



MIDWESTERN STATE UNIVERSITY

*Gunn College of Health Sciences and Human Services
The Shimadzu School of Radiologic Sciences
Bachelor of Science, Radiologic Sciences Program
Course Syllabus - Dr. Rodney Fisher*

RADS 4703 Principles of Computed Tomography

Course Information

| | |
|------------------------|--|
| Name | RADS 4703x10-Principles of Computed Tomography (hybrid) |
| Credit | 3 hours |
| Term | Fall 2022 |
| Dates | August 22, 2022 – December 6, 2022 |
| Time Commitment | You should expect to spend at least 9 hours per week on course material in a 15 week term or 12 hours per week in a 10 week term |
| Prerequisites | None |

Professor

Rodney Fisher, PhD, R.T. (R) (N) (CT) (BD), CNMT

Assistant Professor, Radiologic Sciences

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Phone: (940) 397-4615 **Fax:** (940) 397-4845

Office: Midwestern State University
 3410 Taft Blvd, Centennial Hall 430N
 Wichita Falls, TX 76309

Office hours: Student Specific: Tuesdays 1-3pm, Wednesdays 11am-12pm, and Thursdays 10am-12pm.
 Appointments always take preference over walk-ins. If calling, please email for a time first.

Communicating with the Professor

I prefer email so there is a record of the communication and often I am away from my desk. Phone calls may be answered by email when appropriate. I will respond or at least acknowledge all student communications within five (5) business days. If this time period will be longer because I am out of town or for another reason, a news item will be posted online in D2L for the class. Please always give me the time asked for to respond before repeating your request.

Course Description

This course focuses on computed tomography protocols and procedures, contrast media, physics, sectional anatomy, and patient care. This course meets the 16 hours of structured education required by the American Registry of Radiologic Technologists (ARRT).

Course Objectives

Upon completion of this course, you will:

- Understand and apply best standards in patient care.
- Describe appropriate CT radiation safety practices.
- Discuss dose reduction techniques.
- Identify and define CT procedures.
- Discuss image production including evaluation and archiving.

Teaching Methodology

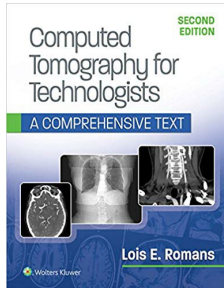
This is a hybrid course which uses a combination of face-to-face instruction along with independent reading assignments; D2L module quizzes; a computed tomography project; and a comprehensive proctored final examination will be used.

Course Materials

Textbooks

Required

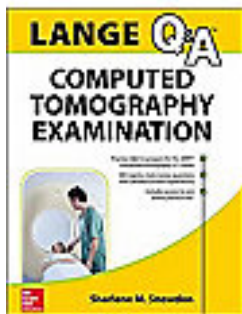
Romans, L.E. (2018). *Computed tomography for technologists: A comprehensive text*. Baltimore, MD: Wolters Kluwer Health – Lippincott Williams & Wilkins. [ISBN 9781496375858]



This book is approximately \$135.00 from the MSU Bookstore.

Recommended

Snowdon, S.M. (2016). *LANGE review: Computed Tomography Examination*. New York, NY: McGraw-Hill Education. (ISBN 9780071843867)



This book is approximately \$65.00 from the MSU Bookstore.

Recommended

MedOne Radiology

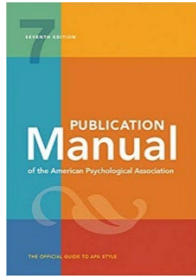


This online resource is free to MSU students. Access MedOne Radiology through the Moffett Library online databases. Log in to the MSU portal and access the Library Resources. Under the [Research Databases](#) tab click on Health Sciences and scroll down to MedOne.

MedOne Radiology is a comprehensive online reference for all medical imaging specialists. It provides extensive case libraries and diagnostic guidance for those in training, and essential references and procedural guidelines for the qualified specialist in clinical practice.

Recommended

American Psychological Association. (2010). Publication manual of the American Psychological Association (7th Ed.) [ISBN 978-1433832161]



This book is approximately \$35.00 from the MSU Bookstore.

Computer Requirements

You need access to an up-to-date Windows- based or Mac computer with an internet connection in this course. Chromebooks will not work. D2L does not work well with Internet Explorer. Please use Chrome or Firefox browsers when working in D2L.

Course Modules

Module 1: Radiographic Physics Review

Module 2: Physics and Instrumentation

Module 3: Patient Care

Module 4: Quality Control and Post Processing

Module 5: Neurologic & Musculoskeletal Anatomy and Imaging

Module 6: Thoracic & Abdominopelvic Anatomy and Imaging

Module 7: Advanced CT Topics

Final Examination

Important Dates

All times are MSU campus time; Schedule subject to change

| Date | Assignment |
|--------------|--|
| August 22 | Class opens All quizzes open Review course syllabus Begin Module 1: Radiographic Physics Review |
| September 6 | Survey Complete by 11:59 pm Introductions due by 11:59 pm Module 1 Quiz due by 11:59 pm |
| September 13 | Module 2 Quiz due by 11:59 pm |
| September 28 | 1 st CT Seminar on campus 1:00 pm – 2:50 pm CE 334 |
| September 27 | CT Project sign-up by 11:59 pm Module 3 Quiz due by 11:59 pm |
| October 11 | Module 4 Quiz due by 11:59 pm |
| October 13 | Presentations for Friday, October 15 due by 11:59 pm in the dropbox |
| October 26 | 2 nd CT Seminar on campus – 12:00 pm – 2:50 pm CE 334 |
| October 18 | Midterm Examination closes at 11:59 pm |
| October 24 | Last day to withdraw with a “W” grade by 4:00 pm campus time Note: withdrawing or otherwise not passing this course will preclude you from taking RADS 4783 in the spring. See your advisor for more information about how this would affect your spring courses. |
| October 25 | Module 5 Quiz due by 11:59 pm |
| November 8 | Module 6 Quiz due by 11:59 pm |
| November 17 | Presentations for Friday, November 20 due by 11:59 pm in the dropbox |
| November 30 | 3 rd CT Seminar on campus – 12:00 pm – 2:50 pm CE 334 |
| November 22 | CT Course Project due by 11:59 pm in the dropbox Module 7 Quiz due by 11:59 pm |
| November 29 | CT Virtual Scenarios Worksheet due by 11:59 pm in the dropbox |
| December 6 | Final Examination closes at 11:59 pm |

Principles of Computed Tomography Assignment Details

Assignments

There will be seven quizzes, one project, one presentation, and one final examination.

- 25 % D2L Module Quizzes (7)
- 10 % CT Course Project
- 5 % Case Presentation at CT Seminar
- 10 % Virtual Scenarios
- 20 % Midterm Examination
- 30 % Comprehensive Final Examination

D2L Module Quizzes (7) 25%

You should complete the reading assignments, answer the chapter objectives, and review the questions at the end of the chapter before attempting the module quizzes.

When you have reviewed a module and is ready for the quiz, you should log into D2L and receive a customized timed module quiz consisting of randomized multiple-choice questions. The Respondus LockDown Browser will be used for all quizzes. Quizzes contain 30 random questions and students will have 30 minutes to complete.

Each quiz may be attempted up to three times. The final score for any module quiz will be the average of all attempts made. It is important to know the module content before attempting the module quizzes since the quizzes are timed. Quiz scores will be available immediately after you submit it for grading.

Each quiz has requirements which must be completed before the quiz will open.

Before the Module 1 quiz can be taken you must complete all of the following:

- New Student Survey must be completed

For subsequent quizzes and the final examination, you must on the previous module quiz:

- Score a 75% or greater on any one attempt; or
- Successfully complete three attempts of the module quiz (the final quiz score will be an average of all attempts)

For example, in order to take the Module 2 quiz, you must either score 75% on any attempt of the Module 1 quiz, or complete three attempts of the Module 1 quiz. In order to take the final examination, you must score 75% on any attempt or complete three attempts of the Module 6 quiz.

If you find a faulty quiz item or believes a quiz question has been scored incorrectly, you should send an email to me that includes the following:

- Module Quiz Number (1-7) or Midterm Examination
- Question stem
- Rationale supporting why your answer is correct
- Include page numbers when referencing the textbook

For example, you cannot send the message: “I think question number ten is wrong on quiz four” because each student gets a quiz of randomly generated test items. I have to know the question stem to find the question in the database. After reviewing the situation, if I think a revision is justified, your quiz score will be revised to reflect the additional points, and the test bank will be updated.

YOU MAY NOT TAKE THE MIDTERM EXAMINATION UNTIL YOU HAVE COMPLETED MODULE 1 – 4 QUIZZES.

YOU MAY NOT TAKE THE FINAL EXAMINATION UNTIL ALL QUIZZES ARE COMPLETED.

NO EXCEPTIONS.

CT Course Project 10%

The course project is designed to give you experience working with CT protocols. In order to perform the CT Clinical Experiences, a student must have permission to perform exams on actual patients from their facility. In addition, some states regulations will not allow distance students to perform assignments at facilities within their state’s borders. When you complete the New Student Survey, you will be able to determine if you can do the CT Experiences Project

There are instructions within the course for both the CT Clinical Experience Project and the Alternate CT Presentation Project.

You must submit one form of the CT Course Project to the appropriate drop box by the scheduled due date.

CT Case Study Presentation 5%

You will take one case study from your project and make a 10-minute presentation that you will deliver during your on-campus seminar. The case you present should be a compelling case study with unusual pathology or findings. Regardless if this is a case you scanned or one you found on the internet, you should discuss it with a CT technologist or a radiologist. Be sure to include their comments in your presentation.

The presentation will cover all the categories in the template:

- Exam History
- Images/Video Links
- Pathology Description
- Imaging Parameters
- Case Discussion Including the Technologist or Radiologist Comments

Be sure you cover all the elements in each category for full credit.

Upload your completed presentation to the dropbox no later than 48 hours before your presentation is to be given during the on-campus seminar.

Virtual Scenarios 10%

There are three virtual scenarios for you to complete. Allow for several hours work on each scenario. After all three scenarios are completed, there is one worksheet to turn into the appropriate dropbox. You should complete the appropriate section of the worksheet after completing each scenario.

Before the completed worksheet may be uploaded, you is asked to complete an anonymous survey. This survey will only be used for research purposes and has no effect upon your grade. The dropbox will open after the survey is completed.

The scenarios are designed to enhance the learning environment after modules 1-3 in the course have been completed. The scenarios will not open until September 21 to give students time to complete modules 1-3 prior to beginning the scenarios.

Complete instructions about the scenarios may be found in the course.

Midterm Examination 20%

Module 1 – 4 quizzes must be completed before the Midterm Examination is taken.

The midterm examination must be completed by October 18, 2022 11:59 pm. Incomplete midterm exams will be scored a zero and you may fail the course. If you know you will miss a due date because of extenuating circumstances, you should contact me so your situation can be dealt with on an individual basis. Acceptance of an extenuating circumstance is at my discretion. Since the midterm examination is open for one month, only the most extraordinary of circumstances will be considered.

Exam Format

- The midterm examination consists of 50 random multiple-choice questions.
- The exam is a timed, 45 minute test.
- To prepare for this exam: The midterm has been derived from Modules 1-4 of this course. Review all of your quizzes and your textbook chapters. Reinforcing study materials include the PowerPoint presentations.
- The midterm examination uses Respondus LockDown Browser + Webcam

Comprehensive Final Examination 30%

All quizzes and projects must be completed before the Final Exam is taken.

The final examination must be completed by December 6, 2022 11:59 pm. Incomplete final exams will be scored a zero and you will fail the course. If you know you will miss a due date because of extenuating circumstances, you should contact me so your situation can be dealt with on an individual basis. Acceptance of an extenuating circumstance is at my discretion. Since the final examination is open for one month, only the most extraordinary of circumstances will be considered.

You are required to have a webcam and microphone for the Final Exam. The examination uses the Respondus LockDown Browser + Webcam

Exam Format

- The proctored comprehensive final examination is closed book, and consists of 100 random multiple-choice questions.
- The exam is a timed, 1 hour (60 min) test.
- The final exam will be administered using Desire2Learn (D2L) and ProctorU online proctoring service.
- To prepare for this exam: The final has been derived from the entire content of this course. Review all of your quizzes and your textbook chapters. Reinforcing study materials include the PowerPoint presentations.
- The midterm examination uses Respondus LockDown Browser + Webcam

What to Bring

- You may bring one blank sheet of paper for use as scratch paper.
- No smart watches or any other electronic devices will be allowed.
- You are not allowed to print the final exam.
- No textbooks or notes may be used.

Technical Problems

- *All times will be documented*
- The exam must be taken within the scheduled test dates, regardless of any technical issues that may arise. This is your responsibility.
- Late submissions will not be accepted.
- My suggestion is to take the exam during the first days it is available (listed below) to avoid receiving a zero due to technical issues.
- See the [Technical Difficulties](#) section below for help options.

All course requirements must be completed before a grade is awarded. You must complete the final and all course work by the dates published in the course schedule (below).

Note: All assignments received are considered complete and will be graded as such. Any decision made by me is final and there will be no further changes made.

Evaluation

Grade Distribution

- 25% D2L Module Quizzes (7)
- 10% CT Course Project
- 5% CT Case Presentation at CT Seminar
- 10% Virtual Scenarios
- 20% Midterm Examination
- 30% Comprehensive Final Examination

Grade Scale

A=100-90

B=89-80

C=79-70

D=69-60

F=59 and below

Grading Cycle

All assignments are graded together as a group to maintain a higher level of consistency. Grading begins on the first business day after a due date, outside of university holidays and professional meetings, and is typically completed before the next due date. You may track your progress through the Gradebook in D2L.

Feedback

Feedback varies throughout the course. The News section of the course is where I will send messages to the entire class. It is best to set up your D2L account to receive an email notification (to the email of your choice) when News items are posted, so you do not miss important updates.

1. Click the down arrow in the News section on the 4703 course home page
2. Select Notifications
3. Check the box next to "News - new item available" and then check any other boxes you wish to receive an email notification from.
4. Check the email address you wish to send email notifications. If you need to change this, select "change your email settings" and enter the new email address. This email address should be an email address you check frequently.

You are welcome to email questions to clarify concepts or look for further explanations. If I come across repeated questions I will provide feedback or supplementary resources in the News section of the course so that everyone can benefit from it. You might look there first, because your question may be located there.

Late Work

Due Dates

Most assignments are due on Tuesdays except for the last week of class (see Important Course Dates above). Assignments must be submitted by 23:59 (11:59 pm) Central time, on scheduled due dates in the course schedule. If you fail to meet a deadline you will receive no credit for the assignment not submitted on time.

Emergency Extension

If you have a major event such as a death in the family, illness, hospitalization, or other extenuating circumstances, email me at rodney.fisher@msutexas.edu as soon as possible and on or before the scheduled due date. I will grant extensions on an individual basis. If an extension is granted, typically the following guidelines will be followed.

1. The assignment may be up to one week late and still qualify for full credit. After the one-week extension has passed, ten percent per day can be deducted until the assignment is no longer worth any credit.
2. When the assignment is completed, you must send a follow-up email to let me know it is ready to grade. Failure to notify me could lead to a grade of zero.

3. **Avoid End of Course Late Work:** Please note there are University deadlines for submitting grades at the end of the semester. All work must be turned in at least a week before grades must be posted.

Final Course Grade

A final course score of 70% is required to pass this course. Letter grades of “D” or “F” cannot be used for graduation and will require the course be repeated or an approved course substitution according to the current radiology program policies.

Technical Difficulties

On occasion, you may experience problems with accessing D2L, accessing class files located within D2L, connecting with your internet service, or you may encounter other computer related problems. Make me aware of a technical problem as soon as possible. If a problem occurs on our end, such as D2L failure, then a due date extension will typically be granted. **However, keep in mind it is your responsibility to have (or have access to) a working computer in this class. Assignments and tests are due by the due date, and personal computer technical difficulties will not be considered reason for me to allow you extra time to submit assignments, tests, or discussion postings.**

Dropbox assignments that can be attached in an email should be emailed to me as soon as a problem is encountered. Failure to do so may result in points being lost, regardless of connection issues.

For help options:

- For D2L issues go online go to the [Distance Education Helpdesk](#)
- By phone call the Distance Education office at 940-397-4868 between 8am and 5pm.
- Use the D2L help link in D2L.
- Contact me.
- For other computer access issues, go online to the MSU [Information Technology Website](#).

Attendance

This is a hybrid course which means part of the instruction is online and part of the instruction is face-to-face CT Seminars held three times a semester. Attendance is mandatory for the CT seminars. Absence from any seminar will result in a 5% deduction from the semester grade (1/2 letter grade deduction), and a 1% deduction for tardiness (more than 10 minutes late). If you must miss a CT seminar, you must receive my approval prior to the day of Seminar. You should be vigilant in logging in to D2L. You should expect to log in at least 3 times per week. Regular checks will ensure that messages from me are received in a timely manner. This course is on a schedule that will be strictly adhered to. See the Important Dates section above for specific due dates.

Requesting a Withdrawal

The last opportunity to drop this course with a grade of “W” is 4:00pm on October 24, 2022. All withdrawals **must be initiated by you**. After this date dropping the course results in a grade of “F”.

In an emergency or extenuating circumstance, you may request a grade of “Incomplete” before grades are submitted. If I grant the “Incomplete,” you have until thirty (30) days after the beginning of the next long semester to complete the course requirements. If you do not complete the course requirements within the deadline, the grade of “Incomplete” will automatically convert into a grade of “F”.

Special Needs

In accordance with Section 504 of the Federal Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990, Midwestern State University endeavors to make reasonable adjustments in its policies, practices, services, and facilities to ensure equal opportunity for qualified persons with disabilities to participate in all educational programs and activities.

The Office of Disability Services (ODS) provides information and assistance, arranges accommodations, and serves as a liaison for students, professors, and staff. The ODS has assistive devices such as books on tape, recorders, and adaptive software which can be loaned to qualified individuals. A student/employee who seeks accommodations based on disability must register with the Office of Disability Services in the Counseling Center; Clark Student Center Room 108. Documentation of disability from a competent professional is required.

Individuals with grievances related to discrimination or lack of accommodation based on a disability are encouraged to resolve the problem directly with the area involved. If the matter remains unresolved, the Office of Disability Services for resolution will provide advice and/or assistance. The grievance procedure may be found in the Student Handbook and Activities Calendar.

The Director of the Counseling Center serves as the ADA Coordinator and may be contacted at (940)397-4618, TDD (940)397-4515, or 3410 Taft Blvd., Clark Student Center Room 108.

Administrative Process

Unresolved issues related to this course should be first addressed between the student and the course professor. If there is no resolution, students must follow this sequence:

1. Department Chair – Dr. Beth Vealé (940-397-4575)
2. College Dean - Dr. Jeff Killion (940-397-4594)
3. Dean of Students – Matthew Park (940-397-7500)

Honor System

RADS 4703 adheres to the [MSU Code of Conduct](#).

In particular, academic dishonesty, however small, creates a breach in academic integrity. Your participation in this course comes with the expectation that your work will be completed in full observance of the MSU Code of Student Conduct. You should consult the current Student Handbook for answers to any questions about the code.

All components of RADS 4703 are designed to represent the efforts of each student individually and are NOT to be shared, copied, or plagiarized from other sources. When you submit your efforts for grading, you are attesting you have abided by this rule.

An online plagiarism service may be used in this course. Student assignments may be uploaded to the service for identification of similarities to other student papers and published works.

Cheating includes, but is not limited to

- Use of any unauthorized assistance in taking quizzes, tests, or examinations;
- Dependence upon the aid of sources beyond those authorized by the professor in writing papers, preparing reports, solving problems, or completing other assignments; or

- The acquisition of tests or other academic materials belonging to the university faculty or staff without permission.

Plagiarism includes, but is not limited to

- The use of, by paraphrase or direct quotation without correct citation in the text and in the reference list,
- The published or unpublished works of another person.
- You may NOT submit papers and assignments that you have previously submitted for this or any other course.
- The use of materials generated by agencies engaged in "selling" term papers is also plagiarism.

Academic dishonesty (cheating, plagiarism, etc.) will not be tolerated in this class. Whenever you are unsure of whether a particular situation will be interpreted as academic dishonesty, you should ask me for clarification. If you are guilty of academic dishonesty, a grade of zero (0) will be given for the quiz, assignment, etc. If the plagiarism is egregious, you may fail the course and could be dismissed from the program. Cases may also be referred to the Dean of Students for possible dismissal from the university.

You are encouraged to review the tutorials and suggested websites for more information about plagiarism. If you have any questions about what constitutes plagiarism, please consult:

- The [University Academic Dishonesty Policy](#)
- The website [Plagiarism.Org](#), or
- The professor

Please Note

By enrolling in this course, you expressly grants MSU a "limited right" in all intellectual property created by you for the purpose of this course. The "limited right" shall include, but shall not be limited to the right to reproduce your work/ project in order to verify originality and authenticity, and for educational purposes. Specifically, faculty may submit student papers and assignments to an external agency to verify originality and authenticity, and to detect for plagiarism.

Campus Carry / Active Shooter

Campus Carry

Effective August 1, 2016, the Campus Carry law (Senate Bill 11) allows those licensed individuals to carry a concealed handgun in buildings on public university campuses, except in locations the University establishes has prohibited. The new Constitutional Carry law does not change this process. Concealed carry still requires a License to Carry permit, and openly carrying handguns is not allowed on college campuses. For more information, visit [Campus Carry](#).

Active Shooter

The safety and security of our campus is the responsibility of everyone in our community. Each of us has an obligation to be prepared to appropriately respond to threats to our campus, such as an active aggressor. Please review the information provided by MSU Police Department regarding the options and strategies we can all use to stay safe during difficult situations. For more information, visit [Safety / Emergency Procedures](#)