

Course Assessment/Methods of Evaluation:

Assignments ¹	Points	Percentage
Project: Value Stream Mapping Project	100	20%
Exam 1	100	20%
Exam 2	100	20%
HW 1: Article Review	10	2%
HW 2: Process Analysis Tools (Part 1)	15	3%
HW 3: Process Analysis Tools (Part 2)	15	3%
HW 4: Process Analysis Tools (Part 3)	15	3%
HW 5: Determining Distribution Shapes	15	3%
HW 6: Control Charts (Xbar-R)	15	3%
HW 7: Control Charts (I-MR)	15	3%
HW 8: Control Charts (p, np, c)	15	3%
HW 9: Process Capability	15	3%
HW 10: Applying Control Charts and Process Capability – Example 1	15	3%
HW 11: Applying Control Charts and Process Capability – Example 2	15	3%
Participation Exercises (Gemba Walk, 5 S, Red Ball, Standard Work)	40	8%
Total	500	100%

¹ Assignments are due on Tuesday by 11:00 pm following the week of assignment, unless otherwise noted. Late assignments may be penalized 5% and will not be accepted after grading is completed.

Course Grade Scale (points): A: 450 to 500, B: 400 to 449, C: 350 to 399, F: < 350 points

Linked MPH Program Learning Outcomes:

The student learning outcomes listed above address the following MPH Program PLOs:

- PLO1 - The student will demonstrate mastery in each of the five core knowledge areas in public health: Biostatistics, Epidemiology, Social & Behavioral Sciences, Health Policy and Management, and Environmental Health Sciences.
- PLO2 - The student will demonstrate proficiency in the four core functions of public health, as well as be able to explain the principles and interrelatedness of the ten essential public health services.
- PLO3 - The student will demonstrate proficiency in using multiple informational resources to gather, analyze, apply and report solutions to public health problems with a special emphasis on rural community health.
- PLO4 - The student will demonstrate proficiency in English communication in both oral (public speaking) and written forms as they pertain to conveying key concepts in public health.
- PLO5 - The student will demonstrate proficiency in using computers and other forms of digital technology and media as they pertain to research, office management and public health issues.
- PLO6 - The student will demonstrate independent and critical thinking skills.

Linked MHA Program Learning Outcomes:

The student learning outcomes listed on pp. 1 and 2 address the following MHA Program PLOs:

- PLO A.1 - The student will identify appropriate sources and gather information, effectively and efficiently.
- PLO A.2 - The student will appraise literature and data critically that enhances community health.
- PLO A.3 - The student will develop, understand, and use data from performance, surveillance or monitoring systems.
- PLO A.5 - The student will understand and apply basic statistical methods relevant to public health and health administration practice.
- PLO A.8 - The student will analyze, design, or improve an organizational process, including the use of quality management, process improvement, marketing and information technology principles and tools.
- PLO A.10 - The student will implement a decision-making process that incorporates evidence from a broad analysis that includes uncertainty, risk, stakeholders, and organizational values.
- PLO B.1 - The student will speak and write in a clear, logical, and grammatical manner in formal and informal situations; prepare cogent business presentations; facilitate an effective group process.
- PLO B.2 - The student will receive, process, and respond appropriately to information conveyed by others.
- PLO B.3 - The student will perceive and respond appropriately to the spoken, unspoken, or partly expressed thoughts, feelings, and concerns of others.

Textbooks:

Brook, Q. (2022). *Lean Six Sigma & Minitab: The complete toolbox guide for business improvement*, 7th ed. Hampshire, UK: OPEX Resources. **[Required]**

Ross, Thomas K. (2014). *Health care quality management: Tools and Applications*. San Francisco, CA: Jossey-Bass. **[Recommended]** [Ebook: unlimited multi-user access.](#)

Special Course Notes:

Proctoring Notice: The exams in this course will be proctored using ProctorU. You will need to have a webcam and microphone. If you are not able to provide these items, you must contact me by September 25th so we can arrange for you to take your exam on campus or via Zoom.

This course is fully online. Students are expected to have access to a reliable, high speed internet connection and a computer capable of accessing Canvas and the Virtual Computer Lab (through VMware). Microsoft Excel and JMP Pro (available by free download or through the Virtual Computing Lab) will be used in class. Technical specifications will be listed in Canvas.

Course Content:

Schedule	Assigned Readings
<p><u>Week 1 (Begins Monday, August 26) – Zoom Session</u> <i>Synchronous Session - Wednesday, August 28 from 6:30 – 9:30 pm</i> <i>Quality in Health Care.</i></p> <ul style="list-style-type: none"> • Quality guru or serial killer? • What is quality in health care? • Quality pioneers. • Improving quality. <p>Assignment: JMP Intro (Extra Credit)</p>	<p>Ross (2014): Chapter 1</p> <p>Article: Institute of Medicine (IOM), Executive Summary: “To Err is Human.” http://www.nap.edu/catalog/9728.html</p>
<p><u>Week 2 (Begins Monday, September 2) – Online</u> <i>Overview of Other Quality Systems</i></p> <ul style="list-style-type: none"> • Overview – Includes Lean Six Sigma • Quality Improvement (QI) in health care • Roadmaps for improvement • Two jobs <p><i>Error and Variation</i></p> <ul style="list-style-type: none"> • Insights into the Medical Decision-Making Process • The Structure-Process-Outcome Paradigm • Extensions to Structure-Process-Outcome <p>Assignment: HW 1. Article review</p>	<p>Walsh & Shortell (2004)</p> <p>Ross (2014): Chapter 2</p>
<p><u>Week 3 (Begins Monday, September 9) – Zoom Session</u> <i>Synchronous Session - Wednesday, September 11 from 6:30 – 9:30 pm</i> <i>Lean</i></p> <ul style="list-style-type: none"> • Lean Overview <p><i>Lean in Health Care</i></p> <ul style="list-style-type: none"> • Lean in Health Care <p><i>Patient Flow in Health Care</i></p> <p><i>Introduction of Process Analysis Tools</i></p> <p>HW 1 and JMP Intro (Extra Credit) due</p>	<p>Reference: Joint Commission – <i>Doing More with Less: Lean Thinking and Patient Safety in Health Care</i></p> <p>Reference: IHI White Paper (2003)</p>
Multi-Week Assignments	Assigned Readings
<p><i>Process Analysis Tools.</i></p> <ul style="list-style-type: none"> • Exploration of seven process analysis tools: 1) Cause-and-effect diagrams; 2) Check sheets; 3) Run charts; 4) Histograms; 5) Pareto charts; 6) Scatter diagrams; 7) Stratification diagrams <p>Assignments: HW 2 - 4. <i>These topics will be presented asynchronously by recorded video.</i></p>	<p>Ross (2014): Chapter 4</p>

Schedule	Assigned Readings
<p><u>Week 4 (Begins Monday, September 16) – Online</u> <i>A Brief History of Lean</i></p> <p><i>Change Management Videos</i></p> <p><i>Lean Glossary</i></p> <p>Assignment: Self-Guided Waste Walk Exercise and HW 3 This is a participation exercise turned in as an assignment followed by a discussion during the Week 5 synchronous class.</p> <p><i>Review of Process Analysis Tools (continued)</i></p> <p>HW 2 due</p>	
<p><u>Week 5 (Begins Monday, September 23) – Zoom Session</u> <i>Synchronous Session - Wednesday, September 25 from 6:30 – 9:30 pm</i></p> <p><i>Value Stream Mapping</i></p> <ul style="list-style-type: none"> • Value Stream Mapping Presentation • Value Stream Process Mapping Videos • Value Stream and Process Mapping Metrics <p>Assignment: Value Stream Mapping Project</p> <p>Assignment: 5S Exercise and HW 4</p> <p><i>Sorting Out the Mess</i></p> <p><i>Review of Process Analysis Tools (continued)</i></p> <p>HW 3 and Waste Walk Exercise Due</p>	<p>Brook (2020)</p>
<p><u>Week 6 (Begins Monday, September 30) – Online</u> <i>Six Sigma Overview</i></p> <p>Assignment: Red Bead Experiment</p> <p><i>Getting Things Done</i></p> <ul style="list-style-type: none"> • DMAIC Revisited • DMAIC (Define) <ul style="list-style-type: none"> ○ Project Charter – Work on Draft ○ House of Quality Exercise • Other Tools <ul style="list-style-type: none"> ○ Kano Analysis ○ CTQ Trees ○ SIPOC <p>HW 4 and 5S Exercise due</p>	<p>Brook (2020)</p>

Schedule	Assigned Readings
<p><u>Week 7 (Begins Monday, October 7) – Zoom Session</u> <i>Synchronous Session - Wednesday, October 9 from 6:30 – 9:30 pm</i></p> <p><i>Getting Things Done</i></p> <ul style="list-style-type: none"> • DMAIC (Measure) <ul style="list-style-type: none"> ○ Develop Process Measures ○ Collect Process Measures ○ Check the Data Quality ○ Understand Process Behavior – First Pass Analysis & Determining Distribution Shapes ○ Baseline Process Capability and Potential • Tutorial: Determining Distribution Shapes <p>Assignment: HW 5. Determining Distribution Shapes</p> <p>Assignment: JMP Extra Credit (Part 1)</p> <ul style="list-style-type: none"> • Review Project Charter (Draft) • Exam 1 Review <p>VSM Charter, Marie Kondo DB, and Red Bead Experiment Due</p>	<p>Brook (2020)</p>
<p><u>Week 8 (Begins Monday, October 14) – Online</u> <i>Exam 1 (Online Exam)</i> <i>Via ProctorU between 6:00 pm, Wed, Oct 16 – 11:00 pm, Sat, Oct 19</i></p> <p><i>Getting Things Done</i></p> <ul style="list-style-type: none"> • DMAIC (Analyze) <ul style="list-style-type: none"> ○ Spaghetti Diagrams ○ Brainstorming ○ 5 Whys • Failure Mode and Effects Analysis <ul style="list-style-type: none"> ○ IHI site and video 	<p>Brook (2020)</p> <p>Ross (2014): Chapter 5 and 10</p>
Multi-Week Assignments	Assigned Readings
<p><i>Statistical Process Control (SPC)</i></p> <ul style="list-style-type: none"> • Theory of variation and control charts for continuous and discrete variables. <ul style="list-style-type: none"> ▪ Construct and interpret Xbar and R charts, I-MR charts, p and np charts, and c and u charts <p>Assignments: HW 6 – 8</p> <p><i>Capability Analysis</i></p> <p>Assignment: HW 9</p>	<p>Brook (2020)</p> <p>Ross (2014): Chapters 6 - 8</p>

Schedule	Assigned Readings
<p><u>Week 9 (Begins Monday, October 21) – Zoom Session</u> <i>Synchronous Session - Wednesday, October 23 from 6:30– 9:30 pm</i> <i>Getting Things Done</i></p> <ul style="list-style-type: none"> • DMAIC (Improve) <ul style="list-style-type: none"> ○ Fishbone Diagram ○ FMEA (Quick Overview) & (More Detailed) ○ FMEA Visual Management (John Shook Blog) ○ Visual Board ○ I Love Lucy Counterexample ○ Pilot Studies (Do of Plan-Do-Study-Act) • IHI Triple Aim for Populations • Review of Control Charts – Xbar and R Charts • Review Project Charter (Draft) <p>Assignment: HW 6</p> <p>HW 5 and JMP Extra Credit (Part 1) due</p>	<p>Brook (2020)</p> <p>Ross (2014): Chapter 5 and 10</p>
<p><u>Week 10 (Begins Monday, October 28) – Online</u> <i>Getting Things Done</i></p> <ul style="list-style-type: none"> • DMAIC (Control) <ul style="list-style-type: none"> ○ Standard Work Exercise • Review of I-MR Charts <p>Assignments – Standard Work Exercise and HW 7</p> <p>HW 6 due</p>	<p>Brook (2020)</p>
<p><u>Week 11 (Begins Monday, November 4) – Zoom Session</u> <i>Synchronous Session - Wednesday, November 6 from 6:30– 9:30 pm</i></p> <p><i>Control Charts – p, np, and c-Charts</i></p> <ul style="list-style-type: none"> • Review of p, np, and c-Charts; SPC Conclusion <p>Assignment: HW 8</p> <p>HW 7 due</p>	
<p><u>Week 12 (Begins Monday, November 11) – Online</u> <i>Capability Analysis</i></p> <ul style="list-style-type: none"> • Review of Capability Analysis <p>Assignment: HW 9</p> <p>HW 8 due</p>	

Lean Six Sigma Green Belt for Healthcare Exam

Students taking this course will be eligible to sit for the Institute of Industrial and Systems Engineers Lean Six Sigma Green Belt for Healthcare Certification Exam.

Contact the Instructor regarding examination requirements and fees if you wish to take the Lean Six Sigma Green Belt for Healthcare Certification Exam.

Students taking the Lean Six Sigma Green Belt for Healthcare Certification Exam have the option of substituting that score for Exam 2. Take the Lean Six Sigma Green Belt for Healthcare Exam prior to 11:00 pm, Tuesday, December 10th if you want the result to substitute for Exam 2

Additional resources to help you prepare for the Lean Six Sigma Green Belt in Healthcare Exam are available in a module at the end of the course materials

Schedule	Assigned Readings
Thanksgiving Holiday for Faculty and Students (November 25 – 29)	
<p><u>Week 13 (Begins Monday, November 18) – Zoom Session</u> <i>Synchronous Session - Wednesday, November 20 from 6:30– 9:30 pm</i></p> <p>Value Stream Mapping presentations (Session 1 of 2)</p> <p>Assignment: HW 10/HW 11/JMP Extra Credit (Part 2)</p> <p>HW 9 due</p>	
<p><u>Week 14 (Begins Monday, December 2) – Online</u> <i>LSS Review</i></p> <p>Register for the Lean Six Sigma Green Belt in Healthcare Exam with IISE (optional)</p> <p>Exam 2 Study Guide Posted</p> <p>HW 10, HW 11, and JMP Extra Credit (Part 2) Due</p>	
Exam Week	
<p><u>Week 15 (Begins Monday, December 9) (On-Line)</u> <i>Synchronous Session - Wednesday, December 11 from 6:30– 9:30 pm</i></p> <p>Value Stream Mapping presentations (Session 2 of 2)</p> <ul style="list-style-type: none"> • Exam 2 Practice Exam <p>Assignment: Exam 2 (Online Exam) <i>Proctored via ProctorU. Take the exam between 6:00 pm, Wednesday, December 11 and 11:00 pm, Saturday, December 14, 2024.</i></p>	

Other Class Policies (Refer to University Policies & Information posted to Canvas for Complete Listing)**Attendance:**

Regular and punctual attendance at synchronous Zoom class sessions is encouraged. If a student misses a class, the student is responsible for obtaining any information distributed during those times. Synchronous Zoom class sessions will be recorded and posted to Canvas. Students must participate in their group's Value Stream Mapping Presentation

Participation:

Attendance and participation in class is important. Students will be frequently asked to review concepts and online presentations prior to the scheduled class, so that class time can be used for hands-on activities and work on assignments. Students will often be building Excel and JMP models with the Instructor.

Academic Honesty:

Any student who commits an act of scholastic dishonesty is subject to discipline. Scholastic dishonesty includes, but is not limited to, cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts.

Cheating

Dishonesty of any kind involving examinations, assignments, alteration of records, wrongful possession of examinations, and unpermitted submission of duplicate papers for multiple classes or unauthorized use of keys to examinations is considered cheating. Cheating includes but is not limited to:

- Using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class.
- Falsifying or inventing any information, including citations, on an assigned exercise.
- Helping or attempting to help another in an act of cheating or plagiarism.

Plagiarism

Plagiarism is presenting the words or ideas of another person as if they were your own. Materials, even ideas, borrowed from others necessitate full and complete acknowledgment of the original authors. Offering the work of another as one's own is plagiarism and is unacceptable in the academic community. A lack of adequate recognition constitutes plagiarism, whether it utilizes a few sentences, whole paragraphs, articles, books, audio-visual materials, or even the writing of a fellow student. In addition, the presentation of material gathered, assembled, or formatted by others as one's own is also plagiarism. Because the university takes such misconduct very seriously, the student is urged to carefully read university policies on Misconduct in Research and Other Scholarly Activity 05.00. Examples of plagiarism are:

- Submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another.
- Submitting a work that has been purchased or otherwise obtained from an Internet source or another source.
- Incorporating the words or ideas of an author into one's paper without giving the author due credit

Withdrawing from Class:

See University Policies & Information posted to Canvas.

Disability Accommodations:

See University Policies & Information posted to Canvas.

Class Policy on Artificial Intelligence

UT Tyler is committed to exploring and using artificial intelligence (AI) tools as appropriate for the discipline and task undertaken. We encourage discussing AI tools' ethical, societal, philosophical, and disciplinary implications. All uses of AI should be acknowledged as this aligns with our commitment to honor and integrity, as noted in UT Tyler's Honor Code. Faculty and students must not use protected information, data, or copyrighted materials when using any AI tool. Additionally, users should be aware that AI tools rely on predictive models to generate content that may appear correct but is sometimes shown to be incomplete, inaccurate, taken without attribution from other sources, and/or biased. Consequently, an AI tool should not be considered a substitute for traditional approaches to research. You are ultimately responsible for the quality and content of the information you submit. Misusing AI tools that violate the guidelines specified for this course (see below) is considered a breach of academic integrity. The student will be subject to disciplinary actions as outlined in UT Tyler's Academic Integrity Policy.

AI is permitted only for specific assignments or situations, and appropriate acknowledgment is required.

Some assignments in this course will permit using artificial intelligence (AI) tools, such as ChatGPT or Copilot. When AI use is permissible, it will be documented in the assignment description, and all use of AI must be appropriately acknowledged and cited. When using AI tools for assignments, add an appendix showing (a) the entire exchange (e.g., prompts used), highlighting the most relevant sections; (b) a description of precisely which AI tools were used, (c) an explanation of how the AI tools were used (e.g. to generate ideas, elements of text, etc.); and (d) an account of why AI tools were used (e.g. to save time, to surmount writer's block, to stimulate thinking, to experiment for fun, etc.). Students shall not use AI tools during in-class examinations or assignments unless explicitly permitted and instructed to do so.

[APA Style Citation Information](#)

References:

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- Belson, D. In Hall, R. W. (Ed.). (2006). *Patient flow: Reducing delay in healthcare delivery*. New York, NY: Springer.
- Brassard, M., & Ritter, D. (1994). *The memory jogger II: A pocket guide of tools for continuous improvement and effective planning* (2nd ed.). Salem, NH: GOAL/QPC.
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- Clark, D. E., Cushing, B. M., & Bredenberg, C. E. (1998). Monitoring hospital trauma mortality using statistical process control methods. *Journal of the American College of Surgeons*, 186(6), 630-635.
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Walshe, K., & Shortell, S. M. (2004). When things go wrong: How health care organizations deal with major failures. *Health Affairs*, 23(3), 103-111.

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Note: The Instructor retains the right to change this syllabus.