FUNDAMENTALS OF VETERINARY IMAGING — VTEC 1220

A. Course Description
   - **Credits:** 3.00
   - **Lecture Hours/Week:** 1.00
   - **Lab Hours/Week:** 2.00
   - **OJT Hours/Week:** 0
   - **Prerequisites:** None
   - **Corequisites:** None
   - **MnTC Goals:** None

   Radiation safety and imaging techniques commonly used in veterinary medicine are covered in this course. Students develop radiographic technique charts and practice radiography using live animals. They also learn about other imaging techniques used in the medical field. Prerequisites: BIOL 1310

B. Course Effective Dates: 8/21/17 – Present

C. Outline of Major Content Areas
   - As noted on course syllabus

D. Learning Outcomes
   1. Compare materials and techniques used in contrast studies imaging the kidneys, lower urinary tract, and upper GI tract.
   2. Demonstrate proper positioning for commonly performed radiographs of various species including avian and equine.
   3. Describe proper patient preparation and positioning for an ultrasound exam.
   4. Describe the process of radiographic imaging.
   5. Determine radiographic quality of produced images.
   6. Develop and properly utilize radiographic technique charts.
   7. Discuss hand, non-digital, and digital processing techniques and digital radiography.
   8. Discuss the modifications of diagnostic imaging techniques as they apply to small exotic animal species.
   9. Discuss the use of endoscopy and the principles of operation and maintenance of fiber optic equipment.
   10. Employ proper technique for radiographic studies, including correct measurement of patient, correct positioning, and correct exposure techniques.
11. Explain and employ recommended radiation safety measures.
12. Explain the differences and similarities of CT scans and MRIs as well as their specific uses.
13. Explain the underlying principle of ultrasonography and why this imaging technique would be used instead of radiology.
14. Given knowledge of the health risks associated with radiographic procedures and effective safety procedures, the veterinary technician will exercise professional judgment to minimize risks to personnel and patients during radiographic procedures to ensure safety.
15. Identify common disorders of the gastrointestinal, musculoskeletal, nervous, and respiratory systems and the associated indications for radiography.
16. Identify the components of an x-ray machine and identify various types of cassettes and processing equipment.
17. Illustrate proper use of personal protective equipment.
18. Manage the maintenance of radiographic equipment and recognize faulty equipment operation.
19. Properly label and store radiographic images.
20. Summarize quality control measures and state regulations for radiation QA/QC.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

F. Learner Outcomes Assessment
   As noted on course syllabus

G. Special Information
   None noted