



Midwestern State University

Robert D. & Carol Gunn College of Health
Sciences & Human Services
The Shimadzu School of Radiologic Sciences

**RADS 5152- Introduction to Advanced
Radiologic Practice**

Course Number: RADS 5152 2 credits **Spring 2025**
Course Title: Introduction to Advanced Radiologic Practice

Professor

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In-office student hours: Tuesday 9:00 a.m.–12:00 p.m.,
 Wednesday 9:00 a.m.– 4:00 p.m.,
 Thursday 9:00 a.m.– 12:00 p.m.

Phone and virtual meetings via Zoom are always available by appointment.

Course Overview

This course introduces students to the role of the radiologist assistant in clinical practice. This course prepares the radiologist assistant student to understand and apply appropriate medical imaging clinical pathways, advanced modalities, and performance improvement. This course focuses on advanced radiologic procedures, sterile technique, fluoroscopic operation and radiation safety, radiopharmaceutical safety, and ultrasound operation.

Course Objectives

Upon completion of this course, you will be able to:

- Describe basic ultrasound operation and modes.
- Describe and identify basic MRI sequences, MR safety, and post-processing techniques.
- Describe and identify basic CT protocols and post-processing techniques.
- Demonstrate fluoroscopic operation and radiation safety techniques.
- Describe proper radiopharmaceutical handling, administration, and disposal.
- Demonstrate proper sterile technique, including, gowning, gloving, sterile tray preparation, and equipment manipulation.

- Describe different types of anesthesia and anesthetics used in radiologic procedures.
- Describe and demonstrate different suturing equipment, equipment manipulation, and suturing techniques.
- Demonstrate proper nasogastric tube insertion, non-coring needle insertion, Foley catheter insertion, and IV catheter placement.
- Describe common indications, contraindications, and performance of advanced radiologic procedures.
- Discuss considerations for ACR appropriateness criteria and considerations for different clinical pathways in patient care.

Teaching Strategies

Independent reading assignments, Desire2Learn (D2L) modules, Open book module quizzes, written assignments, case study presentations, video assignments, and class discussions are used in this course.

Course Materials

Textbooks- Required

Dehn, R.W. & Asprey, D.P. (2021). *Essential clinical procedures* (4th ed.) Elsevier Saunders. [ISBN 978-0323624671] \$26.99 and up

Supplies- Required

Suture Tutor Plus Hands-on Kit, Light, Limbs and Things SKU:STP-Pro-Com Available at <https://limbsandthings.com/us/products/stpprocom/stp-pro-com-suture-tutor-complete-single-user?cat=procedures&subcat=suturing>
\$115.00

Microsoft Office

Midwestern State University offers Office 365 to all students. Instructions on how to access this free software can be located at [Office 365 Education](#)

Computer Requirements

You need access to an up-to-date computer, webcam, and microphone with an internet connection for this course. Use a different browser when working in Brightspace Desire2Learn (D2L). The recommended browsers for D2L are Google Chrome, Mozilla Firefox, and Safari. Other browsers may be incompatible with D2L.

Course Requirements

To succeed in this course, you must:

- Complete reading and/or module assignments.

- Successfully complete the required online quizzes
- Successfully complete discussion posts
- Meet all submission deadlines.

Communication

Communication with the Instructor

Communication will be through your Midwestern State University email account. An email account is created for every MSU student. If you have not accessed this account yet, please do so by logging into the Portal and clicking the student email account icon located in the Portal. You have the option to have any messages sent here to be forwarded to the email account of your choice.

The instructor will respond or at least acknowledge email messages from students within a maximum of five (5) business days when MSU is in session. Beyond standard university holidays and breaks, the instructor will notify you of any extended periods when email contact is not practical (professional meetings, etc.). When emailing the instructor, please include your full name, course and section number, and a thorough explanation in your message. This will help expedite your request or needs.

You should also periodically check the 'News' section within D2L for course updates and other important information.

Behavioral Expectations and "Netiquette"

Behavioral Expectations

All students are expected to help create an environment conducive to effective teaching and learning for all participants. Behavior that disrupts teaching and learning is unacceptable; accordingly, all face-to-face or online interaction should be civilized, respectful, and relevant to the topic. Diverse opinions and engaging argumentation are critical to the higher learning endeavor, but inappropriate behavior that disrespects others or inhibits others from learning may result in sanctions, including but not limited to the removal from the classroom and/or the course. Serious or habitual offenses may result in a referral to the Radiologic Sciences Department Chair, the College Dean, or the Dean of Students.

Disruptive behaviors include:

- offensive comments
- loud and/or frequent side conversations
- dominating classroom discussions
- frequently interrupting others
- aggressively challenging others

- name calling (attacking the person)
- appearing under the influence of drugs or alcohol

Netiquette

When communicating through a digital environment (e.g. email, discussion boards), please use proper netiquette for your communication. The following guidelines will help you to communicate effectively.

- Don't say things that you wouldn't say in a face-to-face environment or any public place.
- Don't share confidential information.
- Use the subject line to identify the content of the message.
- Stay up to date on forum postings by reading them regularly.
- Always comply with copyright by citing your references when posting online content.
- Use individual e-mail for messages to individuals rather than tying up the group list.
- Electronic communication does not provide visual cues, such as smiles or frowns that face-to-face communication allows. Therefore, humor and/or sarcasm in a written text might be misunderstood and interpreted as rude or inflammatory in the online environment. Choose your words carefully to avoid hurting or angering anyone. Should emotions become inflamed, do not promote anger. Take a cooling down period, perhaps overnight, before you engage in the online activity again.
- Avoid using all capital letters in your text. This is considered 'shouting' in the online classroom.
- Aim for clarity and readability in your text.
- Use proper English and remember to spell-check.
- If you do not understand the assignment's directions or the posts of your classmates, don't be afraid to ask for clarification.

Academic Integrity

RADS 5152 adheres to the [MSU Code of Conduct](#).

In particular, however small, academic dishonesty breaches 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 5152 are designed to represent the efforts of each student individually and are NOT to be shared, copied, or plagiarized from other sources. Therefore, when you submit your efforts for grading, you are attesting you have abided by this rule.

An online plagiarism and artificial intelligence screening service may be used in this course. Student assignments may be uploaded to the service to identify similarities to other student papers and published works and to detect AI-generated work.

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

Artificial Intelligence (AI)-Declaration of Generative AI in Academic Writing

For all writing assignments, the student will not use generative artificial intelligence (AI) to construct the content of the assignment. Using AI generators as a tool is not “cheating” but using AI generators for assignments and then submitting the output as your own work without crediting the source is plagiarism. AI-assisted technologies should only be used to improve readability and language. If used, it is the responsibility of the student to carefully review and edit this content, as AI can generate incorrect, incomplete, or biased information. Using these technologies requires human oversight and control. Additionally, AI and AI-assisted technologies should not be listed as an author or co-author or cited as an author. If the student uses AI-assisted technologies, a disclosure must appear at the end of the document in a separate section before the references, using the following format. Without proper declaration, the assignment may be subject to a grade of zero or failure of the course, depending on the severity of the incident.

Declaration of Generative AI and AI-Assisted Technologies in the Writing Process

Statement: During the preparation of this work the author(s) used [NAME TOOL / SERVICE] in order to [REASON]. After using this tool/service, the author(s) reviewed and edited the content as needed and take(s) full responsibility for the content.

Academic dishonesty will not be tolerated in this class. When unsure whether a situation will be interpreted as academic dishonesty, you should ask your professor for clarification.

If you are guilty of academic dishonesty, a grade of zero (0) will be given for the quiz, assignment, etc. Cases may also be referred to the Dean of Students for possible dismissal from the University. ***If a student is guilty of falsification of clinical documentation or evaluation, they will be immediately dismissed from the RA program.***

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
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Evaluation

Grade distribution

- 35% Module discussions
- 35% Module quizzes
- 15% Post-processing case study
- 15% Suturing video

Grade Scale

A = 100 - 90

B = 89 - 80

C = 79 - 70

D = 69 - 60

F = 59 and below

Final grades are rounded (Ex. 89.5 is rounded to 90 or an A; 89.4 is not rounded). Individual quizzes and/or assignments are not rounded.

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. Students may track your progress through the Gradebook in D2L.

Late Work and Extra Credit

Due Dates.

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 (0) credit** for the assignment not submitted on time. Assignments are graded as **complete** after the due date.

Emergency Extension. If you have a major event such as a death in the family, illness, hospitalization, or other extenuating circumstances, email the instructor as soon as possible and on or before the scheduled due date. The instructor will grant extensions on an individual basis.

Extra credit:

You have what it takes to succeed in this course by studying and communicating with your instructor; therefore, extra credit is **not** awarded in this course.

Attendance

This is a hybrid distance education course. Because of the unique distance learning format for this program, you must be present and on-time for the on-campus seminar or required Zoom sessions to receive a passing grade. There are no exceptions to this policy. If you are tardy for class, you risk a grade reduction or dismissal from the class. The instructor will contact you in case of campus closures or other unforeseen events to arrange a virtual class session.

Regular logins to D2L will benefit you in several ways, such as it will ensure that messages from the professor are received promptly, you do not miss important information, and you do not miss due dates. You should expect to log in at least three (3) times per week. See the Course Schedule section for specific due dates.

Course Organization

Module 1: Basic Procedures and Techniques

Module 2: Anesthesia, Sterile Technique, and Suturing

Module 3: Fluoroscopic operation; Radiation Safety, MRI Safety; Advanced Modalities

Module 4: Gastrointestinal Exams

Module 5: Urography; Drainage; Therapeutic Fluid Removal

Module 6: Pulmonary Studies; Neurologic Procedures; Non-Oral Contrast Studies

Module 7: Injections and Biopsies; PICC Line

Assessments

Module Quizzes- 35%

To assess your understanding of the information in the modules, you will have a quiz. Quiz questions will be from information provided in the modules. Be sure to read the content, practice applying and using the information, and/or watch associated video presentations. When you have reviewed a module and are ready for the quiz, you will log on to D2L and receive a customized timed module quiz consisting of randomized multiple-choice questions. It is important to know the module content before attempting the module quizzes because they are **timed**.

Module Discussions- 35%

To facilitate discussion among students and communicate differences in procedural techniques used in medical imaging procedures, you will discuss items related to the learning modules on the discussion board. The instructions are found in the modules and in the discussion board area of the course. The student will make an initial post and respond to 2 other students' posts by the date in the syllabus. Students cannot see other posts until they post their initial discussion. The initial post is 50% and the 2 response posts are 25% of the discussion grade.

Modules 4 – 7 will have Discussion Board requirements. Please see the instructions in the course. Module 7 Discussion Board does not require a response post.

Suturing Video- 15%

To assess your suturing skills learned in the course, you will record a video demonstrating specific suturing skills. Use the Suture Tutor Kit to make the video. Make sure for the first part of the video the instructor can see your face.

- Explain the materials needed to perform sutures and which equipment you would choose to suture a port-a-cath pocket and to secure a central line.
- Explain how you would prep the area with povidone-iodine (Betadine) and with a chlorhexidine scrub.

Move the camera to show the Suture Tutor and your hands. Please wear gloves when performing the suturing and be safe.

- Demonstrate how to properly hold a scalpel and make a 2–3-inch incision.
- Demonstrate how to properly grasp the suture needle with the needle holders.
- Demonstrate how to properly hold the needle holders.
- Demonstrate an interrupted stitch with at least 4 stitches.
- Demonstrate a subcuticular stitch with a buried knot for the length of the incision.
- Demonstrate either a vertical mattress stitch **OR** a horizontal mattress stitch.
- Discuss how you would dress the sutured area.

- Explain and demonstrate proper suture removal.
- Discuss the directions you would give the patient after suture insertion for both absorbable and non-absorbable sutures.
- Discuss the directions you would give the patient after suture removal.

Please discard all sharps properly. Upload your video in the assignments area by the due date in the course syllabus.

Post-Processing Case Study– 15%

To assess your understanding of post-processing techniques and to become familiar with case study presentations used throughout the RA program, you will formulate one case study during the semester. **The case study must be on a pathology seen on an MRI or CT Post-Processing examination.** You will post your selection on the discussion board for the instructor’s approval. Students may not have the same topic. The selection of the topic is on a first-come-first-served basis.

You will present a 10 to 15-minute PowerPoint presentation covering all the items in the case study checklist found in the course during your second on-campus seminar days.

You will upload the PowerPoint slide deck to the appropriate dropbox in the course. All patient information must be removed as per HIPAA policy. There should also be in-text citations and a reference list in APA format at the end of the presentation. You will be assessed using a rubric found in the course.

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

See the Course Schedule at the end of this syllabus for all deadlines.

RADS 5152 Introduction to Advanced Radiologic Practice	
Spring 2025 Course Schedule	
Date	Activity <i>*Note: These are Central Times*</i>
January 21	Classes Begin
February 1-2	On campus weekend
Monday, February 10	Module 1 Quiz due by 11:59 p.m.
Monday, February 24	Module 2 Suture Video due by 11:59 p.m.

Monday, March 3	Module 2 Quiz due by 11:59 p.m.
March 8-16	Spring Break
Monday, March 24	Module 3 Quiz due by 11:59 p.m.
Monday, March 24	Post-Processing Case Study Topic due to Discussion Board due by 11:59 p.m.
Monday, March 31	Module 4 Discussion Initial Post due by 11:59 p.m.
Thursday, April 3	Module 4 Response Posts due by 11:59 p.m.
Monday, April 14	Module 5 Discussion Initial Post due by 11:59 p.m.
Thursday, April 17	Module 5 Response Posts due by 11:59 p.m.
April 17- 20	Easter Break
Monday, April 28	Module 6 Discussion Initial Post due by 11:59 p.m.
Wednesday, April 30 4:00 p.m. CST	Last day to withdraw with a "W" in the class
Thursday, May 1	Module 6 Response Posts due by 11:59 p.m.
Thursday, May 1	Post Processing Case study presentation due to dropbox due by 11:59 p.m.
May 3- 4	On campus weekend
Wednesday, May 14	Module 7 Discussion Post due by 11:59 p.m.

Special Needs

Following 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, instructors, and staff. A student/employee who seeks accommodations based on disability must register with the [Office of Disability Support Services](#), 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, advice and/or assistance will be provided by the [Office of Disability Support Services](#) for resolution. The grievance procedure may be found in the [Student Handbook](#).

The ADA Coordinator may be contacted at (940) 397-4140, or 3410 Taft Blvd., Clark Student Center Room 168.

The Use of Auxiliary Aids and Intermediaries

Students with documented disabilities are provided with accommodations in the Program, which may include involvement of an intermediary or auxiliary aid. No disability can be reasonably accommodated with an aid or intermediary that provides cognitive support, substitutes for essential clinical skills, or supplements clinical and ethical judgment. Thus, accommodations **cannot** eliminate essential program elements or fundamentally alter the RA program curriculum.

Administrative Process

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

1. Interim Department Chair – Dr. Lynette Watts (940-397-4883)
2. College Dean - Dr. Jeff Killion (940-397-4594)
3. Dean of Students – Matthew Park (940-397-7500)

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. Inform the instructor 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 for this class. Assignments and quizzes are due by the due date, and personal computer technical difficulties will not be considered a reason for the instructor to allow students extra time to submit assignments, quizzes, or discussion postings.

Dropbox assignments that can be attached in an email should be emailed to the instructor 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 8:00 a.m. and 5:00 p.m. CST.
- Use the D2L help link in D2L.
- Contact the instructor.
- For other computer access issues, go online to the [MSU Information Technology Website](#).

Campus Carry Policy

Senate Bill 11 passed by the 84th Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, following state law. For more information regarding campus carry, please refer to the University's webpage at [Campus Carry](#)

The instructor reserves the right to make changes to the syllabus, including assignment due dates, when unforeseen circumstances occur. These changes will be announced as early as possible so that students can adjust their schedules.