V T 84L: VETERINARY ANESTHESIA LABORATORY

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2025
Units:	3
Hours:	9 laboratory per week (108 total per quarter)
Prerequisite:	V T 58L; discussion and demonstration of ability to set up an anesthesia machine.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- Safely and competently prepare, induce, maintain, and recover a dog and a cat from general anesthesia.
- Observation/Critique: Working with live program patients, the student will be observed and assessed regarding performance of the pre-anesthetic workup.

Description

The veterinary technician's role in patient assessment, preparation, induction, monitoring, maintenance, and recovery of anesthesia. Includes sedation, analgesia, general anesthesia, and local anesthesia techniques, in addition to practical applications of pharmacology. Skills pertaining to anesthesia will be practiced. Intended for students in the Veterinary Technology Program; enrollment is limited to students accepted in the program.

Course Objectives

The student will be able to:

1. Describe the role of the veterinary technician during the anesthetic event.
2. Perform a thorough pre-anesthetic evaluation of a veterinary patient and develop a comprehensive anesthetic plan.
3. Perform a thorough post-anesthetic evaluation of a veterinary patient and develop a nursing care plan.
4. Identify and explain the function of each of the components of the veterinary anesthesia machine.
5. Recognize, critically evaluate, and respond appropriately to common anesthetic problems and emergencies.
6. Describe the effects of anesthesia on the nervous, cardiovascular, and respiratory systems.
7. Demonstrate the essential clinical skills related to anesthesiology.
8. Explain general principles of inhalation anesthesia and successfully manage a veterinary patient.
9. Demonstrate competence in the induction, monitoring, maintenance, and recovery of a veterinary patient under inhalant anesthesia.
10. Demonstrate competency in the use of manual methods of ventilation.
11. Participate in four common surgeries in small animal practice.
12. Participate in a minimum of one complete oral health assessment and treatment under anesthesia for a dog or a cat.

Course Content

1. Role of the veterinary technician in anesthesia
2. Pre-anesthetic evaluation and development of comprehensive anesthetic plan
   a. Pre-anesthetic patient history
   b. Physical examination
   c. Appropriate laboratory testing using equipment commonly found in clinical practices (CBC, chemistry analyzer, PCV, TP)
   d. Anesthetic risk/patient status (ASA)
   e. Anesthetic plan
   f. Animal care to program standards, based on the Animal Welfare Act
3. Recovery, post-anesthetic evaluation
   a. Body temperature
   b. Extubation timing, risks, technique
   c. Critical considerations in the recovery period
4. Anesthesia machine
   a. Principles of inhalation anesthesia
   b. Components, function, and use of the anesthetic machine
   c. Active and passive scavenging systems
   d. Safety considerations
   e. Re-breathing and non-rebreathing patient circuits
   f. Equipment care and maintenance
5. Common anesthetic problems and emergencies
   a. Patient monitoring
6. Effects of anesthesia on the nervous, cardiovascular, and respiratory systems
   a. Assessment of anesthetic depth
   b. Stages and planes of anesthesia
   c. Assessment of physiological status
   d. Level of consciousness
   e. Interpretation of ocular signs
   f. Assessment of reflexes
   g. Assessment of muscle tone
   h. Assessment of pain perception
   i. Physical parameters (TPR, mucous membrane color, CRT, jaw tone, reflexes, eye position)
   j. Monitoring equipment
      i. Pulse oximetry
      ii. Capnography
      iii. ECG
      iv. Blood pressure
      v. Multiparameter monitoring
7. Essential clinical skills related to anesthesiology
   a. Intravenous catheterization
   b. Calculation of fluid rates and volumes
   c. Fluid rates for different times of anesthesia
   d. Fluid pumps

e. Drug selection and calculation

f. Endotracheal intubation

g. Patient preparation for dog spay, cat spay, dog neuter, cat neuter surgical procedures
    i. Positioning
    ii. Clipping and scrubbing
    iii. Moving into surgery
    iv. Special considerations in pregnant patients
    v. Special considerations in cryptorchid patients

8. Principles of inhalation anesthesia and successfully manage a veterinary patient
    a. Balanced anesthesia

9. Patient care under inhalant anesthesia
    a. Local anesthesia
    b. Anesthetic records
    c. Record keeping for controlled drugs
    d. Common veterinary procedures
        i. Dog and cat spay
        ii. Dog and cat neuter
        iii. Dental prophylaxis (complete oral health assessment and treatment or COHAT)

10. Manual methods of ventilation

11. Surgical assisting
    a. Suturing and appropriate handling of live tissue
    b. Surgical scrubbing; donning and doffing of PPE (gowns and gloves)
    c. Surgical scrub nurse etiquette

12. Oral health assessment and treatment under anesthesia for a dog or a cat

Lab Content

Laboratory content will closely follow the course outline of record. Students will be in anesthesia groups and work on live animals under direct supervision in performing the following tasks:

1. Role of the veterinary technician in anesthesia

2. Pre-anesthetic evaluation and development of comprehensive anesthetic plan

3. Recovery: post-anesthetic evaluation

4. Anesthesia machine

5. Common anesthetic problems and emergencies

6. Effects of anesthesia on the nervous, cardiovascular, and respiratory systems

7. Essential clinical skills related to anesthesiology

8. Principles of inhalation anesthesia and successfully manage a veterinary patient

9. Patient care under inhalant anesthesia

10. Manual methods of ventilation

11. Surgical assisting

12. Oral health assessment and treatment under anesthesia for a dog or a cat

Special Facilities and/or Equipment

1. Laboratory equipped with anesthetic machines, electrocardiography and audible cardiac monitors, blood pressure monitors, respiratory monitors, surgical tables and lights, surgical instruments, and autoclave.
2. Animal models and cadavers for learning skills prior to practicing on live animals.
3. Live animals, including dogs and cats, and housing, husbandry, and handling facilities for those live animals.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Performance assessments for the different tasks on an anesthesia team
Completing peer evaluations
Evaluation of care for animals on campus

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture
Discussion
Demonstrations
Cooperative learning exercises
Practicing skills on live animals as would be performed in a veterinary hospital under direct supervision of RVT and DVM faculty

Representative Text(s) and Other Materials

Thomas, J.A., and P. Lerch. Anesthesia and Analgesia for Veterinary Technicians. 2020.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

1. Weekly reading assignments of approx. 15 pages

2. Animal care as described in the Veterinary Technology Program Animal Care Handbook, with emphasis on pre- and post-operative care of surgical patients

3. Cleaning and maintaining surgical facility and equipment

Discipline(s)

Registered Veterinary Technician