

**University of Wisconsin-Madison School of Veterinary Medicine DVM Degree Course Digest: 2010-2011 Academic Year  
Year 1 Required Courses**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours<sup>1</sup></b>	<b>Semester Offered</b>	<b>Mode of Instruction<sup>2</sup></b>	<b>Course Description</b>
934-500	Fundamental Principles of Veterinary Anatomy	5	Fall	Didactic + Laboratory	This course presents a detailed consideration of gross anatomical structures with emphasis on major anatomical patterns present in species important to veterinary medicine. The dog is used as a model domestic mammal and comparisons with other species are considered. All body systems are dissected. Clinical implications of these dissections are emphasized.
934-501	Veterinary Histology	5	Fall	Didactic + Laboratory	Comparative structural and functional aspects of cells and tissues are examined. Mammalian histology is stressed.
934-503	Veterinary Developmental Anatomy	2	Fall	Didactic	Principles of development and organogenesis in domestic animals are the focus of this course. Normal developmental patterns are related to adult anatomy. Clinical implications of common congenital defects are discussed.
934-551	Veterinary Physiology A	4	Fall	Didactic + Laboratory	This is the first semester of a two semester comprehensive course in comparative veterinary physiology. In this first semester, topics include principles of physiology and physiology of the following systems: muscle, respiratory, cardiovascular, renal and acid/base. A live dog laboratory on ECGs occurs, as well as laboratory discussions of heart sounds and cardiovascular regulation.
938-501	Radiographic Anatomy of the Dog and Cat	1	Fall	Didactic + Laboratory	This course presents the normal radiographic anatomy of dogs, cats, and pet birds, including soft tissue structures, as well as the skeletal system. Clinical case materials are used to emphasize the need for a thorough knowledge of normal radiographic anatomy.
623-570	Health, History and Physical Examination	1	Fall and Spring Combined	Didactic + Laboratory	This course introduces use of the problem-oriented medical record, history taking, physical examination and basic restraint, and diagnostic and therapeutic techniques in large and small domestic animals.

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623-675	Introduction to the Veterinary Medical Teaching Hospital (VMTH) I	1	Fall and Spring Combined	Clinical Rotation Observation	This course is designed to introduce students to the Veterinary Medical Teaching Hospital. Students are given a list of goals to accomplish over the fall and spring semesters, working together with a current fourth-year student in the VMTH.
623-675	Veterinary Medical Ethics	0 <sup>3</sup>	Fall and Spring Combined	Didactic	This course extends over the entire first three years of the DVM curriculum. In a developmentally appropriate manner, students are introduced first to basic concepts, theories and viewpoints of ethics, followed by consideration of a series of veterinary medical ethical issues consistent with the students' progression through the DVM curriculum. The class meetings are a combination of introductory lecture followed by discussion, often based around clinical scenarios or questions.
623-629	Veterinary Nutrition	1	Spring	Didactic	This course covers the importance of nutrition in veterinary medical practice, the role of nutrition in maintaining animal health, and common nutrition-related diseases, with an emphasis on the dairy cow.
934-502	Molecular and Metabolic Basis of Medicine	3	Spring	Didactic	This course covers metabolism, molecular genetics, and aspects of biotechnology, and applications of these concepts towards developing an integrated molecular understanding of various clinical problems in veterinary medicine.
934-505	Veterinary Neuroanatomy and Neurophysiology	3	Spring	Didactic	This course presents a comparative approach to the morphological and physiological properties of the central nervous system of animals, particularly those of veterinary medical importance.
934-506	Veterinary Physiology B	4	Spring	Didactic + Laboratory	This is the second semester of a two semester comprehensive course in comparative veterinary physiology. In this second semester, topics include the physiology of the following systems: gastrointestinal, endocrine and reproductive. A reproductive physiology lab includes fresh and preserved reproductive tracts and related specimens.
703-514	Veterinary Parasitology	3	Spring	Didactic + Laboratory	This course covers basic veterinary parasitology with emphasis on biology, diagnosis, pathophysiology, treatment and management of parasitic infections of veterinary medical importance.

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934-552	Basic Veterinary Pharmacology <i>(Note: this course will be merged with the current Year 2 Semester 2 course in 2011-2012 to create a single 4 credit Veterinary Pharmacology course)</i>	2	Spring	Didactic	This course focuses on the basic principles of pharmacokinetics and pharmacodynamics and the application of those principles to chemical agents of veterinary medical importance. Species variations in drug disposition and drug response are stressed.
934-550	Anatomy of the Large Domestic Animals	2	Spring	Didactic + Lab	This course presents an anatomical study of the horse and the ox with special emphasis on the anatomical specializations of these species. Extensive comparisons are made to the anatomy of the small domestic animals. Other large domestic animals are considered as appropriate to demonstrate anatomical variation.

**University of Wisconsin-Madison School of Veterinary Medicine DVM Degree Course Digest: 2010-2011 Academic Year  
Year 1 Elective Courses**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours<sup>1</sup></b>	<b>Semester Offered</b>	<b>Mode of Instruction<sup>2</sup></b>	<b>Course Description</b>
623-675	Small Animal Emergency and Critical Care	1	Fall	Didactic + Laboratory	This course introduces students to various topics of emergency and critical care medicine through lectures and case discussions, in concert with providing continuing education for graduate veterinarians. An emergency procedures and cardiopulmonary resuscitation wet lab also provides participants with hands-on experiences.
623-675	Introduction to Veterinary Research	1	Fall and Spring	Journal Club format	The goals of course are to provide introductory understanding of appropriate study design, promote critical evaluation of research data in manuscripts, showcase clinical and basic research at the UW SVM, promote laboratory research opportunities at the UW SVM, and promote research careers as veterinary scientists.
938-675	Large Animal Radiographic Anatomy	1	Spring	Didactic + Self-Study Laboratory	This course provides an applied radiology learning supplement to the Anatomy of the Large Domestic Animals course. In addition, this course helps prepare students for radiology and large animal coursework in the third year of the DVM curriculum. Application of anatomy is emphasized by radiographs from clinical cases, which are included in radiograph film study sets.
623-675	Large Animal Supportive Care	1	Spring	Clinical Rotation	This program is an opportunity for students to gain hands-on experience in the restraint and supportive care of critically ill foals, horses and ruminants by participation in night-call service in the Veterinary Medical Teaching Hospital. Students will assist faculty, residents and staff in the diagnostic work-up and care of ill large animal patients, including activities such as: monitoring and nursing care of sick neonates; patient restraint and management of fluid, oxygen and feeding lines; and, diagnostic sample collection and medication administration.

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623-675	Applied Animal Behavior	1	Spring	Didactic	This course is co-presented with a continuing education course for graduate veterinarians, and covers different areas of animal behavior each year. Examples of recent years' topics include: feline behavior problems; canine behavior modification techniques; companion animal-equine behavior; non-human animal cognition (companion animal, marine mammals and birds); animals in translation; clinical behavior evaluation; and, in-patient stress reduction. The course is presented by invited speakers from around the country.
703-675	Shelter Medicine	1	Spring	Didactic + Shelter Visits	This course covers a wide variety of topics related to the care and management of sheltered companion animals, including spay/neuter programs to reduce shelter populations, shelter vaccination and other preventive medicine programs, temperament evaluation and animal cruelty, and shelter design.
623-675	Companion Animal Nutrition	1	Spring	Didactic	This course is co-presented for both DVM students and as continuing education for graduate veterinarians. The specific topics and speakers vary each year, but typically include aspects of basic canine and feline nutrition and nutritional management of companion small animal diseases.

**University of Wisconsin-Madison School of Veterinary Medicine DVM Degree Course Digest: 2010-2011 Academic Year  
Year 2 Required Courses**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours<sup>1</sup></b>	<b>Semester Offered</b>	<b>Mode of Instruction<sup>2</sup></b>	<b>Course Description</b>
703-510	Veterinary Immunology	3	Fall	Didactic + Laboratory	This course presents current concepts in basic and clinical immunology with special emphasis on domesticated species and aspects of immunology important to students of veterinary medicine. Laboratories include hands-on experience with vaccination, collection of samples for laboratory diagnostics and skin testing for hypersensitivity diseases. Case controlled studies, based on results of diagnostic testing, are presented by the students.
703-517	Veterinary Bacteriology - Mycology	4	Fall	Didactic + Laboratory	Lectures present the biology of bacterial and fungal pathogens of importance in veterinary medicine with emphasis on pathogenic mechanisms. Laboratories employ clinical diagnostic techniques to identify these organisms.
703-512	Veterinary Epidemiology	2	Fall	Didactic	This course introduces basic concepts and approaches to population problems in veterinary medicine. Methods appropriate to investigation of disease outbreaks, surveillance of animal disease, and the production and design of epidemiological studies of the determinants of disease are presented.
703-513	Veterinary Virology	2	Fall	Didactic	This course first begins with the basic aspects of virus biology, replication, pathogenesis and diagnosis; the majority of the course then focuses on clinical aspects of viral diseases of domestic animals, including both enzootic diseases and foreign animal diseases, with reference to diseases in free-ranging animals and humans where appropriate.
703-599	General Pathology	2	Fall	Didactic + Laboratory	This course provides an introduction to anatomic pathology of domestic animals. The general principles and mechanisms of disease are discussed from the point of view of changes in morphology at the cellular, tissue, organ, and organismal levels. Specific content areas include cell injury and cell death, neoplasia, inflammation, circulation, and genetics.
703-560	Veterinary Systemic Pathology I	2	Fall	Didactic + Laboratory	This course focuses on morphological manifestations of disease in animals. Diseases and disease processes are discussed by organ system, stressing important diseases in domestic animals.

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703-675	Active-Integrative Learning I	1	Fall	Problem- and Case-based	This course has been developed to create an active learning experience that will allow students to repeatedly practice problem solving and expand their critical thinking skills. The course horizontally integrates information from concurrent courses in bacteriology, mycology, virology, immunology, epidemiology, pathology, clinical pathology, parasitology, toxicology and pharmacology. It also vertically integrates information from previous courses in anatomy; histology; molecular & metabolic basis of medicine; health, history & physical examination; neuroanatomy and physiology. Additional vertical integration forward to VM3 courses in medicine and surgery will occur by constructing the exercises for each session in the context of clinical cases/scenarios (with progressive sophistication and clinical content as the course progresses through the VM2 year).
623-675	Introduction to the Veterinary Medical Teaching Hospital II	1	Fall and Spring Combined	Didactic and Clinical Rotation Observation	This course is an extension of the Introduction to the Veterinary Medical Teaching Hospital course in year 1, again with a series of required activities in the Teaching Hospital for second year students, but also including lectures on basic clinical communication skills.
623-675	Veterinary Medical Ethics	0 <sup>3</sup>	Fall and Spring Combined	Didactic	This course extends over the entire years 1-3 of the DVM curriculum. In a developmentally appropriate manner, students are introduced first to basic concepts, theories and viewpoints of ethics, followed by consideration of a series of veterinary medical ethical issues consistent with the students' progression through the DVM curriculum. The class meetings are a combination of introductory lecture followed by discussion, often based around clinical scenarios or questions.
703-514	Veterinary Parasitology <i>(Note: this course will move to solely Year 1 Semester 2 in the 2011-2012 Academic Year)</i>	3	Spring	Didactic + Laboratory	This course covers basic veterinary parasitology with emphasis on biology, diagnosis, pathophysiology, treatment and management of parasitic infections of veterinary medical importance.

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703-561	Veterinary Systemic Pathology II	4	Spring	Didactic + Laboratory	This is the continuation of Veterinary Systemic Pathology I in the fall semester, covering morphological manifestations of disease in animals. Diseases and disease processes are discussed by organ system, stressing important diseases in domestic animals.
703-562	Veterinary Clinical Pathology	4	Spring	Didactic + Laboratory	This course focuses on the concepts of laboratory medicine, including the physiologic principles that underlie diagnostic tests. Problem-solving and the application of laboratory tests, including their selection and interpretation, to the solution of clinical problems are emphasized.
934-555	Veterinary Toxicology	2	Spring	Didactic	This is a course in the science of toxicology as it relates to veterinary medical practice. The principles of toxicology and the mechanisms and treatment of toxicants commonly encountered in small and large animals are presented.
938-544	Surgery Fundamentals	2	Spring	Didactic + Laboratory	This course provides introductory material on the scientific foundations of surgery and prepares students for subsequent clinical course work in veterinary surgery and medicine.
938-545	Fundamentals of Anesthesiology I	1	Spring	Didactic	This course provides introductory material on the scientific foundations of veterinary anesthesiology.
934-556	Basic and Clinical Therapeutics <i>(Note: this course will be merged with the current Year 1 Semester 1 course in 2011-2012 to create a single 4 credit Veterinary Pharmacology course in Year 2 Semester 2)</i>	3	Spring	Didactic	This course comprises a presentation of the basic pharmacology of various drug classes used in veterinary medicine together with examples of clinical drug use. Important species variations in drug use and drug response are stressed.

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703-675	Active-Integrative 1 Learning II	Spring	Problem- and Case-based	This course has been developed to create an active learning experience that will allow students to repeatedly practice problem solving and expand their critical thinking skills. The course horizontally integrates information from concurrent courses in bacteriology, mycology, virology, immunology, epidemiology, pathology, clinical pathology, parasitology, toxicology and pharmacology. It also vertically integrates information from previous courses in anatomy; histology; molecular & metabolic basis of medicine; health, history & physical examination; neuroanatomy and physiology. Additional vertical integration forward to VM3 courses in medicine and surgery will occur by constructing the exercises for each session in the context of clinical cases/scenarios (with progressive sophistication and clinical content as the course progresses through the VM2 year).
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**University of Wisconsin-Madison School of Veterinary Medicine DVM Degree Course Digest: 2010-2011 Academic Year  
Year 2 Elective Courses**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours<sup>1</sup></b>	<b>Semester Offered</b>	<b>Mode of Instruction<sup>2</sup></b>	<b>Course Description</b>
623-675	Small Animal Emergency and Critical Care	1	Fall	Didactic + Laboratory	This course introduces students to various topics of emergency and critical care medicine through lectures and case discussions, in concert with providing continuing education for graduate veterinarians. An emergency procedures and cardiopulmonary resuscitation wet lab also provides students with hands-on experiences.
623-675	Introduction to Veterinary Research	1	Fall and Spring	Journal Club format	The goals of course are to provide introductory understanding of appropriate study design, promote critical evaluation of research data in manuscripts, showcase clinical and basic research at the UW SVM, promote laboratory research opportunities at the UW SVM, and promote research careers as veterinary scientists.
623-675	Large Animal Supportive Care	1	Spring	Clinical Rotation	This program is an opportunity for students to gain hands-on experience in the restraint and supportive care of critically ill foals, horses and ruminants via night-call service in the Veterinary Medical Teaching Hospital. Students will assist faculty, residents and staff in the diagnostic work-up and care of ill large animal patients, including activities such as: monitoring and nursing care of sick neonate;, patient restraint and management of fluid, oxygen and feeding lines; and, diagnostic sample collection and medication administration.
623-675	Applied Animal Behavior	1	Spring	Didactic	This course is co-presented with continuing education for graduate veterinarians, and covers different areas of animal behavior each year. Examples of recent years' topics include: feline behavior problems; canine behavior modification techniques; companion animal-equine behavior; non-human animal cognition (companion animal, marine mammals and birds); animals in translation; clinical behavior evaluation; and, in-patient stress reduction. The course is presented by invited speakers from around the country.

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703-675	Shelter Medicine	1	Spring	Didactic + Shelter Visits	This course covers a wide variety of topics related to the care and management of sheltered companion animals, including spay/neuter programs to reduce shelter populations, shelter vaccination and other preventive medicine programs, temperament evaluation and animal cruelty, and shelter design.
623-675	Small Animal Nutrition	1	Spring	Didactic	This course is co-presented for both DVM students and as continuing education for graduate veterinarians. The specific topics and speakers vary each year, but typically include aspects of basic canine and feline nutrition and nutritional management of companion small animal diseases.

**University of Wisconsin-Madison School of Veterinary Medicine DVM Degree Course Digest: 2010-2011 Academic Year  
Year 3 Required Courses**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours<sup>1</sup></b>	<b>Semester Offered</b>	<b>Mode of Instruction<sup>2</sup></b>	<b>Course Description</b>
623-632	Companion Animal and Equine Medicine I	6	Fall	Didactic	Basic concepts of well-animal companion animal and equine health care, nutrition, and reproduction are presented. Discussion of the etiology, pathophysiology, diagnosis, treatment, and prevention of important internal medicine and reproductive diseases in these species are emphasized.
623-634	Food Animal Medicine	5	Fall	Didactic	This course introduces students to basic medical principles for food animal species, and is designed to integrate food animal medicine, theriogenology, nutrition and preventive medicine concepts into one course.
938-630	Small Animal Surgery	4	Fall	Didactic	The pathophysiology and diagnosis of common general and orthopedic surgical diseases of small animals are presented. The operative management and postoperative care of small animal surgical patients are discussed in detail.
938-542	Veterinary Ophthalmology	2	Fall	Didactic + Laboratory	This course provides basic instruction in the application of ophthalmic diagnostics and therapeutics to small and large domestic animals, with an emphasis on case-based instruction. Professional students should gain sufficient skills and knowledge to accurately diagnose, treat, prognose or refer domestic animals with common ophthalmic disorders.
623-625	Veterinary Diagnostic and Therapeutic Techniques	1	Fall and Spring Combined	Laboratory	This course provides laboratory instruction in detailed examination techniques and diagnostic and therapeutic procedures relevant to veterinary medical procedures on all species of domestic animals.
938-632	Small Animal Surgery Lab	2	Fall and Spring Combined	Laboratory	The basic skills necessary for student participation in the surgical management of small animals in the Veterinary Medical Teaching Hospital are presented. Students perform a series of ovariohysterectomies on local animal shelter-derived dogs and cats, with students rotating responsibilities as surgeon, assistant surgeon or anesthesiologist, under the direct supervision of staff surgeons and anesthetists/anesthesiologists.

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938-634	Small Animal Anesthesia Lab	1	Fall and Spring Combined	Laboratory	In this laboratory students apply principles and techniques of anesthesiology to common companion animals.
623-675	Veterinary Medical Ethics	1 <sup>3</sup>	Fall and Spring Combined	Didactic	This course extends over the entire years 1-3 of the DVM curriculum. In a developmentally appropriate manner, students are introduced first to basic concepts, theories and viewpoints of ethics, followed by consideration of a series of veterinary medical ethical issues consistent with the students' progression through the DVM curriculum. The class meetings are a combination of introductory lecture followed by discussion, often based around clinical scenarios or questions.
623-633	Companion Animal and Equine Medicine II	6	Spring	Didactic	This course is a continuation of Companion Animal and Equine Medicine I from the fall semester. Basic concepts of well-animal companion animal and equine health care, nutrition, and reproduction are presented. Discussion of the etiology, pathophysiology, diagnosis, treatment, and prevention of important internal medicine and reproductive diseases in these species is emphasized.
703-515	Regulatory Veterinary Medicine and Public Health	2	Spring	Didactic	The first half of this course provides an introduction to regulatory veterinary medicine, as well as an in-depth discussion of meat and milk hygiene and the appropriate use of antibiotics in food animals under AMDUCA. The second half of the course presents a review of important zoonotic diseases from a comparative (animal and human disease presentations) clinical perspective, with an emphasis of the roles of animals in human infection.
938-546	Fundamentals of Anesthesiology II	1	Spring	Didactic	This course is a continuation of Fundamentals of Anesthesiology I from the fall semester. The course prepares students for the fourth year clinical course work.
938-631	Large Animal Surgery: Orthopedic and Soft Tissue	4	Spring	Didactic	Instruction is provided in examination techniques, diagnostic aids and surgical procedures relevant to the gastrointestinal, integumentary, musculoskeletal, respiratory and genitourinary systems of the equine and food animal species.
938-638	Veterinary Radiology	2	Spring	Didactic + Laboratory	Veterinary radiology principles, physical background and diagnostic techniques are taught and emphasized in laboratory exercises.

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938-676	Special Species Health	2	Spring	Didactic + Laboratory	This course presents the basic principles of avian, reptile and laboratory animal medicine and surgery.
623-675	Professional Skills in Veterinary Medicine	1	Spring	Didactic	This course introduces students to a variety of topics related to business aspects of their careers in the veterinary medicine profession. Topics include: perspectives on professional success; writing resumes and cover letters; interview techniques; malpractice insurance and risk management; small and large animal practice management; legal issues in veterinary medical practice; and, business and personal finance management and basic accounting. The course includes visiting practitioners, lawyers, and financial consultants.

**University of Wisconsin-Madison School of Veterinary Medicine DVM Degree Course Digest: 2010-2011 Academic Year  
Year 3 Elective Courses**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours<sup>1</sup></b>	<b>Semester Offered</b>	<b>Mode of Instruction<sup>2</sup></b>	<b>Course Description</b>
623-675	Small Animal Emergency and Critical Care	1	Fall	Didactic + Laboratory	This course introduces students to various topics of emergency and critical care medicine through lectures and case discussions, in concert with providing continuing education for graduate veterinarians. An emergency procedures and cardiopulmonary resuscitation wet lab also provides students with hands-on experiences.
623-675	The Art of Clinical Communication	1	Fall and Spring	Didactic	This course is designed to help students develop an understanding of the communication process, introduce applications of this process in clinical work, practice and develop skills central to effective clinical communications, and help students gain an increased awareness of self. The course combines didactic instruction, experiential training (e.g., role plays) and discussion.
623-675	Large Animal Supportive Care	1	Spring	Clinical Rotation	This program is an opportunity for students to gain hands-on experience in the restraint and supportive care of critically ill foals, horses and ruminants via night-call service in the Veterinary Medical Teaching Hospital. Students will assist faculty, residents and staff in the diagnostic work-up and care of ill large animal patients, including activities such as: monitoring and nursing care of sick neonate;, patient restraint and management of fluid, oxygen and feeding lines; and, diagnostic sample collection and medication administration.
938-675	Bovine Surgery Lab	1	Spring	Laboratory	This laboratory provides students with the opportunity to gain hands-on bovine surgery experience, including performing right flank exploratory celiotomy and omentopexy in the standing cow.
938-677	Advanced Dentistry	1	Spring	Didactic + Laboratory	This course covers advanced dentistry and oral health topics, including regional anesthesia, surgical dental extraction, oral pathology and oral surgery, periodontology and periodontal surgery, oral trauma and fractures, feline oral disease, endodontics, and dental practice marketing.

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623-675	Applied Animal Behavior	1	Spring	Didactic	This course is co-presented with continuing education for graduate veterinarians, and covers different areas of animal behavior each year. Examples of recent years' topics include: feline behavior problems; canine behavior modification techniques; companion animal-equine behavior; non-human animal cognition (companion animal, marine mammals and birds); animals in translation; clinical behavior evaluation; and, in-patient stress reduction. The course is presented by invited speakers from around the country.
703-675	Shelter Medicine	1	Spring	Didactic + Shelter Visits	This course covers a wide variety of topics related to the care and management of sheltered companion animals, including spay/neuter programs to reduce shelter populations, shelter vaccination and other preventive medicine programs, temperament evaluation and animal cruelty, and shelter design.
623-675	Small Animal Nutrition	1	Spring	Didactic	This course is co-presented for both DVM students and as continuing education for graduate veterinarians. The specific topics and speakers vary each year, but typically include aspects of basic canine and feline nutrition and nutritional management of companion small animal diseases.

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**Year 4 Required Courses<sup>4</sup>**

<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours<sup>1</sup></b>	<b>Semester Offered</b>	<b>Mode of Instruction<sup>2</sup></b>	<b>Course Description</b>
<b>Required for All VM4 Areas of Emphasis</b>					
623-670	Large Animal Medicine	2 to 6 <sup>4</sup>	Year-round	Clinical Rotation	This is a practical course in the diagnosis and medical treatment of diseases of horses, cattle, sheep, goats and pigs. Students will admit, examine, perform diagnostic tests, and treat and discharge animal patients in the Veterinary Medical Teaching Hospital.
938-642	Large Animal Surgery	2 to 6 <sup>4</sup>	Year-round	Clinical Rotation	A practical course that covers the admission, examination, preoperative and postoperative management and surgical procedures of the large animal cases in the Veterinary Medical Teaching Hospital.
623-674	Ambulatory	2	Fall and Spring	Clinical Rotation	This is a practical course in the diagnosis, treatment and prevention of common medical, surgical and management problems on farms. Students also examine the environmental influences associated with such problems. Selected private practice farm animal veterinarians throughout the state of Wisconsin host students and serve as mentors for this rotation.
938-647	Radiology	2	Year-round	Clinical Rotation	This is a practical course providing exercises in technical and interpretive diagnostic radiology, based on cases in the Veterinary Medical Teaching Hospital.
703-660	Necropsy	1	Year-round	Clinical Rotation	This is a practical course providing experience with necropsy procedures and helping students develop interpretive skills in gross anatomic pathology.
938-646	Anesthesiology	2	Year-round	Clinical Rotation	This is a practical course focused on clinical anesthesiology techniques including pre-anesthetic evaluation, induction procedures, intraoperative care, recovery management and critical care of domestic livestock and pets in the Veterinary Medical Teaching Hospital.
623-678	Small Animal Internal Medicine	2 to 4 <sup>4</sup>	Year-round	Clinical Rotation	This is a practical course in the diagnosis and medical treatment of diseases of companion small animal species. Students admit, examine, perform diagnostic tests, treat and discharge animal patients in the Veterinary Medical Teaching Hospital.

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938-645    Small Animal    2 to 4<sup>4</sup>    Year-round    Clinical Rotation    This is a practical course in the diagnosis and treatment of soft tissue surgical diseases of small animal species based on cases in the Veterinary Medical Teaching Hospital  
General Surgery

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**Required for Some VM4 Areas of Emphasis**

623-672	Theriogenology	2	Year-round	Clinical Rotation	This is a practical course in the management of reproduction and reproductive problems in domestic animals (including pets) seen in the Veterinary Medical Teaching Hospital and during field trips off campus. (Required for food animal, large animal and mixed animal areas of emphasis)
938-741	Ophthalmology	2	Year-round	Clinical Rotation	This is a practical course providing experience in ocular examination, problem solving skills, and formulation of diagnostic and therapeutic plans for animals presenting with ocular disease in the Veterinary Medical Teaching Hospital. Ocular manifestations of systemic diseases are emphasized. (Required for all VM4 areas of emphasis except food animal, for which it is a selective)
623-701	Basic Skills for Production Medicine	2	Summer and Fall	Didactic + Laboratory + Farm Visits	Students visit dairy farms to assess herd management and use DHI records to analyze herd health problems of production. This course is a prerequisite for all other production medicine and swine medicine courses. (Required for the food animal area of emphasis; elective for other VM4 areas of emphasis)
938-644	Small Animal Orthopedic Surgery	2	Year-round	Clinical Rotation	This is a practical course in the diagnosis, treatment and management of small animal orthopedic conditions focused on the cases in the Veterinary Medical Teaching Hospital. (Required for the small animal area of emphasis; elective for other VM4 areas of emphasis)
623-675	Primary Care	2	Year-round	Clinical Rotation	This is a practical course that focuses on the principles of primary care of companion animals, taught using primary care service cases in the Veterinary Medical Teaching Hospital. (Required for all VM4 areas of emphasis except small animal, for which it is a selective)
623-675	Small Animal Emergency Medicine	2	Year-round	Clinical Rotation	The goal of this rotation is to provide fourth year students with active exposure to emergency medicine. Activities include triage of emergency patients, emergency patient history taking and physical examination, and participation in diagnostic and therapeutic procedures. (Required for the small animal area of emphasis; elective for other VM4 areas of emphasis)

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<b>Small Animal Medicine Specialty Selective Rotations<sup>5</sup></b>					
623-669	Small Animal Cardiology	2	Year-round	Clinical Rotation	This is a practical course on the diagnostic techniques and therapy used to manage cardiology patients in the Veterinary Medical Teaching Hospital.
623-667	Small Animal Neurology	2	Year-round	Clinical Rotation	This is a practical course focusing on clinical neurology including patient examination, diagnostic methods, treatment and case management in the Veterinary Medical Teaching Hospital.
623-679	Small Animal Oncology	2	Year-round	Clinical Rotation	This is a practical course in the diagnosis and treatment of cancer in small animals. Learning is focused on oncology patients in the Veterinary Medical Teaching Hospital.
623-668	Small Animal Dermatology	2	Year-round	Clinical Rotation	This is a practical course held in the Veterinary Medical Teaching Hospital, which focuses on the development of the technical, clinical and knowledge skills to effectively examine, diagnose, treat and manage the dermatology patient.
938-675	Special Species	2	Year-round	Clinical Rotation	This is a practical course in the handling and management of many special species and the diagnostic and therapeutic techniques appropriate to diseases of those species, including avian, exotic mammals, invertebrates and more.

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<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours<sup>1</sup></b>	<b>Semester Offered</b>	<b>Mode of Instruction<sup>2</sup></b>	<b>Course Description</b>
<b>Elective Rotations</b>					
***-775 <sup>6</sup>	Externship	8 to 12	Year-round	Clinical Rotation	An externship is an elective rotation in the fourth year of the DVM educational program that occurs outside the School of Veterinary Medicine and allows students to pursue activities not offered in depth in the Veterinary Medical Teaching Hospital. Externships focus on an activity that will provide students with extended experience(s) in the veterinary medical profession. Each externship experience is typically 1-4 weeks in length.
***-699 <sup>6</sup>	Preceptorship			Clinical Rotation	A preceptorship is an elective rotation in the fourth year of the DVM educational program that occurs outside the School of Veterinary Medicine and allows students to pursue activities not offered in depth in the Veterinary Medical Teaching Hospital. Preceptorships, as opposed to externships, are custom-designed by a student together with a faculty member, and are typically project-based. Preceptorships are designed by the student and faculty member to meet a specific interest of the student.
***-699 <sup>6</sup>	Directed Study	Variable	Year-round	Clinical rotation or Research	A directed study is an elective rotation in the fourth year that is conducted in the School of Veterinary Medicine and is specifically coordinated and managed by a School faculty member. It meets the interest of students outside the regular clinical and didactic rotations.
623-703	Mastitis Problem Investigations	2	Summer and Fall	Didactic + Laboratory + Farm Visits	Students learn to evaluate the causes of mastitis and the diagnosis and treatments fundamental to delivering mastitis management services to dairy herds. Field trips to farms are included.
623-705	Clinical Investigations of Fresh Cow and Calf Problems	2	Fall and Spring	Didactic + Laboratory + Farm Visits	Students learn the skills and experience needed to deal with complex cow/calf health problems including assessment of herd management, diagnosis of infectious and metabolic diseases, nutritional analysis and more. Field trips to farms are included.
623-707	Advanced Techniques in Dairy Records and Nutrition	2	Spring	Didactic + Laboratory + Farm Visits	Students learn how to use and maintain a computerized dairy record system (DairyComp305) and develop skills in detailed, quantitative ration evaluation and re-formulation. Field trips to farms are included.

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938-746	Food Animal Surgery/ Advanced Bovine Skills	2	Spring	Didactic + Laboratory	This is a course that provides didactic and surgical experience in the major, common surgical diseases of cattle, as well as advanced bovine diagnostics and therapeutics.
938-675	Equine Elective	2	Fall	Didactic + Laboratory	This is a course providing practical experience in diagnostic and surgical procedures in horses. Topics covered include equine ophthalmology, nutrition, dermatology and diagnostic medical procedures, as well as surgical procedures such as castration, cast application, check ligament desmotomy, splint bone removal, enucleation, and exploratory celiotomy.
938-675	Equine Dentistry	1	Fall	Didactic + Laboratory	This elective is intended to provide a student pursuing a career in mixed large animal or equine practice with in-depth instruction in the diagnosis and treatment of conditions that affect the dentition, oral cavity and paranasal sinuses of the horse.
938-750	Ultrasound- Radiology Elective	2	Spring	Clinical Rotation	In this course, students learn ultrasound techniques and interpretation using cases in the Veterinary Medical Teaching Hospital.
938-743	Advanced Anesthesiology / Critical Care Medicine	2	Year-round	Clinical Rotation	This course provides advanced training in small and large animal anesthesia and/or critical care medicine. Students may select a general rotation or focus on a project in a particular area of interest.
938-748	Dentistry	2	Year-round	Clinical Rotation	This is a practical course in small animal dentistry as applied to cases in the Veterinary Medical Teaching Hospital.
703-721	Veterinary Necropsy Rotation Elective	Variable	Year-round	Clinical Rotation	This is an advanced course in necropsy techniques and gross pathology.
623-675	Small Animal Emergency Medicine	2	Year-round	Clinical Rotation	The goal of this rotation is to provide fourth year students with active exposure to emergency medicine. Activities include triage of emergency patients, emergency patient history taking and physical examination, and participation in diagnostic and therapeutic procedures.

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<b>Course Number</b>	<b>Course Title</b>	<b>Credit Hours<sup>1</sup></b>	<b>Semester Offered</b>	<b>Mode of Instruction<sup>2</sup></b>	<b>Course Description</b>
<b>VM4 Didactics<sup>7</sup></b>					
703-675	Clinical Pathology	1 to 2	Summer or Fall	Didactic + Laboratory	This course focuses on the interpretation of hematology, clinical chemistry, hemostasis, cytologic specimens, urinalysis, and other laboratory data as a part of the overall diagnostic process. Instructional materials include blood smears, cytologic specimens, and freshly prepared urine sediments.
703-675	Clinical Parasitology	1	Summer	Didactic + Laboratory	This course focuses on the diagnosis, treatment and control of parasitic diseases in canine, feline, equine, ruminant, porcine, avian and exotic species.
623-675	Clinical Therapeutics in Companion Animals	1	Fall	Didactic	This course provides in-depth information on pharmacological management of disease, including case-based presentations. The goal is to provide clinically useful information on frequently used drugs, with a focus on drug mechanisms and common side-effects.
623-675	Small Animal Emergency Medicine	1	Spring	Didactic	This course provides in-depth instruction on the principles of emergency medicine.
623-675	Advanced Art of Communication	1	Spring	Didactic + Mock Client Interactions	This course provides in-depth training and practice on the concepts and communication skills introduced in the Art of Clinical Communication elective course in year 3. The course utilizes videotaping and review of mock client interactions, as well as case presentations and group discussions.
938-744	Restraint and Anesthesia of Exotic Animals	2	Spring	Didactic + Laboratory	Advanced anesthesiology techniques for animals in zoological collections, wildlife parks and non-domestic settings are taught, with an emphasis on pharmacology and physiology (held outside the Veterinary Medical Teaching Hospital).

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<b>VM4 Research Options</b>					
623-704	Veterinary Oncology Research	Variable	Year-round	Research	This program allows students to conduct a mini-research project in oncology, in which hypothesis development, experimental design, experimentation, data analysis and written and oral presentation of findings are emphasized.
703-740	Pathobiological Sciences Research	Variable	Year-round	Research	This program allows students to conduct a mini-research project related to the pathobiological sciences, in which hypothesis development, experimental design, experimentation, data analysis and written and oral presentation of findings are emphasized.

<sup>1</sup> In general, credits for lecture versus lab are not differentiated in our system (unless so indicated); inclusion of laboratory instruction is listed under mode of instruction.

<sup>2</sup> Unless otherwise noted, classroom-based (versus lab or clinical rotation) courses are listed simply as "didactic." However, it should be recognized that each instructor may use a variety of techniques embedded within a didactic lecture format, including various degrees of problem-based learning, case-based learning, traditional lecture, discussion, etc.

<sup>3</sup> This course runs throughout years 1-3 of the curriculum, with credit awarded at the end of year 3.

<sup>4</sup> Fourth year students choose from one of five areas of emphasis: food animal, large animal, mixed animal, small animal, other. Required rotations and/or number of credits/weeks on required rotations vary among the different areas of emphasis.

<sup>5</sup> Students elect to take 2 weeks each of one to five selective small animal internal medicine specialty rotations; the number of selectives required is dependent upon the student's chosen fourth year area of emphasis. These rotations may also be taken as electives.

<sup>6</sup> Students may elect to complete externships or preceptorships with faculty in each of the four departments; therefore, the first three digits of the course numbers vary.

<sup>7</sup> During three 2 week periods of the fourth year, students may step out of clinical rotations to elect didactic courses in specific content areas.