

McLennan
C O M M U N I T Y
C O L L E G E

WACO, TEXAS

COURSE SYLLABUS
AND
INSTRUCTOR PLAN

Veterinary Radiology

VTHT 1245.75

Laurel Shrawder, LVT

NOTE: This is a 16-week course.

COVID 19 Notice:

McLennan Community College is committed to providing you with every resource you need to reach your academic goals including your safety. We will continue to monitor the evolving situation with COVID 19 and adjust our safety guidelines to make sure we offer a safe environment for you and our faculty. Please make sure to consult your faculty and the MCC website on any changes to these guidelines.

Course Description:

Presentation of theory and principles and practical application of radiology within the field of veterinary medicine.

Veterinary Radiology is a course developed to teach the student the technical principles involved in the field of radiology. The parts of the x-ray machine, physics of radiology, and the many variables involved in actually taking radiographs are thoroughly discussed.

The knowledge of anatomy and the various structures, is an important part of radiology. It too, is reviewed to assist the students as they learn patient positioning and labeling of radiographs.

Most importantly, the course is designed to stress the importance of radiation safety. Practical application of safety involving exposure, monitoring devices, maintenance of protective apparel, and the general rules and regulations are covered thoroughly.

Prerequisites and/or Corequisites:

Prerequisite: Successful completion first years VTHT courses with a grade of “C” or better. Minimum grade of C or better. Semester Hours: 2 (1 lec/ 4 lab)

Course Notes and Instructor Recommendations:

In order to fully understand and remember the material it is important for you to read the chapters before class and then to spend a certain amount of time reviewing the information each day. The more you review something the easier it is to learn and remember. You should plan on spending at the minimum, 2 hours of study for every hour of class/lab. **Do not wait until the day before the exam to try to learn everything. Retention of information is the key to your success!**

****All notices and information related to this course will be posted on Brightspace and/or your MCC student email.**

Instructor Information:

Instructor Name: Laurel Shrawder, LVT

MCC E-mail: lshrawder@mclennan.edu

Office Phone Number: 254-299-8735

Cell Phone Number: 512-461-2600

Office Location: 126 Veterinary Technology Building

Office/Teacher Conference Hours: Wednesday 8:00AM to 10:00AM; Friday 8:00 to 5:00PM by appointment. Appointments are preferred and Friday by appointment only please. Appointments may be conducted via Zoom, phone or in person. In person will follow MCC's COVID-19 policies.

Other Instruction Information: Email is the best way to contact me. It is essential that you have a fully functioning MCC email account and that you check it often. This is the primary way that I communicate. You need to use your student email address as this is where emails will be sent. My cell phone number is provided and should only be used in important or emergent matters.

*****INSTRUCTOR NOTE:*****

I read my e-mail at least twice a day during the week; however, if you send me an e-mail at 11 PM with a question you need answered before the class tomorrow, I likely will not read it before class. I do not always read e-mails on the weekends. Do not expect instantaneous responses from me via e-mail. Instructors are not 24/7 call centers. Please plan ahead. Remember, poor planning on your part does not constitute an emergency for anyone else.

When you send an e-mail, ALWAYS begin the subject line with VTHT and your course number. If you respond to my e-mail, hit reply, and make sure VTHT (1234.56) is present in the subject line. **Please use complete text in your emails. I do not want to see: u, ur, b4 etc.** Be professional in your communications to your instructors.

Required Text & Materials:

Title: Lavin's Radiology for Veterinary Technicians

Author: Marg Brown

Edition: 7th

Publisher: Elsevier

ISBN: 9780323763707

eBook ISBN: 9780323763714

MCC Bookstore Website: <http://www.mclennan.edu/bookstore/>

Methods of Teaching and Learning:

Lectures, group projects, lab exercises, student performances, and exams.

Course Objectives and/or Competencies:

1. Obtain knowledge on how radiographs are produced and be able to identify the parts and function of the x-ray machine.
2. Learn and maintain all safety regulations for the protection of the patient and personnel involved.
3. Critique radiographic quality and demonstrate methods of improving radiograph quality.
4. Be able to select the proper cassette size and understand the basic facts of image receptors.

5. Position dogs*, cats*, horses* (*) indicates required, and birds to create diagnostic radiographic images.
6. Utilize radiographic equipment to properly radiograph live animals (fixed and portable units)
7. Demonstrate an understanding of the modifications of diagnostic imaging techniques as they apply to mice, rats, guinea pigs, lizards and amphibians. (This is also discussed in VTHT 2213, Lab Animal Clinical Management)
8. Be able to evaluate the developed film and adjust as necessary.
9. Demonstrate an understanding of completing a radiographic log for systems, reports, files and records. (**NOTE: A log of all radiographs taken at the facility will be kept up to date at all times**)
10. Properly utilize a radiograph technique chart.
11. Identify technical artifacts and errors.
12. Identify the importance of Quality Assurance and Quality Control.
13. Have basic knowledge of Ultrasonography, and other means of imaging, such as Computerized Tomography and Magnetic Resonance Imaging.

Course Outline or Schedule:

| Course Lecture Outline | | | Lab Outline |
|------------------------|------------------|---|----------------------------------|
| Week | Required Reading | Chapter | Lab Task |
| 1 | Pg. 2 - 29 | Chapter 1: The Basics of Atoms and Electricity Chapter 2: Diagnostic X-Ray Production | Radiology Lab Introduction |
| 2 | pg. 30 - 44 | Chapter 3: Radiobiology and Radiation Protection for the Patient and the Worker | Lecture |
| | | Exam 1: Section One: The Technical Sie of Imaging | |
| 3 | Pg. 45 - 82 | Chapter 4: Imaging on Film Chapter 5: Producing the Image | Lecture |
| 4 | Pg. 83 - 120 | Chapter 6: Optimizing the Image Chapter 7: Processing the Image | Lecture |
| 5 | Pg. 121 - 169 | Chapter 8: Computerized Radiology and Digital Imaging Chapter 9: Quality Control, Testing, and Artifacts | Lecture |
| | | Exam 2: Section Two: Film Processing and Digital Imaging | |

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|----|----------------------------|--|--|
| 6 | Pg. 236 - 263 | Chapter 15: Overview of Positioning Chapter 16: Small Animal Abdomen | Lecture/ Hands-On Lab |
| 7 | Pg. 264 - 318 | Chapter 17: Small Animal Thorax Chapter 18: Small Animal Forelimb | Lecture/ Hands-On Lab |
| | | Exam 3: Section Four: Radiographic Positioning and Related Anatomy | |
| 8 | Pg. 319 - 380 | Chapter 19: Small Animal Pelvis and Pelvis Limb Chapter 20: Small Animal Vertebral Column | Lecture/ Hands-On Lab |
| 9 | Pg. 381 - 406 470 - 505 | Chapter 21: Small Animal Skull Chapter 23: Small Animal Special Procedures | Barium Lab Mandatory - NO MAKE UPS |
| | | Exam 4: Section Four: Radiographic Positioning and Related Anatomy | |
| 10 | Pg. 506 - 578 | Chapter 24: Equine and Large Animal Radiography | Lecture |
| 11 | | Chapter 24: Equine and Large Animal Radiography Continued | Equine Lab Mandatory - NO MAKE UPS |
| | | Exam 5: Section Four: Radiographic Positioning and Related Anatomy | |
| 12 | Pg. 170 - 193 | Chapter 10: Ultrasonography Chapter 11: Fluoroscopy | Lecture/ Hands-On Lab |
| 13 | Pg. 194 - 223 | Chapter 12: Computerized Tomography Chapter 13: Magnetic Resonance Imaging | Lecture/ Hands-On Lab |
| 14 | | Lecture Tuesday | No Lab Thanksgiving |
| 15 | Review | Review Week -Student Projects in Lab | Project Completion |
| 16 | Finals Week | Comprehensive Final | No Lab Final |

LAB OUTLINE

Lab class will coordinate with the lectures that week and practicing positioning. Students will be working on the Essential Skills required for the course as well.

****DISCLAIMER:** This schedule is subject to change throughout the semester. Students will be notified prior to the change.

LIVE ANIMAL LABS CANNOT BE MADE UP. STUDENTS WILL BE MADE AWARE OF THESE PRIOR TO THE LAB. ATTENDANCE IS MANDATORY!

Course Grading Information:

LECTURE: There will be 5, 100-point exams and a 200 point comprehensive final, for 700 possible points. All tests will cover information covered in lecture and lab.

Worksheets (10) total, are worth 20 points each, for a total of 200 possible points. They must be completed by their due date to receive credit.

Lab Project: The students will work in the surgical groups assigned in Anesthesia & Surgery, to produce diagnostic radiographs of the thorax and abdomen, be able to identify animal structures. The radiographs submitted will be graded on diagnostic quality, setting techniques, positioning, and correct identification. Students will receive a rubric for this project the first day of class.

| Grading | |
|--|-------------|
| Item | Points |
| 5 Lecture Exams (100 points each) | 500 |
| 1 Comprehensive Final | 200 |
| Student Team Radiology Project | 200 |
| 10 Worksheets (20 points each) | 200 |
| Total Possible Points | 1100 |
| Grade Breakdown | |
| 1100 - 990 | A |
| 989 - 880 | B |
| C= 879-825 (MUST make a 75% or higher), so 825 points is a "C" | C |
| 824 - 660 | D |
| 659 or Below | F |

The point system is only for illustration purposes in calculating your grade in this course.

***You must pass this course with a minimum of a “C” (75%) or better. Failure to achieve a minimum of a “C” average in this course will result in you being dropped from the Veterinary Technology or Veterinary Assistant program at the end of the Fall 2020 Semester. This will prohibit you from advancing to the Spring 2021 semester. ***

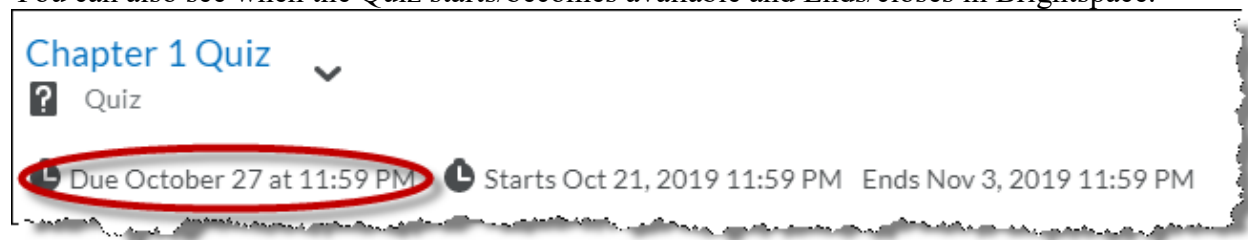
NOTE ABOUT Essential Skills for Syllabi:

Successful completion of ALL the Essential Skills associated with this course is required by the AVMA/CVTEA for all program veterinary technician students, and as part of eligibility to graduate.

Late Work, Attendance, and Make Up Work Policies:

As stated in the Student Attendance Policy: Students will be permitted to make up tests missed due to absences caused by 1) authorized participation in official College functions, 2) personal illness, 3) an illness or death in the immediate family or 4) the observance of a religious holy day. It is the student’s responsibility to inform the instructor of the reason for an absence and to do so in a timely fashion (within 24 hours of the absence or sooner). If the student misses an exam, he/she will be allowed to make up the missed exam ONLY if the absence is caused by one of the 4 causes listed above. Personal illness may require a doctor’s note before you are allowed to make up any missed exams/work.

Pay attention to important dates on Brightspace! Example: Circled is the Due date for a Quiz. You can also see when the Quiz starts/becomes available and Ends/closes in Brightspace.



*****INSTRUCTOR NOTE:*****

Do not submit *.pages, *.numbers, or *.key files. These are Apple iWorks files and cannot be opened. If you submit Apple iWorks files and your work cannot be opened by the instructor, you will receive a zero for the assignment.

Do not submit *.odp, *.odt, or *.ods files. These are OpenOffice files and, when opened in Microsoft Office, will lose formatting and document properties. If you submit OpenOffice files and your document loses formatting when opened, you will lose any points associated with the formatting of the document for the assignment.

If you submit *.pdf files, your professor will be limited to how they can markup the document or assist with modifications to the document. PDF files are an acceptable submission format, but may limit the assistance that you can receive if corrections or revisions must be made.

Do not submit assignments in Google Docs, your instructors can always open these submissions and will cause a delay in grading. You will be asked to resubmit the assignment as a Word document.

NEW TARDY POLICY EFFECTIVE SP 2020

In order to ensure students, arrive on time for class, please note that effective Spring 2020, the classroom instructor will be locking the classroom door 10 minutes after class begins. If a student arrives late and the door is locked, please know that the student will NOT be allowed in the classroom and will be counted absent for that class period. If a student leaves the classroom during the class (for anything other than an emergency)-such as becoming ill, or specific phone calls-for example a sick child, doctor's office, etc.-they will NOT be allowed to return to the classroom. Personal needs need to be taken care of between classes.

For classes (either lecture or labs), that last more than the approximate 50-minute period, a tardy student may be allowed into that class when the class takes a scheduled break or at the instructor's discretion if scheduled breaks are not practical.

This policy is to help diminish disruption of the class, and to help ensure student safety while in the classroom.

Student Behavioral Expectations or Conduct Policy:

STUDENT UNIFORMS/DRESS CODE:

The type of scrubs and lab coats worn by veterinary technicians in veterinary clinics is required in laboratory classes starting with the first semester in the first year of training. Student's dress and appearance at all times will be expected to reflect the dress worn when the student becomes employed as a veterinary technician. Scrub tops and jeans are acceptable in some courses. If jeans are worn, they must NOT have any holes/tears/rips in them, and be clean. You are required to have at least one set of MCC Veterinary Technology scrubs to wear as directed by your instructors for labs, field trips and special occasions. These are available at the MCC Bookstore. Otherwise, scrubs of various prints and colors may be worn to lecture and laboratory sessions as long as the scrubs are in good condition, fit well, and are clean not wrinkled, and in good taste. Full scrubs, close toed shoes, and full surgical attire must be worn during all surgery laboratories.

Coveralls may be worn when working around large animals or appropriate clothing as determined by instructor's class syllabi. Lab coats are required in labs that involved handling blood, fecal material or urine. Lab coats that have the MCC Vet Tech logo are available in the MCC Bookstore. Coveralls are available at most retail clothing stores and are similar to the Dickies brand coveralls. Closed-toe, non-slip shoes, such as boots or tennis shoes, must be worn at all times during all labs and field trips. It is strongly advisable to wear boots when handling large animals to minimize foot injuries.

1. Visible tattoos and body jewelry (other than earrings confined to the ear lobes-1 per year) may be required to be covered up or removed, respectively, when in lecture or laboratory sessions while at the veterinary technology facility, and AT ALL TIMES during your practicum. Gauged ears require a plug in each while in any/all program classes, field trips or public events.
2. No loose jewelry or loose-fitting clothing (such as bracelets, scarves) are typically allowed in any lab due to safety concerns.
3. Disruptive hair styles are discouraged. Acceptable hair colors fall under the normal range of natural color.

Personal Grooming Guidelines:

1. Professional appearance when in clinical settings.
2. Good personal hygiene is required.
3. All clothing should be clean and free from wrinkles, stains, ragged hems. Hems and pants should be at least ½" from the floor.
4. Hair should be well groomed and pulled out of face and off shoulders in the laboratory courses.
5. Male students should be freshly shaven or have well-groomed beards, mustaches, and sideburns.
6. Fingernails are to be kept at a length and shape consistent with patient and personal safety. NO artificial nails are allowed.
7. The use of safety goggles or other eye protection may be required in the laboratory classes, and the wearing of exam gloves when handling laboratory specimens, including anatomical specimens, blood, urine and feces, is required.

You must wear closed-toe non-slip shoes at all times for lecture and lab. No sandals, flip-flops, Crocs, etc.

Students may wear the following to class: Jeans (clean with no holes, no rips and no tears), Scrub pants, Dress slacks, Scrub top, MCC Vet Tech Polo shirt or polo shirt, or other shirts deemed appropriate.

Preferred dress for all vet tech classes: Scrub top, Scrub pants or jeans

The following is prohibited and will result in being dismissed from class for the day, being marked as absence, and a grade of 0 (F) for the day: Open toed shoes, Shorts, Capri Pants, Leggings, Short skirt or kilt, T- Shirt (MCC shirts may be considered), Spaghetti strap/Cami-style/Tank tops (Allowed under Scrub top), Sleeveless shirt (such as shirt/t-shirt with the arms cut off), Facial Piercings (one 1 earring allowed in each ear-no lip/nose/tongue or other piercings with jewelry), and Any distractive/suggestive clothing, piercing, or body art.

The Veterinary Technician's Oath

"I solemnly dedicate myself to aiding animals and society by providing excellent care and services for animals, by alleviating animal suffering, and promoting public health. I accept my obligations to practice my profession conscientiously and with sensitivity, adhering to the profession's Code of Ethics, and furthering my knowledge and competence through a commitment to lifelong learning."

*** Click Here for the MCC Academic Integrity Statement**

(www.mclennan.edu/academic-integrity)

The link above will provide you with information about academic integrity, dishonesty, and cheating.

*** Click Here for the MCC Attendance/Absences Policy**

(<https://www.mclennan.edu/highlander-guide/policies.html>)

Click on the link above for the college policies on attendance and absences. Your instructor may have additional guidelines specific to this course.

**** You will need to access each link separately through your Web browser (for example: Mozilla Firefox, Chrome, Microsoft Edge or Safari) to print each link's information.***



ACADEMIC RESOURCES/POLICIES

Accommodations/ADA Statement:

Any student who is a qualified individual with a disability may request reasonable accommodations to assist with providing equal access to educational opportunities. Students should contact the Accommodations Coordinator as soon as possible to provide documentation and make necessary arrangements. Once that process is completed, appropriate verification will be provided to the student and instructor. Please note that instructors are not required to provide classroom accommodations to students until appropriate verification has been provided by the Accommodations Coordinator. For additional information, please visit www.mclennan.edu/disability.

Students with questions or who require assistance with disabilities involving physical, classroom, or testing accommodations should contact:

disabilities@mclennan.edu

254-299-8122

Room 319, Student Services Center

Title IX:

We care about your safety, and value an environment where students and instructors can successfully teach and learn together. If you or someone you know experiences unwelcomed behavior, we are here to help. Individuals who would like to report an incident of sexual misconduct are encouraged to immediately contact the Title IX Coordinator at titleix@mclennan.edu or by calling Dr. Drew Canham (Chief of Staff for Diversity, Equity & Inclusion/Title IX) at (254) 299-8645. Individuals also may contact the MCC Police Department at 299-8911 or the MCC Student Counseling Center at MCC at (254) 299-8210. The MCC Student Counseling Center is a confidential resource for students. Any student or employee may report sexual harassment anonymously by visiting <http://www.lighthouse-services.com/mclennan/>.

Go to McLennan's Title IX webpage at www.mclennan.edu/titleix/. It contains more information about definitions, reporting, confidentiality, resources, and what to do if you or someone you know is a victim of sexual misconduct, gender-based violence or the crimes of rape, acquaintance rape, sexual assault, sexual harassment, stalking, dating violence, or domestic violence.

Student Support/Resources:

MCC provides a variety of services to support student success in the classroom and in your academic pursuits to include counseling, tutors, technology help desk, advising, financial aid, etc. A listing of these and the many other services available to our students is available at <http://www.mclennan.edu/campus-resource-guide/>

College personnel recognize that food, housing, and transportation are essential for student success. If you are having trouble securing these resources or want to explore strategies for balancing life and school, we encourage you to contact a Success Coach by calling (254) 299-8226 or emailing SuccessCoach@mclennan.edu. Students may visit the Completion Center Monday-Friday from 8 a.m.-5 p.m. to schedule a meeting with a Success Coach and receive additional resources and support to help reach academic and personal goals. Paulanne's Pantry (MCC's food pantry) provides free food by appointment to students, faculty and staff based on household size. Text (254) 870-7573 to schedule a pantry appointment. The Completion Center and pantry are located on the Second Floor of the Student Services Center (SSC).

MCC Foundation Emergency Grant Fund:

Unanticipated expenses, such as car repairs, medical bills, housing, or job loss can affect us all. Should an unexpected expense arise, the MCC Foundation has an emergency grant fund that may be able to assist you. Please go to <https://www.mclennan.edu/foundation/scholarships-and-resources/emergencygrant.html> to find out more about the emergency grant. The application can be found at https://www.mclennan.edu/foundation/docs/Emergency_Grant_Application.pdf.

MCC Academic Integrity Statement:

Go to www.mclennan.edu/academic-integrity for information about academic integrity, dishonesty, and cheating.

Minimum System Requirements to Utilize MCC's D2L|Brightspace:

Go to <https://www.mclennan.edu/center-for-teaching-and-learning/Faculty-and-Staff-Commons/requirements.html> for information on the minimum system requirements needed to reliably access your courses in MCC's D2L|Brightspace learning management system.

Minimum Technical Skills:

Students should have basic computer skills, knowledge of word processing software, and a basic understanding of how to use search engines and common web browsers.

Backup Plan for Technology:

In the event MCC's technology systems are down, you will be notified via your MCC student email address. Please note that all assignments and activities will be due on the date specified in the Instructor Plan, unless otherwise noted by the instructor.

Email Policy:

McLennan Community College would like to remind you of the policy (<http://www.mclennan.edu/employees/policy-manual/docs/E-XXXI-B.pdf>) regarding college email. All students, faculty, and staff are encouraged to use their McLennan email addresses when conducting college business.

A student's McLennan email address is the preferred email address that college employees should use for official college information or business. Students are expected to read and, if needed, respond in a timely manner to college emails. For more information about your student email account, go to www.mclennan.edu/student-email.

Instructional Uses of Email:

Faculty members can determine classroom use of email or electronic communications. Faculty should expect and encourage students to check the college email on a regular basis. Faculty should inform students in the course syllabus if another communication method is to be used and of any special or unusual expectations for electronic communications.

If a faculty member prefers not to communicate by email with their students, it should be reflected in the course syllabus and information should be provided for the preferred form of communication.

Email on Mobile Devices:

The College recommends that you set up your mobile device to receive McLennan emails. If you need assistance with set-up, you may email Helpdesk@mclennan.edu for help.

You can find help on the McLennan website about connecting your McLennan email account to your mobile device:

- [Email Setup for iPhones and iPads](https://support.microsoft.com/en-us/office/set-up-an-outlook-account-in-the-ios-mail-app-b2de2161-cc1d-49ef-9ef9-81acd1c8e234?ui=en-us&rs=en-us&ad=us) (<https://support.microsoft.com/en-us/office/set-up-an-outlook-account-in-the-ios-mail-app-b2de2161-cc1d-49ef-9ef9-81acd1c8e234?ui=en-us&rs=en-us&ad=us>)
- [Email Setup for Androids](https://support.microsoft.com/en-us/office/set-up-email-in-android-email-app-71147974-7aca-491b-978a-ab15e360434c?ui=en-us&rs=en-us&ad=us) (<https://support.microsoft.com/en-us/office/set-up-email-in-android-email-app-71147974-7aca-491b-978a-ab15e360434c?ui=en-us&rs=en-us&ad=us>)

Forwarding Emails:

You may forward emails that come to your McLennan address to alternate email addresses; however, the College will not be held responsible for emails forwarded to an alternate address that may be lost or placed in junk or spam filters.

For more helpful information about technology at MCC, go to [MCC's Tech Support Cheat Sheet](#) or email helpdesk@mclennan.edu.

Disclaimer:

The resources and policies listed above are merely for informational purposes and are subject to change without notice or obligation. The College reserves the right to change policies and other requirements in compliance with State and Federal laws. The provisions of this document do not constitute a contract.