the nervous system and organs of special sense with emphasis on general clinical application.

VMB 620, VETERINARY IMMUNOLOGY, 5 Credits
Clinical and diagnostic aspects of immunological mechanisms, serological reactions; hypersensitivity, allergy, and disorders of the immune system.
Equivalent to: VM 620

VMB 621, GENERAL PATHOLOGY, 4 Credits
General principles of pathology, cell injury and death, inflammation and tissue repair, abnormalities of cell growth, and structures and mechanisms of disease.
Equivalent to: VM 621

VMB 622, PATHOLOGY LABORATORY, 1 Credit
Laboratory instruction to complement VMB 621.
Prerequisite: VMB 611 (may be taken concurrently) with C or better
Equivalent to: VM 622

VMB 624, ANTIBIOTIC STEWARDSHIP, 1 Credit
Elective course for students to learn about significant aspects of antibiotic resistance. Intended to become part of the “One Health Program”, resulting in the ability to create a plan for effective antibiotic stewardship as it relates to human, animal, and environmental health.

VMB 627, ORNAMENTAL FISH MEDICINE, 2 Credits
An introduction to the basic principles of ornamental fish medicine including basic husbandry, handling and clinical procedures. This is a 1-week intensive course held at the Hatfield Marine Science Center in Newport, Oregon. Graded P/N.

VMB 630, MECHANISMS OF DISEASE, 3 Credits
Cellular and molecular events that contribute to the pathogenesis of disease in animals, including humans. Host interactions with infectious agents and the environment.
Equivalent to: VM 630

VMB 631, MATHEMATICAL MODELING OF BIOLOGICAL SYSTEMS, 3 Credits
The use of mathematical modeling in biological sciences is studied. A variety of modeling techniques are covered including implementing the methods computationally.

VMB 640, SEMINARS IN LABORATORY ANIMAL MEDICINE, 2 Credits
Prepares students for careers in laboratory animal medicine. Provides a review of medical conditions, diagnosis and treatment of research animals.

VMB 641, SEMINARS IN LABORATORY ANIMAL MEDICINE, 2 Credits
Prepares students for careers in laboratory animal medicine. Provides a review of medical conditions, diagnosis and treatment for research animals.

VMB 642, SEMINARS IN LABORATORY ANIMAL MEDICINE, 2 Credits
Prepares students for careers in laboratory animal medicine. Provides a review of medical conditions, diagnosis and treatment for research animals.

VMB 651, SELECTED TOPICS IN VETERINARY MEDICINE, 3 Credits
Topics vary; check Schedule of Classes for particular topics.
Equivalent to: VM 651

VMB 652, CANCER SYSTEMS BIOLOGY, 3 Credits
Overview of systems biology approaches that are being used to study cancer, with an emphasis on omics techniques and fundamental mechanisms in the origination and progression of cancer. Discussion-based, with each class session focused on a contemporary research article in the field of cancer systems biology.

VMB 653, VETERINARY VIROLOGY, 4 Credits
Virology for the professional and graduate student.

VMB 659, VETERINARY BACTERIOLOGY AND MYCOLOGY, 5 Credits
Veterinary bacteriology and mycology for the veterinary graduate student.
VMB 660, VETERINARY PARASITOLOGY, 5 Credits
A study of the parasitic diseases of domestic animals with an emphasis on diagnosis and treatment. Fundamentals in host-parasite interactions, taxonomy and life cycle strategies are covered.

VMB 663, VETERINARY DIAGNOSTIC PATHOLOGY, 6 Credits
Practical hands-on course training students in the diagnostic pathology utilizing case material received at the OSU Veterinary Diagnostic Lab. Graded P/N.

VMB 664, COMPARATIVE MICROSCOPIC PATHOLOGY, 1 Credit
Case-based discussion course to train participants in the recognition, description, and pathogenesis of a wide variety of disease processes with an emphasis on microscopic features. Graded P/N. This course is repeatable for 4 credits.

VMB 665, READINGS IN VETERINARY PATHOLOGY, 1 Credit
Group discussions of assigned readings central to understanding of veterinary pathology, including recent advances. Graded P/N. This course is repeatable for 6 credits.

VMB 666, VETERINARY MEDICINE AND PUBLIC HEALTH, 3 Credits
Covers aspects of veterinary medicine that affect human health. An understanding of the contribution of the veterinary profession to human (public) health will enable students to play an effective role in this area, regardless of career direction.

VMB 669, INTRODUCTION TO GRANT PROPOSAL WRITING, 2 Credits
To introduce students to the fundamentals of writing grant proposals to the National Institute of Health (NIH), different funding mechanisms, as well as the grant reviewing process. CROSSLISTED as PHAR 669/ VMB 669. Equivalent to: PHAR 669 This course is repeatable for 20 credits.

VMB 670, INTRODUCTION TO SYSTEMS BIOLOGY, 2 Credits
Students will gain a high-level overview of systems biology and bioinformatics, with an emphasis on biomedical applications, integration of ‘omics’ approaches, and biological networks.

VMB 671, MOLECULAR TOOLS, 3 Credits
Intended for personnel with some scientific background who are seeking basic- and advanced-level molecular biology knowledge and who wish to become involved with molecular biology-related and biotechnological research. CROSSLISTED as MCB 671/VMB 671. Equivalent to: MCB 671

VMB 672, MOLECULAR APPROACH TO CANCER, 1 Credit
Overview of cancer pathogenesis and current molecular techniques to diagnose and treat various neoplasms is provided. Content will include both veterinary and human data and concepts. Discussion/Lab. Graded P/N.

VMB 673, COMPARATIVE IMMUNOLOGY, 3 Credits
Examines immune system function in animals other than mice and men with a focus on adapting cutting-edge technologies.

VMB 674, VACCINES AND NEW THERAPIES, 3 Credits
Provides students with a cohesive understanding of the basic research behind the discovery of new therapeutic targets and scientific advancements used in development of vaccines and new therapies.

VMB 699, SPECIAL TOPICS, 1-16 Credits
This course is repeatable for 99 credits.

VMB 701, RESEARCH, 1-16 Credits
Equivalent to: VM 701 This course is repeatable for 16 credits.

VMB 705, READING AND CONFERENCE, 1-16 Credits
Equivalent to: VM 705 This course is repeatable for 16 credits.

VMB 706, PROJECTS, 1-16 Credits
Equivalent to: VM 706 This course is repeatable for 16 credits.

VMB 711, VETERINARY GROSS ANATOMY, 4 Credits
Systematic and topographic study and dissection of the dog, cat, horse, ruminant, pig, and chicken. Equivalent to: VM 711

VMB 712, VETERINARY GROSS ANATOMY, 4 Credits
Systematic and topographic study and dissection of the dog, cat, horse, ruminant, pig, and chicken. Equivalent to: VM 712

VMB 713, VETERINARY GROSS ANATOMY, 4 Credits
Systematic and topographic study and dissection of the dog, cat, horse, ruminant, pig, and chicken. Lec/lab. Equivalent to: VM 713

VMB 714, VETERINARY MICROSCOPIC ANATOMY, 4 Credits
Structure and development of cells, tissues, organs, and organ systems of animals. Equivalent to: VM 714
VMB 716, VETERINARY NEUROSCIENCES, 4 Credits
Structural and functional relationships of the nervous system and organs of special sense with emphasis on general clinical application.
Equivalent to: VM 716

VMB 717, VETERINARY PHYSIOLOGY, 5 Credits
Physiology of body fluids, excretion, respiration, acid-base balance, blood, muscle, bone, cardiovascular system, digestion, metabolism, endocrine system, reproduction, and lactation.
Equivalent to: VM 717

VMB 718, VETERINARY PHYSIOLOGY, 5 Credits
Physiology of body fluids, excretion, respiration, acid-base balance, blood, muscle, bone, cardiovascular system, digestion, metabolism, endocrine system, reproduction, and lactation.
Equivalent to: VM 718

VMB 719, VETERINARY PHYSIOLOGY, 4 Credits
Physiology of body fluids, excretion, respiration, acid-base balance, blood, muscle, bone, cardiovascular system, digestion, metabolism, endocrine system, reproduction, and lactation. Lec/lab.
Equivalent to: VM 719

VMB 720, VETERINARY IMMUNOLOGY, 5 Credits
Clinical and diagnostic aspects of immunological mechanisms, serological reactions, hypersensitivity, allergy, and disorders of the immune system. Lec/lab.
Equivalent to: VM 720

VMB 721, VETERINARY PATHOLOGY, 5 Credits
Basic mechanisms and concepts relating to reaction of cells and tissues to disease, with emphasis on cellular and tissue degeneration, inflammatory reaction, circulatory disturbance and neoplasia. Lec/lab.
Equivalent to: VM 721

VMB 722, RESEARCH READING SKILLS FOR VETERINARY STUDENTS, 1 Credit
Training in critical evaluation of biomedical and clinical research studies, and understanding of laboratory diagnostic methods.

VMB 723, VETERINARY LEADERSHIP: INCLUSION, REFLECTION, DEVELOPMENT, 1 Credit
Focusing on diversity and inclusion, self-compassion, and effective interpersonal communication in relationship to fostering leadership in veterinary medicine. Graded P/N.
This course is repeatable for 10 credits.

VMB 724, ANTIBIOTIC STEWARDSHIP, 1 Credit
Elective course for students to learn about significant aspects of antibiotic resistance. Intended to become part of the “One Health Program”, resulting in the ability to create a plan for effective antibiotic stewardship as it relates to human, animal, and environmental health.

VMB 726, PET BIRD AND SMALL MAMMAL MEDICINE AND SURGERY, 2 Credits
Medicine and surgery of pet birds and small animals. Graded P/N.

VMB 727, ORNAMENTAL FISH MEDICINE, 2 Credits
An introduction to the basic principles of ornamental fish medicine including basic husbandry, handling and clinical procedures. Graded P/N.

VMB 728, SPECIAL ANIMAL MEDICINE, 4 Credits
Diagnosis, treatment, and management of special animals, including the common laboratory animals. Graded P/N. This course is repeatable for 12 credits.

VMB 729, LAB ANIMAL/PRIMATE MEDICINE AND SURGERY, 3-12 Credits
Designed to provide hands-on experience with a variety of laboratory animal species including primates, rodents, ungulates, fish, and reptiles. May be repeated up to 4 times for 3, 6, 9 or 12 credits per term. 12 credits maximum apply toward graduation. Graded P/N. This course is repeatable for 12 credits.

VMB 736, DIAGNOSTIC CLINICAL PATHOLOGY, 2 Credits
One week clinical experience in clinical pathology, cytology, urinalysis, clinical chemistry interpretation and hematology. Lec/lab.
Equivalent to: VM 736

VMB 740, VETERINARY INTEGRATED PROBLEM SOLVING, 1 Credit
The first of three 1-credit courses in problem solving and integration of clinical cases and basic sciences in the veterinary curriculum. Equivalent to: VM 740

VMB 742, VETERINARY INTEGRATED PROBLEM SOLVING, 1 Credit
The third of three 1-credit courses in problem solving and integration of clinical cases and basic sciences in the veterinary curriculum. Graded P/N. Equivalent to: VM 742

VMB 745, COMMUNICATIONS FOR VETERINARIANS, 1 Credit
Communications and problem solving for the third-year veterinary student. Graded P/N.
VMB 749, WILDLIFE SAFARI, 2 Credits
Clinical training in the care of exotic and zoo animal species. Graded P/N.

VMB 750, SYSTEMIC PATHOLOGY I, 4 Credits
Examines the principles of system and organ responses to injury and the consequent effects of these changes on the host.
Equivalent to: VM 7500

VMB 751, SYSTEMIC PATHOLOGY II, 5 Credits
Examines the principles of system and organ responses to injury and the consequent effects of these changes on the host.
Equivalent to: VM 751

VMB 753, VETERINARY VIROLOGY, 4 Credits
Virology for the professional DVM student.
Equivalent to: VM 753

VMB 756, ADVANCED CLINICAL PATHOLOGY, 1 Credit
One-week rotation in advanced clinical pathology: cytology, hematology and clinical chemistry interpretation. Graded P/N.
Prerequisite: VMB 736 with C or better

VMB 759, VETERINARY BACTERIOLOGY AND MYCOLOGY, 5 Credits
Bacteriology and mycology for the professional DVM student.
Equivalent to: VM 759

VMB 760, VETERINARY PARASITOLOGY, 5 Credits
A study of the parasitic diseases of domestic animals with an emphasis on diagnosis and treatment. Fundamentals in host-parasite interactions, taxonomy and life cycle strategies are covered.
Equivalent to: VM 760

VMB 761, VETERINARY PHARMACOLOGY, 2 Credits
Fundamentals of pharmacology as related to veterinary medicine presented in a systems-oriented approach with drug therapy in domestic animals.
Equivalent to: VM 761

VMB 762, VETERINARY PHARMACOLOGY II, 4 Credits
Fundamentals of pharmacology as related to veterinary medicine presented in a systems-oriented approach with drug therapy in domestic animals.
Equivalent to: VM 762

VMB 763, VETERINARY CLINICAL PATHOLOGY, 4 Credits
Clinical pathology for the professional DVM student.
Equivalent to: VM 763

VMB 765, VETERINARY TOXICOLOGY, 4 Credits
A study of toxic agents, mechanisms of action, toxicosis and treatments, especially as related to domestic and wild animals, with principles of toxicity testing, clinical diagnosis, and identification of poisonous plants. Lec/lab.
Equivalent to: VM 765

VMB 766, EPIDEMIOLOGY AND PUBLIC HEALTH, 3 Credits
Examination of the application of epidemiology to the field of veterinary medicine and the study of important veterinary public health issues.
Equivalent to: VM 766

VMB 768, BASIC HISTOPATHOLOGY, 1 Credit
A rotation in histopathology at the Veterinary Diagnostic Laboratory. Emphasis is placed on case evaluation, diagnosis and report writing of biopsies of all species. Graded P/N.

VMB 769, ANIMAL GENOMICS, 1 Credit
Discussion about the dog and cow genomes, susceptibility to diseases, and the possibilities and techniques for treatment of medical conditions by gene transfer and modification.

VMB 772, INTERNATIONAL VETERINARY MEDICINE, 2 Credits
Veterinary students work with veterinarians and domestic animals in international settings. Graded P/N.
This course is repeatable for 4 credits.

VMB 774, LABORATORY ANIMAL MEDICINE, 6 Credits
Clinical experience related to diagnosis, treatment, and management of laboratory animals. Graded P/N.
Equivalent to: VM 774

VMB 786, ADVANCED HISTOPATHOLOGY, 2 Credits
A rotation in histopathology at the Veterinary Diagnostic Laboratory. Emphasis is placed on case evaluation, diagnosis and report writing of biopsies of all species.

VMB 795, DIAGNOSTIC SERVICES, 2 Credits
Students will perform service duty in the necropsy area of the Veterinary Diagnostic Laboratory and will perform necropsies on delivered specimens. Other activities.

Veterinary Medicine Clinical (VMC)
VMC 501, RESEARCH, 1-16 Credits
Graded P/N.
Equivalent to: VM 501
This course is repeatable for 16 credits.
VMC 503, THESIS, 1-12 Credits
Equivalent to: VM 503
This course is repeatable for 999 credits.

VMC 505, READING AND CONFERENCE, 1-16 Credits
Graded P/N.
Equivalent to: VM 505
This course is repeatable for 16 credits.

VMC 507, SEMINAR, 1-16 Credits
Graded P/N.
Equivalent to: VM 507
This course is repeatable for 16 credits.

VMC 509, TEACHING PRACTICUM FOR VETERINARY PROFESSIONAL CURRICULUM, 1-6 Credits
Provides veterinary specialty residents and graduate students a mentored experience in teaching of veterinary medical students. Experience can be gained with teaching of lecture and/or laboratory courses.
This course is repeatable for 6 credits.

VMC 601, RESEARCH, 1-16 Credits
Graded P/N.
Equivalent to: VM 601
This course is repeatable for 16 credits.

VMC 603, THESIS, 1-16 Credits
Equivalent to: VM 603
This course is repeatable for 999 credits.

VMC 605, READING AND CONFERENCE, 1-16 Credits
Equivalent to: VM 605
This course is repeatable for 16 credits.

VMC 606, PROJECTS, 1-16 Credits
Graded P/N.
Equivalent to: VM 606
This course is repeatable for 16 credits.

VMC 607, SEMINAR, 1-16 Credits
One-credit section; VMC 607 Sect. 1. Graded P/N.
Equivalent to: VM 607
This course is repeatable for 16 credits.

VMC 632, POSTGRADUATE MEDICINE, 3-7 Credits
An interactive, practical course on the role of scholarship in clinical medicine, including techniques to develop and conduct research in a clinical setting.
This course is repeatable for 16 credits.

VMC 634, POSTGRADUATE SURGERY, 3-7 Credits
An interactive, practical course on the role of scholarship in clinical surgery, including techniques to develop and conduct research in a clinical setting.
This course is repeatable for 16 credits.

VMC 637, POSTGRADUATE CARDIOLOGY, 3-7 Credits
An interactive, practical course on the role of scholarship in clinical cardiology, including techniques to develop and conduct research in a clinical setting.
This course is repeatable for 16 credits.

VMC 682, TOPICS IN INTERNAL MEDICINE, 2-4 Credits
In-depth investigation of important topics in physiology, pathophysiology, treatment, diagnosis, and other aspects of internal medicine through investigation of primary literature and recent reviews.
This course is repeatable for 16 credits.

VMC 684, TOPICS IN SURGERY, 2-4 Credits
In-depth investigation of important topics in physiology, pathophysiology, treatment, diagnosis, and other aspects of surgery through investigation of primary literature and recent reviews.
This course is repeatable for 16 credits.

VMC 701, RESEARCH, 1-16 Credits
Equivalent to: VM 701
This course is repeatable for 16 credits.

VMC 705, READING AND CONFERENCE, 1-16 Credits
Equivalent to: VM 705
This course is repeatable for 16 credits.

VMC 706, PROJECTS, 1-16 Credits
Equivalent to: VM 706
This course is repeatable for 16 credits.

VMC 711, CLINICAL CARDIOLOGY, 1-4 Credits
A one-week clinical elective rotation in cardiology at the Veterinary Teaching Hospital. May be repeated up to 4 times, two weeks or more is encouraged. Fourth-year standing in Veterinary Medicine required.
This course is repeatable for 4 credits.

VMC 712, CLINICAL ONCOLOGY, 1-4 Credits
A one-week clinical elective rotation in clinical oncology at the Veterinary Teaching Hospital. May be repeated up to 4 times, two weeks or more is encouraged. Fourth-year standing in Veterinary Medicine required.
Prerequisite: VMC 778 with C or better
This course is repeatable for 4 credits.
VMC 714, SMALL ANIMAL DENTISTRY, 1 Credit
A clinical course designed to provide students with hands-on training in diagnosis, treatment and prophylaxis of dental diseases of dogs and cats.

VMC 715, CASE STUDIES IN SMALL ANIMAL MEDICINE I, 1 Credit
A case-based course involving diseases and conditions of the endocrine, gastrointestinal and hepatobiliary systems as well as neoplastic and infectious diseases of small animals.

VMC 716, CASE STUDIES IN SMALL ANIMAL MEDICINE II, 1 Credit
A case-based course involving diseases and conditions of the cardiovascular, respiratory and urogenital systems as well as emergent diseases and conditions.

VMC 717, CASE STUDIES IN SMALL ANIMAL MEDICINE III, 1 Credit
A case-based course involving diseases and conditions of the dermatologic, neurologic, ophthalmologic, and hemolymphatic systems.

VMC 718, SMALL ANIMAL PREVENTIVE MEDICINE, 2 Credits
Introductory course to basic concepts in small animal preventive medicine including vaccine immunology, vaccine strategies, internal/external parasite control, nutrition in disease prevention, and wellness programs for dogs and cats.

VMC 719, CLINICAL CARDIOLOGY I, 2 Credits
Hands-on practical experience in a clinical setting in taking a clinical history, performing a cardiovascular physical examinations, recording electrocardiograms, interpreting thoracic radiographs and echocardiograms, creating problem lists, compiling lists of differential diagnosis, formulating diagnostic and therapeutic plans, discussing treatment options, generating medical records, and discharging patients.

VMC 720, VETERINARY CLINICAL NUTRITION, 2 Credits
To examine the nutritional needs of many species of veterinary importance. Emphasis is placed on designing feeding programs to optimize health and animal performance.

VMC 721, SMALL ANIMAL CLINICAL NUTRITION, 1 Credit
Introduction to the concepts of small animal clinical nutrition and is designed for the third-year veterinary student.

VMC 723, ADVANCED FELINE MEDICINE, 2 Credits
A one-week elective for senior students in the DVM curriculum. The course emphasizes aspects of internal medicine specific to the domestic cat. Graded P/N.

VMC 724, LARGE ANIMAL SURGERY, 4 Credits
Familiarizes students with general surgical principles and common surgical conditions in large animal species.
Equivalent to: VM 724
This course is repeatable for 8 credits.

VMC 725, PRINCIPLES OF SURGERY, 4 Credits
A basic course in the principles and techniques of surgery for the professional veterinary student. Lec/lab.
Equivalent to: VM 725

VMC 726, SMALL ANIMAL THERIOGENOLOGY, 1 Credit
Advanced clinical experience in small animal (canine) reproduction. Graded P/N.
Prerequisite: VMC 783 with C or better

VMC 727, ADVANCED SMALL ANIMAL SURGERY, 2 Credits
One-week of additional lectures and laboratories to improve surgical skills and acquire more advanced knowledge of specific surgical conditions. Lec/lab. Graded P/N.

VMC 729, CLINICAL THERIOGENOLOGY, 1 Credit
Practical and theoretical training in reproductive management and disorders in all species; routine diagnostic and treatment procedures; clinic rounds.
This course is repeatable for 3 credits.

VMC 730, LARGE ANIMAL MEDICINE AND SURGERY LABORATORY, 1 Credit
Covers practical laboratory that allows students to develop skills necessary for physical examination and common diagnostic and surgical procedures on domestic large animal species, primarily horses and ruminants.

VMC 731, SMALL ANIMAL EMERGENCY CARE-DOVE LEWIS, 3 Credits
A two-week clinical rotation at the Dove Lewis Memorial Emergency Clinic in Portland, OR.
Equivalent to: VM 731

VMC 732, CLINICAL LARGE ANIMAL MEDICINE I, 3,6 Credits
Clinical medicine training in diseases of food animals and horses; clinic rounds and diagnostic procedures.
Equivalent to: VM 732
This course is repeatable for 24 credits.

VMC 733, LARGE ANIMAL SURGERY LABORATORY, 2 Credits
Apply surgery principles and common surgical procedures of large animal species
VMC 734, CLINICAL LARGE ANIMAL SURGERY I, 3,6 Credits
Clinical surgery, treatment, and care of food animals and horses; clinical rounds; training in surgery, lameness, and diagnostic procedures. Lec/lab.
Equivalent to: VM 734
This course is repeatable for 24 credits.

VMC 735, RURAL VETERINARY PRACTICE I, 3,6 Credits
Rural practice training in diseases of food animals and horses. Lec/lab.
Equivalent to: VM 735
This course is repeatable for 6 credits.

VMC 736, CLINICAL SKILLS IV: PROFESSIONAL COMMUNICATION AND ETHICS, 2 Credits
Develop communication skills and ethical reasoning for client interactions.

VMC 737, VETERINARY ANESTHESIOLOGY, 4 Credits
A three-week rotation in veterinary anesthesiology utilizing patients presented to the veterinary teaching hospital.
Equivalent to: VM 737

VMC 739, VETERINARY MEDICAL ETHICS, 1 Credit
Introduction of ethics in veterinary medicine, with specific attention to ethical theories, ethical decision making, moral status of animals, professional ethics, and practice issues.
Equivalent to: VM 739

VMC 740, SHEEP AND GOAT MEDICINE AND SURGERY, 3 Credits
Discussions of economically important sheep and goat diseases, practical surgeries, and a review of nutrition and husbandry. Graded P/N.

VMC 741, LARGE ANIMAL GI SURGERY, 2 Credits
A one-week course for 4th year veterinary students, with particular interest in gastrointestinal surgery. Graded P/N.

VMC 742, CAMELID MEDICINE AND SURGERY, 4 Credits
Designed to give students an in-depth introduction to camelid health care via hands-on work, lectures, and discussion sections. Graded P/N.

VMC 744, ADVANCED LAMENESS IN EQUINE, 3 Credits
Application of anatomy, lameness examination, nerve and joint anesthesia, diagnostic radiology, ultrasound and nuclear scintigraphy to diagnosis of lameness in horses. Graded P/N.

VMC 745, PRACTICE MANAGEMENT, 2 Credits
A course in basic personal and business finance, career skills, and legal aspects of veterinary practice. Graded P/N.
Equivalent to: VMB 775

VMC 747, VETERINARY ANESTHESIOLOGY II, 3 Credits
An additional two-week clinical rotation in veterinary anesthesiology utilizing patients presented to the Veterinary Teaching Hospital. Graded P/N.

VMC 748, EQUINE DENTISTRY, 2 Credits
Utilizing modern, motorized equipment, cadaver specimens, and live hospital and client horses, students will learn and perform modern methods of equine dental prophylaxis and treatment. Graded P/N.

VMC 749, CLINICAL IMAGING II, 3 Credits
Advanced clinical course for 4th-year veterinary students in which they will assume additional responsibility for performing common radiographic procedures. Graded P/N.
Prerequisite: VMC 796 with C or better

VMC 750, EQUINE CLINICAL NUTRITION, 1 Credit
A one-week course for veterinary students focusing on equine nutrition that can be used in veterinary practice. Graded P/N.

VMC 751, RUMINANT NUTRITION, 2 Credits
An advanced course in clinical ruminant nutrition dealing with nutritional problems of ruminants that might be encountered by a practicing veterinarian. Graded P/N.

VMC 752, CLINICAL LARGE ANIMAL MEDICINE II, 3-6 Credits
Additional clinical medicine training. Graded P/N.
Prerequisite: VMC 732 with C or better
Equivalent to: VM 752
This course is repeatable for 6 credits.

VMC 753, CLINICAL ONCOLOGY I, 2 Credits
Teaches students a realistic approach to the diagnosis and treatment of pets with cancer. Students will participate in rounds, case management and medical records keeping.

VMC 754, CLINICAL LARGE ANIMAL SURGERY II, 3,6 Credits
Additional clinical surgery training. Graded P/N.
Prerequisite: VMC 734 with C or better
Equivalent to: VM 754
This course is repeatable for 6 credits.
VMC 755, RURAL VETERINARY PRACTICE II, 3-6 Credits
One additional rural practice training. Graded P/N.
Prerequisite: VMC 735 with C or better
Equivalent to: VM 755
This course is repeatable for 6 credits.

VMC 756, CLINICAL SKILLS V: TECHNICAL SKILLS AND CLINICAL REASONING, 1 Credit
Development of technical and psychomotor skills and clinical reasoning in preparation for clinical coursework.

VMC 758, CATTLE PRODUCTION MEDICINE, 3 Credits
Clinical application of production medicine practices to dairy and beef cattle practice. Graded P/N.
Prerequisite: VMC 735 with C or better
Equivalent to: VM 758

VMC 759, LARGE ANIMAL PALPATION, 1 Credit
A laboratory for additional experience in rectal palpation of large animals, for third-year veterinary students. Graded P/N.

VMC 760, CLINICAL SKILLS I: INTRO TO ANIMAL CARE AND VETERINARY MED, 3 Credits
Introduction of a variety of topics relevant to veterinary clinical skills including professionalism, inclusion, ethics, and career options. In addition, animal care, handling, restraint, and physical exam skills will begin to be developed.

VMC 761, CLINICAL SKILLS II: PHYSICAL EXAM AND PROBLEM SOLVING SKILLS, 3 Credits
Introduction to problem solving and integration of clinical case and basic science in the veterinary curriculum. Development of physical exam skills on healthy animals and medical records keeping.

VMC 762, CLINICAL SKILLS III: REASONING AND COMMUNICATION, 2 Credits
Develop communication skills and clinical reasoning in preparation for client interactions and evidence-based decision-making.

VMC 763, ADVANCED CLINICAL CARDIOLOGY, 1 Credit
An elective course for junior veterinary students detailing diagnosis and management of the common congenital and acquired cardiac diseases of domestic animals.

VMC 764, DIAGNOSTIC IMAGING, 4 Credits
A lecture and laboratory course in diagnostic imaging covering physics or radiography and ultrasonography, radiation safety and image interpretation for small and large animals, presented by body systems.
Equivalent to: VM 764

VMC 765, ADVANCED CLINICAL RADIOLOGY, 1 Credit
An elective advanced radiology case-based course for Year 3 veterinary medicine students that focuses on radiographic findings of commonly encountered clinical disease.

VMC 766, CLINICAL SMALL ANIMAL ULTRASONOGRAPHY, 2 Credits
A 1-week overview of clinical small animal ultrasonography with particular emphasis on material relevant to a general or emergency practitioner. Students will be able to perform a FAST scan to identify peritoneal fluid. Students will listen to didactic lectures in the morning with practical sessions in the afternoon. At the end of the week, pairs of students will make a short presentation based on a literature search on a topic of interest.

VMC 767, SMALL ANIMAL ABDOMINAL ULTRASOUND, 3 Credits
Introductory course to provides instruction in veterinary ultrasound with an emphasis on image optimization, evaluation of the abdomen, description and interpretation of imaging findings in dogs and cats. This course is intended for students with a background in common small animal disease and imaging anatomy.

VMC 768, PRINCIPLES OF ANESTHESIA, 4 Credits
A basic course in the principles and techniques of surgery and anesthesia for the professional veterinary student. Lec/lab.
Equivalent to: VM 768

VMC 769, GENERAL MEDICINE, 2 Credits
An introduction to medicine with a discussion of the principles of medicine that would be applicable to all species. Physical examination, clinical diagnosis, pathophysiology of signs of disease in domestic animals, therapeutic principles and diagnostic procedures.
Equivalent to: VM 769

VMC 770, LARGE ANIMAL MEDICINE I, 4 Credits
The first of three courses in large animal medicine for third-year professional veterinary students covering diagnosis and treatment of domestic large animals.
Equivalent to: VM 770

VMC 771, LARGE ANIMAL MEDICINE II, 4 Credits
Diagnosis, treatment and control of diseases of large domestic animals, specifically gastrointestinal, hepatobiliary diseases, weight loss, and introduction to production medicine, and some swine diseases.
VMC 772, LARGE ANIMAL MEDICINE III, 4 Credits
Diagnosis, treatment and control of diseases of large domestic animals, specifically central nervous system, mastitis, musculoskeletal, sudden death, skin, and some swine diseases.

VMC 773, MEDICINE LABORATORY I, 1 Credit
Laboratory experience for third-year veterinary students concurrent with the large and small animal medicine courses.

VMC 774, MEDICINE LABORATORY II, 1 Credit
Laboratory experience for third-year veterinary students concurrent with the large and small animal medicine courses.

VMC 775, CLINICAL SMALL SPORTS MEDICINE AND REHABILITATION, 3 Credits
Clinical training in small animal rehabilitation in the Veterinary Teaching Hospital.

VMC 776, SMALL ANIMAL MEDICINE I, 5 Credits
A course for veterinary students describing major topics of small animal internal medicine, using both a systems-based approach and a problem-based approach. 
Equivalent to: VM 776

VMC 777, SMALL ANIMAL MEDICINE II, 5 Credits
A course for veterinary students describing major topics of small animal internal medicine, using both a systems-based approach and a problem-based approach. 

VMC 778, SMALL ANIMAL MEDICINE III, 5 Credits
A course for veterinary students describing major topics of small animal internal medicine, using both a systems-based approach and a problem-based approach.

VMC 779, EQUINE SPORTS MEDICINE, 1 Credit
One-week elective encompassing basic exercise physiology, sports-related injuries, injury rehabilitation, training and nutrition of equine athletes. Graded P/N. 
Equivalent to: VM 779

VMC 780, VETERINARY MEDICAL PRECEPTORSHIP, 1-16 Credits
Theory of practice of veterinary medicine in a non-university situation. Graded P/N.
Equivalent to: VM 780
This course is repeatable for 16 credits.

VMC 781, SEMINAR IN VETERINARY MEDICINE, 1-16 Credits
Seminars and case discussions on selected topics by students, staff, and others. Graded P/N. 
Equivalent to: VM 781
This course is repeatable for 16 credits.

VMC 782, EMERGENCY CARE, 1 Credit
One-week rotation in the Veterinary Teaching Hospital during non-regular hours. Practice and instruction in caring for critically ill patients.
Equivalent to: VM 782

VMC 783, THERIOGENOLOGY I, 4 Credits
To present the clinical applications of reproductive physiology, anatomy, embryology, pathology and microbiology in domesticated animals. 
Equivalent to: VM 783

VMC 785, SMALL ANIMAL SURGERY, 7 Credits
A lecture and laboratory course covering the diagnosis, operative methods, and aftercare of common small animal surgical conditions. 
Equivalent to: VM 785

VMC 786, ANIMAL BEHAVIOR, 1 Credit
Diagnosis and treatment of feline, canine and equine problem behaviors including aggression, anxiety, house-soiling and compulsive behaviors. 

VMC 787, 3RD YEAR CLINICS, 1 Credit
An introductory clinical experience for third-year veterinary students. 

VMC 788, PET PRACTICE, 3 Credits
Additional clinical training in primary care pet practice at a Banfield Pet Hospital. Graded P/N. 
This course is repeatable for 6 credits.

VMC 790, CLINICAL EXPERIENCE, 1-16 Credits
Equivalent to: VM 790
This course is repeatable for 48 credits.

VMC 791, CLINICAL SMALL ANIMAL MEDICINE, 3,6 Credits
A clinical rotation in small animal internal medicine at the Veterinary Teaching Hospital. Emphasis will be placed on patient evaluation, diagnosis and treatment of diseases of dogs and cats. 
This course is repeatable for 6 credits.

VMC 792, CLINICAL SMALL ANIMAL MEDICINE II, 3-6 Credits
A two-week, three-credit clinical elective rotation in small animal internal medicine at the Veterinary Teaching Hospital. Emphasis will be placed on patient evaluation, diagnosis and treatment of diseases of dogs and cats. 
This course is repeatable for 6 credits.
VMC 793, CLINICAL SMALL ANIMAL SURGERY, 3-6 Credits
Clinical training in small animal surgery in the Veterinary Teaching Hospital.
Prerequisite: VMC 725 with C or better and VMC 785 [C]
This course is repeatable for 6 credits.

VMC 794, OHS SMALL ANIMAL PRIMARY CARE, 4 Credits
Three-week rotation at OHS to gain experience with an emphasis on surgery, medical case workup, exam room protocol and behavior basics.

VMC 796, CLINICAL IMAGING, 3 Credits
A clinical course for 4th-year veterinary students in which they will assume primary responsibility for performing common radiographic procedures.

VMC 797, SMALL ANIMAL CRITICAL CARE AND HOSPITAL SERVICE ROTATION, 1 Credit
A one-week clinical rotation in small animal critical care managing small animal cases in the intensive care unit at the Veterinary Teaching Hospital.

VMC 798, CLINICAL SMALL ANIMAL SURGERY II, 3-6 Credits
Clinical training in small animal surgery in the College of Veterinary Medicine, Lois B. Acheson Veterinary Teaching Hospital.
This course is repeatable for 6 credits.

VMC 799, SPECIAL TOPICS, 1-16 Credits
This course is repeatable for 16 credits.