

VETERINARY CLINICAL STUDIES AND ADVANCED MEDICINE - PHILADELPHIA (VCSP)

VCSP 6320 Diagnosis of Common Veterinary Intoxications

The diagnosis of poisoning in small animals has become an important part of Veterinary Medicine. All parts of Veterinary education are used in making diagnoses and formulating treatment of the poisoned animal patient. Thus, the course involves the integration of preclinical and clinical subjects, rather than simply the study of toxicology.

The instructors will provide detailed descriptions of cases from the Emergency Service files, integrated with the more typically academic aspects of toxicology. A variety of common toxins will be discussed including ethylene glycol, lead, zinc, organophosphates, rodenticide anticoagulants, cholecalciferol and non-steroidal anti-inflammatory drugs. The format for this course will be creative and include interactive lectures and discussions. The major emphasis of the course will be the clinical diagnosis and clinical management of intoxicated patients utilizing basic physiological and pharmacologic principles.

2 Credit Hours

VCSP 6330 Fundamentals of Animal Behavior

This course is foundational for students enrolling in the Animal Welfare and Behavior Certificate Program and provides students with the fundamental tools to interpret the behavior of small (companion) and large (farm) animals, poultry, and laboratory animals. Specifically, the course will cover: The anatomy and physiology that regulate behavior, its modification through learning, and animal cognition. The evolution and individual development of a behavior, including the analysis of its mechanism, adaptive value, ontogeny, and phylogeny. The ecology of domestic and laboratory animals: environmental needs, body care, locomotion and exploration. The social behavior of domestic and laboratory animals: affiliative and aggressive behavior, body language. The ingestive (feeding and drinking) behavior of domestic and laboratory animals. The reproductive and maternal behavior of domestic and laboratory animals.

6 Credit Hours

VCSP 6340 Emergency Preparedness and Response

Emergency preparedness and response integrates core professional competencies including communication, collaboration, management, lifelong learning, scholarship, promoting the value of research, leadership, diversity and multicultural awareness, and adapting to changing environments. The organization of this course emphasizes the clinically relevant aspects of public health in the context of emergency preparedness. The importance of emergency preparedness/response and public health is especially evident in the time of the Covid-19 pandemic, and this course should help emphasize the importance of understanding these concepts in a clinical setting for any graduating veterinarian. The course will help prepare students for approaching a patient from the population or response levels. This is relevant to all practitioners, as emergency preparedness and response is currently an asset in the execution of Covid-19 response strategies in private practice as well as sheltering or public health settings.

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3 Credit Hours

VCSP 6350 Introduction to Companion Avian Medicine

This course is designed to provide the future veterinarian with the tools to evaluate, diagnose, and treat pet avian species in clinics and beyond. Although the course will mainly focus on common psittacine species kept as pets, information on columbiform and passerine species will be provided as well. Topics covered will include pet parrot taxonomy, husbandry, nutrition, clinical examination, common infectious diseases, and practical diagnostic and surgical techniques. The final grade is based on attendance (students with 3 unexcused absences will receive a penalty to their grade) and completion of an in-class final examination. Submission of a course evaluation at the end of the course is required for a grade.

2 Credit Hours

VCSP 6360 Introduction to Reptile and Amphibian Medicine

This course is designed to provide the future veterinarian with the tools to evaluate, diagnose, and treat captive reptiles and amphibians in clinics and private practice, zoological institutions, and herpetological collections. This course will focus on the more common species kept as pets. Topics covered will include captive husbandry, basic herpetology, nutrition, clinical examination, common infectious and noninfectious diseases, surgery and anesthesia, diagnostic and treatment techniques. The final grade is based on attendance (students with 3 unexcused absences will receive a penalty to their grade) and completion of an in-class final examination. Submission of a course evaluation at the end of the course is required for a grade.

2 Credit Hours

VCSP 6370 Professional Foundations

Includes: 1) making the transition from student to employed veterinarian (resumes, cover letters/letters of intent, interviews, and job selection); 2) personal finance and investment strategies; 3) negotiation skills; 4) stress management; 5) evaluating disability insurance and understanding basic retirement planning options to know what to ask in an interview as part of your benefit plan; 6) time management & goal planning and 7) workshops on obtaining internship or a residency, and (b) Interview Role-Playing/Communication skills. Students are required to submit detailed personal budgets for their first year after graduation and a typewritten resume or curriculum vitae. To receive an "A" students also must submit a 3-year personal, professional, and financial plan. Course notes will be distributed at the first class session.

2 Credit Hours

VCSP 6380 Legal Issues for Veterinarians

Course is a broad overview of the legal issues veterinarians face on a daily basis, including legal constraints on practice; overview of laws regulating animals (including laws specific to Pennsylvania); divorce and custody battles; illegal drug compounding; internet pharmacies; lemon laws; pet health insurance; vaccination and liability; negotiating and understanding the employment relationship; veterinary malpractice and state board investigations; responding to client complaints; importance of medical records/informed consents; and, applied professional ethics with clients and colleagues including study of social media. A course hand-out will be provided. Testing of students will be through the use of homework assignments. Attendance mandatory.

2 Credit Hours

VCSP 6390 Animals & Society

This course is a foundational course for students enrolling in the Animal Welfare Certificate Program. It will describe the changing roles and status of animals in society, and examine the history of human-animal relationships through the lens of subsistence hunting, animal domestication, farming and pastoralism, animal research, and pet keeping. The historical development of ambivalent/oppositional attitudes to animal exploitation will also be described and discussed, and the remarkable diversity of contemporary human-animal relationships and their impacts on animal welfare will be explored across cultures and contexts. The influence of science, government, business, and non-governmental organizations in defining and influencing animal-related laws and policies will also be addressed.

6 Credit Hours

VCSP 6410 Small Animal Pediatrics

The objective of this course is to further familiarize the student with the small animal pediatric patient and the proper approach to clinical diagnosis. Lectures are complemented with case reports which serve as a basis for small group discussions. Emphasis is placed on integration of new and previously acquired knowledge to construct differential diagnoses when presented with appropriate historical data and physical as well as laboratory findings. Diagnostic tests and therapeutic regimens for various conditions are discussed in the context of these cases. Grading is based upon attendance, participation in case discussions and performance at a final take home exam.

2 Credit Hours

VCSP 6420 Topics in Neurology

This seminar series will stress broad topics, the majority to be selected by the students, which relate to clinical neurology or neuroscience in general. Seminar topics will be selected and presented by students. The course grade (Pass/Fail) is based on class participation.

2 Credit Hours

VCSP 6430 Small Animal Clinical Nutrition

The first half of the small animal nutrition course will be devoted to: (1) information on feeding normal dogs and cats for maintenance and the prevention of disease and (2) the pet food industry, including labeling, regulation and laboratory on the evaluation of pet foods. The second half of the course will examine the role of dietary manipulation in the management of a wide variety of canine and feline diseases. The course format utilizes a combination of individual and group exercises, discussion, cases, and lectures some of which will require preparation outside of scheduled class time. Grading will be pass/fail and based on attendance, class participation and an individual take-home project.

2 Credit Hours

VCSP 6460 Small Animal Surgery

This course will cover selected topics of advanced surgical procedures in dogs and cats. Emphasis will be given to diseases and conditions where treatment usually requires elaborate procedures. Material presented will involve most major organ systems such as the gastrointestinal tract, the respiratory tract and the urogenital tract. Furthermore, the skin, the endocrine system, and the peritoneal and pleural cavities will be given special consideration. Minimally invasive surgery as well as advanced surgical tools and equipment will also be discussed. The course will be restricted to what is generally understood as soft tissue surgery.

3 Credit Hours

VCSP 6470 Small Animal Surgery/Anesthesia Laboratory

The class is divided into 2 groups. Building on the Core Anesthesia and Surgery laboratory course, this course provides the student with experience as assistant surgeon, surgeon and anesthetist while performing exploratory laparotomy and hysterectomy in cats. The cats are provided by an animal shelter and are returned to the shelter for adoption following surgery. Students enrolled in the course, working in teams of three, are responsible for examination and veterinary care (under supervision) at least daily while the cats are at the Veterinary School. There are two additional laboratory sessions. One is a session during which enterotomy, intestinal anastomosis and other soft-tissue procedures will be performed by each student on tissues. The other is an orthopedic procedure session during which pinning and plating techniques are performed by each student on models.

2 Credit Hours

VCSP 6480 Small Animal Anesthesia

This lecture and discussion course will stress the application of physiology, pharmacology, clinical pharmacology, and economics to the problems encountered during the clinical administration of anesthesia.

1 Credit Hour

VCSP 6490 Emergency/Critical Care Medicine

Small group case-based discussions pertain to the clinical evaluation and management of small animal emergency and critical care patients. Life-threatening abnormalities of the nervous, cardiovascular, respiratory, endocrine, gastrointestinal, and urinary systems are presented in a problem-oriented manner. Actual clinical case material is used to illustrate principles with emphasis placed on the physiology and pathophysiology of the presenting problem. Monitoring and therapeutic procedures (both conservative and non-conservative) will be presented. The grade will be based on a final examination given to small groups at the end of the course. The examination will be a clinical problem similar to all the other clinical problems presented in the course. Everyone in the same group will receive the same grade.

3 Credit Hours

VCSP 6500 Small Animal Dentistry and Oral Surgery

Building on the dentistry and oral surgery information presented in VMED611, Med/Surg I, the lectures cover the spectrum of dental and oral diseases and procedures seen and practiced in small animals. The course is integrated with oral surgery lectures presented in VCSP 648, Small Animal Surgery elective. Although there are normally no laboratory practice sessions included in this course, laboratory practice sessions based on material in this course are included in the Small Animal Dentistry and Oral Surgery clinical rotation (VCSP 817, VCSP 877).

2 Credit Hours

VCSP 6510 Practice Management

Includes establishing a realistic fee schedule; effectively marketing veterinary services; determining how much income a practice owner really makes; the veterinary client's perception of value; establishing a small or mixed animal practice; medical records as a legal defense and to generate income; understanding the vet-pet-client relationship to develop a bond-centered practice; introduction to personnel management and employment law; understanding the Internal Revenue Code, the payment of taxes, and the need for a schedule C to reduce one's tax liability; successfully organizing one's basic business management strategies; and marketing veterinary services. A 300-page notebook and 150 page hard cover book entitled *The Art of Veterinary Practice Management* will accompany this course and be provided at no charge by a corporate sponsor. The final examination consists of a group project to be completed by 2-4 people using a typical practice management "head-ache" as the problem to be resolved. Four guest speakers will participate in this course.

3 Credit Hours

VCSP 6520 Introduction to Shelter Animal Medicine

This course is designed to complement the senior year Shelter Animal Medicine rotation by introducing students to some of the particular problems and issues facing veterinarians who work with animal shelters and animal control facilities. The course will combine lectures and discussion periods, and will involve significant out-of-course reading assignments. Topics covered will include: Husbandry and disease management, pet population dynamics and control, behavior and behavior problems, feral cats, and animal cruelty & neglect. Course grades will be determined by attendance, participation in discussions and a final take home exam.

2 Credit Hours

VCSP 6540 Small Animal Critical Care Medicine

This course offers a comprehensive overview of several key aspects of critical care medicine. Lectures will primarily use a "case-based" approach with discussion of the physiology of organ function and the pathophysiology of disease, and will highlight state-of-the-art concepts for these exciting patients. The final session will be a "hands-on" laboratory in which the students will work with the monitoring instruments that have been discussed during the course. Evaluation will be based on a take home examination.

2 Credit Hours

VCSP 6550 Introduction to Wildlife Medicine I

This course is designed to provide an overview of the field of wildlife medicine for first year veterinary students through lectures from veterinarians working in various aspects in wildlife medicine. *Wildlife Medicine I* will present current issues in environmental monitoring, emerging diseases and public health, disease surveillance and prevention, disease outbreaks and control, captive propagation and species re-introduction, disaster medicine, and wildlife rehabilitation. The format will consist of eight lectures, each approximately one hour in length, and a required two-hour wet lab held at Tri-States facility, the Frink Center for Wildlife, in Newark, DE. Optional lectures may be scheduled during the semester based on student interest and speaker availability. Students are expected to attend all required lectures and participate in the wet lab to receive credit for the course. Grades will be based on attendance (50%) and on three worksheets (50%); a five-page paper may be substituted with the approval of the instructor. Opportunities for clinical experience at the Frink Center for Wildlife will be scheduled during the semester; students are expected to sign up in advance and are responsible for their own transportation.

1 Credit Hour

VCSP 6560 Introduction to Wildlife Medicine II

This course is designed to provide an introduction to the clinical aspects of wildlife medicine for first year veterinary students through a lecture and wet lab format. Lecture and/or laboratory topics will include zoonotic diseases, diseases of native mammals, marine mammals, reptiles and birds; pathology, physical examination techniques, and introductions to necropsy techniques, fracture immobilization, and emergency care. The format will consist of six lectures, each approximately one hour in length, and three two-hour wet labs. Optional lectures may be scheduled during the semester based on student interest and speaker availability. Students are expected to attend all lectures and participate in the wet labs to receive credit for the course. Grades will be based on attendance (50%) and on three worksheets (50%); a five page paper may be substituted with approval of the instructor. Opportunities for clinical experience at the Frink Center for Wildlife will be scheduled during the semester; students are expected to sign up in advance and are responsible for their own transportation.

1 Credit Hour

VCSP 6570 Aquatic Animal Medicine

The goal of this course is to give an introduction to aquatic animal medicine by providing students with information regarding the species and their care for pet, aquarium and aquaculture aquatic species. Water quality maintenance, clinical techniques, and common infectious and non-infectious diseases will be reviewed. This course is designed to cover NAVLE focused material as a review and it is designed to equip future aquatics veterinarians with clinically-relevant resources that will enable them to become practice ready after graduation.

2 Credit Hours

VCSP 6580 Pet Small Mammal Med/Surg

This introductory course will mainly cover pet rabbits and ferrets with some discussion of rodents and other small mammals seen in veterinary practice. Husbandry, physical examination, diagnostic testing, and treatment techniques of these animals will be presented. The most common health problems and surgeries will be discussed. After this course, the student should be better prepared to see these patients during their clinical rotations and in practice. Student evaluation will be based on a final exam.

2 Credit Hours

VCSP 6590 Small Animal Advanced Cardiology

This course will build on the core cardiology curriculum by introducing a wider range of topics involving cardiovascular disease, treatment, and research in small animals. In-depth topics include diagnosis and treatment of cardiac arrhythmias, correction of congenital heart defects using minimally invasive catheter-based therapies, echocardiography of feline cardiomyopathy, clinical pathophysiology of degenerative mitral valve disease, and a review of the clinical trial evidence that forms the basis of standard treatment recommendations for congestive heart failure. The course is designed for a relatively small number of students so that discussion and interaction with the instructor(s) is facilitated. The course is suitable for students that might be interested in cardiology specialization or research careers as well as for future general practice veterinarians that wish to provide a high level of cardiac care for their patients.

1 Credit Hour

VCSP 6600 Advanced Small Animal Electrocardiography and Arrhythmias

This course will build on the core cardiology curriculum by providing practical experience involving electrocardiographic (ECG) interpretation and the diagnosis and treatment of cardiac arrhythmias in small animals. Specific topics include diagnosis of both supraventricular and ventricular arrhythmias as well as proper selection of antiarrhythmic therapy and an introduction to artificial pacemaker implantation. The course is designed for a relatively small number of students so that discussion and interaction with the instructor(s) is facilitated. The course includes 6 hours of laboratory where students will work through ECG cases in a small group setting. The course is suitable for students that might be interested in cardiology specialization as well as for future general practice veterinarians that wish to provide a high level of cardiac care for their patients.

2 Credit Hours

VCSP 6640 Student Shelter Opportunities

This course is an introduction to High Quality High Volume (HQHV) surgery in the shelter environment and consists of 17 online lecture hours and 3 hours of in-person lecture hours of material that utilizes the Association of Shelter Veterinarians' Veterinary Medical Care Guidelines for Spay-Neuter Programs. Lecture topics, assignments, and pre/post tests are delivered online and include an overview of HQHV surgery, patient handling, anesthesia and pain management in the shelter environment, partner protocols, patient monitoring, patient pre-surgical preparation, basic surgical principles, sterilization of the male and female cat, and sterilization of the male and female dog. In-person lecture and discussion sessions will complement and expand upon online material. The lab component of this course consists of four hours of skills lab and 16 hours in a clinical setting with shelter medicine faculty participating in perioperative activities, which include physical exam, induction, patient preparation, surgery, and recovery. Emphasis in this course is a holistic approach to HQHV spay/neuter including pre-clinical skill acquisition that also introduces some concepts of shelter medicine and community programming. Grading is pass/fail. Purchase of an online webtext is required. Curriculum/course to cover high-quality, high-volume surgical and anesthetic principles to properly prepare students for not only these experiences, but give them a better foundation for learning life-long skills and enhancing their surgical experience at Penn via authentic learning experiences. Students will have to complete extensive online learning, assessments, and skills labs for this course.

3 Credit Hours

VCSP 6670 Student Shelter Opportunities II

This course is designed to be a continuation of Shelter Surgical Opportunities I and consists of six hours of online lectures/exam that cover inhalant anesthesia, more advanced knots and suture patterns, sterilization of the female cat, special sterilization cases, emergency procedures in the shelter environment and surgical instruments and pack preparation. Eighteen hours of on-site work at a partner shelter will be devoted to learning to spay and participation in peri-operative activities. Lecture topics, assignments, and pre/post tests are delivered online. Emphasis in this course is a holistic approach to HQHV spay-neuter including pre-clinical skill acquisition that also introduces some concepts of shelter medicine and community programming. To be eligible to spay, students must reach an appropriate level of competency at performing feline castration and clinical skills as determined by course instructors. This course can be taken any time, including the summer, after passing Student Shelter Opportunities I. Students must complete VSUR601 Surgical Principles (offered as part of the core curriculum in the first quarter of second year) before attending the skills lab. Grading is pass/fail and must be completed by end of core.

1 Credit Hour

VCSP 6680 Student Shelter Opportunities III

This course is designed to be a continuation of Student Shelter Opportunities II and is an advanced elective that consists of four hours of didactic instruction that will be offered online covering sterilization surgeries of adult and pediatric dogs as well as specialty surgeries such as enucleation, amputation, wound repair and mass removal. Twenty hours of a skills lab and on-site work at a partner shelter will be devoted to learning to spay, neuter, and participate in perioperative activities. Lecture topics, assignments, and pre/post tests are delivered online. Emphasis in this course is a holistic approach to HQHV spay-neuter including clinical skill acquisition that also introduces some concepts of shelter medicine and community programming. To be eligible to spay and neuter dogs or do speciality procedures, students must reach an appropriate level of competency in performing the feline spay, feline castration, and clinical skills as determined by course instructors. Every effort will be made to allow students to meaningfully participate in non-sterilization surgeries such as mass removal, enucleation, amputation and wound repair after they are spay certified, although achievement of this goal may require an on-call option depending on caseload and individual student interest. This course can be taken any time, including the Summer, after passing Student Shelter Opportunities II and grading is pass/fail.

1 Credit Hour

VCSP 7005 Small Animal Internal Medicine-Foundation

The Internal Medicine rotation involves clinical training in all core medicine disciplines including endocrinology, gastroenterology, hematology, infectious disease, nephrology, oncology and pulmonary medicine. Fourth year students will assist doctors in history taking, physical examinations and the medical management of patients presented to the Matthew J. Ryan Veterinary Hospital of the University of Pennsylvania. Students will also have directed supervision on nutritional aspects of internal medicine cases by a board-certified clinical nutritionist. Emphasis will be placed on problem solving, understanding of pathophysiology and integration and utilization of principles of medicine. As experience is gained, students will assume more responsibility in patient management. Students and staff will participate in daily rounds and conferences.

12 Credit Hours

VCSP 7105 Small Animal Internal Medicine

The elective rotation in small animal internal medicine will provide further contact and experience in problems of internal medicine (diseases of the endocrine, gastrointestinal, hematologic, pulmonary, and urogenital systems). Students in the elective rotation will be assigned more complex cases, and they will be expected to assume more responsibility for patient management and decision-making.

6 Credit Hours

VCSP 7125 Small Animal Intensive Care Medicine Service

The ICU rotation provides a good medical approach to the management of critical and often very unstable patients. Since these cases are often very challenging diagnostically, and also very dynamic, they provide an excellent learning experience, with ample opportunity for one-on-one discussion with the clinician, and for background reading. Students have an opportunity to become familiar with use and interpretation of the advanced technical equipment available in the ICU, and are also encouraged to perform and perfect technical skills such as catheterization of blood vessels and urinary bladder, obtaining arterial blood samples, etc. During the rotation, we encourage integration and a team approach among the students, the ICU clinicians, and the nursing staff. Students on the ICU service start daily at or before 7:00 a.m., and stay until their cases are stable and all of the proposed diagnostics have been completed (usually 6-7 p.m.). Students are expected to SOAP the cases daily including weekends, to be closely involved in decision-making, diagnostics and therapeutics, and to present and discuss the cases at daily rounds. Students are internally scheduled to assist in treatments in the Intensive Care Unit; patient care shifts may include evening and overnight responsibilities. Weekend duties are distributed equitably among all assigned students. Cage rounds are held daily at approximately 2 P.M. Student teaching rounds are held most weekdays at approximately 2.30 P.M.

6 Credit Hours

VCSP 7155 Small Animal Cardiology Service

Students will participate in outpatient and inpatient cardiovascular examinations and treatments. Cardiology Clinic days are currently Wednesday/Thursday/Friday, but are subject to change. Cardiology invasive procedures are performed on Tuesdays. Cardiology also provides consultation to other services and accepts transfer of Cardiology cases for primary care. Student responsibilities include obtaining a complete medical history and performing a thorough physical examination with emphasis on the cardiovascular system. After an orientation period on the first day, students are responsible for recording and interpreting electrocardiograms as well as interpreting thoracic radiographs and pertinent clinical laboratory data. Students assist with recording echocardiograms and are expected to become familiar with echo image recognition and common measurement techniques. Students are also expected to summarize pertinent findings in cases under their care at daily rounds and be able to discuss their significance. Completion of the medical case record for review by the attending cardiologist is required. The group captain will develop a schedule for the daily examination and morning treatments (seven days/week) of all hospitalized cases for which the cardiology service is responsible. A quiz is administered the final day of the rotation and determines 15% of the students grade for the rotation. Students should review notes for VMED 611 and the small animal cardiology computer assisted learning site prior to beginning the rotation.

5 Credit Hours

VCSP 7165 Dermatology & Allergy Service

This course exposes the student to case material presented to the Dermatology and Allergy Clinic at the small animal. This course exposes the student to case material presented to the Dermatology and Allergy Clinic at the small animal hospital, and may include case material presented to the large animal hospital at New Bolton Center. Special emphasis is given in the discussion of each patient to the etio-pathogenesis, diagnosis, and treatment of disease. Attendance during receiving of large animal cases at NBC may be required on one Wednesday of each block, although volunteers will be sought first.

5 Credit Hours

VCSP 7175 Comprehensive Cancer Care Service

This rotation will expose students to a comprehensive approach to clinical oncology in small animals, including cancer diagnosis, staging, treatment, and palliative care. This service is primarily comprised of faculty and staff from Medical Oncology, Surgery, and Radiation Oncology. Other services, such as Interventional Radiology and Dentistry and Oral Surgery, will also be involved. Students are expected to participate in the care of outpatient and hospitalized cases (including pre and post-operative care for Surgical Oncology patients) and in patient care rounds in the morning and afternoon. Weekend duties include morning and afternoon treatments for hospitalized patients. Each student will present and discuss a journal article or relevant tumor topic once during the rotation.

6 Credit Hours

VCSP 7215 Primary Care Services

This rotation will offer students the opportunity to evaluate cases scheduled with the Primary Care Service (PCS). The Primary Care Service is designed to give students first-hand experience in dealing with common general practice clinical cases and with client communication. The main objective is for students to have the opportunity to be the vet while working under the guidance and supervision of a PCS veterinarian.

5 Credit Hours

VCSP 7220 Small Animal Pediatrics/Genetics/Reproduction

The Small Animal Pediatrics-Genetics-Reproduction Clinic is run under the supervision of two board-certified faculty and two residents and emphasizes the unique care of pediatric patients, the approach and management of hereditary diseases, and reproductive problems. Pediatric and genetics clinics are held on Mondays and Tuesdays, and reproduction appointments are seen any day of the week. In addition to the clinical appointments, there is opportunity to see several unique genetic diseases in dogs and cats and handle the youngest of pediatric patients in the animal colonies, as well as get an appreciation for the specialty diagnostic laboratories. The clinical rotation deals with the initial yet crucial pediatric wellness visits including nutrition, socialization and preventive care and disease issues specific to this age group. The clinic highlights the evaluation of normal development and diagnosis of diseases of puppies and kittens (<1 year). Moreover, kittens and puppies with known or suspected inherited disorders are examined for which genetic counseling or special diagnostic studies are required. It provides experience with routine immunizations, treatment and prevention of parasitism, and nutritional and spay/neuter counseling.

Also Offered As: VCSP 7820

2 Credit Hours

VCSP 7705 Small Animal Internal Medicine

The elective rotation in small animal internal medicine will provide further contact and experience in problems of internal medicine (diseases of the endocrine, gastrointestinal, hematologic, pulmonary, and urogenital systems). Students in the elective rotation will be assigned more complex cases, and they will be expected to assume more responsibility for patient management and decision-making.

6 Credit Hours

VCSP 7725 Small Animal Intensive Care Medicine Service

The ICU rotation provides a good medical approach to the management of critical and often very unstable patients. Since these cases are often very challenging diagnostically, and also very dynamic, they provide an excellent learning experience, with ample opportunity for one-on-one discussion with the clinician, and for background reading. Students have an opportunity to become familiar with use and interpretation of the advanced technical equipment available in the ICU, and are also encouraged to perform and perfect technical skills such as catheterization of blood vessels and urinary bladder, obtaining arterial blood samples, etc. During the rotation, we encourage integration and a team approach among the students, the ICU clinicians, and the nursing staff. Students on the ICU service start daily at or before 7:00 a.m., and stay until their cases are stable and all of the proposed diagnostics have been completed (usually 6-7 p.m.). Students are expected to SOAP the cases daily including weekends, to be closely involved in decision-making, diagnostics and therapeutics, and to present and discuss the cases at daily rounds. Students are internally scheduled to assist in treatments in the Intensive Care Unit; patient care shifts may include evening and overnight responsibilities. Weekend duties are distributed equitably among all assigned students. Cage rounds are held daily at approximately 2 P.M. Student teaching rounds are held most weekdays at approximately 2.30 P.M.

6 Credit Hours

VCSP 7765 Dermatology & Allergy Service

This course exposes the student to case material presented to the Dermatology and Allergy Clinic at the small animal. This course exposes the student to case material presented to the Dermatology and Allergy Clinic at the small animal hospital, and may include case material presented to the large animal hospital at New Bolton Center. Special emphasis is given in the discussion of each patient to the etio-pathogenesis, diagnosis, and treatment of disease. Attendance during receiving of large animal cases at NBC may be required on one Wednesday of each block, although volunteers will be sought first.

5 Credit Hours

VCSP 7775 Comprehensive Cancer Care Service

This rotation will expose students to a comprehensive approach to clinical oncology in small animals, including cancer diagnosis, staging, treatment, and palliative care. This service is primarily comprised of faculty and staff from Medical Oncology, Surgery, and Radiation Oncology. Other services, such as Interventional Radiology and Dentistry and Oral Surgery, will also be involved. Students are expected to participate in the care of outpatient and hospitalized cases (including pre and post-operative care for Surgical Oncology patients) and in patient care rounds in the morning and afternoon. Weekend duties include morning and afternoon treatments for hospitalized patients. Each student will present and discuss a journal article or relevant tumor topic once during the rotation.

6 Credit Hours

VCSP 7815 Primary Care Services

This rotation will offer students the opportunity to evaluate cases scheduled with the Primary Care Service (PCS). The Primary Care Service is designed to give students first-hand experience in dealing with common general practice clinical cases and with client communication. The main objective is for students to have the opportunity to be the vet while working under the guidance and supervision of a PCS veterinarian.

5 Credit Hours

VCSP 7820 Small Animal Pediatrics/Genetics/Reproduction

The Small Animal Pediatrics-Genetics-Reproduction Clinic is run under the supervision of two board-certified faculty and two residents and emphasizes the unique care of pediatric patients, the approach and management of hereditary diseases, and reproductive problems. Pediatric and genetics clinics are held on Mondays and Tuesdays, and reproduction appointments are seen any day of the week. In addition to the clinical appointments, there is opportunity to see several unique genetic diseases in dogs and cats and handle the youngest of pediatric patients in the animal colonies, as well as get an appreciation for the specialty diagnostic laboratories. The clinical rotation deals with the initial yet crucial pediatric wellness visits including nutrition, socialization and preventive care and disease issues specific to this age group. The clinic highlights the evaluation of normal development and diagnosis of diseases of puppies and kittens (<1 year). Moreover, kittens and puppies with known or suspected inherited disorders are examined for which genetic counseling or special diagnostic studies are required. It provides experience with routine immunizations, treatment and prevention of parasitism, and nutritional and spay/neuter counseling.

Also Offered As: VCSP 7220

2 Credit Hours

VCSP 7900 Small Animal Medicine Holiday Rotation

The holiday internal medicine rotation will be a "learning on your feet" experience. Students will have similar responsibilities as during the core medicine rotations. Clinic appointments will be scheduled only for the first part of week one. Students will be assigned out patients and ES transfers and will evaluate these patients, formulate problem lists and appropriate diagnostic plans, participate in diagnostic procedures (e.g., bone marrow aspirate, tracheal wash), and perform treatments. Formal teaching rounds may not be held, but students will discuss patients on an individual basis with clinicians. The hours of the rotation shifts will be 6AM to 6PM and 12 noon to 12 midnight. Each student will be assigned to five shifts and will likely cover four 6AM to 6 PM shifts and one noon to midnight shift.

3 Credit Hours

VCSP 7980 Small Animal Neurology Holiday Rotation

Two one-week rotations will be offered during the Holiday period, each for 3 credits. Each rotation will consist of half of the Holiday period. This holiday rotation will have similar responsibilities as during the core neurology rotation. Clinic appointments will be scheduled for the first week only. Students will be assigned out patients, ES transfers, and will participate in neurology consultations for other services. Students will evaluate these patients, formulate problem lists and appropriate diagnostic plans, participate in diagnostic procedures (electrodiagnostic testing, CSF taps, imaging), and perform treatments that may include surgery. Formal teaching rounds may not be held, but students will discuss patients on an individual basis with clinicians.

3 Credit Hours

VCSP 8005 Small Animal Soft Tissue Surgery

This is an elective clinical rotation equivalent to courses VCSP 8000. Prerequisite: Core Surgery Courses CONFERENCE HOURS: 3 hrs/day of clinics (5) = 15 hours. 2-4 hrs/day of surgery (5) = 10-20 hours. 1 hr/ weekend morning (4) = 4 hour. TOTAL 29-39 hours.

6 Credit Hours

VCSP 8115 Small Animal Orthopedics

This is an elective rotation equivalent to SA Orthopedic Surgery VCSP 8115. Prerequisite: Core Surgery Courses

6 Credit Hours

VCSP 8135 Small Animal Emergency Service

Students are assigned to a busy 24-hour, 7-day per week emergency service on a shift system. The students are responsible for diagnosis and management of animals presented to the service under the supervision of Emergency Service staff. Emergency Service rounds are held Monday through Thursday inclusive, and include topics related to emergency medicine and surgery centered around case discussion.

6 Credit Hours

VCSP 8145 Small Animal Radiology Service

This course primarily offers experience in small animal diagnostic radiology with some exposure to diagnostic ultrasound. Principles of radiographic interpretation teaching rounds are held daily. Students will assist in the positioning of animals and taking of routine and special procedure radiographic examinations and will observe and assist with ultrasonographic examinations of Ryan Hospital clinic cases. Students will also interact with the radiologist or radiology resident during their interpretation of the clinic cases. A 2-hour examination is given on the last day of the rotation. See Learn.vet for information on clinical competencies to be assessed in this rotation and to access additional study materials.

6 Credit Hours

VCSP 8155 Small Animal Anesthesiology Service

Students are responsible for anesthetizing animals presented to the anesthesia service under the supervision of the Anesthesia staff. During the day, students will work closely with either the anesthesiologist on duty or a senior technician. Students will be scheduled with a technician for "on-call" night and weekend duty. On-call duties begin the first Tuesday (or second day) of the rotation and continue through to the last Sunday (or last day before the next rotation). The anesthesia service provides on-call services from 8 pm until 8 am during weekdays, and from Friday 8 pm until Monday 8 am over the weekend. In general, students schedule themselves for the on-call duties. Most rotations assign one student on-call per night during weekdays and split the weekend into 8 or 12-hour shifts. Anesthesia student rounds are conducted Mondays, Wednesdays, Thursdays, and Fridays. The first rounds on the first day of the rotation (usually a Monday) will occur at 9 am. Rounds on Wednesdays are at 8 am. Rounds on Thursdays and Fridays are at 7:30 am. Students are expected to attend grand rounds on Tuesdays. It is highly recommended that students prepare for their rotation by reviewing the course notes from the anesthesia core course and student surgery labs. The anesthesia handout will be given to students on the first day of the rotation. The rounds schedule and topics will be presented in more detail then.

6 Credit Hours

VCSP 8175 Small Animal Dentistry and Oral Surgery

Students participate in the client communication (including assessment of medical history), clinical examination, diagnostic testing (including patient restraint for intravenous catheter placement), treatment planning and treatment of animals presented with dental and oral diseases, including periodontal, endodontic, restorative and occlusal problems and oral and maxillofacial inflammation, infection, malformation, trauma and cancer. Mondays and Wednesdays are clinic appointment days, with rounds and a teaching laboratory or treatment procedures in the afternoons. Tuesdays, Thursdays and Fridays are treatment days. Occasionally, cases are hospitalized into Saturdays, and emergency cases may be referred from ES on Saturdays and Sundays. Responsibility for Saturday and Sunday patient care will be one to maximum two weekend days per student during the two-week rotation, and will most often consist of being on-call. Typically, Mondays and Wednesdays run from 8.30am-5.30pm (only rarely are there cases to SOAP on these mornings), and Tuesdays and Thursdays from 7am- 6.30pm. One student will be assigned to early-call (7am) on Fridays (other students will have an 8.30am start); Friday responsibilities typically extend to 4pm, except for one late-call student. Prerequisite: Core surgery lecture courses.

5 Credit Hours

VCSP 8705 Small Animal Soft Tissue Surgery

This is an elective clinical rotation equivalent to courses VCSP 800. Prerequisite: Core Surgery Courses CONFERENCE HOURS: 3 hrs/day of clinics (5) = 15 hours. 2-4 hrs/day of surgery (5) = 10-20 hours. 1 hr/ weekend morning (4) = 4 hour. TOTAL 29-39 hours.

6 Credit Hours

VCSP 8715 Small Animal Orthopedics

This is an elective rotation equivalent to SA Orthopedic Surgery VCSP 8115. Prerequisite: Core Surgery Courses

6 Credit Hours

VCSP 8725 Small Animal Ophthalmology

The goals of this clinical rotation are to ensure that students achieve proficiency in performing a complete ophthalmic examination and become familiar with recognizing and treating common problems in small animal ophthalmology practice. All students are required to meet at 7:30 am the first day, and then at 8:00 am on subsequent days of the rotation. Attendance is not required on Friday of each week but the free time is expected to be dedicated to independent study in ophthalmology. An introduction to the service will be given on the first day of the rotation which will include a graded, short quiz. It is recommended that students prepare for the clinical rotation by reviewing their course notes in ophthalmology. Clinical rounds will take place several times weekly. Topic rounds and a cadaver (pig eye), surgery wet lab will be included if time permits. Outpatient service (each day of the rotation): Students are responsible for history taking, clinical examination, treatment planning, preparation of client discharge instructions and some client communication. Surgery patients (each day of the rotation): Students assigned a patient for surgery will be responsible for helping with the patients admission (7:30am the day of surgery). In preparation for surgery, the student must have reviewed the surgical technique, performed a complete physical examination and reviewed pertinent bloodwork. SOAPs, a surgical report and client communication following the procedure are also expected. There will be an opportunity to assist with some of the surgical procedures.

6 Credit Hours

VCSP 8735 Small Animal Emergency Service

Students are assigned to a busy 24-hour, 7-day per week emergency service on a shift system. The students are responsible for diagnosis and management of animals presented to the service under the supervision of Emergency Service staff. Emergency Service rounds are held Monday through Thursday inclusive, and include topics related to emergency medicine and surgery centered around case discussion.

6 Credit Hours

VCSP 8745 Small Animal Radiology Service

This course primarily offers experience in small animal diagnostic radiology with some exposure to diagnostic ultrasound. Principles of radiographic interpretation teaching rounds are held daily. Students will assist in the positioning of animals and taking of routine and special procedure radiographic examinations and will observe and assist with ultrasonographic examinations of Ryan Hospital clinic cases. Students will also interact with the radiologist or radiology resident during their interpretation of the clinic cases. A 2-hour examination is given on the last day of the rotation. See Learn.vet for information on clinical competencies to be assessed in this rotation and to access additional study materials.

6 Credit Hours

VCSP 8755 Small Animal Anesthesiology Service

Students are responsible for anesthetizing animals presented to the anesthesia service under the supervision of the Anesthesia staff. During the day, students will work closely with either the anesthesiologist on duty or a senior technician. Students will be scheduled with a technician for "on-call" night and weekend duty. On-call duties begin the first Tuesday (or second day) of the rotation and continue through to the last Sunday (or last day before the next rotation). The anesthesia service provides on-call services from 8 pm until 8 am during weekdays, and from Friday 8 pm until Monday 8 am over the weekend. In general, students schedule themselves for the on-call duties. Most rotations assign one student on-call per night during weekdays and split the weekend into 8 or 12-hour shifts. Anesthesia student rounds are conducted Mondays, Wednesdays, Thursdays, and Fridays. The first rounds on the first day of the rotation (usually a Monday) will occur at 9 am. Rounds on Wednesdays are at 8 am. Rounds on Thursdays and Fridays are at 7:30 am. Students are expected to attend grand rounds on Tuesdays. It is highly recommended that students prepare for their rotation by reviewing the course notes from the anesthesia core course and student surgery labs. The anesthesia handout will be given to students on the first day of the rotation. The rounds schedule and topics will be presented in more detail then.

6 Credit Hours

VCSP 8765 Small Animal Behavior Clinic

This is an elective clinical rotation in small animal behavioral medicine. Clinics are Wednesday and Thursday. Appointments are also seen on Fridays, and students are invited, but not required, to join us. Out-patient behavior clinic appointments are scheduled at approximately 3-4 hour intervals. Each student is responsible for reviewing behavior notes from VMED 6160 (9005), prior to his/her first scheduled clinic. Students are required to attend all case rounds (twice per day), review records before rounds, and be prepared to present all cases. Students will assist with medical and behavioral history-taking, physical examination and diagnosis, and are responsible for a selecting handouts and writing discharge letter summarizing the recommendations made. Behavioral topics and volunteer training sessions are offered, when possible, between afternoon appointments and rounds.

5 Credit Hours

VCSP 8775 Small Animal Dentistry and Oral Surgery

Students participate in the client communication (including assessment of medical history), clinical examination, diagnostic testing (including patient restraint for intravenous catheter placement), treatment planning and treatment of animals presented with dental and oral diseases, including periodontal, endodontic, restorative and occlusal problems and oral and maxillofacial inflammation, infection, malformation, trauma and cancer. Mondays and Wednesdays are clinic appointment days, with rounds and a teaching laboratory or treatment procedures in the afternoons. Tuesdays, Thursdays and Fridays are treatment days. Occasionally, cases are hospitalized into Saturdays, and emergency cases may be referred from ES on Saturdays and Sundays. Responsibility for Saturday and Sunday patient care will be one to maximum two weekend days per student during the two-week rotation, and will most often consist of being on-call. Typically, Mondays and Wednesdays run from 8.30am-5.30pm (only rarely are there cases to SOAP on these mornings), and Tuesdays and Thursdays from 7am- 6.30pm. One student will be assigned to early-call (7am) on Fridays (other students will have an 8.30am start); Friday responsibilities typically extend to 4pm, except for one late-call student. Prerequisite: Core surgery lecture courses.

5 Credit Hours

VCSP 8785 Exotic Companion Animal Medicine/Surgery

The purpose of this rotation is to introduce the student to exotic companion animal medicine and surgery. Students will gain knowledge of these animals by hands-on experience and participation in rounds. The student will be expected to obtain histories, develop a rule-out list and a diagnostic plan on all appointments. Students will participate in patient management and assist with various diagnostic and treatment procedures for all scheduled appointments and exotic animal emergencies transferred from the emergency service. There will be a Monday through Sunday clinic schedule as appointments are seen 7 days a week. Additionally, students are expected to be "on-call" for night and daytime emergencies with a clinician. Students should expect the typical day to run from 8:00 AM - 7:00 PM.

6 Credit Hours

VCSP 8795 Working Dog Medicine

To gain experience with all aspects of working dog medicine: Students will handle working dogs to perform general physical examinations as well as specialized assessments including but not limited to breeding soundness exams to assess dogs value in reproduction, dental examinations, and fitness evaluations. Student examinations and handling will be incorporated into behavioral training of dogs to being handled and touched on all areas of their body. Students will participate in routine preventive care and assess and treat injuries or illnesses that occur in the WDC working dogs. Students will gain experience in behavior and sports medicine through participation in impulse control, search work, fitness and conditioning exercises. Students may incorporate other aspects of working dog medicine into their rotations depending on their interests. These areas include sports nutrition, dentistry, and various aspects of research.

6 Credit Hours

VCSP 8805 Shelter Animal Medicine

This rotation gives a complex overview of the field of shelter medicine and community outreach by partnering via a service-learning model with open and closed admission shelters, HQHV surgical clinics, schools, and outreach organizations like Pets for Life. A typical rotation focuses on authentic hands-on learning including four surgical days, mentored primary case management of medical cases and shelter population rounds, public clinical outreach, herd health management, training and behavioral assessment, and providing veterinary CE for shelter staff. Rounds and tour topics include cruelty investigation and humane law enforcement, behavior, ethics, exotics, and risk analysis. Dentistry, necropsies, consults, special procedures, and outreach to local middle schools can also be included as part of the rotation depending on the week.

5 Credit Hours

VCSP 8900 Small Animal Surgery Holiday Rotation

This rotation will be similar to a regular surgery rotation with some modifications dictated by the holiday schedule. Students will assist surgery faculty and house officers in history taking, examinations, and the surgical management of small animal patients presented on an emergency basis to the Veterinary Hospital of the University of Pennsylvania. Students will be responsible for the daily care of surgical patients hospitalized at Ryan Hospital. They will also assist in surgery and perform treatments. All students will be expected to participate in night, weekend, and holiday duty on a rotating basis. Two students will be assigned to On Call duty each night and will perform treatments until midnight and assist with cases needing surgery in the night and evening hours. Assignments will be made the first day of the rotation. Rounds to acquaint students with the hospitalized patients will be held each morning and as time permits with the emergency clinician/house officer/nursing staff on duty, but formal teaching or rounds will occur as time permits during this rotation.

3 Credit Hours

VCSP 8930 Small Animal Emergency Service Holiday Rotation

This rotation will be very similar to the Emergency Medicine clinical rotation elective course. Students will be involved in triage, patient stabilization, history and physical examination, diagnostic workup and treatment of patients seen in the emergency room. (We want students who have an interest in learning more about emergency medicine!) Specific time will not be set aside during the rotation for student rounds; however, teaching on a case-to-case basis will be stressed. Rotation shifts will be 8 AM to 8 PM and 8 PM to 8 AM. Each student will be assigned to 5 shifts during the rotation. There will be at least two students assigned to each shift.

3 Credit Hours

VCSP 8940 Small Animal Radiology Service

3 Credit Hours