



## Quality Improvement in Healthcare – Syllabus

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## Course Information

<b>Course Number/Section:</b>	<b>HMGMT 6332 / OPRE 6354 Section 5U1</b>
<b>Course Title:</b>	Quality Improvement in Healthcare
<b>Term:</b>	Summer 2023
<b>Location:</b>	JSOM 1.102
<b>Day and Time:</b>	Tue 6:00 PM - 10:00 PM
<b>Instructor:</b>	Dr. Kannan Ramanathan
<b>Virtual Office Hours:</b>	Email for appointment
<b>Email:</b>	<a href="mailto:kxr087000@utdallas.edu">kxr087000@utdallas.edu</a>

## 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.

## Course Modality and Expectations

Regular class participation is expected regardless of course modality. Students who fail to participate in class regularly are inviting scholastic difficulty. It also includes engaging in group or other activities during class that solicit your feedback on homework assignments, readings, or materials covered in the lectures (including guest lectures and review sessions). Successful participation is defined as consistently adhering to university requirements, as presented in this syllabus. Failure to comply with these University requirements is a violation of the Student Code of Conduct. Class participation may be one or more of: attending the live session, asking questions during the live session, and meeting with the professor to discuss.

It is expected that the students will read the syllabus in its entirety. There is a quiz on the syllabus. You need to score 100% in this quiz to qualify to take the first quiz. You can take the quiz as many times as you need to. Quiz will be available ONLY for the first 10 days of the semester.



## Professional Conduct, Bonus Points, Penalty Points

- This course emphasizes not only academic performance but also professional conduct.  
This means:
  - Attend class regularly
    - o Attendance will be taken at some point during the class
    - o You are expected to stay for the whole class
    - o 3.0% points of your grade are based on your attendance and active participation
  - Come on time (i.e., come before 6:00 pm)
    - o There is a penalty of 1% point if you come even a minute late
    - o If you have a specific reason for coming late, let me know AHEAD of time
  - Bring a printed tent card
    - o It MUST be printed using the template provided on elearning
    - o Handwritten tent-cards are not acceptable
    - o I will provide your tent card on the first day of class
    - o If you do not come to the first class, or lose your tent card, print one using the template provided on elearning
    - o There is a penalty of 1% point each time you do not have a printed tent card
  - Do NOT use your phone / laptop during class (whatever the reason)
    - o There is a penalty of 2% point for each such use
  - If you schedule an appointment with the Professor (in-person/virtual), do not miss it or be late
    - o There is a penalty of 1% point if you are late or fail to attend the meeting, without a day's prior notice
  - You can schedule and re-schedule your quiz as many times as you want on the specified days
  - But there is a penalty of 10% points if your mid-term/final needs to be re-scheduled outside those days
  - After the final grades are uploaded, DO NOT contact the Professor for changes to your grade without a valid reason
  - Emails asking for grade changes will be ignored
  - If you include your phone number when you email the Professor, your question may be answered more quickly
  - For any meeting with the Professor, you MUST schedule an appointment
  - You have opportunities to earn bonus points (e.g., by answering questions in class)
  - These bonus points are awarded at the discretion of the instructor
  - There is no limit either on the penalty points or on the bonus points

## Course Platform

- In person in JSOM 1.102
- We may have guest lectures via MS Teams

## COVID-19 Resources

Students may review [University's COVID-19 resources](#) for information.



## 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

## 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. If you are eligible to receive accommodation and would like to request it for this course, please discuss it with me and allow one-week advance notice. Students who have questions about receiving accommodations, or those who have, or think they may have, a disability (mobility, sensory, health, psychological, learning, etc.,) are invited to contact the Office of Student Accessibility for a confidential discussion. 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](mailto: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](#).

If the instructor or a UTD school/department/office plans any other uses for the recordings, consent of the students identifiable in the recordings is required prior to such use unless an exception is allowed by law.

## Technical Requirements

In addition to a confident level of computer and Internet literacy, certain minimum technical requirements must be met to enable a successful learning experience. Please review the important technical requirements on the [Getting Started with eLearning](#) webpage.

## Course Access and Navigation

This course can be accessed using your UT Dallas NetID account on the [eLearning](#) website.



Please see the course access and navigation section of the [Getting Started with eLearning](#) webpage for more information. To become familiar with the eLearning tool, please see the [Student eLearning Tutorials](#) webpage.

UT Dallas provides eLearning technical support 24 hours a day, 7 days a week. The [eLearning Support Center](#) includes a toll-free telephone number for immediate assistance (1-866-588-3192), email request service, and an online chat service.

## 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. For more details, please visit the [Student eLearning Tutorials](#) webpage for video demonstrations on eLearning tools.

1. **Please do not text me on MS Teams**
2. Without exception, you MUST communicate via your UTD email account only (FERPA purposes). 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 number, section, and time. For example, HGMT 6332.5U1 TUE 6:00PM.

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

## Quizzes

<i>Assignment</i>	<i>All Day CT On</i>	<i>Scope of quiz</i>	<i>Time (minutes)</i>	<i>Number of questions</i>	<i>% of grade</i>
<i>Mid-Term (closed book)</i>	Jul 6 – Jul 8	All topics up to (but not including) Basic Statistics	75	75	39%
<i>Final (closed book)</i>	Aug 3 – Aug 5	All topics, with emphasis on Basic Statistics and Six Sigma	100	75	42%
<i>Quizzes open book</i>	Quizzes differ with respect to number of questions, time available, and deadlines. Content from these quizzes is not included in the mid-term and final.				16%

**Remaining 3% of your grade is based on your attendance and active participation.**

Mid-term and final MUST be taken at the UTD 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.**



## 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:

### GRADES WILL BE BASED ON:

POINTS ABOVE/UPTO	Letter Grade
0%	F
72%	C
77%	C+
80%	B-
83%	B
86%	B+
90%	A-
93%	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

- 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.
- Read the syllabus thoroughly and get familiar with the course policy, assignments, due dates, and expectations.
- 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.
- 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.
- Please note:
  - The instructor reserves the right to change the grading policy without any notice due to unforeseen circumstances such as dishonesty, cheating, etc.*
  - 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. Do not email the instructor after an exam or a quiz and request extra credit for what was earned. Such emails 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. In medical emergency circumstances, your make-up exam may include SIGNIFICANT discussion, essay, and short answer questions.

## UT Dallas Syllabus Policies and Procedures

### Academic Support Resources

- The information contained in the [Academic Support Resources](#) lists the University's academic support resources for all students.
- The information contained in the following link constitutes the University's policies and procedures segment of the course syllabus. Please go to [UT Dallas Syllabus Policies](#) webpage for these policies.

## READ THE SYLLABUS IN ITS ENTIRETY

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

## Course Timeline

*The descriptions and timelines contained in this syllabus are subject to change as required and at the discretion of the Professor.*

<b><i>Tuesday May 30 – Tuesday Jun 27</i></b>	<b>-</b>	<b><i>Quality and Lean</i></b>
<b><i>Tuesday Jul 11 – Tuesday Jul 25</i></b>	<b>-</b>	<b><i>Statistics and Six Sigma</i></b>

## 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	Tue, Jun 13, 2023
Q2 FACTORY EFFICIENCY COMES TO THE HOSPITAL	Tue, Jun 13, 2023
Q3 MISTAKE-PROOFING HEALTHCARE - WHY STOPPING PROCESSES MIGHT BE A GOOD START	Tue, Jun 20, 2023
Q4 HEALTHCARE QUALITY - ACCOUNTABILITY	Tue, Jun 27, 2023
Q5 APPLYING THE LEAN PRINCIPLES OF THE TOYOTA PRODUCTION SYSTEM TO REDUCE ... ..	Tue, Jul 04, 2023
Q6 WRITING THE NEW PLAYBOOK FOR US HEALTHCARE	Tue, Jul 11, 2023
Q7 THE IMPACT OF SIX SIGMA IMPROVEMENT-A GLIMPSE INTO THE FUTURE OF STATISTICS	Tue, Jul 18, 2023
Q8 MANAGING QUALITY WITH PROCESS CONTROL	Tue, Jul 25, 2023
Q9 THE NORMALIZATION OF DEVIANCE IN HEALTHCARE DELIVERY	Tue, Aug 01, 2023

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

<https://hbsp.harvard.edu/import/1056781>

### 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](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 emergency department  
*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  
*John Toussaint, Health Affairs 28, no.5 (2009):1343-1350*

**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)