

# V T 84L: VETERINARY ANESTHESIA LABORATORY

## Foothill College Course Outline of Record

Heading	Value
<b>Units:</b>	2
<b>Hours:</b>	6 laboratory per week (72 total per quarter)
<b>Prerequisite:</b>	V T 58L; discussion and demonstration of ability to set up an anesthesia machine.
<b>Corequisite:</b>	Completion of or concurrent enrollment in V T 84.
<b>Degree &amp; Credit Status:</b>	Degree-Applicable Credit Course
<b>Foothill GE:</b>	Non-GE
<b>Transferable:</b>	CSU
<b>Grade Type:</b>	Letter Grade Only
<b>Repeatability:</b>	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. Sedation, analgesia, general anesthesia, and local anesthesia techniques will be practiced and/or demonstrated. Practical applications of pharmacology, including indications, contraindications and effects of common pre-anesthetic and anesthetic agents. 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:

- Describe the role of the veterinary technician during the anesthetic event.
- Perform a thorough pre-anesthetic evaluation of a veterinary patient and develop a comprehensive anesthetic plan.
- Perform a thorough post-anesthetic evaluation of a veterinary patient and develop a nursing care plan.
- Identify and explain the function of each of the components of the veterinary anesthesia machine.
- Recognize, critically evaluate and respond appropriately to common anesthetic problems and emergencies.
- Describe the effects of anesthesia on the nervous, cardiovascular, and respiratory systems.
- Safely and competently perform essential clinical skills related to anesthesiology.
- Articulate the general principles of inhalation anesthesia and successfully manage a veterinary patient.

- Safely and competently induce, monitor, maintain, and recover a veterinary patient under inhalant anesthesia.
- Demonstrate competency in the use of manual methods of ventilation.
- Participate in four common surgeries in small animal practice.
- Participate in at least one complete oral health assessment and treatment under anesthesia for a dog or a cat.

## Course Content

- Introduction to the role of the veterinary technician in anesthesia
- Pre-anesthetic evaluation and development of comprehensive anesthetic plan
  - Pre-anesthetic patient history
  - Physical examination
    - Appropriate laboratory testing using equipment commonly found in clinical practices (CBC, chemistry analyzer, PCV, TP)
    - Evaluation of pre-anesthetic laboratory tests
  - Assignment of anesthetic risk/patient status (ASA)
  - Formulation of anesthetic plan
  - Perform animal care to program standards, based on the Animal Welfare Act
- Recovery: post-anesthetic evaluation
  - Techniques for maintaining body temperature
  - Extubation timing, risks, technique
  - Critical considerations in the recovery period
- Identify and explain the function of each of the components of the veterinary anesthesia machine
  - Principles of inhalation anesthesia
  - Components, function, and use of the anesthetic machine
  - Active and passive scavenging systems
  - Safety considerations
  - Re-breathing and non-rebreathing patient circuits
  - Care and maintenance
- Recognize, critically evaluate and respond appropriately to common anesthetic problems and emergencies
  - Patient monitoring
- Describe the effects of anesthesia on the nervous, cardiovascular, and respiratory systems
  - Assessment of anesthetic depth
  - Stages and planes of anesthesia
  - Assessment of physiological status
  - Level of consciousness
  - Interpretation of ocular signs
  - Assessment of reflexes
  - Assessment of muscle tone
  - Assessment of pain perception
  - Physical parameters (TPR, mucous membrane color, CRT, jaw tone, reflexes, eye position)
  - Monitoring equipment
    - Pulse oximetry
    - Capnography
    - ECG
    - Blood pressure
    - Multiparameter monitoring
    - Patient evaluation using the senses
- Safely and competently perform essential clinical skills related to anesthesiology
  - Intravenous catheterization
  - Proper calculation of fluid rates and volumes
  - Describe different fluid rates for different times of anesthesia
  - Demonstrate proper use of fluid pumps

5. Drug selection and calculation
6. Endotracheal intubation
7. Proper patient preparation for the following surgeries: dog spay, cat spay, dog neuter, cat neuter
  - a. Positioning
  - b. Clipping and scrubbing
  - c. Moving into surgery
  - d. Special considerations in pregnant patients
  - e. Special considerations in cryptorchid patients
- H. Articulate the general principles of inhalation anesthesia and successfully manage a veterinary patient
  1. Balanced anesthesia
- I. Safely and competently induce, monitor, maintain, and recover a veterinary patient under inhalant anesthesia
  1. Local anesthesia
  2. Anesthetic records
  3. Proper record keeping for controlled drugs
  4. Student participation in each of the following anesthetic events:
    - a. Dog and cat spay
    - b. Dog and cat neuter
    - c. Dental prophylaxis (complete oral health assessment and treatment or COHAT)
  - J. Demonstrate competency in the use of manual methods of ventilation
  - K. Surgical assisting
    1. Demonstrate suturing and appropriate handling of live tissue
    2. Demonstrate surgical scrubbing, gowning, and gloving
    3. Demonstrate surgical scrub nurse etiquette
  - L. Participate in at least one complete 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:

- A. Describe the role of the veterinary technician during the anesthetic event.
- B. Perform a thorough pre-anesthetic evaluation of a veterinary patient and develop a comprehensive anesthetic plan.
- C. Perform a thorough post-anesthetic evaluation of a veterinary patient and develop a nursing care plan.
- D. Identify and explain the function of each of the components of the veterinary anesthesia machine.
- E. Recognize, critically evaluate and respond appropriately to common anesthetic problems and emergencies.
- F. Describe the effects of anesthesia on the nervous, cardiovascular, and respiratory systems.
- G. Safely and competently perform essential clinical skills related to anesthesiology.
- H. Articulate the general principles of inhalation anesthesia and successfully manage a veterinary patient.
- I. Safely and competently induce, monitor, maintain, and recover a veterinary patient under inhalant anesthesia.
- J. Demonstrate competency in the use of manual methods of ventilation.

- K. Participate in four common surgeries and at least one dental prophylaxis on dogs and cats.
- L. Surgeries will be performed by the veterinarian instructor on live patients. Students will serve as anesthetist, surgical assistant, circulating nurse, floater and recovery nurse on a rotating basis. The RVT instructor will supervise the patient and a small group of students during the entire anesthetic event.

M. Perform animal care to program standards, based on the Animal Welfare Act.

## Special Facilities and/or Equipment

- A. Laboratory equipped with anesthetic machines, electrocardiography and audible cardiac monitors, blood pressure monitors, respiratory monitors, surgical tables and lights, surgical instruments, and autoclave.
- B. Animal models and cadavers for learning skills prior to practicing on live animals.
- C. 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:

The student will demonstrate proficiency by a combination of skills assessment and written assignments, as follows:

- A. Performance assessments for the different tasks on an anesthesia team
- B. Written clinical case report of anesthetic event
- C. Written self-reflection essays
- D. Completing peer evaluations for animal care
- E. Proper record keeping
- F. Caring for animals on campus
- G. Completion of assignments reflecting common surgical procedures in small animal medicine

## Method(s) of Instruction

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

Methods of instruction may include:

- A. Lecture
- B. Discussion
- C. Demonstrations
- D. Cooperative learning exercises
- E. Directed, independent study
- F. 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*. 5th ed. Elsevier, 2017.

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

Assignments may include, but are not limited to:

- A. Weekly reading assignments of approx. 15 pages
- B. Written assignments, including case studies and reflections on surgical events
- C. Animal care as described in the Veterinary Technology Program Animal Care Handbook, with emphasis on pre- and post-operative care of surgical patients
- D. Cleaning and maintaining surgical facility and equipment
- E. Collaborative work on anesthetic emergencies

**Discipline(s)**

Registered Veterinary Technician