

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



COURSE OUTLINE

VSCT 206 – ANESTHETIC PRINCIPLES

Prepared By: Mary O'Horo Loomis, DVM

**SCHOOL OF SCIENCE, HEALTH AND CRIMINAL JUSTICE
VETERINARY SCIENCE TECHNOLOGY
AUGUST 2018**

- A. **TITLE:** Anesthetic Principles
- B. **COURSE NUMBER:** VSCT 206
- C. **CREDIT HOURS:** 3
- D. **WRITING INTENSIVE COURSE:** No
- E. **COURSE LENGTH:** 15 weeks
- F. **SEMESTER(S) OFFERED:** Fall
- G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:**
3 lecture hours per week

H. **CATALOG DESCRIPTION:**

This course is an introduction to anesthetic principles as they relate to animal medical and surgical care. The student will be presented with information on basic preanesthetic agents, anesthetic agents, and anesthetic monitoring devices. Special anesthetic techniques used on dogs, cats, horses, ruminants and swine will be covered as well rodents and other more exotic species. Students will be presented with the potential human and animal hazards associated with anesthetic drugs. CPR and the recognition and treatment of emergency situations will be addressed. Pain control and analgesics commonly used in multi-modal pain treatment will be covered.

I. **PRE-REQUISITES/CO-REQUISITES:**

- a. Pre-requisite(s): VSCT 114 and VSCT 115
b. Co-requisite(s): None

J. **GOALS (STUDENT LEARNING OUTCOMES):**

By the end of this course, the student will be able to:

<i>Course Objective</i>	<i>Institutional SLO</i>
Accurately calculate anesthetic drug dosages for animals when given the appropriate information.	5. Industry, Professional, Discipline-Specific Knowledge and Skills
Discuss the various preanesthetic drugs and the pros and cons of each.	5. Industry, Professional, Discipline-Specific Knowledge and Skills
List the commonly used veterinary anesthetic drugs (injectable & inhalant) and discuss their characteristics and their uses.	5. Industry, Professional, Discipline-Specific Knowledge and Skills
Describe the stages and planes of anesthesia.	5. Industry, Professional, Discipline-Specific Knowledge and Skills
Trace a molecule of gas through an anesthetic machine.	5. Industry, Professional, Discipline-Specific Knowledge and Skills

Discuss alternative induction modalities such as mask/chamber induction.	5. Industry, Professional, Discipline-Specific Knowledge and Skills
Discuss anesthetic hazards and emergency protocols.	2. Crit. Thinking/ Problem Solving 5. Industry, Professional, Discipline-Specific Knowledge and Skills
Discuss & perform the proper method of endotracheal intubation.	5. Industry, Professional, Discipline-Specific Knowledge and Skills
Describe how to perform CPR.	5. Industry, Professional, Discipline-Specific Knowledge and Skills
Operate and discuss the use of monitoring devices such as the pulse oximeter and the EKG machine.	5. Industry, Professional, Discipline-Specific Knowledge and Skills
Recognize signs of pain and common drugs used in pain management.	5. Industry, Professional, Discipline-Specific Knowledge and Skills
Discuss various drugs used or avoided with exotic animals.	5. Industry, Professional, Discipline-Specific Knowledge and Skills

K. TEXTS:

Thomas and Lerche. Small Animal Anesthesia and Analgesia 4th Edition. St. Louis, MO: Mosby/Elsevier, 2011.

L. REFERENCES: NA

M. EQUIPMENT: NA

N. GRADING METHOD: A/F

O. MEASUREMENT CRITERIA/METHODS:

- Exams
- Quizzes

P. DETAILED COURSE OUTLINE: (must use the outline format listed below)

- I. Drug Calculations
 - A. Review stoichiometric and ratio methods of calculating drug dosages
 - B. Required Math Test
- II. Introduction to Anesthesia
 - A. Local vs. general anesthesia
 - B. Inherent risks of all anesthesia
 - C. The technician's role in the practice of anesthesia

- III. Patient Preparation
 - A. The pre-anesthetic evaluation
 - B. Anesthetic risk categories
 - C. Basal Metabolic Rate and influencing factors
- IV. Preanesthetic Drugs & Adjuncts
 - A. The anti-cholinergic drugs
 - B. Tranquilizers used in veterinary medicine
 - C. Opioid drugs used in veterinary medicine
- V. Anesthetic Drugs/ Induction Agents
 - A. Cyclohexamine drugs
 - B. Propofol
 - C. Barbiturates
 - D. Other categories
- VI. Anesthetic Monitoring
 - A. Endotracheal Intubation
 - B. Stages & planes of anesthesia
 - C. Monitoring reflexes
 - D. Monitoring HR, RR, BP and temperature under anesthesia
- VII. Gas Anesthesia
 - A. Anesthetic gasses used in veterinary medicine & their properties
 - B. The gas anesthesia machine
 - C. Vaporizers
 - D. Rebreathing and non-rebreathing systems
- VIII. Special Techniques
 - A. Local anesthesia
 - B. Mask induction
 - C. Chamber induction
- IX. Monitoring Equipment
 - A. Pulse Oximeter
 - B. Capnograph
 - C. EKG
 - D. Doppler Unit
 - E. Fluid Pump and other devices
- X. Special Considerations with Equine Anesthesia
 - A. Drug Protocols
 - B. Monitoring the equine patient
 - C. Recovering the equine patient
- XI. Special Consideration with Ruminant & Swine Anesthesia
 - A. Drug Protocols
 - B. Nerve blocks used for ruminant anesthesia
 - C. Swine anesthesia
 - D. Common surgical procedures of ruminants & swine

- XII. Rodent, Rabbit and Exotic Anesthesia
 - A. Drugs commonly used in these species
 - B. Special considerations with anesthesia in these species.

- XIII. Emergency and Critical Care
 - A. Identifying emergencies
 - B. Triage for veterinary patients
 - C. Critical care nursing
 - D. Cardiopulmonary Resuscitation procedure
 - E. Emergency drugs and uses
 - F. Shock: signs and origins
 - G. Fluid therapy
 - H. Other hazards of anesthesia

- XIV. Analgesia
 - A. The role of the technician as a patient advocate
 - B. Physiology of pain
 - C. Assessment of pain in different species
 - D. Drugs & modalities for the control of pain

- XV. Troubleshooting Anesthetic Problems
 - A. Avoiding anesthetic problems
 - B. Risk Factors that can complicate anesthetic procedures

Q. LABORATORY OUTLINE: NA