Nebraska College of Technical Agriculture

DIVISION: Veterinary Technology
COURSE TITLE: Radiation Safety – on-line
COURSE NUMBER: VTE 2821
CREDIT HOURS: 1
SEMESTER: Fall 2017
TIME: Arranged On-Line
INSTRUCTOR: Barbara A. Berg LVT, BS
OFFICE: Veterinary Technology Building Room 105
OFFICE HOURS: Arranged
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COURSE DESCRIPTION
This course is designed for veterinary assistants who are working in a private practice. The course covers the dangers of radiation and how to protect our patients and ourselves from potential harm. Rules and regulations as they apply to veterinary assistants and technicians are reviewed and a clinic safety plan is developed. Successful completion of this course will allow the individual to meet the State of Nebraska’s Radiation Safety training requirements for people working in a veterinary clinic who are not a LVT or DVM.

DIVISION MISSION
Veterinary Technology supports the college mission by striving to develop students into competent citizens through general education and promoting involvement, innovation, individuality and technical skills in the field of veterinary medicine.

STUDENT LEARNING OUTCOMES
At the end of this course the student will be able to:
1. List the dangers of radiation within the field of veterinary technology
2. List the rules and regulations pertaining to x-rays in a Nebraska veterinary clinic.
3. Recall the radiation dosage limits and recognize who does and does not need to be monitored.
4. Describe methods utilized to monitor radiation exposure.
5. Identify practical radiation safety practices
6. Develop a Safety Plan for the clinic

TEXTBOOK:
None required. All information is provided within the canvas based course.
ASSESSMENT – TESTS AND GRADING
There is a canvas test after each unit of instruction. The canvas tests are open book with no time limit and can be repeated if necessary. The comprehensive exam at the end of the course is taken under the supervision of an identified proctor. Passing grade in the course is an 80%.

COMPUTER ASSISTANCE
- Always access Canvas by going to myunl.edu.
- Once you have logged into canvas, click on Courses and Organizations tab, then scroll down the list of classes until you find Radiation Safety Short Course – online.
- Once the course has been found and opened, all class materials, outline, syllabus, lectures, assignments and tests can be found under the “Assignments” tab.
- It is recommended that you use either Firefox or chrome browser when accessing Canvas courses. If you experience specific issues with Canvas, try using an alternate browser before requesting assistance. (Even internet explorer). Switching browsers often solves simple issues.
- **UNL Help Desk contact information for all Canvas-related problems or questions: toll free (866) 472-3970 and helpdesk@unl.edu**

DUE DATES
Due dates are listed within the course syllabus and correspond to the assignments listed under course documents. They are intended for students starting the course in fall of and completing the course within the semester. Please review all material in the unit before taking the quiz.

INSTRUCTOR’S ROLE
I will monitor the progress of the course and answer any questions you have or explain sections that are confusing. Communication is best done via E-mail. Don’t forget to include the course name in the subject line. I can be reached at bberg2@unl.edu. Or you may call my office number at 308-367-5219. If on campus feel free to stop by my office in the Veterinary Technology Building.
PROFESSIONAL CONDUCT
1. Responsible, ethical, adult behavior is expected.
2. Complete all assignments in a timely manner.
3. Do your own work on assignments and tests. All cases of cheating or plagiarism shall be handled at the discretion of the instructor and is based on the NCTA Student Code of Conduct and the Vet Tech Handbook. (Page 65, Academic Dishonesty and Disciplinary Procedures). Students may be disciplined by dismissal from the course and/or a failing grade.
4. Follow all guidelines set forth by the instructor and NCTA.
5. Avoid the misuse of any PDA device, computer or cell phone.
6. Dishonesty or unprofessional behavior may result in grade reduction, failing the class, or permanent withdrawal from the class.

OUTLINE and DUE DATES
Unit One – Due Sep 10
1. Radiation Exposure, Radiation Safety – Everything You Need to Know – video on blackboard
   Quiz

2. On the Job – This presentation discusses clinic requirements in the radiation safety department. (Regulations.zip) There is also a handout to help as well. (Regulations.doc) Please read through both.
   Quiz

3. Rules and Regulations for Assistants and Technicians
   This power point covers who can do what in the clinic, levels of supervision etc. Please read through and take the quiz.
   Quiz

Unit Two – Due Sep 17th
4. Safety Plan Assignment
   The power point provides the assignment details and the Safety Plan doc is an example / template than can be used to help you include everything the state wants in the clinics Radiation Safety Plan

5. Radiation Safety in an Equine Clinic
   This 60 minutes video talks all about radiation safety and taking x-rays in an equine veterinary practice. Equine radiographs can expose technicians to many dangers not limited to just radiation exposure.
Unit Three – Due Sep 24th

6. Safety Overview – The formation of x-rays and the potential dangers associated with x-rays as well as how to protect ourselves from radiation are discussed in this power point. It is attached as a presentation with voice over and as a power point without voiceover. The information covered is the same in both formats. Read through the information and then take the quiz.

7. This short video follows the oncology case on a Golden Retriever at Cornell University’s Companion Animal Hospital.

Quiz

Unit Four – Due October 1st

8. Radiation dose and exposure limits
   Please listen to the presentation (Radiation dose and Exposure.zip). There is a handout with information about dosage and exposure as well. (Dose and Exposure.doc). The power point covers radiation limits for different groups of people and how radiation exposure can be monitored as well as who needs to be monitored. After reading through the material please take the quiz.

9. Safety for Veterinary Technicians
   This video covers safety issues for Veterinary Technicians in radiology and other areas as well.

Quiz

Unit Five – Due Oct 8th

10. X-Ray Production
    The most basic of basics dealing with the production of x-rays is covered in the X-Ray production lecture. (Production of X-rays-short.zip) The same information is provided in the power point (Production of x-rays-short.ppt) Some notes are attached as well. (X-ray production notes.doc). Read through the material and then take the quiz.

11. Radiation Safety Video using ALARA Principles ("As Low As Reasonably Achievable")- University of Melbourne Faculty of Veterinary Science.

Quiz
12. Quality Control
There are some quality control checks that can easily be done in the clinic such as checking the aprons and gloves for cracks, insuring that the darkroom is really dark and that the lighted collimator is providing a true indication of where the primary beam is. Read through the attached materials and take the quiz please.

13. Hyperthyroid cats and radiation concerns – video
In some situations we need to think about the owners of our patients as well as the patient and ourselves.

Quiz

Unit Seven – Due October 22\textsuperscript{nd}
14. X-Ray Film
The presentation with voice over and the power point presentation covers how x-ray film is constructed and the different types available.

15. Cassettes & Screens
Cassettes, digital imaging plates and the screens inside of them are covered in the presentation format and power point format. After reading through the film, cassettes and film information then take the quiz.
Quiz

Unit Eight – Due October 29\textsuperscript{th}
16. Staying Safe Cassettes, digital imaging plates and the screens inside of them are covered in the presentation format and power point format. After reading through the film, cassettes and film information take the quiz.

17. OSHA Compliance – Why veterinarians should care – video
Quiz

Unit Nine – Due Nov 5\textsuperscript{th}
18. Monitoring Exposure levels
Monitoring radiation limits is covered in the power point. After reviewing please take the quiz.

19. Scatter radiation video
In addition to primary beam radiation, scatter radiation is a concern as well.
Quiz
Unit Ten – Due Nov 12th.
20. Safety Review
   An annual safety review is presented here. This is an example of the training that needs to be used for everyone working in the radiology department at a veterinary clinic.

21. Video-X-ray Safety Quiz

Unit Eleven – Due Nov 19th
22. Where Does Radiation Originate and how is it Measured – U-Tube Video - Fluoroscopy Radiation Safety Course Section 1 Quiz

Unit Twelve – Due Dec 11th
23. Final Exam
   This is a proctored 100 question final exam. Please provide the name and phone number of your proctor. Once I have contacted the proctor and set up the location and time for the final exam I will e-mail you the code to access the exam.