

# V T 86: LABORATORY ANIMAL NURSING

## Foothill College Course Outline of Record

Heading	Value
<b>Units:</b>	4
<b>Hours:</b>	4 lecture per week (48 total per quarter)
<b>Prerequisite:</b>	V T 55.
<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

- Articulate the husbandry and care of common species of laboratory animals.
- Know and discuss all the laws that pertain to the Care and Use of Laboratory Animals.

## Description

Study of the husbandry, management, and nursing care of rabbits and rodents kept as both research and companion animals. Orientation to the humane and ethical use of animals in research. Discussion of the veterinary technician as an animal advocate and nurse in a biomedical research animal facility. Regulations affecting the use of animals in research are discussed. Proper methods of restraint and handling; husbandry and housing; feeding and nutrition; medical and surgical nursing techniques for the common species of laboratory animals. Introduction to diagnostic and therapeutic techniques and common diseases of laboratory animals. Appropriate anesthesia, analgesia and euthanasia methods will be discussed. 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:

- Identify and discuss the legal, moral, and ethical obligations involved in the humane care and use of research animals.
- Explain the laws governing the humane and ethical use of laboratory animals.
- Discuss the requirements for research animal facilities.
- Explain the following features of common laboratory animal species: taxonomy, anatomy, uses in research, restraint and husbandry, and common diseases.
- Describe acceptable methods of anesthesia, analgesia, euthanasia in common laboratory animal species, compatible with the Animal Welfare Act.
- Outline and discuss colony surveillance techniques.
- Investigate various career opportunities in biomedical research.

## Course Content

- Legal, moral, and ethical obligations involved in the humane care and use of animals in the research setting

- Introduction to biomedical research and laboratory animal science
  - Survey of methods of biomedical research
  - Animal research in context
  - Animal research cost and benefit to humans and animals
    - Cost and benefit to animals
    - Cost and benefit to humans
  - Comparison of companion animal and research animal species
    - Common research animal species
    - Common companion animal species
    - Common ground for the veterinary professional
    - Roles of the RVT and DVM
- Ethical, humane, and scientific issues related to animal research
  - Ethical issues
  - Humane issues
  - Scientific issues
  - Alternatives to the use of animals in research: the three "Rs"
- Laws, regulations, and policies affecting the use of laboratory animals
  - Federal laws and regulations
  - State laws and regulations
  - Other regulations and policies
- Requirements for research animal facilities
  - Introduction to laboratory animal facilities
  - Facility design
    - Environmental concerns
    - Animal caging systems
    - Sanitation practices
  - Animal records
  - Animal procurement and transportation
  - Safety and health considerations
    - Biosecurity
  - Pest control
- Identification, husbandry, nursing care of the common laboratory animal species
  - The mouse
    - Taxonomy
    - Origin
    - Use in research
    - Behavioral patterns
    - Anatomic characteristics
    - Life history data
    - Husbandry practices
    - Restraint
    - Identification
    - Breeding
    - Biomethodology techniques
    - Diseases and conditions
  - The rat
    - Taxonomy
    - Origin
    - Use in research
    - Behavioral patterns
    - Anatomic characteristics
    - Life history data
    - Husbandry practices
    - Restraint
    - Identification
    - Breeding
    - Biomethodology techniques
    - Diseases and conditions
  - The hamster
    - Taxonomy
    - Origin

- c. Use in research
- d. Behavioral patterns
- e. Anatomic characteristics
- f. Life history data
- g. Husbandry practices
- h. Restraint
- i. Identification
- j. Breeding
- k. Biomethodology techniques
- l. Diseases and conditions
- 4. The guinea pig
  - a. Taxonomy
  - b. Origin
  - c. Use in research
  - d. Behavioral patterns
  - e. Anatomic characteristics
  - f. Life history data
  - g. Husbandry practices
  - h. Restraint
  - i. Identification
  - j. Breeding
  - k. Biomethodology techniques
  - l. Diseases and conditions
- 5. The rabbit
  - a. Taxonomy
  - b. Origin
  - c. Use in research
  - d. Behavioral patterns
  - e. Anatomic characteristics
  - f. Life history data
  - g. Husbandry practices
  - h. Restraint
  - i. Identification
  - j. Breeding
  - k. Biomethodology techniques
  - l. Diseases and conditions
- 6. Survey of miscellaneous species
- E. Describe acceptable methods of anesthesia, analgesia, euthanasia in common laboratory animal species, compatible with the Animal Welfare Act
  - 1. Mouse
    - a. Anesthesia
    - b. Analgesia
    - c. Euthanasia
  - 2. Rat
    - a. Anesthesia
    - b. Analgesia
    - c. Euthanasia
  - 3. Hamster
    - a. Anesthesia
    - b. Analgesia
    - c. Euthanasia
  - 4. Guinea pig
    - a. Anesthesia
    - b. Analgesia
    - c. Euthanasia
  - 5. Rabbit
    - a. Anesthesia
    - b. Analgesia
    - c. Euthanasia
- F. Colony health surveillance techniques
  - 1. Sentinel animals

- 2. Other techniques in health surveillance
- 3. Zoonoses
- 4. Necropsy procedures
- G. List and describe various career opportunities in biomedical research

## Lab Content

Not applicable.

## Special Facilities and/or Equipment

- A. Classroom with multimedia projection and presentation capability.
- B. Instructional media which show animal handling techniques, blood collection procedures, surgery, etc.
- C. Appropriate laboratory animal housing that meets or exceeds the requirements of the Animal Welfare Act.

## Method(s) of Evaluation

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

Methods of evaluation may include, but are not limited to:

- A. Midterm and comprehensive written final examination
- B. Research project
- C. Journal review essay
- D. Essay on comparison of animal rights to animal welfare

## Method(s) of Instruction

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

- A. Lecture
- B. Discussion
- C. Oral presentations
- D. Demonstrations
- E. Hands-on practice with rodents and other animals
- F. Canvas is used for homework and communication purposes

## Representative Text(s) and Other Materials

Tighe, Monica M. Mosby's Comprehensive Review for Veterinary Technicians. 4th ed. Elsevier, 2015. ISBN: 9780323171380

Pritchett-Corning, Kathleen R. Handbook of Clinical Signs in Rodents and Rabbits. 2nd ed. Charles River Laboratories, 2011. ISBN: 9780983545309

National Research Council. Guide for the Care and Use of Laboratory Animals. 8th ed. National Academies Press, 2011. Online

Although some of these texts are older than the suggested "5 years or newer" standard, they remain seminal texts in this area of study.

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

- A. Weekly reading assignments from text, class handouts, and outside sources, ranging from 30-60 pages per week.
- B. Research project and/or journal review articles may be assigned.
- C. Essay comparing and contrasting animal welfare to animal rights.
- D. Canvas site with additional content and links to free online information.

**Discipline(s)**

Registered Veterinary Technician