



The Shimadzu School of Radiologic Sciences  
Robert D. & Carol Gunn College of Health Sciences & Human Services  
Course Syllabus: RADS 4633 Quality Improvement in Medical  
Imaging

*Revised 01/2022*

### Course Information

Name: Continuous Quality Improvement in Medical Imaging

Credit: 3 hours

Term: Spring 2022

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### Professor

**Mandy Sedden, M.S.R.S., R.T. (R)**

**E-mail:** mandy.sedden@msutexas.edu

Use this format in the subject line: 4633\_your last name\_topic of the message E-mail is the best way to me. If I haven't responded within 72 hours, please email me again.

**Phone:** (940) 397-4664

**Office location:** Midwestern State University 3410 Taft Blvd Centennial Hall 430M

Wichita Falls, TX 76309

**Office hours:** Please make an appointment by e-mail.

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### Course Overview

**Prerequisite(s):** None

This course is a study of the principles and methodologies of continuous quality improvement. A comparison with traditional quality assurance will be included as well as implementation standards to satisfy The Joint Commission

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### Course Objectives

Upon completion of this course, the student should be able to:

- Delineate the role of the health care manager in continuous quality improvement
- Describe the 8-step model for continuous quality improvement
- Apply the tools used in implementing a continuous quality improvement program
- Identify the barriers to successful continuous quality improvement.
- Analyze a scenario for the existence of a problem, customer identification, customer needs and expectations, and possible solutions.
- Generate solutions for a problem using relevant tools and procedures.

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## Teaching Strategies

Independent reading assignments, study guides, Desire2Learn (D2L) modules, Sectional anatomy assignment, optional learning activities, open book module quizzes, and a closed book proctored final exam are used in this course.

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## Course Materials

### Textbooks

No textbook is required for this course.

Suggested: American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7<sup>th</sup> ed.). Washington, DC: American Psychological Association. [ISBN 978-1-4338-3216-1]

### Internet connectivity

Students need an up-to-date computer with an internet connection for this course.

### Computer Requirements (Proctor Specifications)

- PC Users: A well-working computer running Windows XP or higher with 1024 MB of RAM or higher.
- Mac Users: A well-working computer running Mac OS X or higher.
- Headphones or working speakers connected to the computer.
- Webcam and mic (for proctoring)
- A reliable high speed internet connection (minimum 768 Kbps/384 Kbps Download/Upload).
- A web browser with Adobe Flash Player installed.

### Additional Resources (not required)

If you are studying for the QM Registry these resources might be helpful.

#### Textbook

- *Quality Management in the Imaging Sciences*, 5<sup>th</sup> edition, 2015, by Jeffrey Papp, published by Elsevier.

#### Online Resources

- *AAPM Reports*  
[American Association of Physicists in Medicine](http://www.aapm.org)  
www.aapm.org
- *DICOM Standards*  
[National Electrical Manufacturers Association](http://dicom.nema.org/)  
dicom.nema.org/

- *NCRP Recommendations*  
[National Council on Radiation Protection and Measurements](http://ncrponline.org)  
ncrponline.org
  - *OSHA Requirements*  
[Occupational Safety and Health Administration](http://www.osha.gov)  
www.osha.gov
  - *Quality Control Manuals*  
[American College of Radiology](http://www.acr.org)  
www.acr.org
  - *Safe Medical Devices Act (SMDA)*  
[U.S. Food and Drug Administration](http://www.fda.gov)  
www.fda.gov
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## Course Requirements

The student must:

- Complete reading assignments.
  - Successfully complete the required online proctored examinations.
  - Participate in asynchronous discussion threads.
  - Meet all submission deadlines.
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## Communication with Instructor

Contact information for the instructor is listed at the beginning of this syllabus. Email is the preferred mode of communication so there is a record of the communication and often she is away from her office.

When emailing the instructor, please use the following subject header:

4633\_your last name\_topic of message

Example: 4633\_Smith\_Quiz 4

When there is a need to contact a student, the instructor will use the student's students.mwsu.edu email account. The instructor is not responsible for sending emails to any other email account (set up your email to forward messages to an email you check often to avoid potentially missing any correspondence).

Faculty members will not be responsible for keeping up with other email addresses for students. If you have not established this account or you need help forwarding messages, do so as soon as possible by going to [MSU IT Help](#).

The professor 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 students of any extended periods of time when email contact is not practical (professional meetings, etc.).

The instructor will be available to meet either in person or via telephone with any interested students by appointment.

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## Evaluation

### Grading

Assignments will be graded in a timely manner after the published due dates. The professor will not grade assignments early nor will be professor “pre-grade” assignments. The professor is committed to your education and will answer relevant questions about course topics so long as such answers do not compromise specific assignments or specific test question.

### Grade distribution

- 40% Proctored D2L unit quizzes
- 25% Discussion Board
- 35% Proctored D2L comprehensive closed book final exam

### 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 4633 course home page
2. Select Notifications
3. Check the box next to “News - new item available” and any other boxes you wish to receive an email notification for.

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 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.

### 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 department policies.

The last date to withdraw from this course and receive a grade of “W” is **March 21 at 4:00 pm CST**. All withdrawals **must be initiated by the student**. After this date dropping the course results in a grade of “F”.

### Late Work

**Due Dates.** Assignments and quizzes must be submitted by the scheduled due dates in the course schedule. If a student fails to meet a deadline the student will receive **no (0) 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 the professor as soon as possible on or before the scheduled due date. All course work must be completed in the semester the course is taken. The professor does not give incomplete grades. 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 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. All work must be turned in at least a week before grades must be posted.
4. Since this course relies heavily on interaction between students in the discussion board, if extenuating circumstances will prevent you from participating, an alternate assignment may be considered at the discretion of the professor.

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### Technical Difficulties

On occasion, you may experience problems accessing D2L or class files located within D2L, Internet service connection problems, and/or other computer related problems. 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.

**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 points being lost.**

For help:

- Use the D2L help link in D2L
- Contact your Professor
- And for other computer access issues, contact [information systems](http://www.mwsu.edu/it/) at <http://www.mwsu.edu/it/>

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## Attendance

This is an online course and there are no mandatory sessions. However, the student should be vigilant in logging in to D2L. Regular checks will ensure that messages from the instructor are received in a timely manner.

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## 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, instructors, 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 on the basis of disability must register with the [Office of Disability Services](#) in the Counseling Center, Clark Student Center Room 168 (940)397-4140. Documentation of disability from a competent professional is required.

Individuals with grievances related to discrimination or lack of accommodation on the basis of 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 Services for resolution. The grievance procedure may be found in the Student Handbook and Activities Calendar.

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

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## 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:  
Department Chair – Dr. Beth Veale (940-397-4611)  
College Dean - Dr. Jeff Killion (940-397-4679)  
Dean of Students – Matthew Park (940-397-7500)

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## Honor System

RADS 4733 adheres to the [MSU Code of Conduct](#).

In particular, academic dishonesty, however small, creates a breach in academic integrity. A student's participation in this course comes with the expectation that his or her 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 4733 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.

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 instructor 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,

- Turning in another person's work and calling it your own.
- Paraphrasing another source without citing the source.
- Direct quotations which are not marked as direct quotations regardless of the attribution.
- Using a majority of direct quotes within a paper regardless of attribution and:
- Using incorrect information in a citation including citing one author as the source of another author's work.<sup>1</sup>

All assignments will be submitted to TurnItIn.com, a computerized service which checks for plagiarism. Any suspicious results will be investigated.

Academic dishonesty (cheating, plagiarism, etc.) will not be tolerated in this class. Whenever a student is unsure of whether a particular situation will be interpreted as academic dishonesty, he/she should ask the instructor 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 entire University Academic Dishonesty Policy which can be found in the [University Student Handbook](#)
- [Plagiarism.Org](#), or
- [iParadigms. \(2014\). What is plagiarism? Retrieved from http://www.plagiarism.org/plagiarism-](#)
- 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 the purpose of this course. The "limited right" shall include, but shall not be limited to the right to reproduce the student's 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.*

## Senate Bill 11

Senate Bill 11 passed by the 84<sup>th</sup> Texas Legislature allows licensed handgun holders to carry concealed handguns on campus, effective August 1, 2016. Areas excluded from concealed carry are appropriately marked, in accordance with state law. For more information regarding campus carry, please refer to the [University's web page](#).

If you have questions or concerns, please contact MSU Chief of Police Patrick Coggins at [patrick.coggins@mwsu.edu](mailto:patrick.coggins@mwsu.edu).

## Class Activities and Assignments

### Modules

The course content is divided into six (6) individual Modules. Each module contains a study guide, an associated quiz, and a discussion board. Additional resource material is available through the Internet.

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

Once you feel comfortable with the module notes, the associated pages in and any learning activities, you should complete the associated module exams.

### Order of Content

Since this course is highly interactive between students with much of the learning occurring in the discussion boards, students are required to complete the course content by the dates listed in the course schedule.

See the Course Schedule for specific information about activities and due dates. Late work is not accepted and a zero (0) will be recorded after the due date.

If extenuating circumstances occur that may cause a delay in completing an assignment or quiz by the deadline the student should contact the professor before the assignment is due (see the section on late work above); such cases will be dealt with on an individual basis.

### **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.

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## **Modules**

The course content is divided into 6 individual Modules. Each module contains a study guide, an associated quiz, and a discussion topic.

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

<b>Module</b>	<b>Topic</b>
<b>Module 1</b>	Quality Improvement Development and Principles
<b>Module 2</b>	Characteristics and Roles of the Quality Manager and Skills That Enable Effective Quality Management
<b>Module 3</b>	The Management Model
<b>Module 4</b>	Developing Measures to Monitor Performance
<b>Module 5</b>	The Manager's Tool Kit - Part One
<b>Module 6</b>	The Manager's Tool Kit - Part Two

## Independent Reading and Instructional Videos

Each module contains a study guide. These are your main sources of instruction. Each study guide has objectives the student should pay close attention to while reviewing each module. At the end of each study guide there are some important key items listed that the student should review in addition to the objectives before attempting the associated quiz.

Several video files are embedded within the study guides to help you better understand the various charts, graphs, and content. When you click on these, a second window will open to display the video. When finished watching, just close that window and you can return to the course content. *Note: the videos can take up to a few minutes to load. Please be patient as they really can be helpful. If you are unable to open them, you may have to enable pop-ups or you may have to change your browser*

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## Module Quizzes -40%

When a student has reviewed a module and is ready for the quiz, he or she will log on to D2L and receive a customized timed module quiz consisting of randomized multiple choice and/or matching questions. It is important to know the module content before attempting the module quizzes because they are **timed**.

Quiz questions will be from information learned in the modules. Review the important key items and the objectives before attempting a quiz.

Quizzes not completed by the due dates, will receive a zero (0). Students should contact the professor in extenuating circumstances before the close date of the quizzes; such cases will be dealt with on an individual basis (see the section on late work). All quizzes must be completed before taking the Final Exam. See the course schedule for the due dates for the quizzes.

## Technical problems

If technical issues occur (cannot see an image, cannot see your grade, etc.) sometimes the easiest solution is to see if the issue can be corrected by simply changing browsers. Fewer occurrences have been noted by using Firefox or Chrome as a browser for D2L.

If students have technical difficulties during a quiz, they should use the Help link in D2L, contact the [MSU Information Systems Support](#) Staff, and send an email to the course instructor explaining what happened. Screenshots and/or taking a picture of your screen may help in diagnosing the problem.

## Scores

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

- Module Quiz Number (1 -5)

- Answer the Student Thinks Should be Correct
- Rationale Supporting Why the Student's Answer is Correct
- Page numbers must be included when referencing the textbook in the rationale

After reviewing the case, if the course instructor 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.

## **Discussions -25%**

There are 7 discussion topics in this course. Each one requires an original post and you must reply to at least two of your peers.

### **Introductions**

Introduce yourselves in the introduction discussion board and reply to at least two of your peers by the due date in the course schedule.

### **Module discussions (original post and 2 replies, there are 6 of these)**

In each module you will respond to the associated discussion prompt in the discussion board. Follow the instructions closely for each module. Once you have posted your original response, you will then be able to view everyone else's responses. Review and reply to at least two of your classmates' posts. Your replies must contain substantial information that will provide your classmates with something they can use in their current or future positions. Depending on the topic you will either

- Provide suggestions for alternative solutions,
- Share a similar experience, or
- Add to the discussion by providing a resource about the topic, such as a website, an article, or pages from a book.

Provide something your classmates can walk away with. Once someone has replied to your post, please acknowledge them with a short reply and/or further discussion if needed.

The grades for the discussions are as follows:

- Each discussion topic is an all or nothing grade. If you do not complete all three portions (1 original post with a reply to at least two of your peers) you will not receive any credit for partial work.
- Substantial information must be included in all three portions.
- Posting an original post at the last minute does not provide enough time for your peers to respond. Posting an original post in the last days a discussion is open may result in a significant loss of points. Goal dates for original posts are in the course schedule. Post your original response as close to these dates as possible.
- 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.

The discussion board counts as 25% of your grade. If you do not understand this requirement, please let me know.

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## Comprehensive Final Exam- 35%

**\*Note- All quizzes must be completed before the Final Exam is taken. \***

### Exam Format

- The proctored comprehensive final examination is closed book and notes
- The exam is a timed, 2-hour (120 min) test.
- The comprehensive exam will be administered using Desire2Learn (D2L) online proctoring service.
- The final exam consists of a scenario with eight (8) separate areas requiring you to identify the problem and work through the problem using the skills you have learned throughout the semester. (the exam will follow course objectives exactly)
- To prepare for this exam:
  - The goal by the end of this course is to acquire truly usable problem-solving skills that will work for you and help you transform your workplace. The final will challenge you and test the knowledge you have gained this semester.
  - The final has been derived from the entire content of this course. Review all of your quizzes, your study guides, and your discussion exercises.
  - You will be given directions concerning a narrow-focused problem supplied by your professor, and then you will have several tasks to complete regarding the problem.
  - You will be required to identify the problem and work through that problem using the skills you have obtained throughout the semester.
  - You will need to be able to identify your customers, prioritize them, understand the consequences of not satisfying their needs, and analyze the given problem.
  - You will need to critically look at the PDCA model and be able to work a problem thoroughly through that model.
  - You will need to be familiar with the tools you have learned about and be able to apply them to your problem.
  - The final will test you over all problem-solving techniques and tools contained in the course.

### What to Bring

- You must have a computer with a good internet or WiFi connection and a webcam and mic
- No smartwatches or any other electronic devices will be allowed.
- Students are not allowed to print the final exam.
- No textbooks or notes may be used.
- You may bring scratch paper

### Technical problems

- If you are disconnected during your exam, you must immediately send an email to your professor. All exams taken after business hours will not have the luxury of technical help should something go wrong. Use discretion when preparing to take the exam.
- \*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 the student's responsibility.
- Late submissions will not be accepted.
- A suggestion is to take the exam during the first days it is available (listed below) to avoid receiving a zero due to technical issues. If you must reschedule, it must be within the scheduled dates and times. You are cautioned that if you schedule the exam on a weekend, you do so knowing there is no technical assistance available at the university to help in case a problem arises.

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

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

## Course Schedule

<b>RADS 4633-Spring 2022- Course Schedule</b>	
<b>Date</b>	<b>Activity</b> <i>Note: These are Central Times</i>
January 10, Monday	Class begins All quizzes & discussion boards are open
January 21, Friday	Module 1 Discussion Board by 11:59PM
January 23, Sunday	Module 1 Quiz by 11:59 PM
February 4, Friday	Module 2 Discussion Board by 11:59PM
February 6, Sunday	Module 2 Quiz by 11:59 PM
February 18, Friday	Module 3 Discussion Board by 11:59PM
February 20, Sunday	Module 3 Quiz by 11:59 PM
March 11, Friday	Module 4 Discussion Board by 11:59PM
March 13, Sunday	Module 4 Quiz by 11:59 PM
March 21, Monday	<i>Last day to withdraw with a grade of "W" by 4:00 p.m. CST</i>
April 1, Friday	Module 5 Discussion Board by 11:59PM
April 3, Sunday	Module 5 Quiz by 11:59 PM
April 22, Friday	Module 6 Discussion Board by 11:59PM
April 24, Sunday	Module 6 Quiz by 11:59 PM
April 23 -May 1	Final Exam *Closed Book and Proctored *All quizzes must be complete before attempting the final exam