

Please take the time to read the entire syllabus and consult it for answers to questions you might have.

Course Number: RADS 4633 3 credit hours
Course Title: **Quality Improvement in Radiology**
Faculty: Beth L. Vealé RT(R) (CT)
Chair/Professor
(940) 397-4611
Fax: (940) 397-4845
E-mail: beth.veale@msutexas.edu

Text: **None**

Additional Resources:

Internet, library

Not required

1. [Total Quality in Radiology: A Guide to Implementation](#) by Henry George Adams, et al
2. [The Five Pillars of TQM: How to Make Total Quality Management Work for You](#) by Bill Creech
3. [Quality Management Exam Review for Radiologic Imaging Sciences](#) by Steven Dowd, et al
4. [Quality Management in the Imaging Sciences](#) by Jeffrey Papp
5. Abujudeh, H., Kaewlai, R., Shaqdan, K., & Bruno, M. (2017). Key principles in quality and safety in radiology. *American Journal of Roengenology*, 208(3), W101-W109.

Prerequisites: **None**

Course Overview:

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

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.

Introduction

Being a professional means making an investment in your profession. With today's patient being much more informed about health care, and much more discerning about treatment appropriateness and quality, it is vital that you rise to meet the challenges of the patient and health care delivery. As a working technologist, you will be asked to do more with less--more examinations, more patients, in much less time--without compromising quality. As a department director, you will be expected to provide the highest quality care in your department, with fewer people and a great deal less financial support.

The changes that have to be made to allow this to happen will be difficult and many times painful. This course is an overview of the concept of continuous quality improvement and how changes can be made without increasing the difficulty and pain.

Course Navigation

If you are not familiar with Desire to Learn (D2L), you should spend some time clicking on the various tabs. If a hyperlink within the content area doesn't work, look at the top of the page and try that. It appears that the Tests and Dropbox work better when you click those words at the top of the page.

Several video files are embedded within this course 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.*

"Tests" is the link to the unit exams. Please read each unit carefully before attempting the exams. The unit exams are open-book.

Mozilla Firefox seems to work much better than Internet Explorer and Google Chrome does not display discussion boards well at all. It is suggested that Firefox be used in this course.

The unit exams must be completed before you take the final. Any unit exam work not completed will be assigned a grade of 0.

Methodology/Teaching Strategies:

All or some of the following strategies may be used in the delivery of this course: Independent reading assignments, study guide, written assignments,

Assignments/Activities

This course is divided into individual units. A unit examination accompanies each unit of instruction and is designed as an "open book" evaluation of the material. Be sure to complete the unit exam at the end of each unit. Some units may require special drawings, work, etc. for you to completely understand the information. While you will not have to submit this work, you should be familiar with how to construct some of the items as the final WILL require you to label, identify, and/or apply these tools and processes. The final exam is **CLOSED** notes. Pay close attention to those requirements.

All work submitted to the instructor will be considered complete and final, and will be graded as such.

Student Responsibilities

As a student enrolled in this course, you will be responsible for adhering to and meeting posted deadlines and due dates. All activities for this course are listed at the end of this syllabus. Activities such as quizzes have expiration dates. Please take note that expiration dates for quizzes will differ from deadlines for assignments and activities.

Quizzes and assignments/activities are spaced out in a manner that will allow you ample time to complete them. Assignments/Activities will be accepted on or before the posted due date and deadline. If you choose to wait until the **very last minute** and there is some problem with getting the assignment to me in time, that is the risk that you take and you must accept the penalty.

Penalty:

Any student that missed a quiz expiration date will not be allowed to take the quiz once the time has expired. If this happens, the student will receive a grade of zero (0) for that quiz. If a student misses a deadline for an activity or assignment, that assignment/activity will not be graded and a grade of zero (0) will be given. Assignments can only be submitted once for grading. Emergencies do occur and they will be dealt with on an individual basis. Do not inform me of personal emergencies **after** the deadlines/due dates and expiration dates have passed.

DO NOT WRITE TO ME AND ASK IF I WILL ACCEPT A LATE ASSIGNMENT or GIVE EXTRA CREDIT/WORK. I WILL NOT.

Discussion Board

There are several discussion board topics posted under the "Discussions" link. You must meet the deadlines to get credit. Spelling, grammar, and substance really do count. Try not to veer off subject, and be respectful and considerate of your fellow student's submissions.

You must post at least **one** original response to the topic AND you must **respond** to at least **2** postings for each topic. The discussion board counts as 15% of your grade. If you do not understand this requirement, please let me know.

The final exam will be hosted through Respondus Lockdown Browser. You must have a webcam, microphone, and a reliable Internet connection. This service is free and you will be monitored during the exam. Follow the instructions included in the quiz section. The instructions to take the final exam are included when you start the exam. Be aware that Chromebook will not work for the Respondus Lockdown Browser.

You may complete this course at any time during the semester. All course requirements (unit exams and discussion boards) must be completed before a passing grade is awarded.

The Final Exam:

The final exam is mixed format, (short answer, essay, etc.) and you will have two hours to complete it. The final exam is closed book/notes and no supplemental material is allowed. The final consists of a provided scenario with eight separate areas requiring you to identify the problem and work through that problem using the skills you have obtained throughout the semester. The final exam follows exactly the course objectives outlined in the course objectives. Again, the final exam will be hosted through Respondus © within your course. If you have problems with the exam shutting down, anything you have submitted will be saved and you can sign back in as long as the time has not expired. Contact me if you have any problems.

It may take several days to grade this exam, so please be patient. This is also why the exam deadline is on the last official day of classes.

Communication with Instructor:

Contact information for the instructor is listed at the beginning of this syllabus. ***Email is the preferred mode of communication.*** It is critical that students report all email changes immediately to the instructor. 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 students of any extended periods of time when email contact is not practical (professional meetings, etc)

The instructor will be available to meet face-to-face with any interested students at a designated time and place that will be announced on Desire to Learn (D2L) after the start of classes. This meeting is optional and must be confirmed by email ahead of time with the instructor.

Tentative Class Schedule

There are six units in this course. The first three units and all of the associated assignments should be completed by the date indicated to avoid penalties. This will

leave you enough time to finish the remaining units as well as leave time to study for the final exam

Tentative Course Schedule

First day of Classes	August 23
The first three unit quizzes are available throughout the time period listed. Quizzes become available on the date specified on the course calendar expire as specified on the course calendar. All times are based on Central Time Zone	August 23 – October 15
Introduction discussion board post due today	September 3
Discussion 1 posting and responses due at 11:59pm CST	September 17
Discussion 2 posting and responses due at 11:59pm CST	October 1
Discussion 3 posting and responses due at 11:59pm CST	October 15
The first three unit quizzes must be completed by the date specified on the course calendar. ANY quiz not completed will receive a grade of 0.	October 15
Discussion 4 posting and responses due at 11:59pm CST	October 29
Discussion 5 posting and responses due at 11:59pm CST	November 12
Discussion 6 posting and responses due at 11:59pm CST	November 26
The last three quizzes are available through this time period specified on the course calendar. Quizzes become available on August 23 and will expire on dates specified on the course calendar.	December 3rd
The last three unit quizzes must be completed by the date specified on the course calendar. ANY quiz not completed will receive a grade of 0.	Prior to taking the final exam
Final Exams can be taken as soon as November 1 and as soon as all requirements have been completed, <u>including the discussion boards</u>. NO FINAL will be scheduled after the expiration date on the course calendar.	December 4, 5:00 pm CT is the last day to take the final exam.

Last day to withdraw with “W” is October 25, 2021 by 4:00 pm.

Grading/Evaluation

Your course grade will be based on the following:

Unit exams 40%	40%
Discussion Board postings and responses	15%
Final exam	45%

The following grading scale is used for this course:

90 and above	A
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80-89	B
70-79	C
60-69	D
59 and below	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 Support Services (DSS) provides information and assistance, arranges accommodations, and serves as a liaison for students, instructors, and staff. The DSS has assistance 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 Support Services in the Clark Student Center Room 168 or call 940-397-4140 for further information. 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 director of the Counseling Center services as the ADA Coordinator may be contacted at (940) 397-4618, TDD (940) 397-4515, or 3410 Taft Blvd., Clark Student Center Room 108.

Conduct/Honesty/Honor System Policy

RADS 4633 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 Student Handbook for answers to any questions about the code.

Many components of RADS 4633 are designed to be highly interactive with students helping each other learn. Students are encouraged to take full advantage of many resources available including Internet sites, handouts and module notebooks, other textbooks and journals, faculty, and peers. This interactive collegial learning environment is conducive for life-long learning.

Specific components of RADS 4633 are designed to represent the efforts of each student individually and are NOT to be shared. These components include the written

assignments submitted for a grade. When students submit their efforts for grading, they are attesting they abided by this rule.

Cheating includes, but is not limited to, (1) use of any unauthorized assistance in taking quizzes, tests, or examinations, including using any devices to access the Internet or online information; (2) dependence upon the aid of sources beyond those authorized by the instructor in writing papers, preparing reports, solving problems, or completing other assignments; or (3) 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 on the reference list, the published or unpublished works of another person. Students may NOT submit papers and assignments that they have previously submitted for this or other courses. The use of materials generated by agencies engaged in "selling" term papers is also plagiarism. Students are encouraged to review the tutorials and suggested websites for more information about plagiarism. Papers and other assignments may be submitted to an external agency for verification of originality and authenticity.

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) may be given for the quiz, assignment, etc. Cases may also be referred to the Dean of Students for possible dismissal from the university.

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 product 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.

Topic Outline

Quality Improvement Development and Principles

Terminal Performance Objective: Upon completion of this unit, the student should be able to identify opportunities for integrating traditional quality assurance models with continuous improvement models.

Enabling Objectives: Upon completion of this unit, the student should be able to:

1. Compare structure methods and scopes of continuous quality improvement to those of traditional quality assurance.
2. Discuss the historical perspective of quality improvement development.
3. State examples which illustrate the "right things done right" interface.
4. Identify factors which contribute to customer satisfaction.
5. Identify factors which contribute to staff retention.
6. Explain the effect of continuous quality improvement on financial viability.
7. Identify strategies for advancement of continuous quality improvement.
8. State the four facets of a comprehensive strategy for continuous quality improvement.

Quality Management

Terminal Performance Objective: Upon completion of this unit, the student should be able to recognize the characteristics and roles of the quality manager and skills that enable effective quality management.

Enabling Objectives: Upon completion of this unit, the student should be able to:

1. Identify principles of quality management, including Deming's 14 points.
2. Identify key roles of the quality manager.
3. Discuss the attributes and abilities of quality managers.
4. Describe the components of the PDCA cycle.
5. Describe the 10 mind-set shifts for managing continuous quality improvement.
6. Perform self-assessments for the Quality Manager mindset.

The Management Model

Terminal Performance Objective: Upon completion of this unit, the student should be able to recognize the importance of identifying customers and understand the effect of professional standards on meeting both customer expectations and operational requirements.

Enabling Objectives: Upon completion of this unit, the student should be able to:

1. Define specifications for a management model.
2. Explain customer-driven management.
3. Identify customers and their expectations.
4. Differentiate between internal and external customers.
5. Discuss the importance of initiating cyclical steps in the management model.
6. Summarize the importance of the role of customer expectations and professional standards in customer driven management.
7. Explain the use of focus groups and interviews.
8. Identify professional standards necessary to satisfy customer needs.

9. Develop a flow chart which identifies the steps of a process needing improvements.
10. Develop a critical path for the previous process.

Developing Measures to Monitor Performance

Terminal Objective: Upon completion of this unit, the student should be able to identify and develop measures to monitor performance.

Enabling Objectives: Upon completion of this unit, the student should be able to:

1. Identify methods for developing measures to monitor performance.
2. Explain the importance of feed back in measuring effectiveness of CQI.
3. Identify key cross-functional processes that impact customer perception.
4. Describe methods for measuring quality.
5. Discuss how involvement and perceptions of staff affects identification, measurement, and collection of data.
6. Identify essential elements in measuring performance.
7. Describe advantages and pitfalls of reporting results and providing feedback.
8. Identify the four ways to share management results with staff.
9. Describe three ways to make priority decisions.
10. Define process.
11. Cite reasons for improving process rather than people.
12. Describe the four phases of the PDCA model for process improvement.

The Manager's Tool Kit

Terminal Objective: Upon completion of this unit, the student should be able to recognize and utilize tools for quality management.

Enabling Objectives: Upon completion of this unit, the student should be able to:

1. Discuss the importance of checks against bias in data collection.
2. Identify the seven tools for collecting and displaying CQI data.
3. Identify the nine tools for making CQI improvements.
4. Give examples of uses of focus groups in CQI.
5. Develop a CQI survey.
6. Give examples of check sheet use.
7. Cite examples of the uses of logs.
8. Define the histogram as a CQI tool.
9. State the Pareto principle and its application in chart form.
10. Analyze control charts for run length, freaks, trends, sudden shifts, and cycling.

The Manager's Tool Kit – Part II

Terminal Objective: Upon completion of this unit, the student should be able to recognize and utilize tools for quality management.

Enabling Objectives: Upon completion of this unit, the student should be able to:

1. Expand the abbreviated flowchart developed in Unit III, or expand a new idea into a SIPOC Chart.
2. Construct a flowchart from the information gathered in the SIPOC.
3. Conduct a brainstorming session.

4. Construct the following: affinity chart, relationship diagram, cause and effect diagram, force-field analysis, decision matrix, tree diagram, and action plan.
5. Analyze gathered information through the use of tools.

If you have questions or experience difficulties during the semester, please contact your instructor.