Miami Dade College

Course Description

ATE2639 | Animal Lab Procedures 2 | 3.00 credits

This course serves as a continuation of Animal Laboratory Procedures 1 and covers immunology, liver function and diagnostic testing for liver abnormalities, kidney function and testing used in disease states, urinalysis, pancreatic evaluation; normal and abnormal exfoliative cytology; and the evaluation of endocrine disorders. It also will include principles of serological testing and microbiological methods and protocols. Prerequisites: ATE2638, 2638L; corequisite: ATE2639L.

Course Competencies:

Competency 1: The student will demonstrate an understanding of the principles of clinical chemistry laboratory procedures by:

1. Discussing the available chemistry analyzers and their principle of operation
2. Displaying the differences between manual as well as automated chemistry tests, citing the advantages and disadvantages of each
3. Identifying the purposes for the recommendations regarding collection, handling, and storage of blood samples
4. Enumerating the guidelines for safe and efficient centrifuge operation
5. Discussing the characteristics and differences of plasma, serum, buffy coat, etc
6. Citing guidelines to prevent hemolysis in collected samples
7. Discussing available diagnostic tests for organ function investigation
8. Showing the use of serologic test kits available in veterinary clinical labs

Competency 2: The student will become acquainted with laboratory practices in microbiology by:

1. Describing the guidelines for proper sample preparation regarding urine and other body fluids
2. Interpreting exfoliative cytology samples
3. Determining the correct and incorrect methods of obtaining samples for the microbiology lab
4. Citing the principles on which culture and sensitivity studies are based upon
5. Discussing unique culture media characteristics used in aerobic, anaerobic, fungal, viral, and unique studies
6. Discussing in-house vs. Reference- laboratory testing
7. Discussing allergy testing both by blood analysis and skin testing

Competency 3: The student will be able to identify and describe laboratory procedures associated with performing a urinalysis by:

1. Learning and using terms associated with renal disease and urinalysis
2. Discussing quality control procedures necessary in handling a urine sample
3. Discussing what a complete urinalysis is and what is assessed when performing a urinalysis
4. Discussing and explaining the anatomy and physiology of the urogenital system

Competency 4: The student will be able to identify various laboratory methods used in assessing cytology in a veterinary laboratory by:

1. Discussing how to perform an ear cytology and identify the various elements
2. Detecting the stages of estrus and the elements associated with the various stages
3. Detecting the anatomical sites used to perform bone marrow aspiration
4. Detecting supplies required when performing a bone marrow aspirate
5. Detecting characteristics of bone marrow macroscopically and microscopically
6. Discussing how to perform M: E ratio
7. Describing and how to perform various techniques used to obtain cytological samples

8. Discussing and identifying the basic assessments used to identify neoplasia

Competency 5: The student will be able to discuss and identify ectopic parasites by:

1. Detecting genus and species of the various ectopic parasites seen in dogs and cats
2. Detecting what supplies are needed to perform tests associated with the identification of ectoparasites
3. Describing how to perform tests associated with identifying the various ectoparasites
4. Discussing microscopic objectives used in the identification of parasites
5. Detecting the various treatments used to treat the various ectoparasites

Learning Outcomes

- Communicate effectively using listening, speaking, reading, and writing skills
- Use quantitative analytical skills to evaluate and process numerical data
- Solve problems using critical and creative thinking and scientific reasoning