



## Course Syllabus: RADS 4743 MRI

Robert D. & Carol Gunn College of Health Sciences & Human Services

Department of Radiologic Sciences

### Course Information

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Information	Description
Name	RADS 4743x11-MRI (online)
Credit	3 hours
Term	Fall 2022
Dates	August 22-December 13, 2022
Time Commitment	Students should expect to spend at least 9 hours per week on course material (15-week term)
Prerequisites	Acceptance into the BSRT, BSRS, or MRI Certification Program

### Professor

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**Kimberly Onstott EdD, RT(R)(CT)(MR), MRSO(MRSC™) Assistant Professor, Radiologic Sciences**

**Email:** [kimberly.onstott@msutexas.edu](mailto:kimberly.onstott@msutexas.edu)

Use this format in the subject line: 4743\_your last name\_topic of the message

Email is the best way to reach me. If I haven't responded within 72 hours, please email me again.

**Phone:** (940) 397-4332

**Office location:** Midwestern State University

3410 Taft Blvd

Centennial Hall 430Q

Wichita Falls, TX 76309

**Office hours:** Tuesdays 12:00-13:00, Wednesdays 12:00-15:00, and Thursdays 12:00-13:00. Please make an appointment by email to be sure I am not meeting with another student at the same time. Zoom meetings, phone meetings, and any additional hours can be arranged by email request.

## Communicating with the Professor

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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 typically respond to emails within 72 hours or sooner. If you do not hear from me within 72 hours, please email me again to be sure I received your email. If this time is 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 to respond before repeating your request.

Include the format below for your email subject line so I can quickly search for particular course questions and answers.

4743\_your last name\_topic of message

Example: 4743\_Smith\_Final Exam question

When there is a need to contact a student, the professor will use the student's MSU email account. The professor is not responsible for sending emails to any other email account (set up your email to forward messages to an email you often check to avoid potentially missing any correspondence). Likewise, faculty members will not be responsible for keeping up with other students' email addresses. If you have not established this account or you need help forwarding messages, do so as soon as possible by contacting [information systems](#).

## Course Description

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This course explores the basic physical and technical principles of MRI scanning. Related clinical applications, system components, image characteristics, quality control methods, limitations, and future developments are introduced.

## Course Objectives

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Radiologic technologists interested in magnetic resonance imaging should demonstrate increased awareness of MRI safety, recognition of MRI instrumentation and coils, and basic knowledge of MRI physical principles and data acquisition. In addition, this course provides opportunities to become familiar with various MRI theories and concepts used in the MRI suite.

Upon completion of this course, the student will:

- Recognize radiofrequency coils and other components of the MRI scanner.
- Define the parts of the atom and explain how the parts of the atom are used in MRI.
- Describe the effect of intrinsic and extrinsic parameters on MRI scanning, the patient, and image quality.
- Differentiate between pulse sequences and identify the strengths and weaknesses of each one.

## Teaching Methodology

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Independent reading assignments, Desire2Learn (D2L) modules, Discussion boards, PowerPoint presentations, two course projects, Open book module quizzes, and a Closed book proctored final exam are used in this course.

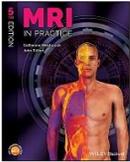
## Course Materials

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### Textbooks

#### Required

Westbrook, C., Roth, C.K., & Talbot, J. (2019). *MRI in Practice*. (5<sup>th</sup> Ed.). Oxford: Blackwell Publishers. [ISBN-13: 978-1119391968 or ISBN-10: 9781119391968] \*Access code not needed, but recommended\* (\$28.70+)



#### Recommended

MedOne Radiology (Free to MSU students)



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. Then, 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, diagnostic guidance for those in training, and essential references and procedural guidelines for the qualified specialist in clinical practice.

#### Recommended

American Psychological Association. (2019). *Publication manual of the American Psychological Association* (7<sup>th</sup> ed.). Washington, DC: Author. [ISBN 978-1433832161]. (\$14.00+)



### Computer Requirements

You need access to an up-to-date computer with an internet connection in this course. D2L does not work well with Internet Explorer. Use a different browser when working in D2L. Also, Chromebooks will not work. Only Word documents will be submitted in this course. If using a MAC, documents can be saved as Word files. Video: [How to save Apple Pages document as Microsoft Word file \(.doc & .docx\)](#)

### Proctor Specifications

- Web Camera 640x480 resolution minimum, 1280x720 resolution recommended.
- PC Users: A well-working computer running Windows Vista or higher (Windows 10 S is not supported).
- Mac Users: A well-working computer running Mac OS X 10.5 or higher. Mac OS X 10.10 Yosemite recommended
- A reliable high-speed internet connection

- minimum download .768 Mbps
- minimum upload .384 Mbps
- A functioning microphone (sometimes web cameras have built-in microphones).
- One of the following compatible web browsers:
  - Google Chrome (preferred)
  - Mozilla Firefox
  - Safari
- The following plugins for your web camera:
  - Adobe Flash Player v12
  - Adobe Shockwave player

Detailed instructions for ProctorU are in the RADS 4743 D2L course shell under the section labeled Final Examination.

**Additional Resources (not required)**

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If you are studying for the MRI Registry, these resources might be helpful:

**Textbook**



Review Questions for MRI Carolyn Kaut Roth, William Faulkner Wiley- Blackwell; 2nd ed. 2013 (\$50.00+)

**Online**

[ARRT's MRI certification page](#) provides details about MRI certification eligibility, including education, ethics, and examination requirements.

[ACR Manual on MR Safety: 2020](#)

[MRI Safety-ACR Manual on Contrast Media: 2022](#)

**Assignments**

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See more detailed descriptions of each at the end of this syllabus.

**Important Dates (all times are campus time CST)**

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Date	Assignment
<b>August 22</b>	Class opens Review course syllabus Modules 1-4 are available Quizzes 1-4 available until October 4 at 23:59
<b>August 30</b>	Introductions in Discussion Board due by 23:59
<b>August 30</b>	Introductions due by 23:59

<b>September 6</b>	Introductions 2 replies due by 23:59
<b>September 6</b>	Presentation Topic
<b>September 27</b>	MRI Question Discussion-original post due by 23:59
<b>September 27</b>	Modules 5-12 open
<b>October 4</b>	Quizzes 1-4 are due by 23:59
<b>October 11</b>	MRI Question Discussion-2 replies by 23:59
<b>October 24</b>	The last day to withdraw with a "W" grade by 4:00 pm campus time
<b>October 25</b>	Presentation Project-uploaded to Discussion Board and Dropbox by 23:59
<b>November 8</b>	Presentation Project Discussions- 2 replies by 23:59
<b>November 15</b>	Virtual Laboratory Project to Dropbox by 23:59
<b>November 15</b>	Clinical Experiences Project to Dropbox by 23:59
<b>November 22</b>	All quizzes close at 23:59
<b>November 22- December 6</b>	Closed Book Proctored Final Exam The exam must be completed by 23:59 on December 6 (2 hours, multiple-choice format and short answer, all quizzes and projects must be complete before taking the final)

## Course Modules

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<b>Module</b>	<b>Title</b>
Module 1	Chapter 1-Basic Principles
Module 2	Chapter 10-MRI Safety
Module 3	ACR Contrast Manual-Contrast agents in MRI
Module 4	Chapter 2-Image Weighting and Contrast
Module 5	Chapter 3 & 4 - Pulse sequences
Module 6	Chapter 5, 6, & 7 - Encoding and Image Information
Module 7	Chapter 6 & 7 - Parameters and Trade-offs
Module 8	Chapter 8 - Artifacts and their compensation
Module 9	Chapter 9 - Instrumentation and Equipment
Module 10	Projects
Module 13	Wrapping up

## Evaluation

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### Grade Distribution

- 15% Module Quizzes
- 15% Presentation Project
- 15 % MRI Clinical Experiences Project
- 15% Virtual Scenarios Assignment
- 10% Discussion board postings and responses
- 30% Comprehensive Final Exam (Proctored with ProctorU)

### 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 critical updates.

1. Click the down arrow in the News section on the 4743 course home page
2. Select Notifications
3. Check the email address you wish to send email notifications to. 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.
4. If you want to receive these updates on your mobile, select "Register your mobile"
5. Check the box next to "News - new item available" and then check any other boxes you wish to receive an email notification from.

You are welcome to email questions to clarify concepts or look for further explanations. If I encounter 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 questions and answers may be located there.

### Late Work

### Due Dates

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

### Progression

The student may progress through this course at their leisure within the time constraints set forth by the end dates and due dates in the course schedule. However, the student must consult with the professor if an assignment due date has been missed.

### Emergency Extension

If you have a significant event such as a death in the family, illness, hospitalization, or other extenuating circumstances, email the professor at [kimberly.onstott@msutexas.edu](mailto:kimberly.onstott@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, the following guidelines will typically 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 points 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 the professor know it is ready to grade. Failure to notify the professor 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. Therefore, all work must be turned in at least a week before grades must be posted.
4. If a course includes interaction between students in the discussion board, and if extenuating circumstances will prevent you from participating, an alternate assignment may be considered at the discretion of the professor.

### HIPAA Requirement

Do not place ANY patient name on your assignments. Any proper name that appears on an assignment other than yours will be considered a HIPAA violation, and the assignment grade may be dropped to as low as a zero, depending on the severity of the violation.

### 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 to be repeated according to the current radiology program policies.

### Technical Difficulties

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Occasionally, you may experience problems accessing D2L, accessing class files located within D2L, connecting with your internet service, or other computer-related issues. Make the professor 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, remember that 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 a reason for the instructor to allow students extra time to submit assignments, tests, or discussion postings.**

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

For help options:

- For D2L issues, go online go to the [Distance Education Helpdesk](#)
- Call the Distance Education office at 940-397-4868 between 8 am and 5 pm.
- Use the D2L help link in D2L.
- Contact your professor.

- For other computer access issues, go to the MSU [Information Technology Website](#).

## Attendance

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This is an online course, and there are no mandatory sessions. However, the student should be vigilant in logging in to D2L. The student should expect to log in at least three times per week. Regular checks will ensure that messages from the professor are received promptly. 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

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The last opportunity to drop this course with a grade of "W" is 4:00 pm on October 24, 2022. The student must initiate all withdrawals. After this date, dropping the course results in a grade of "F".

In an emergency or extenuating circumstance, a student may request a grade of "Incomplete" before grades are submitted. If the professor grants the "Incomplete," the student has until thirty (30) days after the beginning of the next long semester to complete the course requirements. If the student does not meet the course requirements within the deadline, the grade of "Incomplete" will automatically convert into a grade of "F".

## Special Needs

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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. In addition, 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. The Office of Disability Services for resolution will provide advice and assistance if the matter remains unresolved. 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

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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 Veale (940-397-4575)
2. College Dean - Dr. Jeff Killion (940-397-4594)
3. Dean of Students – Matthew Park (940-397-7500)

## Honor System

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RADS 4743 adheres to the [MSU Code of Conduct](#).

In particular, however small, academic dishonesty breaches academic integrity. A student's participation in this course comes with the expectation that their work will be completed in full observance of the MSU Code of Student Conduct. A student should consult the current Student Handbook for answers to any questions about the code.

All components of RADS 4743 are designed to represent the efforts of each student individually and are NOT to be shared, copied, or plagiarized from other sources. When students submit their efforts for grading, they are attesting they abided by this rule.

An online plagiarism service will be used in this course. Student assignments will be uploaded to the service to identify 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 paraphrasing or direct quotation without correct citation in the text and the reference list,
- The published or unpublished works of another person.
- Students may NOT submit papers and assignments previously submitted for this or other courses.
- Using materials from agencies engaged in "selling" term papers is also plagiarism.

Academic dishonesty (cheating, plagiarism, etc.) will not be tolerated in this class. Whenever a student is unsure whether a particular situation will be interpreted as academic dishonesty, they should ask the professor for clarification. If students 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. Students 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, the student expressly grants MSU a "limited right" in all intellectual property created by the student for this course. The "limited right" shall include but shall not be limited to the right to reproduce the student's work/project 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 detect plagiarism.

## **Senate Bill 11**

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### **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 as

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 are 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](#). In addition, students are encouraged to watch the video entitled "Run. Hide. Fight." which may be electronically accessed via the University police department's webpage: "[Run. Hide. Fight.](#)"

If you have questions or concerns, please contact MSU Chief of Police [Patrick Coggins](#) by email at [mpatrick.coggins@msutexas.edu](mailto:mpatrick.coggins@msutexas.edu).

Scroll down for Assignment details

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## **Magnetic Resonance Imaging Assignment Details**

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- 15% Module Quizzes
- 15% Presentation Project
- 15 % MRI Clinical Experiences Project
- 15% Virtual Scenarios Assignment
- 10% Discussion board postings and responses
- 30% Comprehensive Final Exam (Proctored with ProctorU)

### **Order of Content**

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Students can proceed through the course content at their own pace within the boundaries set by the Course Schedule and the MSU Academic Calendar. See the Course Schedule for specific information about activities and due dates. Not all of the modules are taught in the order presented in the textbook.

### **Independent Reading**

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Students should read each assigned chapter and practice answering the multiple-choice questions available on the companion website available with the book.

Students should review any internet resources associated with each chapter and watch all instructional videos.

PowerPoint presentations

For each Module, you will find PowerPoint presentations that students may use to reinforce the chapter material. In addition, the animations provided are helpful and can be made interactive by downloading the PowerPoint and playing as a slideshow.

### **Discussions**

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The purpose of the discussions is to interact with your peers and to start thinking about the different topics in MRI.

Post an initial response in each discussion area and reply to at least two of your peers by the due dates in the course schedule.

- Introductions (original post and two replies)
- An MRI Question (original post and two replies)

In this discussion area, students will post an MRI question. This may be a question about new technology in MRI, MRI research that has intrigued you, MRI protocols, MRI contrast media, MRI safety, or any number of MRI questions. Post something about MRI that you would like to know or have already found an answer to that you think would be a good MRI discussion question. Do not repeat your peer's questions. Review the discussion board before you post to be sure your question is not a duplicate question.

Then Reply to two other posts. Provide an answer to your peer's question. Include at least one resource about the topic, such as a website, an article, or pages from a book that will support your answer.

- Project Posting and Viewing (original post and two replies)

In this discussion area, students will

- Upload their Research Project Presentations for classmates to view.
- Then Review at least two of your peer's presentations.
- Comment about what you learned from each presentation (4-8 sentences should be sufficient). Although you are free to comment on the creativity of the presentations, your 4-8 sentences should be centered on the topic of the presentation.

## Scores

The grades for the discussions are as follows:

- You will not receive full credit if you do not complete all three portions (1original post with a reply to at least two of your peers).
- Substantial information must be included in all three portions.
- Posting an initial post at the last minute does not provide enough time for your peers to respond. Posting an initial post in the last days a discussion is open may result in a significant loss of points. Dates for original posts are in the course schedule. Post your initial response on or before these dates.
- Post replies before the close of the discussions.
- Professional interactions are expected. Spelling, grammar, and substance really do count. Try not to veer off subject, and be respectful and considerate of your fellow students' submissions.

## Unit Quizzes

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When a student has reviewed a module and is ready for the quiz, they will log on to D2L and receive a customized timed unit quiz consisting of randomized multiple choice questions. See the course schedule for the open and close dates for the quizzes.

Knowing the module content before attempting the unit quizzes is essential because they are **timed**. Quiz scores will be available immediately after students submit their quizzes for grading.

The first four quizzes are open on the day that classes begin. The second set of quizzes is available approximately mid-semester (review the course schedule for dates).

The quizzes are designed to encourage practice with the material, so you may take each quiz up to 2 times before the due date (this does not include the comprehensive final exam). The grade will be an average of the attempts. Note: Only one attempt is required, so you do not have to complete the quiz two times. However, it is highly recommended as it will give you additional practice with the material for your final exam.

Quizzes not completed by the due dates may receive a zero (0). Students who know they will miss a due date because of extenuating circumstances should contact the professor as soon as it is known.

Each circumstance will be considered on an individual basis. See the late policy above.

If students have technical difficulties during a quiz, they should use the 'Help' link on the top toolbar within D2L to contact the MSU Information Systems Support Staff and email the course professor explaining what happened.

If a student finds a faulty quiz item or believes a quiz question has been scored incorrectly, they should send an email to the course professor that includes the following:

- Module Quiz Number (1-6)
- Question Stem
- Rationale Supporting Why the Student's Answer is Correct
- Include Page Numbers When Referencing the Textbook

For example, a student 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. The professor has to know the question stem to find the question in the database. After reviewing the situation, if the course professor thinks a revision is justified, the student's quiz score will be revised to reflect the additional points, and the test bank will be updated.

## Virtual Laboratory Project Assignment

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In the second part of the course, virtual simulations will be included in three of the modules. The simulations are story-based and are intended to be fun, interactive ways to apply the information. The student will become a virtual student MRI technologist in an online environment. The student must identify pulse sequences and imaging parameters like an actual MRI suite. The student will encounter safety hazards, complex patients, and difficult or unsafe coworkers. The student will also have an opportunity to identify and correct image artifacts, and the student will have an opportunity to explore instrumentation and equipment in an MRI suite. The student will complete each scenario at their own pace while making decisions within the scenarios that will affect how the story plays out. Incorrect choices will not be penalized, so the student may purposefully choose a wrong answer to see what might happen if a wrong choice is made. However, questions at the end of the scenarios will give the professor an idea of whether the information was retained. The purpose of this project is for students to better understand the fundamentals of MRI imaging by participating in the day-to-day operations of an MRI suite.

The second set of modules will not appear until October 4 and will not be available to the student until they have completed the modules and quizzes for **Modules 1, 2, 3, and 4**,

### Submission

The student's activities will be recorded in D2L throughout the scenario program. Additionally, the student will complete a worksheet during their virtual activity.

- The student will submit the **typed** completed worksheet to the Virtual Laboratory Dropbox.
- Students must use the following format as the title of the assignment when saving the document:

Lastname\_Virtual Laboratory Assignment

- All assignments must reflect baccalaureate level effort

- Submit the typed worksheet to the dropbox as a single Word document by the due date in the course schedule.

## Clinical Experiences Project

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Throughout this course, you will complete an MRI clinical experiences project. The type of project will be determined based on your current professional situation. For example, suppose you are in a facility where you are permitted to perform MRI scans on actual patients. In that case, you will log MRI scans that can be used to satisfy a significant portion of your clinical experience requirements for the ARRT. This situation is ideal as you will practice what you are learning in this course. However, not everyone will have access to an MRI scanner, or some may only have a limited amount of time scanning. Therefore, you will complete this project according to your specific situation. Read the instructions carefully in the course to determine how you will complete this project.

## Research Presentation Project

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Working knowledge of Microsoft Office PowerPoint (or other presentation software) is a fundamental skill for all baccalaureate-level students. Students are encouraged to strengthen their PowerPoint and presentation skills while presenting a topic in MRI. A professional product will be produced.

Each student will create a 4-10 minute PowerPoint (or similar) presentation consisting of a minimum of eight (8) slides and a maximum of fifteen (15) slides based on at least three (3) PEER-REVIEWED or SCHOLARLY journal articles. The presentation will cover any one of the case studies from the Clinical Experiences project. PowerPoint presentations should contain:

- A title slide with your name, date, course, and topic
- A slide with your objectives and an outline of your presentation
- Relevant, up-to-date (within the past five years) information on your MRI topic
- Scan protocols
- Contraindications and concerns (example: non-ferrous surgical instruments in the MRI scan room)
- Labeled and relevant images (must give credit to the authors for these)
- An APA formatted reference page
- 4-10-minute audio/video presentation recorded by the student and uploaded to the discussion board for peer discussion. This presentation should also be uploaded to the dropbox for grading.

More specific guidelines, a grading rubric, and support are provided in the course content.

**Note:** You will not be allowed to take the final exam if the PowerPoint has not been completed. Follow the deadlines posted in the course schedule.

## Proctored Final Exam- 30%

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### Exam Format

- The final examination is a proctored, "closed-book", comprehensive examination of multiple-choice and short answer questions. The final exam is timed for 2 hours (120 min) and consists of 50 questions.

- To prepare for this exam: The final has been derived from the entire content of this course. Therefore, review all of your quizzes and your textbook chapters. Reinforcing study materials include the Berlex tutorials and the PowerPoint presentations.
- The comprehensive proctored final exam will be administered using Desire2Learn (D2L) and ProctorU online proctoring.

### What to Bring

- You may bring scratch paper with only ProctorU's phone number on it.
- No textbooks or notes may be used.
- No smart watches or any other electronic devices will be allowed.
- Students are not allowed to print the final exam.

### ProctorU Scheduling

- You may schedule your exam any time within the testing dates in the course schedule. However, you must complete ALL of your course work when you take your final, or the final will not be accessible in D2L.
- For ProctorU instructions, please read the ProctorU Student Instruction Guide in the course and visit the MSU ProctorU Webpage.
- Be aware specific equipment is required. Review the ProctorU instructions as soon as possible.
- Contact a ProctorU representative to check your equipment and bandwidth in real-time before your test date. If anything changes after this check (new computer, updates, ISP changes, etc.), REPEAT the check.
- All appointments should be made at least three days in advance. To make an appointment, simply create an account by visiting the MSU ProctorU Webpage. Once logged in, click on the new exam link and select the exam, date, and time you desire. You must submit payment (based on the length of the exam) at that time - usually about \$25.00. You will receive an email confirming your reservation at your provided email to ProctorU.
- Late registrations and Take it Now features are subject to availability. Note: If a proctor is unavailable because you did not schedule your exam in advance, the final is considered missing, and a grade of zero will be given.
- Be mindful when you schedule your final exam. If you schedule the exam outside of the 5-day work week (M-F), there may be no one at MSU to help if you have technical problems.

### Technical Problems

- If you are disconnected during your exam, you must immediately send an email to your professor and immediately contact ProctorU by phone. All exams are monitored, and the proctor and D2L create a log.
- \*All times will be documented\*
- The exam must be taken within the scheduled test dates, regardless of technical issues. But, again, this is the student's responsibility.
- Late submissions will not be accepted.
- I suggest taking the exam during the first days it is available (listed below) to avoid receiving a zero due to technical issues. Then, if you have to reschedule, it must be within the scheduled dates and times.
- See the [Technical Difficulties](#) section above for help options.

**All course requirements must be completed before a grade is awarded.** Therefore, students must complete the final and all coursework by the course schedule date.

### Note:

**All assignments received are considered complete and will be graded as such. Any instructor decision is final, and no further changes will be made. Scroll down to view the Course Schedule.**

## Course Schedule

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All times are Central Standard Time (CST)

Information contained in the course syllabus, besides the grade and absence policy, may be subject to change with advance notice, as deemed appropriate by the instructor.

Date	Assignment
<b>August 22</b>	Class opens Review course syllabus Modules 1-4 are available Quizzes 1-4 available until October 4 at 23:59
<b>August 30</b>	Introductions in Discussion Board due by 23:59
<b>August 30</b>	Introductions due by 23:59
<b>September 6</b>	Introductions 2 replies due by 23:59
<b>September 6</b>	Presentation Topic
<b>September 27</b>	MRI Question Discussion-original post due by 23:59
<b>September 27</b>	Modules 5-12 open
<b>October 4</b>	Quizzes 1-4 are due by 23:59
<b>October 11</b>	MRI Question Discussion-2 replies by 23:59
<b>October 24</b>	The last day to withdraw with a "W" grade by 4:00 pm campus time
<b>October 25</b>	Presentation Project-uploaded to Discussion Board and Dropbox by 23:59
<b>November 8</b>	Presentation Project Discussions- 2 replies by 23:59
<b>November 15</b>	Virtual Laboratory Project to Dropbox by 23:59
<b>November 15</b>	Clinical Experiences Project to Dropbox by 23:59
<b>November 22</b>	All quizzes close at 23:59
<b>November 22- December 6</b>	Closed Book Proctored Final Exam The exam must be completed by 23:59 on December 6 (2 hours, multiple-choice format and short answer, all quizzes and projects must be complete before taking the final)

