



School of Engineering and Applied Sciences
EGMT 580 Six Sigma Quality
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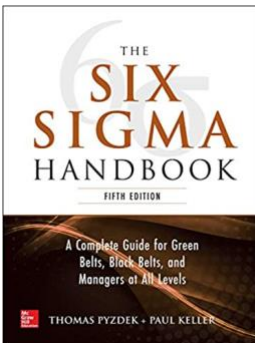
Course Syllabus

Office Hours By appointment

Catalog Description

Management and application of six sigma methodologies including the DMAIC process and data-driven decision making. Advanced quality concepts and statistical process control.
Prerequisite: Admitted to MS Engineering Management or Lean Sigma Certificate.

Textbooks



- Pyzdek, T., & Keller, P.A. (5th edition or earlier). *The Six Sigma handbook*. New York: McGraw-Hill. ISBN 978-1260121827

Course Objectives

Upon successful completion of the course, students will be able to:

- Apply six sigma measurement technique
- Apply descriptive statistical methods
- Demonstrate competency in statistical process control
- Perform methods analysis for defect and variability reduction
- Evaluate tools used for Six Sigma quality
- Examine tools and methods for identifying customer requirements, evaluating design concepts, and optimizing process to meet quality specifications
- Write and analyze on the topic of Six Sigma

Course Topics

The DMAIC deployment model for continuous improvement will be comprehensively covered from the definition of work to be accomplished to the control and verification of process and product design.

Course Structure and Design

Readings from the assigned text and other supplemental materials, discussion of course content, assignments, and scholarly papers.

- Discussion. Participation in Blackboard discussions. It is important to prepare for the discussions using scholarly information and acquired knowledge.
- Assignments. Assigned work related to the course objectives. Planned problems include process data collection, descriptive statistics, process behavior charts, measurement analysis, hypothesis testing, designed experiments, risk assessment, and control planning.
- Application Papers. Application of the assigned tools to selected problems.

Grading

The grading for the course is as follows:

Assignments and quizzes	40%
Discussions	10%
Application Papers (2)	50%
Total	100%

Grading Criteria. There are four possible grade levels:

Mastery, A, 100% – \geq 90%

- Superior work performance and mastery of the subject content. The work/performance is commendable and demonstrates exceptional thinking and/or performance. The work or research exceeds expected requirements with substantial depth and efficiency. The work is highly organized, formatted correctly, and communicates effectively.

Competency, B, 89% – \geq 80%

- Clear understanding of the subject content with no flaws. The work or research accomplishes the purpose of the task and identifies the most important ideas. The work is over and beyond the minimum requirements with depth. The work is organized, formatted correctly, and communicates effectively.

Minimal, C, 79% – \geq 70%

- Performance at minimum standard. Work displays some understanding of major concepts. Main points of content are covered and required elements included, but the work lacks competent professionalism.

Deficient or Unacceptable; Standard not met, F, < 70% – 0%

- Incomplete or deficient understanding of the task/project. The purpose of the task or research was not accomplished. The work/performance is ineffectual or

inappropriate. The work is vague and incorrectly formatted. Significant parts omitted or plagiarized. Work shows no understanding of the subject content. Important purpose of the task or research was not achieved. Work did not meet the minimum requirements. Work suggests incompetence.

For this course, achievement at the minimal level must be obtained to pass the course. Performance at minimal standard (< 70%) is not acceptable. Students must achieve competency ($\geq 70\%$) or higher.

You will know in advance the standards for each assignment. You are responsible for:

- Asking for help or clarification when needed
- Completing all course deliverables by the due date or as negotiated with the instructor
- Committing to a high level of professional development and cooperative learning

The grade for this course is based upon performance to a standard. Students are expected to put forth effort congruent with the highest standard. The earned final grade is based on Grading Criteria. The final grade is per my discretion.

You are ultimately responsible for your learning. Those who take responsibility for their learning are generally more successful in the course. Successful students are active learners who read the text, complete the assigned work, ask questions as needed, and participate fully in the course.

You are expected to locate and use scholarly resources as needed. Research and references should be from peer-reviewed sources, professional organizations, or recognized experts in the discipline. All deliverables and concepts must adhere to principles grounded in the scientific method with supporting evidence. The instructor may recommend appropriate reference materials, documents, and sources. Any scholarly resources used should be referenced in assignments, papers, or used as supporting evidence in posted discussions.

Course Policies General

General communication and expectations. Students should work independently on assignments unless the instructor gives prior permission for collaboration. Students will communicate with the instructor using the learning management system Blackboard or other communication media such as e-mail, voicemail, or videoconferencing. Access to a late-model computer with standard business software such as Microsoft Office Suite and an Internet connection is required.

This is a paperless course. This course and all associated communication within, or as part of the course, should adhere to the [WKU Information Technology Acceptable Use Policy](#). All assignments and related documents will be submitted on-line via Blackboard. Students must make prior arrangements before submitting hard copy reports or papers. If you have problems transmitting information, telephone, or e-mail immediately.

Ground rules for communication

1. Use e-mail for private or personal messages to the instructor and questions regarding grades.

2. Please submit papers as text/word files (e.g., DOC, DOCX, RTF, TXT, HTM, HTML, or PDF), PowerPoint files (e.g., PPT, PPTX), or spreadsheet files (e.g., XLS, XLSX, WKS) uploaded to Blackboard. Use other file formats at your own risk. If I can't read them, I can't grade them!
3. For **all** assignments that are uploaded to Blackboard, include your name at the top of the document AND as part of the **file name** (e.g., Doggett_Homework.doc). With NetID, names are not associated with documents uploaded to Blackboard. Thus, when I download your file, I am no longer able to see the name associated with the file. If you do not put your name at the top of the document, then I must go back to BB to locate it. This is time-consuming. It is much easier for you to put your name on the document and as part of the file name.

Important: BlackBoard has difficulty processing file sizes over 10 MB. If your file does not upload correctly, you may need to change to a different file format that uses less memory!

Expectations. *All assignments should be completed to pass the course. All assignments must be submitted on time. Any assignments submitted after scheduled due dates will not be accepted unless prior arrangements have been made with the instructor. Do not email me after the course is completed concerning your grade. This will likely have the opposite effect of the one you intended.*

Instructor Availability. During the week from 8:00 AM to 5:00 PM CST M-F with limited availability on the weekends. Students may reasonably expect a response within 24 hours on workdays, but not necessarily on the weekends.

Late Submissions or Resubmissions. As a general rule, I do NOT accept late work unless prior arrangements have been made with me. If you think you need an extension, you must contact me *before* the assignment is due. In some cases, I may grant a resubmission of work that does not meet the minimum standard. However, students should expect a reduction in the grade for late or resubmitted work. I realize that some life circumstances may be unavoidable, but recognize that you can always drop a course for extenuating circumstances such as the death of a family member. All other circumstances are per my discretion. Family or work commitments and schedule conflicts are generally not good reason for extensions.

Extra Credit. There is no extra credit work available. Additional work beyond what is assigned will not be considered.

Academic Honesty. All Western Kentucky University policies are in effect. All work must reflect APA citation standards. All your work must be your own, unless I authorize collaboration. Presenting the words, ideas, or expressions of another person in any form and claiming them as one's own is plagiarism and will not be tolerated. The claim of ignorance is no excuse. (See [academic offenses](#) in the WKU student handbook.) The University Catalog states, "Students who commit any act of academic dishonesty may receive from the instructor a failing grade in that portion of the coursework in which the act is detected or a failing grade in the course without possibility of withdrawal."

Title IX Statement. Western Kentucky University is committed to supporting faculty, staff and students by upholding WKU's Title IX Sexual Misconduct/Assault Policy (#0.2070) at <https://wku.edu/eoo/documents/titleix/wkutitleixpolicyandgrievanceprocedure.pdf> and Discrimination and Harassment Policy (#0.2040) at https://wku.edu/policies/hr_policies/2040_discrimination_harassment_policy.pdf.

Student Accessibility Resource Center. In compliance with university policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the [Student Accessibility Resource Center](#) at Downing Student Union, 1074. The phone number is 270.745.5004. Please do not request accommodations directly from the instructor without a letter of accommodation. This course is compliant with the WKU standards for [web accessibility](#).

Add/Drop Policy: Students who have trouble working independently are encouraged to drop the course. For face-to-face courses, students who do not participate in the course for more than a week will be dropped involuntarily from the course. For online courses, students will be dropped after a week of Blackboard inactivity. Incomplete grades are given only by mutual agreement between the instructor and the student and must be in writing.

Course Calendar/Breakdown of Assignments

See the separate schedule document.