

Department of Environmental Health

I. Course Information:

Title: Quality Improvement and Patient Safety

Course #: BE7071/PH7071

Credit Hours: 1

Term: Fall 2018

Prerequisites: N/A

II. Instructor Information:

Name: Amy Diane Short, MHSA

Title: Course Director

Email: amy.short@uc.edu

Communication Policy: Students are encouraged to contact me anytime via email. A response will be given within 24-48 hours except on weekends. Please include the course number (7071) in the subject line of emails to help “error proof” against any of your emails being missed. In-person meetings and telephone conversations with me are available by appointment.

Name: Mark Eckman, MD

Title: Course Advisor

III. Course Materials

Required

Graban (2016). *Lean Hospitals: Improving Quality, Patient Safety, and Employee Engagement*. 3rd edition. CRC Press. ISBN# 978-1498743259.

IV. Course Description:

This course is intended to be the beginning of your foray into Lean Quality Improvement in the healthcare setting. As a beginner course, it initiates a framework for understanding Lean concepts and methodologies to prepare students for future pragmatic applications in the context of their daily work in clinical environments. Readings, discussion boards, lectures, activities and videos will be used to help the student understand methods for implementing Lean Quality Improvement.

V. Student Learning Outcomes:

Upon successful completion of this course, the learner will be able to:	How is this outcome assessed?
1. Appreciate the need for Lean Quality Improvement as it relates to both the patient and the healthcare organization	Discussion board, activities, final reflection
2. Identify the key dimensions of the Lean Quality Improvement methodology	Discussion board, activities, final reflection
3. Apply Lean tools and techniques	Discussion board, activities, final reflection

VI. Instructional Methods:

The following course has the Blackboard Learning Management System to provide student-centered online learning that will enhance the teaching and learning process. If you are not familiar with these tools, please visit [IT@UC's Knowledge Base for Blackboard](#).

VII. Course Communication:

University policy requires that the email set up in Blackboard is the primary means of communication. It is advisable that you use your UC email for this purpose and that you check it often. If you choose to change your email in Blackboard to a non-UC email it is your responsibility to ensure you check it frequently. Please include the course number (7071) in the subject line of emails to help “error proof” against any of your emails being missed.

VIII. Course and Grading Policies:

All assignments are due by 11:59 PM EST on the listed due date. It is understood that you are busy professionals. Extensions will be granted, no questions asked, if the student makes the request by 5:00 PM EST on the Friday prior to the due date. Assignments submitted late, without an extension, will not receive full credit, and may receive no credit. In the case of emergency, the instructor will determine if the seriousness of the problem warrants an extension requested after the assignment's due date.

Students are expected to follow the assignment's instructions, particularly the stated word counts. Content exceeding the word count may not be graded.

Criteria for letter grades:

Your course grades are based on the following:

Point Allocation:

<i>Watching Lecture Modules (8)</i>	<i>20 points each</i>
<i>Discussion Board Posts (8)</i>	<i>10 points each</i>
<i>Deliverables (6)</i>	<i>30 points each</i>
<i>Final Reflection (1)</i>	<i>50 points each</i>
<i>Total Points Available</i>	<i>470 points</i>

Grading Scale

Overall Percentage / Points

**Letter
Grade**

93% and above	A
90%	A-
87%	B+
83%	B
80%	B-
77%	C+
73%	C
70%	C-
Below 70%	F

IX. Course Schedule:

All assignments are due by 11:59 PM EST on the listed due date.

Dates	Weekly Topic(s):	Readings and Lecture Modules	Assignments & Assessments	Due Dates
8/27/18	Week 1: Lean in Healthcare	Graban Chapters 1&2 Lecture "Module 1"	Discussion Board Post	9/2/18
9/3/18	Week 2: Value and Waste	Graban Chapter 3 Lecture "Module 2"	Discussion Board Post	9/9/18
9/10/18	Week 3: 7 Waste Observation	Graban Chapter 3	7 Waste Observation	9/16/19
9/17/18	Week 4: Observing the Process	Graban Chapter 4 Lecture "Module 3"	Discussion Board Post	9/23/18
9/24/18	Week 5: Mapping a Process	Graban Chapter 4	Mapping a Process	9/30/18
10/01/18	Week 6: Standard Work	Graban Chapter 5 Lecture "Module 4"	Discussion Board Post	10/7/18
10/08/18	Week 7: Visual Management	Graban Chapters 6 Lecture "Module 5"	Discussion Board Post	10/14/18
10/15/18	Week 8: Visual Management Snap Chat	Graban Chapters 6	Visual Management Snap Chat	10/21/18
10/22/18	Week 9: 5S	Graban Chapters 6 Lecture "Module 9"	Discussion Board Post	10/28/18
10/29/18	Week 10: Perform a 5S	Graban Chapters 6	Perform a 5S	11/4/18
11/5/18	Week 11: Root Cause Analysis	Graban Chapters 7 Lecture "Module 11"	Discussion Board Post	11/11/18
11/12/18	Week 12: Fish Bone	Graban Chapters 7	Fish Bone	11/18/18

Dates	Weekly Topic(s):	Readings and Lecture Modules	Assignments & Assessments	Due Dates
11/19/18	Week 13: Preventing Errors	Graban Chapter 8 Lecture "Module 13"	Discussion Board Post	11/25/18
11/26/18	Week 14: Error Proofing Snap Chat	Graban Chapters 8	Error Proofing Snap Chat	12/2/18
12/3/18	Week 15: Putting it Together	UNBC Reflective Writing	Final Reflection	12/9/18

Week 1

Lean in Healthcare

LEARNING OBJECTIVES

By the end of Week 1, students must demonstrate mastery of the following competencies:

- Appreciate the need for Lean Quality Improvement as it relates to both the patient and the healthcare organization.
- Identify the key dimensions of the Lean Quality Improvement methodology.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- Lecture “Module 1”
- Quality Improvement in Healthcare <https://www.youtube.com/watch?v=jq52ZjMzqyI>
- The Promise of Lean in Healthcare <https://www.youtube.com/watch?v=W217mMcYpTI>

Read

- Lean Hospitals: Chapters 1&2
- Chapter 1 available freely online: goo.gl/qJgTNa

Toolbox Resources

- To Err is Human: Building a Safer Health System, Institute of Medicine, National Academy Press, 1999 <https://www.nap.edu/read/9728/chapter/1>
- Lean Vs Model for Improvement <https://www.youtube.com/watch?v=LENZbA1owVo>

Deliverable

Week 1: Write a brief discussion board post. After introducing yourself and your experience with Lean Quality Improvement (QI), please reflect in 250-500 words on how QI is different or similar to other types of QI you have encountered. If this is your first experience with QI, instead reflect on how Lean could improve where you work.

Week 2

Value and Waste

LEARNING OBJECTIVES

By the end of Week 2, students must demonstrate mastery of the following competency:

- Identify the key dimensions of the Lean Quality Improvement methodology.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- Lecture “Module 2”
- 8 Wastes in Healthcare https://www.youtube.com/watch?v=7mA1L_a_FX4
- What is Value? <https://www.youtube.com/watch?v=4WBvqNwGeEs>

Read

- Lean Hospitals: Chapter 3

Toolbox Resources

- Agarwal, R., Sands, D.Z., Schneider, J.D. (2010). Quantifying the economic impact of communicating inefficiencies in U.S. hospitals. *Journal of Healthcare Management*, 55:4, 265-281.
- Hendrich, A., Chow, M. P., Skierczynski, B. A., & Lu, Z. (2008). A 36-Hospital Time and Motion Study: How Do Medical-Surgical Nurses Spend Their Time? *The Permanente Journal*, 12(3), 25–34.
- 7 Wastes Observation form (PDF in Blackboard)

Deliverable

Please note that the deliverable for week 3 is announced here so that the student may have two weeks to complete the activity.

Week 2: Write a brief discussion board post. Think back to a time when YOU were the patient. Please reflect in 250-500 words on the value and waste inherent in the care you received.

Week 3: Each student is to spend an hour observing a process outside of their work environment and complete and submit a “7 Wastes Observation Form”. Examples of processes to observe are the counters of fast food restaurants, grocery store deli departments, or store checkout lanes. Please upload the completed form into Blackboard.

Week 3

Waste Observation

LEARNING OBJECTIVES

By the end of Week 3, students must demonstrate mastery of the following competency:

- Apply Lean tools and techniques.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- See Week 2

Read

- See Week 2

Toolbox Resources

- See Week 2

Deliverable

Week 3: Each student is to spend an hour observing a process outside of their work environment and complete and submit a “7 Wastes Observation Form”. Examples of processes to observe are the counters of fast food restaurants, grocery store deli departments, or store checkout lanes. Please upload the completed form into Blackboard.

Week 4

Observing the Process

LEARNING OBJECTIVES

By the end of Week 4, students must demonstrate mastery of the following competency:

- Identify the key dimensions of the Lean Quality Improvement methodology.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- Lecture “Module 3”
- Value Stream Mapping in Health Care

Read

- Lean Hospitals: Chapter 4

Toolbox Resources

- Process Mapping: <https://www.youtube.com/watch?v=-wqVknKMpEg>
- IHI Open School Process Mapping
<http://www.ihio.org/education/IHIOpenSchool/resources/Pages/AudioandVideo/Whiteboard11.aspx>

Deliverable

Please note that the deliverable for week 5 is announced here so that the student may have two weeks to complete the activity.

Week 4: Write a brief discussion board post. Please reflect in 250-500 words on what process in your own work area would benefit from a process observation and any challenges you might face in trying to observe all of the elements of the process. How might you address?

Week 5: As described in the lecture on process mapping, make a simple Post-it note process map (see Toolbox Resource in Week 4). It should have 6-15 steps and at least one decision point. Legible hand writing please. Take a picture and paste it into

a PowerPoint slide. In the notes section of the slide, add in brief comments or observations. (No more than 400 words.) Please upload your submission into Blackboard.

Week 5

Mapping a Process

LEARNING OBJECTIVES

By the end of Week 5, students must demonstrate mastery of the following competency:

- Apply Lean tools and techniques.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- See Week 4

Read

- See Week 4

Toolbox Resources

- See Week 4

Deliverable

Week 5: As described in the lecture on process mapping, make a simple post-it note process map. It should have 6-15 steps and at least one decision point. Legible hand writing please. Take a picture and paste it into a PowerPoint slide. In the notes section of the slide, add in brief comments or observations. (No more than 400 words.) Please upload your submission into Blackboard.

Week 6

Standard Work

LEARNING OBJECTIVES

By the end of Week 6, students must demonstrate mastery of the following competency:

- Identify the key dimensions of the Lean Quality Improvement methodology.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- Lecture “Module 4”
- Bed Movement <https://www.youtube.com/watch?v=A2uQENkysbQ>
- THEDA Care Standard Work <https://www.youtube.com/watch?v=jTpsNpCZqj8>

Read

- Lean Hospitals: Chapter 5

Toolbox Resources

- The Discipline of Standard Work <https://www.youtube.com/watch?v=CrIujo1A77U>
- Draw a Pig <https://www.youtube.com/watch?v=v-ThBEAZ5jo>
- IHI: Standardize Before You Improve <http://www.ihf.org/communities/blogs/standardize-before-you-improve>

Deliverable

Week 6: Write a brief discussion board post. Please reflect in 250-500 words on standard work already in place at your organization. Does it help you be more efficient and safer or just get in the way? If it gets in the way, how might it be improved?

Week 7

Visual Management

LEARNING OBJECTIVES

By the end of Week 7 students must demonstrate mastery of the following competency:

- Identify the key dimensions of the Lean Quality Improvement methodology.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- Lecture “Module 5”
- Visual Management <https://www.youtube.com/watch?v=5C1ZWtvemgY>

Read

- Lean Hospitals: Chapter 6

Toolbox Resources

- Harvard Business Review: How Visual Systems Make It Easier to Track Knowledge Work
<https://hbr.org/2015/09/how-visual-systems-make-it-easier-to-track-knowledge-work>

Deliverable

Please note that the deliverable for week 8 is announced here so that the student may have two weeks to complete the activity.

Week 7: Write a brief discussion board post. Please reflect in 250-500 words on an idea for applying visual management in an area where you work that might need it.

Week 8: Please snap a picture of two things: 1 a sign that is not an example of visual management (just a sign) and 2 a picture of something you think is true visual management. Put each of these in one slide apiece in PowerPoint, then in the notes section for each in 200 words or less (this is for each slide so 400 words total for the assignment) tell me why each is or is not an example of visual management. Please upload into Blackboard.

Week 8

Visual Management Snap Chat

LEARNING OBJECTIVES

By the end of Week 8 students must demonstrate mastery of the following competency:

- Apply Lean tools and techniques.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- See Week 7

Read

- See Week 7

Toolbox Resources

- See Week 7

Deliverable

Week 8: Please snap a picture of two things: 1 a sign that is not an example of visual management (just a sign) and 2 a picture of something you think is true visual management. Put each of these in one slide apiece in PowerPoint, then in the notes section for each in 200 words or less (this is for each slide so 400 words total for the assignment) tell me why each is or is not an example of visual management. Please upload into Blackboard.

Week 9

5S

LEARNING OBJECTIVES

By the end of Week 9 students must demonstrate mastery of the following competency:

- Identify the key dimensions of the Lean Quality Improvement methodology.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- Lecture “Module 9”
- Lean 5S in MICU <https://www.youtube.com/watch?v=aMkXICM1-98>

Read

- Lean Hospitals: Chapter 6

Toolbox Resources

- What is 5S? <https://www.5stoday.com/what-is-5s/>
- “Epic” Lean Kitchen <https://www.youtube.com/watch?v=Ui-Lk6gK7m8>

Deliverable

Please note that the deliverable for week 10 is announced here so that the student may have two weeks to complete the activity.

Week 9: Write brief discussion board post. Go to a storage area in the location where you do the most work. Look at it with a 5S eye and answer the following question in 250-500 words about some of the things you see. Are all of these items needed? Are they needed in this quantity? How frequently are they used? Should they be located here or somewhere better? What is missing?

Week 10: It is time to do your own 5S. First, select an area to do your own 5S project and then sort, store, shine, standardize, and think about how you might sustain this improvement. This can be at home or in your workspace if you think people would be open to it, particularly if it is organizing something non-controversial and relatively contained.

Please snap a picture of two things: 1 the before, and 2 the after. Put each of these in one slide apiece in PowerPoint. Record any observations (up to 400 words) in the notes section. Please upload submission into Blackboard.

Week 10

Perform a 5S

LEARNING OBJECTIVES

By the end of Week 10 students must demonstrate mastery of the following competency:

- Apply Lean tools and techniques.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- See Week 9

Read

- See Week 9

Toolbox Resources

- See Week 9

Deliverable

Week 10: It is time to do your own 5S. First, select an area to do your own 5S project and then sort, store, shine, standardize, and think about how you might sustain this improvement. This can be at home or in your workspace if you think people would be open to it, particularly if it is organizing something non-controversial and relatively contained.

Please snap a picture of two things: 1 the before, and 2 the after. Put each of these in one slide apiece in PowerPoint. Record any observations (up to 400 words) in the notes section. Please upload submission into Blackboard.

Week 11

Root Cause Analysis

LEARNING OBJECTIVES

By the end of Week 11 students must demonstrate mastery of the following competency:

- Identify the key dimensions of the Lean Quality Improvement methodology.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- Lecture “Module 11”
- 5 Whys: Jefferson Memorial Example:
<https://www.youtube.com/watch?v=BEQvq99PZwo>
- Why A Fishbone Diagram Can Help Solve Risk and Quality Problems
<https://www.youtube.com/watch?v=wr4iRIOZHwE>

Read

- Lean Hospitals: Chapter 7

Toolbox Resources

- James, J. T. (2013). A new, evidence-based estimate of patient harms associated with hospital care. *Journal of Patient Safety*, 9(3), 122-128.
- RCA2: Improving Root Cause Analyses and Actions to Prevent Harm (PDF in Blackboard)
- Fishbone Template (form in Blackboard)

Deliverable

Please note that the deliverable for week 12 is announced here so that the student may have two weeks to complete the activity.

Week 11: Write a brief discussion board post. Please think back to a time that the root cause of a problem was NOT identified, and a quick, but ineffective, “Band-aid” was put in place instead. Discuss in 250-500 words why you think that happened and what the quick fix did for the process, good or bad. Did it help at all? Did it make things worse? Did it even last as a process change?

Week 12: Using the provided Fishbone template, gather a group of stake holders and brainstorm the possible root causes of a problem. I recommend doing this with your friends or family about something simple like why a pizza delivery might be delayed or why your kids almost always miss the school bus in the morning. Don’t forget to keep asking why! Paste your fishbone diagram into a PowerPoint slide and discuss any insights (up to 400 words) in the note section. Please upload into Blackboard.

Week 12

Fishbone

LEARNING OBJECTIVES

By the end of Week 12 students must demonstrate mastery of the following competency:

- Apply Lean tools and techniques.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- See Week 11

Read

- See Week 11

Toolbox Resources

- See Week 11

Deliverable

Week 12: Using the provided Fishbone template, gather a group of stake holders and brainstorm the possible root causes of a problem. I recommend doing this with your friends or family about something simple like why a pizza delivery might be delayed or why your kids almost always miss the school bus in the morning. Don't forget to keep asking why! Paste your fishbone diagram into a PowerPoint slide and discuss any insights (up to 400 words) in the note section. Please upload into Blackboard.

Week 13

Preventing Errors

LEARNING OBJECTIVES

By the end of Week 13 students must demonstrate mastery of the following competency:

- Identify the key dimensions of the Lean Quality Improvement methodology.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- Lecture “Module 13”
- Error Proofing (Poka Yoke) in Daily Life
<https://www.youtube.com/watch?v=HTKqf9vj6X4>

Read

- Lean Hospitals: Chapter 8

Toolbox Resources

- Case Example on Misidentified Specimens
https://www.youtube.com/watch?v=PrePUo1ga_o
- Mistake Proofing Examples
<http://www.mistakeproofing.com/example1.html>

Deliverable

Please note that the deliverable for week 14 is announced here so that the student may have two weeks to complete the activity.

Week 13: Write a brief discussion board post. Please think back to a patient care error you have heard about. Discuss in 250-500 words how the related process might be error proofed to keep that error from happening again.

Week 14: Take pictures of four examples of error proofing and paste into PowerPoint. These can be from anywhere (work environment, home, out in the community....). In the notes section of the slides take up to 400 words to discuss what problem and related consequence your examples of error proofing were meant to prevent. Please

upload into Blackboard.

Week 14

Error Proofing Snap Chat

LEARNING OBJECTIVES

By the end of Week 14 students must demonstrate mastery of the following competency:

- Apply Lean tools and techniques.

LEARNING ACTIVITIES AND ASSIGNMENTS

View and Listen

- See Week 13

Read

- See Week 13

Toolbox Resources

- See Week 13

Deliverable

Week 14: Take pictures of four examples of error proofing and paste into PowerPoint. These can be from anywhere (work environment, home, out in the community....). In the notes section of the slides take up to 400 words to discuss what problem and related consequence your examples of error proofing were meant to prevent. Please upload into Blackboard.

Week 15

Putting it Together

LEARNING OBJECTIVES

By the end of Week 15 students must demonstrate mastery of the following competencies:

- Appreciate the need for Lean Quality Improvement as it relates to both the patient and the healthcare organization.
- Identify the key dimensions of the Lean Quality Improvement methodology.
- Apply Lean tools and techniques.

LEARNING ACTIVITIES AND ASSIGNMENTS

Read

- UNBC Academic Success Center: Reflective Writing (PDF in Blackboard)

Toolbox Resources

- Reflective Thinking and writing:
<https://learn.solent.ac.uk/mod/book/tool/print/index.php?id=2732>
- Reflective Writing: A Basic Introduction (PDF in Blackboard)

Deliverable

Week 15: Please write a reflection on what you have learned in this course. The personal reflection section of the required reading for this week will go into more detail about the below questions for this assignment. Think back on the concepts you have learned and the tools you have tried over the last 14 weeks.

In 1500-2000 words please answer five of the six questions below as you write your reflection and upload into Blackboard.

1. What was your initial reaction to the topics in the course?
2. What resonated with you?

3. What did not resonate with you?
4. What are some examples of your personal experience with this topic?
5. How will you integrate what you have learned into your practice/research?
6. What questions do you still have?

Assignment Requirements:

- Cover page
 - Times New Roman 12-point type
 - 1-inch margins
 - Double spaced
 - No citations/references or figures are required, but if included should be formatted in the APA style
- https://owl.purdue.edu/owl/research_and_citation/apa_style/apa_formatting_and_style_guide/general_format.html