OPSM 4859.501

Lean Six Sigma

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Virtual Office Hours: By appointment

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Course Description

OPSM 4850 Lean Manufacturing involves studying and applying Lean principles in production processes and multiple stages in a supply chain network, including planning and coordinating the upstream and downstream activities of the supply chain network's trading partners. New product design and the launch of that design are used as an example of how Lean principles are applied throughout the supply chain network (Kaizen events). Emphasis is placed on material flow analysis, process, continuous improvement techniques, and employee development and empowerment as integral aspects of a Lean/Six Sigma philosophy. This course addresses not only Lean manufacturing techniques as applied throughout production and service processes but also the application of Lean extending upstream and downstream in coordination with suppliers and customers. The associated integrative concepts of Lean/Six Sigma provide the framework for the course that includes governance, project management, performance management, and analytics.

Course Structure

OPSM 4850 is taught in senior seminar format. Participation is key in a senior seminar, and a major portion of your grade. Simply reviewing the course material is not enough. You are expected to contribute your ideas to the course and back them up with external sources, views, and commentary. The course materials will be covered in approximately 16 weeks. Each student will complete a Lean Six Sigma Green Belt project following the DMAIC method.

Course Objectives

At the conclusion of this course, the student should be able to:

1. Identify and define key terms associated with Lean/Six Sigma.
2. Describe the origins, framework and basic terminology associated with both Lean and Six Sigma.
3. Describe specific techniques associated with structured problem solving in new product design, project management and planning.
4. Identify and/or discuss actual or potential application of Lean and Six Sigma in various settings (manufacturing, service, government, etc.) as well as throughout the supply/value chain.
5. Pass the Six Sigma Green Belt Certification Exam

Required Materials

1. **The Lean Six Sigma Pocket Toolbook: a Quick Reference Guide to Nearly 100 Tools for Improving Quality and Speed**, by Michael L., Sr. George, John Maxey, David T. Rowlands, and Malcolm Upton.
2. **The Goal: A Process of Ongoing Improvement**, by Eliyahu M. Goldratt.
3. **LinkedIn Learning Six Sigma: Green Belt course** by Richard Chua. As a student you have free access to LinkedIn Learning through your UNT ID. You must upload your certificate to the assignment tab in Canvas to receive credit for this course.
4. Course materials, assignments, and other readings will be available on the Canvas portal or on the Lean/Six Sigma Bookshelf.
5. Outside readings may be assigned for class sessions as determined by the instructor. Topical issues may be provided from current business readings and sources.

Week	Date	Chapter/Topic	Pre-Reading	Assignment
1	Jan 13	Administrative Overview Introduction to Lean Six Sigma Green Belt Project Selection	Course Syllabus	SSGB – Introduction Identify a project

2	Jan 29	DMAIC Framework *The value of Lean Six Sigma game*	The Goal Ch 1-3 LSSTB: pg 5-26	
3	Jan 27	**Define** Project Charters Problem Statements Voice of the customer	The Goal Ch 4-6	SSGB - 1. Define Phase Draft Project Charter
4	Feb 3	**Define** SIPOC Communication plans	The Goal Ch 7-12	Define Tollgate
5	Feb 10	***Define Tollgate***	The Goal Ch 13-15	SSGB - 2. Measure Phase
6	Feb 17	**Measure** Process Mapping Data collection plan	The Goal Ch 16-18 LSSTB: pg 67-86	Map your process Begin collecting data
7	Feb 24	**Measure** Baseline Statistics Quick Wins	The Goal Ch 19-21 LSSTB: pg 104-116	SSGB - 3. Analyze Phase
8	Mar 3	**Analyze** Statistics for Six Sigma	The Goal Ch 22-24 LSSTB: pg 149-196	Measure Tollgate
	Mar 10	**Spring Break**		
9	Mar 17	***Measure Tollgate***	The Goal Ch 25-27	
10	Mar 24	**Analyze** Non-value add Root Cause Analysis Variation Analysis	The Goal Ch 28-30 LSSTB: pg 141-149	Analyze Tollgate
11	Mar 31	***Analyze Tollgate***	The Goal Ch 31-33	SSGB - 4. Improve Phase
12	Apr 7	**Improve** Identifying Solutions 5S	The Goal Ch 34-36 LSSTB: pg 197-212	
13	Apr 14	**Improve** Implementation Plan Pilot Testing	The Goal Ch 37-40 LSSTB: pg 258-276	Improve Tollgate
14	Apr 21	***Improve Tollgate***		SSGB - 5. Control Phase
15	Apr 28	**Control** Control Plans Mistake Proofing	LSSTB: pg 232-240	
16	May 5	**Green Belt Project Presentations**		

Assignments & Activities (1,000 points)

Table of Course Grades

Assignment	***Points Possible***	***Percentage of Final Grade***
Class Participation	*150 points*	*15%*
Define Tollgate	*50 points*	*5%*
Measure Tollgate	*50 points*	*5%*
Analyze Tollgate	*50 points*	*5%*
Improve Tollgate	*50 points*	*5%*
Green Belt Project	*300 points*	*30%*
Green Belt Project Final Presentation	*50 points*	*5%*
Six Sigma: Green Belt Course	*100 points*	*10%*
Green Belt Certification Exam	*200 points*	*20%*
Total Points Possible	***1,000 points***	***100%***

Grading

A = 900-1000

B = 800-899

C = 700-799

D = 600-699

F = 500-599

Course Policies

Teaching Philosophy

OPSM 4850 is an in-person senior seminar focused on expanding your understanding of Lean Six Sigma principles. It utilizes discussions and presentations in class. All materials, readings, quizzes, and cases are provided within the Canvas shell.

The course is designed to provide you with a detailed overview of Lean Manufacturing and Six Sigma. Each module is self-contained. Cases are to be completed individually. You will be expected to present your case findings during class on the dates noted in the syllabus. Completing all the assignment readings in the required time window will prepare you for the class discussions and the issues you will find in the cases.

As always, please reach out to me should you have any questions or concerns regarding the course.

A typical class will follow this outline:

1. Review of the LinkedIn Learning Six Sigma Green Belt course
2. Discussion of the assigned reading: The Goal
3. Discussion of new content
4. Group case study (as applicable)

Assignment Policy

All assignments are due by 6:30pm Wednesday of the week assigned. These should be uploaded to the appropriate assignment tab in Canvas. You are expected to approach each assignment with the professionalism required in the “business” world. Poor grammar and/or presentation formats will result in point deductions. Late assignments are not accepted without prior authorization from the instructor.

The University is committed to providing a reliable online course system to all users. However, in the event of any unexpected server outage or any unusual technical difficulty which prevents students from completing a time sensitive assessment activity, adjustments to the time windows may be provided based on the situation. Students should immediately report any problems to the instructor and contact the UNT Student Help Desk: helpdesk@unt.edu or 940.565.2324 and obtain a ticket number. The instructor and the UNT Student Help Desk will work with the students to resolve any issues at the earliest possible time.

Examination Policy

You will need to score above 80% on the Green Belt Certification Exam in order to receive your Green Belt Certification. You may take the exam anytime during the semester prior to 11:59pm on Wednesday, Dec 4, 2025.

Attendance

Students are expected to attend class meetings regularly and to abide by the attendance policy established for the course. It is important that you communicate with the professor and the instructional team prior to being absent, so you, the professor, and the instructional team can discuss and mitigate the impact of the absence on your attainment of course learning goals. Please inform the professor and instructional team if you are unable to attend class meetings because you are ill, in mindfulness of the health and safety of everyone in our community.

Class Participation

You are expected to be prepared for each class and participate in class discussions and presentations. This includes completing all required readings and finding additional information on the topic to be covered. Failure to participate may result in you being dropped from the course.

Outside Readings

Videos or Podcasts Outside readings, videos or podcasts provide different perspectives on the class topics. The readings are meant to provide a foundation for in-class discussion and to broaden the students' understanding of the topics. You are expected to use these to bring new/different insights to your individual and case presentations. A complete list of the readings, cases and recommended references are included at the end of this syllabus.

Instructor Responsibilities and Feedback

In addition to maintaining the Canvas course site, I will also

- Post announcements as needed to clarify and update information on the course
- Answer any questions/concerns you may have about the course, assignments, due dates, etc.
- Respond to all course inquiries usually within 24 hours, but always within 48 hours.

Syllabus Change Policy

While every attempt has been made to cover possible contingencies, the syllabus may change during the semester. If it does, an announcement will be posted noted the changes and an updated syllabus will be posted in Canvas.

Course Evaluation

Student Perceptions of Teaching (SPOT) is the student evaluation system for UNT and allows students the ability to confidentially provide constructive feedback to their instructor and department to improve the quality of student experiences in the course. You will receive notification when SPOT evaluations become available for this course. Additionally, there will be a post in the Announcements on Canvas reminding you to complete the SPOT evaluation.

UNT Policies

Academic Integrity Policy

According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

ADA Accommodation Statement

UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website at disability.unt.edu.

Emergency Notification & Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety

emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to the UNT Learning Management System (LMS) for contingency plans for covering course materials.

Student Evaluation Administration Dates

Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. The survey will be made available during weeks 13, 14 and 15 [insert administration dates] of the long semesters to provide students with an opportunity to evaluate how this course is taught. Students will receive an email from "UNT SPOT Course Evaluations via IA System Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey, they will receive a confirmation email that the survey has been submitted. For additional information, please visit the SPOT website at spot.unt.edu or email spot@unt.edu.

Important Notice for F-1 Students taking Distance Education Courses

Federal Regulation

To read detailed Immigration and Customs Enforcement regulations for F-1 students taking online courses, please go to the Electronic Code of Federal Regulations website (Links to an external site.)Links to an external site. (http://www.ecfr.gov/). The specific portion concerning distance education courses is located at Title 8 CFR 214.2 Paragraph (f)(6)(i)(G).

The paragraph reads:

(G) For F-1 students enrolled in classes for credit or classroom hours, no more than the equivalent of one class or three credits per session, term, semester, trimester, or quarter may be counted toward the full course of study requirement if the class is taken on-line or through distance education and does not require the student's physical attendance for classes, examination or other purposes integral to completion of the class. An on-line or distance education course is a course that is offered principally through the use of television, audio, or computer transmission including open broadcast, closed circuit, cable, microwave, or satellite, audio conferencing, or computer conferencing. If the F-1 student's course of study is in a language study program, no on-line or distance education classes may be considered to count toward a student's full course of study requirement.

University of North Texas Compliance

To comply with immigration regulations, an F-1 visa holder within the United States may need to engage in an on-campus experiential component for this course. This component (which must be approved in advance by the instructor) can include activities such as taking an on-campus exam, participating in an on-campus lecture or lab activity, or other on-campus experience integral to the completion of this course.

If such an on-campus activity is required, it is the student's responsibility to do the following:

(1) Submit a written request to the instructor for an on-campus experiential component within one week of the start of the course.

(2) Ensure that the activity on campus takes place and the instructor documents it in writing with a notice sent to the International Student and Scholar Services Office. ISSS has a form available that you may use for this purpose.