VS202

Surgery, Dentistry and Pain Management

3 Credits

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Calendar Description

This course utilizes fundamental knowledge from VS 105 and VS 108 and incorporates it into surgical and dentistry labs. It also expands upon previous training in the areas of veterinary anesthesia, surgical preparation and dentistry. Students learn to safely and confidently administer, monitor and record anesthetic depths during surgical and dental procedures. Anesthetic drugs, monitoring, surgical instruments and pre-surgical preparation are reinforced. Students use the autoclave, prepare surgical and dental packs, prep animals for surgery, and gown, glove and assist the veterinarian during surgical procedures. Students engage in pre and post anesthetic discussions with owners, and learn how to perform a Comprehensive Oral Health Assessment and Treatment (COHAT) procedure. They also learn dental abnormalities and the treatments available for dogs and cats as well as an introduction to equine, ruminant and small mammal dentistry.

Rationale

This course is required for second year Animal Health Technology students. A thorough understanding of anesthetic procedures, pharmaceuticals used, and the maintenance and functioning of equipment are critical to the safety and success of veterinary anesthesia. The Animal Health Technologist plays an important role in helping prepare for surgery, assisting during surgery and post-operative clean up and patient post-surgical nursing care. Thorough knowledge of the equipment used and maintaining aseptic technique is essential to the Animal Health Technologist employed in this capacity.

Veterinary dentistry is an important part of both small animal, exotic animal and equine veterinary clinics. The Animal Health Technologist must be able to perform dental charting, hand and power scaling, polishing and maintain dental equipment for small animal dentistry as well as assist the veterinarian in equine dental procedures.

Animal Health Technologists are also responsible for admitting and discharging surgical and dental patients in veterinary practice. It is therefore crucial that they are able to counsel the owners about the risks of anesthesia and normal post-anesthetic side effects.

Prerequisites

None

Co-Requisites

None

Course Learning Outcomes

Unit 1 - Veterinary Dentistry

Upon successful completion of this course, students will be able to

1. perform COHAT procedures in dogs and cats:
   a) oral charting
   b) probing
   c) hand scaling
   d) ultrasonic scaling
   e) polishing
   f) home care instruction
2. identify, operate and maintain all dental equipment commonly utilized in veterinary practice.
3. recognize and describe dental abnormalities in small animal and equine patients and assist in appropriate therapies.
4. council cat and dog owners on proper dental care for their pets.
5. assist in dental procedures in horses.
6. recognize normal ruminant and small mammal dental anatomy.
7. discuss common dental abnormalities in ruminants and small mammals and describe common therapeutic procedures.

Unit 2 - Veterinary Anesthesia

Upon successful completion of this course, students will be able to:

1. explain the need for thorough pre-anesthetic assessment to prevent unexpected complications during anesthesia.
2. explain the importance of withholding food and water before anesthesia and the necessity of signed consent forms prior to anesthesia.
3. explain the importance of correct drug dosing and safe administration of pre-anesthetic and general anesthetic drugs.
4. demonstrate correct dosage calculation and with time recognize really abnormal volumes for certain drugs.
5. acknowledge the normal response in the anesthetic patient to anesthetic drugs.
6. demonstrate the sequence of steps involved in proper endotracheal intubation.
7. explain the function of the inhalation anesthetic machine and demonstrate the assembly and function of the machines.
8. demonstrate how to properly operate and maintain the equipment that is frequently used to monitor the anesthetic patient.

9. demonstrate the ability to assess vital signs and protective reflexes in order to determine an animal's depth of general anesthesia.
10. evaluate patient's anesthetic depth and physiological status and formulate corrective actions to commonly anticipated problems during maintenance and recovery periods of general anesthesia.
11. demonstrate the ability to properly fill out anesthetic monitoring forms
12. execute a routine surgical and dental patient admittance and discharge.
13. describe the different types of pain and the drugs and therapies involved in multimodal pain management.
14. recognize signs of pain in post op surgical patients.
15. determine the degree of pain using multifactorial pain scales.
16. complete CRI drug calculations.

Resource Materials

Required Text(s):
Perrone, J. R. (2013). *Small animal dental procedures for Veterinary Technicians and nurses.* Ames, Iowa: Wiley-Blackwell.

***Reference Text(s)*:**
Thomas, J., & Lerche, P. (2017). *Anesthesia and analgesia for Veterinary Technicians* (5th ed.) St. Louis, Missouri: Elsevier.

Goldberg, M., & Shaffran, N. (2015). *Pain management for veterinary technicians and nurses* (1st ed.) Ames, Iowa: Wiley-Blackwell.

Holmstrom, S. (2000). *Veterinary Dentistry for the technician and office staff*. Philadelphia, PA: W. B. Saunders.

Conduct of Course

This course consists of 3 hours of lecture per week and 3 hours of lab every second week.

The lecture portion of the course covers the theory and explains techniques and equipment used before, during and after anesthesia and surgery in small animals as well as dentistry. The lab portion gives the students experience handling the equipment used, administering and monitoring general anesthetics, preparing patients for surgery, employing surgical assisting techniques, performing COHAT procedures and caring for patients post-operatively.

Prior reading and preparation of materials and patients are required before the lab. Kennel care duty is required for hospitalized patients before and after most labs. Failure to be prepared for a lab results in the student being asked to leave, and obtaining a 0 for that lab.

Evaluation Procedures

The final grade is an aggregate of the following components:

Lectures	
Review Quiz at beginning of course	P/F
Midterm 1	15%
Midterm 2	20%
Quizzes/Assignments	5%
Final Exam	25%
Lab	
Lab Skills	20%
Lab Assignments	15%
*Required Clinical Competencies in Surgery and Dentistry	Pass/Fail
Total	100%

There will be a review quiz that the students must complete with a score of 70% in order to pass and continue on in the VS 202 course. It will be conducted outside of class time on D2L: the student will have a maximum of 3 attempts to pass the quiz.

A passing grade of "B-" must be obtained in the lab portions of this course in order for a Pass grade to be given. A "C" must be obtained in the lecture portion of this course in order for a pass grade to be given.

*Core competencies are evaluated at the end of the semester on a pass/fail basis. Successful completion of the competencies is required to pass the course.

An unexcused absence for a lab results in a mark of zero for that lab.

As animal care is essential to the Animal Health Technology profession, failure to properly care for a surgical patient that has been assigned to a student may result in a zero for the individual lab or the entire lab portion of the course, at the discretion of the instructor.

Late or missed assignments receive a grade of zero for the assignment.

Lakeland College is committed to the highest academic standards. Students are expected to be familiar with Lakeland College polices related to academic conduct and academic honesty and to abide by these policies. Violations of these policies are considered to be serious and may result in suspension or expulsion from the College."

Grade Equivalents and Course Pass Requirements

Letter	F	D	D+	C-	C	C+	B-	B	B+	A-	A	A+
Percent Range	0-49	50-52	53-56	57-59	60-64	65-69	70-74	75-79	80-84	85-89	90-94	95-100
Points	0.00	1.00	1.30	1.70	2.00	2.30	2.70	3.00	3.30	3.70	4.00	4.0

Students must successfully pass or complete the lecture portion of the course with a 60% (C), and the lab portion with a 70% (B-). A mark in the lecture portion of 50-59% is recorded as a 'D'. A mark of 50-69% in the lab portion is recorded as a 'D'.

A grade of C (60%) in the lecture portion of this course and a B- (70%) in the lab portion of this course is required to progress to VS206 Animal Care and Nursing IV, VS208 Emergency Medicine and Critical Care, and VS210 Animal Health Technologist Practicum.

Attendance

Classroom and laboratory attendance is considered vital to the learning process and as significant to the students' evaluation as examinations and reports, therefore absenteeism is recorded.

a. Students having a combination of excused and/or unexcused absence of 20 percent or higher for the scheduled course hours can be required to withdraw and would then automatically receive a "RW" (required withdrawal) for the course, regardless of any other evaluation results. (RW is a failing grade).
b. An excused absence is one that is verified with your instructor. Verification should be prior to the absence or the next class day following the absence. Verification of the absence may take the form of a note from your doctor/College nurse regarding illness, or a note from another instructor regarding a field trip or other activity, or authorization by your instructor following an in-person meeting. Be sure to contact your instructor and ask what they will require from you as verification for each absence. An unexcused absence is anything NOT verified by the instructor prior to the absence or the next class day following the absence.

NOTE: Any exceptions to the above attendance policy (e.g. timetable conflicts, work-related issues) must be approved in writing by the Department Chair prior to the beginning of the course.

It is the students' responsibility to know their own absentee record.

Normal hours are 8:30 a.m. to 6:30 p.m., with potential for evening courses, exams or extended field trips. Students are expected to be available for classes during these times.

Course Units/Topics

All lecture and lab material from VS105 and VS108 is an integral component to the student's understanding and ability to perform all required duties in VS202. The following topics will not be lectured on in VS202 but it is expected that the student will have a good understanding and knowledge of the following topics covered in VS105 and VS108.

a) patient and pack preparation for surgical procedures
b) sterile techniques
c) function and maintenance of the anesthetic machine
d) anesthetic drugs and agents
e) endotracheal intubation
f) stages and planes of anesthesia
g) anesthetic and fluid equipment - multi-monitor (Life Windows), Doppler, PetMap, Pulse oximeter, IV fluid pumps
h) normal values for vitals and reflexes of the anesthetized patient
i) anesthesia and workplace safety

Unit 1 - Dentistry

a) Dental anatomy and terminology
b) Dental charting
c) Dental equipment - hand tools and power tools
d) COHAT procedure
e) Local anesthetic blocks
f) Homecare instructions
g) Equine dentistry
h) Dental abnormalities - congenital and acquired
i) Feline dental conditions
j) Ruminant and small mammal dentistry

Unit 2 - Analgesia

a) The Pain Pathway
b) Types of pain
c) Monitoring signs of pain
d) Behavioral and physiological effects of pain
e) Multimodal pain management
f) Pharmacological methods of pain control
g) Assessing pain using multifactorial pain scales
h) CRI drug calculations

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