



Quality Improvement in Healthcare – Syllabus

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Course Information

Course Number/Section:	HMGMT 6332 / OPRE 6354 Section OW1
Course Title:	Quality Improvement in Healthcare
Term:	Fall 2024
Course Modality:	ONLINE
Instructor:	Dr. Kannan Ramanathan
Virtual Office Hours:	Email for appointment
Email:	kxr087000@utdallas.edu

Course Description

This course uses the Lean Six Sigma framework to discuss how healthcare organizations can improve the quality of care and implement continuous improvement in the healthcare environment. Lean manufacturing/service focuses on improving the speed of a process and the elimination of waste, primarily by reducing non-value-added steps. Six Sigma deals with improving consistency and the effectiveness with which a process meets customer requirements. Concepts from the combined framework – Lean Six Sigma – are increasingly being applied to healthcare processes.

About Certification in Lean Six Sigma

Please note that this is NOT a project-based course, i.e., the course requirements do not include the completion of a project. If you complete HMGMT 6320 (The American Healthcare System), HMGMT 6321 (Strategic Leadership of Healthcare Organizations), HMGMT 6323 (Healthcare Informatics in Healthcare), in addition to this course (HMGMT 6332), and secure a minimum 'B' grade in each course, you qualify for a Lean Six Sigma Yellow Belt Certificate. You **must** formally apply to, and be accepted into, the Yellow Belt Certificate Program, followed by applying 'to graduate' to be awarded this certificate. All academic certificate programs follow the same application and admission processes as graduate degree programs. All dates and deadlines can be on the UTD Academic Calendar. Note also that there are penalties (fees) if you do not apply for admission and graduation on a timely basis. If you have questions about the Yellow Belt, please contact Dr. Thurgood. If you have questions about the Green Belt, please contact Dr. Ramanathan.

Students Learning Objectives/Outcomes

At the conclusion of this course, the student should:

- Understand concepts of Lean and Six Sigma as applied to healthcare processes
- Develop analytical thinking and problem-solving capability
- Cultivate ability to apply concepts and techniques to process engineering in healthcare
- Be familiar with tools in process engineering
- Express your ideas and thoughts clearly and concisely

JSOM Virtual Learning Launchpad

- To access your course content, complete the JSOM Virtual Learning Launchpad in eLearning, follow instructions shown at [Student JSOM Virtual Learning Launchpad Instructions](#)
- The certificate must be completed each academic year and uploaded each semester for all synchronous / asynchronous courses. The Launchpad will be available before your course starts.



Required Materials

1. Lean Six Sigma for Healthcare Professionals by Kannan Ramanathan
 - This book is available for purchase only from the UTD Bookstore
2. In addition, some readings will need to be purchased (see list at end of syllabus)

Office of Student Accessibility

It is the policy and practice of The University of Texas at Dallas to make reasonable accommodation for students with properly documented disabilities. However, written notification from the Office of Student Accessibility (OSA) is required. OSA is in the Administration Building, suite 2.224. They can be reached by phone at 972- 883-2098, or by email at studentaccess@utdallas.edu.

Unless the Office of Student Accessibility has approved the student to record the instruction, students are prohibited from recording any part of this course. Recordings may not be published, reproduced, or shared with those not in the class, or uploaded to other online environments except to implement an approved Office of Student Accessibility accommodation. Failure to comply with these University requirements is a violation of the [Student Code of Conduct](#).

Communication

This course utilizes online tools for interaction and communication. Some external communication tools such as regular email and a web conferencing tool may also be used during the semester.

1. **Please do not communicate with me on MS Teams or through eLearning**
2. Without exception, you MUST communicate via your UTD email account only (to be compliant with FERPA). Do not use a personal email account (e.g., Gmail, Yahoo, or other), it will not be answered.
3. When sending an email, make sure to include the course and section number. For example, HMGMT 6332.OW1.

Student emails will be answered within 3 working days under normal circumstances. See guidelines for communication further below.

Quizzes

Assignment	All Day CT On	Scope of quiz	Time (minutes)	Number of questions	% of grade
Mid-Term (closed book)	Wed, Oct 9 – Fri, Oct 11	All topics up to (but not including) Basic Statistics	75	75	37%
Final (closed book)	Mon, Dec 2 – Thu, Dec 5	All topics, with emphasis on Basic Statistics and Six Sigma	100	75	41%
Quizzes open book	Quizzes differ with respect to number of questions, time available, and deadlines. No proctoring Content from these quizzes is not included in the mid-term and final.				16%
Assessment Quiz	Fri, Nov 29 ONLY	You have questions on both Lean and Six Sigma	10	10	4%
	The Assessment Quiz is NOT proctored. You do NOT need to book time with the Testing Center.				
Real life examples	You can earn up to 3% points by providing examples of applications of quality control in healthcare. These can be from articles mentioned in the public press. Your assignment must consist of one page of text (single-space, Calibri font, font-size 11). On the second page provide the source for this article. Professional presentation (in terms of spelling, grammar, formatting) is a MUST .				2%



Extra Credit Opportunities	Extra credit of up to two marks (for attending healthcare management events and/or other activities.) One mark (not percentage point) for each event attended will be added to final exam marks for a maximum of two marks for one course. Email from organizer of event is required. These points are solely at the discretion of the Professor.	
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Mid-term and final MUST be taken at the UTD Testing Center (or another approved Testing Center) on the days specified (whenever you can make a reservation). Note that the UTD Testing Center is not open 24/7. **If you need to have a make-up quiz for any reason, there will be a deduction of 10% points. The make-up quiz may be different (in both format and grading criteria) from the scheduled quiz.**

Exams

- You need to take your Mid-term and Final during the scheduled window.
- If you need to have a make-up exam outside the scheduled window – for whatever reason - **there will be a deduction of 10% points** from the earned grade for that exam
- The make-up exam may be different (in both format and grading criteria) from the scheduled quiz
- The Mid-term will cover all material from the beginning to the end of discussions on Lean
- The Final will cover all material on Six Sigma, Basic Statistics, and may also have some questions regarding differences between Lean and Six Sigma
 - Open-book quizzes do not need proctoring (i.e., do not need to be taken at a testing center)
 - Mid-term and Final MUST be taken in person at the UTD Testing Center, or another testing center approved by UTD

See: <https://ets.utdallas.edu/testing-center/students/>
<https://ets.utdallas.edu/testing-center/distance-learning/>
<https://dox.utdallas.edu/list15802>

Note that ALL proctored exam applications for a testing center other than UTD must be submitted and received by the UT Dallas Testing Center **at least 10 business days** prior to the exam date. The UT Dallas Testing Center will adhere to the 10-business day deadline submission, **no exceptions**.

For questions about remote testing – please contact tccl@utdallas.edu.

A 10%-point penalty applies if I have to make any changes to your exam schedule. The penalty will apply to the grade for the entire course. (e.g., if your course grade is 95% and you have a 10%-point penalty, your grade will be 85%).

Grading Criteria

Grading criteria may vary from those for other courses or even this same course in other semesters. Grades will be based on the following point ranges:

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DES WILL BE BASED ON:

POINTS ABOVE/UPTO	Letter Grade
0%	F
72%	C
77%	C+
80%	B-
83%	B
86%	B+
90%	A-



Note: Grades are NOT curved

Comet Creed

This creed was voted on by the UT Dallas student body in 2014. It is a standard that Comets choose to live by and encourage others to do the same: *"As a Comet, I pledge honesty, integrity, and service in all that I do."*

Course Policy: Be Advised

General

- a. Announcements or changes will be made through the eLearning and/or UT Dallas email and it is your responsibility to log into eLearning (Blackboard) periodically (e.g., weekly, daily) and review the provided materials. The instructor makes every effort to inform you of any changes.
- b. Read the syllabus thoroughly and get familiar with the course policy, assignments, due dates, and expectations.
- c. The office hours must be used to discuss specific concerns and should not be viewed as an opportunity for additional instruction or tutoring. Your primary source of instruction apart from the lectures, include the eLearning materials, the research you conduct online to complement your learnings and books you review from UT Dallas digital library.
- d. Any student responsible for committing an act of academic dishonesty will receive a grade of F or 0 (zero) on that quiz, exam, assignment, project, or course.
- e. Please note:
 - i. *The instructor reserves the right to change the grading policy without any notice due to unforeseen circumstances such as dishonesty, cheating, etc.*
 - ii. *The instructor reserves the right to change the already published grades on eLearning and/or Galaxy if there has been a miscalculation.*
- f. When the grades are posted on eLearning, you have 72 hours to review and notify the instructor if there is an issue with your grade, otherwise, the grade remains as is and will not be changed under any circumstances.
- g. Pay close attention to all the due dates and exam dates, so plan/schedule your personal activities around those dates. Never purchase a plane ticket (no matter how cheap it is) before the posted final Exam Week (review UTD calendar for specific dates).
- h. You will receive a grade of zero or F for any missed assignment, exam or quiz, no exceptions.
- i. There will be NO make-up for any missed assignment, quiz, exam nor any project for an extra credit. Emails asking for extra credit will not be answered. **Grades are not curved.**
- j. Exam make up may be accepted only for medical emergencies (written statement justifying the situation from a local physician required). Scheduling a surgery/operation on an exam date is not considered a medical emergency. The written statement should include the physician's (not a physician assistant) address and phone number. For a make-up exam, the format of the exam may be considerably different from the regular exam.

READ THE SYLLABUS IN ITS ENTIRETY

Professor will not respond to questions if the information is already provided in the syllabus.



Open-book Quizzes

PLEASE NOTE:

- YOU MUST SUBMIT THE FOLLOWING OPEN-BOOK QUIZZES BEFORE THE DEADLINE
- ONLY ONE SUBMISSION IS ALLOWED
- DO NOT SUBMIT ACCIDENTALLY
- DO NOT WAIT TILL THE LAST MINUTE TO SUBMIT – DEADLINES WILL **NOT** BE EXTENDED

READING

COMPLETE QUIZ BY

Q1 MAKING A DENT IN MEDICAL WASTE	Sun, Sep 08, 2024
Q2 FACTORY EFFICIENCY COMES TO THE HOSPITAL	Sun, Sep 15, 2024
Q3 MISTAKE-PROOFING HEALTHCARE - WHY STOPPING PROCESSES MIGHT BE A GOOD START	Sun, Sep 29, 2024
Q4 HEALTHCARE QUALITY - ACCOUNTABILITY	Sun, Oct 06, 2024
Q5 APPLYING THE LEAN PRINCIPLES OF THE TOYOTA PRODUCTION SYSTEM TO REDUCE	Sun, Oct 20, 2024
Q6 WRITING THE NEW PLAYBOOK FOR US HEALTHCARE	Sun, Oct 27, 2024
Q7 THE IMPACT OF SIX SIGMA IMPROVEMENT-A GLIMPSE INTO THE FUTURE OF STATISTICS	Sun, Nov 03, 2024
Q8 MANAGING QUALITY WITH PROCESS CONTROL	Sun, Nov 10, 2024
Q9 THE NORMALIZATION OF DEVIANCE IN HEALTHCARE DELIVERY	Sun, Nov 17, 2024

Readings for Q3, Q8, Q9 can be purchased from the link below.

<https://hbsp.harvard.edu/import/1200743>

Other Readings

These and other readings are available as follows.

For copyright reasons you will need to obtain these on your own.

Content from these readings is not included in the mid-term and final exams.

- Q1** In a World of Throwaways, Making a Dent in Medical Waste
Yingfei Chen, The New York Times, July 5, 2010
- Q2** Factory Efficiency Comes to the Hospital
Julie Weed, The New York Times, July 10, 2010
- Q3** Mistake-Proofing Healthcare
John R. Grout and John S. Toussaint, Business Horizons (2010), 53, 149-156
(Purchase from link above)
- Q4** HealthCare Quality - From Data to Accountability
Mary Darby, National Health Policy Forum, February 1998
https://hsr.himmelfarb.gwu.edu/cgi/viewcontent.cgi?article=1002&context=sphhs_centers_nhpf
- Q5** Applying the Lean principles of the Toyota Production System to reduce wait times in the ED
David Ng, Gord Vail, Sophia Thomas, Nicki Schmidt, CJEM 2010; 12(1):50-7
- Q6** Writing the New Playbook for U.S. Health Care: Lessons from Wisconsin



- Q7** The Impact of Six Sigma Improvement-A Glimpse into the Future of Statistics
Gerald J. Hahn, William J. Hill, Roger W. Hoerl and Stephen A. Zincograph
The American Statistician, Vol. 53, No. 3 (Aug. 1999), pp. 208-215
- Q8** Managing Quality with Process Control
Roy D. Shapiro, Harvard Business Publishing, Core Curriculum Readings, 8020-HTM-ENG, Sep 10, 2013
(Purchase from link above)
- Q9** The Normalization of Deviance in Healthcare Delivery
John Banja, Harvard Business Publishing, Mar 15, 2010, #: BH375-PDF-ENG (Purchase from link above)

WEEK #	WEEK ENDING	LECTURE	READING	ASSIGNMENT	DUE DATE
MODULE 1					
1	Sun Sep 1	Unit 1 to 6	Textbook		
2	Sun Sep 7	Unit 7 to 10	Textbook + Paper	Q1 Making a dent in medical waste	Sun, Sep 08
3	Sun Sep 15	Unit 11 to 15	Textbook + Paper	Q2 Factory Efficiency Comes to the Hospital	Sun, Sep 15
4	Sun Sep 22	Unit 16 to 19	Textbook + Paper	Q3 Mistake-Proofing Healthcare	Sun, Sep 29
5	Sun Sep 29	Unit 20 to 22	Textbook		
	Mon Oct 07	REVIEW OF TOPICS PRIOR TO MID-TERM			
		MS TEAMS MEETING 2:30 PM TO 3:30 PM CENTRAL TIME			
6	Sun Oct 06	Unit 23 to 26	Textbook + Paper	Q4 HealthCare Quality - Accountability	Sun, Oct 06
7	Wed, Oct 9- Fri, Oct 11	MID-TERM			
MODULE 2					
8	Sun Oct 13	Unit 1 to Unit 5	Textbook + Paper	Q5 Applying the Lean principles of the Toyota Production System	Sun, Oct 20
9	Sun Oct 20	Unit 6 to 9	Textbook + Paper	Q6 Writing the New Playbook for US Healthcare	Sun, Oct 27
10	Sun Oct 27	Unit 10 to Unit 13	Textbook + Paper	Q7 The Impact of Six Sigma Improvement -A Glimpse into the Future of Statistics	Sun, Nov 03
11	Sun Nov 3	Unit 14 to 16	Textbook		
12	Sun Nov 10	Unit 17 to 20	Textbook + Paper	Q8 Managing Quality with Process Control	Sun, Nov 10
	Mon, Nov 25	REVIEW OF TOPICS PRIOR TO FINAL			
		MS TEAMS MEETING 2:30 PM TO 3:30 PM CENTRAL TIME			
13	Sun Nov 17	Unit 21 to 23	Textbook		
14	Sun Nov 24	SELF-STUDY	Textbook + Paper	Q9 The Normalization of Deviance in Healthcare Delivery	Sun, Nov 17
15	Mon, Dec 2- Thu, Dec 5	FINAL			