



*Soules College of Business School of Technology*  
*Department of Technology*



**Department of Human Resource Development and Technology**  
**Advanced Lean Six Sigma Black Belt Techniques**  
**Course Syllabus**

Course: TECH 5390  
Title: Adv. LSSBB Techniques  
Section: 560/401

Instructor: Dr. Heshium Lawrence  
Office: COB 225.03  
Office Hours: TBD  
Other Availability: By appointment

Hybrid (Online/Tues 6-8:45-  
Class Time: COB 229)

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Email: **contact me**)

Prerequisite: TECH 5310 Six Sigma Quality

**Course Description**

An in-depth analysis of lean and statistical tools used to reduce costs and improve process or transactional flow through an organization. The DMAIC approach will be discussed as well as most topics currently covered on lean six sigma certification exams.

**Course Objectives**

At the end of this course, students will be able to:

1. Explore the advanced concepts of lean six sigma.
2. Become familiar with the statistical software, Minitab.
3. Understand the fundamentals of lean six sigma.

**Student Learning Outcomes**

1. Demonstrate how to use Minitab by successfully completing assignments and quizzes.
2. Explain statistical results by discussing assignments in class
3. Implement the fundamentals of lean six sigma by passing a national certification exam.
4. Identify the appropriate decision based off of the given statistical tool.

**Course Competencies**

1. Computer-Based Skills – the student will complete written assignments using the word processor.
2. Communication Skills – the student will exhibit a mastery of both written and oral skills in completion and presentation of the assigned projects.
3. Interpersonal Skills – the student will interact in class discussion to clarify the key lean and six sigma concepts.
4. Problem Solving (Critical Thinking) – the student will use conceptual thinking to analyze and make determinations regarding the implementation of Minitab.
5. Ethical Issues in Decision Making and Behavior- the student will gain an appreciation of the ethics when creating an environment conducive to Minitab.
6. Personal Accountability for Achievement – the student will complete the projects at the time designated by the instructor and will enter into class discussion.

7. Competence in Technology Principles
- The student will have a thorough understanding of basic Minitab concepts to improve efficiency.
  - Exposure to and appreciation for industrial experiences such as industrial tours, work-study options and cooperative education, senior seminars – Students will discuss and review videos of companies implementing lean.

**Grading Policy and Criteria to Determine Final Course Grade:**

Quizzes (5-6)	500-590
Assignments	500
Final Exam	100
TOTAL POINTS = 1100-1190	

**Grade Scale Breakdown:**

A=90 - 100%

B=80 - 89%

C=70 - 79%

D=60 - 69%

F=BELOW 60%

Note: 89.99999999999999 is still a B.

**Date of Final Exam:** TBD

**Course Content:**

History of lean and six sigma

Integration of lean and six sigma

Six sigma and lean applications

Six sigma projects and classifications

Organizational process management and measurement

Team formation, facilitation, dynamics, management, performance, evaluation, rewards

DMAIC

Project charter and tracking

Data collection techniques

Measurement systems

Statistics (ANOVA, non-parametric tests, etc...)

Multivariate Tools

Regression

Hypothesis Testing

Probability

Process capability

Hypothesis testing

FMEA

Design of experiments

Waste elimination

Cycle time reduction

Kaizen

TOC

Risk analysis and mitigation

SPC

TPM and DFSS  
Final exam

### **Attendance and Make-Up Policy:**

Attendance is mandatory for International students graduating this summer and will be taken at every scheduled class and laboratory period. No make-ups unless:

1. Organized university trip.
2. Illness or death in **immediate** family (mother, father, brother and/or sister).
3. Illness of student.

Each one of these will require either a **doctor's statement** or a **signed** statement from the individual in charge of the trip.

**A student will lose a letter grade in the course each time s/he is absent or late 3 times. Any student entering the classroom 1 second after the scheduled starting time will be considered late unless accompanied with a valid excuse. (Applies to face-to-face lectures)**

### **Late Work:**

**Absolutely no make up course work or exams. Any make up course work or exams due to a student not submitting it is considered on a case by case basis. Which means the professor reserves the right to decline make up course work or exams.** Exceptions to this will be as per University Policy concerning absences from class. If you know an assignment will be late for a valid reason, inform your instructor in advance to avoid unnecessary penalty.

### **Required Textbooks, Materials, and Supplies:**

Kubiak, T.M. and Benbow, D.W., 2009. The Certified Six Sigma Black Belt Handbook (3<sup>rd</sup> Edition). Milwaukee, WI: ASQ Quality Press. ISBN: 978-0-87389-941-3

### **Optional Software:**

Minitab may be purchased for \$29.99 at ([www.onthehub.com/minitab](http://www.onthehub.com/minitab)) or you can download a 30 trial version.

### **Required Activities Scheduled Outside of Regularly-Scheduled Class time (fees, tickets, procedures and/or forms required):**

Read textbook, review notes, and prepare PowerPoint presentations.

### **UT Tyler Honor Code**

Every member of the UT Tyler community joins together to embrace: Honor and integrity that will not allow me to lie, cheat, or steal, nor to accept the actions of those who do.

### **Students Rights and Responsibilities**

To know and understand the policies that affect your rights and responsibilities as a student at UT Tyler, please follow this link: <http://www.uttyler.edu/wellness/rightsresponsibilities.php>

### **Campus Carry**

We respect the right and privacy of students 21 and over who are duly licensed to carry concealed weapons in this class. License holders are expected to behave responsibly and keep a handgun secure and concealed. More information is available at <http://www.uttyler.edu/about/campus-carry/index.php>

### **UT Tyler a Tobacco-Free University**

All forms of tobacco will not be permitted on the UT Tyler main campus, branch campuses, and any property owned by UT Tyler. This applies to all members of the University community, including students, faculty, staff, University affiliates, contractors, and visitors.

Forms of tobacco not permitted include cigarettes, cigars, pipes, water pipes (hookah), bidis, kreteks, electronic cigarettes, smokeless tobacco, snuff, chewing tobacco, and all other tobacco products.

There are several cessation programs available to students looking to quit smoking, including counseling, quitlines, and group support. For more information on cessation programs please visit [www.uttyler.edu/tobacco-free](http://www.uttyler.edu/tobacco-free).

### **Grade Replacement/Forgiveness and Census Date Policies**

Students repeating a course for grade forgiveness (grade replacement) must file a Grade Replacement Contract with the Enrollment Services Center (ADM 230) on or before the Census Date of the semester in which the course will be repeated. (For Fall, the Census Date is Sept. 12.) Grade Replacement Contracts are available in the Enrollment Services Center or at <http://www.uttyler.edu/registrar>. Each semester's Census Date can be found on the Contract itself, on the Academic Calendar, or in the information pamphlets published each semester by the Office of the Registrar. Failure to file a Grade Replacement Contract will result in both the original and repeated grade being used to calculate your overall grade point average. Undergraduates are eligible to exercise grade replacement for only three course repeats during their career at UT Tyler; graduates are eligible for two grade replacements. Full policy details are printed on each Grade Replacement Contract. The Census Date (Sept. 12th) is the deadline for many forms and enrollment actions of which students need to be aware. These include:

- Submitting Grade Replacement Contracts, Transient Forms, requests to withhold directory information, approvals for taking courses as Audit, Pass/Fail or Credit/No Credit.
- Receiving 100% refunds for partial withdrawals. (There is no refund for these after the Census Date)
- Schedule adjustments (section changes, adding a new class, dropping without a "W" grade)
- Being reinstated or re-enrolled in classes after being dropped for non-payment
- Completing the process for tuition exemptions or waivers through Financial Aid

### **State-Mandated Course Drop Policy**

Texas law prohibits a student who began college for the first time in Fall 2007 or thereafter from dropping more than six courses during their entire undergraduate career. This includes courses dropped at another 2-year or 4-year Texas public college or university. For purposes of this rule, a dropped course is any course that is dropped after the census date (See Academic Calendar for the specific date). Exceptions to the 6-drop rule may be found in the catalog. Petitions for exemptions must be submitted to the Enrollment Services Center and must be accompanied by documentation of the extenuating circumstance. Please contact the Enrollment Services Center if you have any questions.

### **Disability/Accessibility Services**

In accordance with Section 504 of the Rehabilitation Act, Americans with Disabilities Act (ADA) and the ADA Amendments Act (ADAAA) the University offers accommodations to students with learning, physical and/or psychological disabilities. If you have a disability, including non-visible a disability diagnosis such as a chronic disease, learning disorder, head injury or ADHD, or you have a history of modifications or accommodations in a previous educational environment you are encouraged to contact the Student Accessibility and Resources office and schedule an interview with an Accessibility Case Manager. If you are unsure if the above criteria applies to you, but have questions or concerns please contact the SAR office. For more information or to set up an appointment please visit the SAR webpage (<http://www.uttyler.edu/disabilityservices/>) or the SAR office located in the University Center, Room 3150 or call 903.566.7079. You may also send an email to [saroffice@uttyler.edu](mailto:saroffice@uttyler.edu).

### **Student Absence due to Religious Observance**

Students who anticipate being absent from class due to a religious observance are requested to inform the instructor of such absences by the second class meeting of the semester. Revised 09/16

### **Student Absence for University-Sponsored Events and Activities**

If you intend to be absent for a university-sponsored event or activity, you (or the event sponsor) must notify the instructor at least two weeks prior to the date of the planned absence. At that time the instructor will set a date and time when make-up assignments will be completed.

### **Social Security and FERPA Statement**

It is the policy of The University of Texas at Tyler to protect the confidential nature of social security numbers. The University has changed its computer programming so that all students have an identification number. The electronic transmission of grades (e.g., via e-mail) risks violation of the Family Educational Rights and Privacy Act; grades will not be transmitted electronically.

### **Emergency Exits and Evacuation**

Everyone is required to exit the building when a fire alarm goes off. Follow your instructor's directions regarding the appropriate exit. If you require assistance during an evacuation, inform your instructor in the first week of class. Do not re-enter the building unless given permission by University Police, Fire department, or Fire Prevention Services.

### **Student Standards of Academic Conduct**

Disciplinary proceedings may be initiated against any student who engages in scholastic dishonesty, including, but 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.

i. "Cheating" includes, but is not limited to:

- copying from another student's test paper;
- using, during a test, materials not authorized by the person giving the test;
- failure to comply with instructions given by the person administering the test;
- possession during a test of materials which are not authorized by the person giving the test, such as class notes or specifically designed "crib notes". The presence of textbooks constitutes a violation if they have been specifically prohibited by the person administering the test;
- using, buying, stealing, transporting, or soliciting in whole or part the contents of an unadministered test, test key, homework solution, or computer program;
- collaborating with or seeking aid from another student during a test or other assignment without authority;
- discussing the contents of an examination with another student who will take the examination;
- divulging the contents of an examination, for the purpose of preserving questions for use by another, when the instructor has designated that the examination is not to be removed from the examination room or not to be returned or to be kept by the student;
- substituting for another person, or permitting another person to substitute for oneself to take a course, a test, or any course-related assignment;
- paying or offering money or other valuable thing to, or coercing another person to obtain an unadministered test, test key, homework solution, or computer program or information about an unadministered test, test key, home solution or computer program;
- falsifying research data, laboratory reports, and/or other academic work offered for credit;

- taking, keeping, misplacing, or damaging the property of The University of Texas at Tyler, or of another, if the student knows or reasonably should know that an unfair academic advantage would be gained by such conduct; and
- misrepresenting facts, including providing false grades or resumes, for the purpose of obtaining an academic or financial benefit or injuring another student academically or financially.

ii. “Plagiarism” includes, but is not limited to, the appropriation, buying, receiving as a gift, or obtaining by any means another’s work and the submission of it as one’s own academic work offered for credit.

iii. “Collusion” includes, but is not limited to, the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any section of the rules on scholastic dishonesty.

iv. All written work that is submitted will be subject to review by SafeAssign™, available on Blackboard.

#### UT Tyler Resources for Students

- UT Tyler Writing Center (903.565.5995), [writingcenter@uttyler.edu](mailto:writingcenter@uttyler.edu)
- UT Tyler Tutoring Center (903.565.5964), [tutoring@uttyler.edu](mailto:tutoring@uttyler.edu)

The Mathematics Learning Center, RBN 4021, this is the open access computer lab for math students, with tutors on duty to assist students who are enrolled in early-career courses.

**Note: The instructor reserves the right to modify the syllabus. All modifications will be communicated to the students in a timely manner.**