JEFFERSON COLLEGE
COURSE SYLLABUS

VAT264
LABORATORY ANIMAL TECHNOLOGY
3 Credit Hours

Prepared
By
Cheryl Emerson, BPS, RVT, LATg.

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I. CATALOG DESCRIPTION

Prerequisite: Completion of the first year of the Veterinary Technology curriculum. 3 semester hours credit.

Laboratory Animal Technology covers the care, anatomy, physiology, and common disease problems of the common species of laboratory animals and includes a laboratory session to familiarize students with various research facilities and cover handling and common procedures of animals used in research. Also covered is the consideration of the use of animals as experimental models in the research laboratory.

II. GENERAL COURSE OBJECTIVES

The primary objective of this course is to educate the student in the use of animals in a research environment. The student will also learn of the methods by which these animals are protected through the Animal Welfare Act and various Federal committees dedicated to the welfare of animals. In addition, through hands-on laboratory exercises, the student will learn the restraint, handling and treatment techniques of common laboratory animal species, and to recognize disease signs in these animals and provide professional follow-up are. Students enrolled in this course who lean toward research medicine as a career goal are familiarized with certification levels offered by the American Association of Laboratory Animal Science.

III. COURSE OUTLINES

A. Ethics Of Using Animals In Research

1. Animal Welfare Act
2. The Three Rs As Applied To Animal Use
3. Legal System Affecting Animal Welfare
4. Why Animals Are Needed In Research
5. Ethics Of Animal Use
6. Zoo, Wildlife, and Utility Animals
7. The Animal Rights Movement

B. Introduction To Research Medicine

1. AALAS
2. Laboratory Animal Support Committees
3. The Structure Of The Research Team
4. Types Of Research

C. Introduction To Laboratory Animal Environment

1. Terminology
2. Primary Environments
3. Nutrition
4. Animal Identification
D. Animals Commonly Used In Research

1. Mice
2. Rats
3. Rabbits
4. Guinea Pigs
5. Nonhuman Primates
6. Hamsters
7. Gerbils
8. Chinchillas
9. Reptiles
10. Ferrets
11. Birds
12. For each of the animals listed above:
   a. Use in research
   b. Behavior
   c. Husbandry
   d. Techniques
      1) Handling
      2) Administration of Drugs and Medicaments
      3) Sample Collection
      4) Anesthesia
      5) Euthanasia
   e. Diseases
      1) Genetic and Acquired Anomalies
      2) Bacterial
      3) Viral
      4) Fungal
      5) Parasitic

e. Infrequently Used Animals In Research

1. Amphibians
2. Fishes
3. Others

IV. UNIT OBJECTIVES

A. Ethics Of Using Animals In Research

1. Apply knowledge of state, federal, and local animal regulations.
2. Become familiar with the “three R’s” in the formation of research design.
3. Explain the pros and cons of using animals in research.
4. Understand the proposed justifications in using animals in research protocols.
5. Become familiar with The Animal Welfare Act in animals used outside of research facilities.
6. Become familiar with proponents of the Animal Rights Movement in Great Britain and the U.S.

B. Introduction To Research Medicine

1. Become familiar with the various support organizations involved in animal research.
2. Explain the basic principles and organization of animal research.
3. Become familiar with the various types of research in which animals are used.
C. Introduction To Laboratory Animals

1. Become familiar with the medical terminology expressive of laboratory animal research.
2. Become familiar with animal and personnel safety, and structural optimums in a research facility.
3. Review basic nutrition and become familiar with the general nutritional demands of animals used in research.
4. Apply knowledge of the various methods employed in permanently identifying the animals commonly used in research.

D. Animals Commonly Used In Research

1. Become familiar with and apply knowledge in areas of handling and restraint, sexing, oral dosing, injection techniques, blood sample collection, anesthesia, euthanasia, prosection and specimen collection for the following laboratory animal species: mice, rats, rabbits, guinea pigs, nonhuman primates, hamsters, gerbils, chinchillas, reptiles, ferrets, and birds.
2. Become familiar with various diseases, signs and treatment techniques for bacterial, viral, fungal, and parasitic diseases common to animals used in research.

E. Infrequently Used Animals In Research

Become familiar with the species of animals not often encountered in research, but because of species idiosyncrasy, are of proven value to the biomedical research industry and are frequently encountered in small animal practice.

V. METHOD(S) OF INSTRUCTION

A. Lecture: M: 10:00 – 11:50 a.m.
B. Lab: TR 2:00-3:50 pm
C. Textbooks, Outlines, Live Animal Models for Laboratory Instruction, Audio-Visual Materials, Guest Lecturers, Field Trips to Relevant Research Laboratories
D. Student Interactive Assignments

VI. REQUIRED TEXTS


VII. REQUIRED MATERIALS

A. Required textbooks, audio-visual aids
B. Outlines supplied by instructor

VIII. SUPPLEMENTAL REFERENCES

Materials for research projects available in Jefferson College Library and within the Veterinary Technology Department. Journals within the department (i.e., “Laboratory Animal”, “Compendium”), are kept for student use.
IX. METHOD(S) OF EVALUATION

A. Distribution of Final Grade

There are four written examinations and a comprehensive final examination, all of which comprise equal percentages in determining 80% of the final grade.

Laboratory participation, performance and laboratory assignments comprise 20% of the final grade.

Class participation, general attitude, and attendance are expected of the students, however, the instructor reserves the right to award or detract percentage points based on these attributes.

Students are expected to complete the course with at least a grade of C. Students who make a grade below C will be dropped from the program and invited to re-enroll as second year students and thus repeat the course the following year.

Any student found in noncompliance with the Jefferson College Honesty Policy as delineated in the Jefferson College and Veterinary Technology Student Handbooks will receive a grade of F regardless of concurrent academic standing.

B. Assignment of Final Letter Grades

A = 90-100
B = 80-89
C = 70-79
D = 60-69
F = below 60

X. ATTENDANCE POLICY

A. Student attendance is mandatory. Lab sessions cannot be made up, regardless of the reason for absence. This policy applies to attendance at lecture, field trips and guest lecture. This policy also applies to excused as well as unexcused absences.

B. Students are permitted to miss one exam date with no penalty. Make up exams are taken in the Assessment Center within 3 days of the original exam. For each subsequent exam missed, the student is penalized 10% of the total value of that exam (one letter grade). This policy applies to excused as well as unexcused absences.

C. The instructor may make exceptions to this policy in certain cases, i.e., illness requiring hospitalization, death in the immediate family, etc.