

## ***IEE 585 – Six Sigma Capstone – Syllabus***

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**Office:** BYENG 328  
**Office hours:** Refer to Blackboard, or email for an appointment

**Course description:** The DMAIC (define, measure, analyze, improve, control) improvement strategy is applied in the formulation and execution of a six sigma project.

**Enrollment requirements:** Prerequisite(s): Engineering Graduate student

### ***COURSE OBJECTIVE***

This course is the culminating experience for the Lean Six Sigma Black Belt Certificate. Students identify a project to improve or design a product, process or service. The project should be at the level of a typical industry Black Belt project. Students manage the project to completion while demonstrating their skill at applying the Six Sigma methodology.

Prior to enrollment in this capstone class, students should have completed all other required and elective courses on their program of study.

### ***COURSE OUTCOMES***

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

- Apply appropriate analytical, statistical, and lean methods throughout DMAIC and DFSS projects
- Apply the DMAIC approach to improvement projects
- Apply Design for Six Sigma (DFSS) concepts to product/process design projects
- Manage a Six Sigma project to completion

### ***RECOMMENDED TEXTBOOKS***

- George, M.L. (2002). *Lean Six Sigma: Combining Six Sigma Quality with Lean Production Speed*. McGraw-Hill, New York, NY.
- Snee, R.D. and Hoerl, R.W. (2003). *Leading Six Sigma: A Step-by-Step Guide Based on Experience with GE and Other Six Sigma Companies*. Financial Times Prentice Hall, Upper Saddle River, NJ.

### ***COPYRIGHT NOTICE***

Course content, including lectures, is copyrighted material. This includes, but is not limited to, lecture slides, written materials, assignments, homework, exercises, quizzes, and exams.

- Students may not distribute these copyrighted materials to others.
- Students may not sell notes taken during the conduct of the course. Refer to [ACD 304-06](#) for additional information.

## **BLACKBOARD**

Students will be enrolled in a Blackboard course for this class. The schedule, syllabus, deliverable submission links, and other useful information will be posted there.

## **GRADING POLICY**

Deliverables are weighted for the final average as follows:

<b>Deliverable</b>	<b>Weight</b>	<b>Approximate Deadline</b>
Project Charter	10%	Classes Begin Date + 2 weeks
Measure Phase Update	10%	Classes Begin Date + 5 weeks
Analyze Phase Update	10%	Classes Begin Date + 9 weeks
Improve Phase Update	10%	Classes Begin Date + 12 weeks
Final Project Report, including Control Phase	60%	Classes End Date

These deliverables assume a DMAIC improvement project. The student should contact the Instructor if their project aligns more closely with a DFSS approach.

The deadlines are approximate and vary each semester. Check the [ASU Academic Calendar](#) for the referenced dates. Actual deadlines will be published each semester.

The Instructor will suggest information that should be included in each deliverable. These suggestions are intended to help students demonstrate their knowledge of the Six Sigma methodology. The suggestions will closely align with the activities, tools, techniques, and deliverables covered in IEE 581, *Six Sigma Methodology*.

## **MAKE-UP POLICY**

Assignment deadlines are intended to keep students on track for project completion by the end of the semester. Timeliness in meeting deadlines will be an indication of the student's ability to manage and successfully complete a project. With advance approval from the Instructor, there will be no penalty for missing assignment deadlines. *If advance approval is not given **before** a deadline is missed, a late penalty of 10% may be assessed. All work must be submitted by the last day of classes for the semester.*

If a student determines that the project may not be completed by the end of the semester, they should reach out to the Instructor as soon as possible to identify possible options.

## **ATTENDANCE**

There are no lectures or attendance requirement for this class.

## ***EXPECTED CLASSROOM BEHAVIOR***

Expectations for classroom behavior apply to on-line classes and encompass both virtual and in-person interactions:

- Any incident or allegation of violent or threatening conduct by an ASU student will be reported to the ASU Police Department and the Office of the Dean of Students, per policy ([SSM 104-02](#)).
- ASU expressly prohibits discrimination, harassment, and retaliation by employees, students, contractors, or agents of the university based on any protected status. Any occurrence of discrimination, harassment or retaliation will be reported, per policy ([ACD 401](#)).

## ***WRITING CENTERS***

All ASU students have access to in-person writing tutoring at all four campus locations. These centers offer in-person appointments for 1-on-1 writing tutoring. More information can be found at the [ASU Writing Centers website](#). Online writing tutoring resources are also available; please see [ASU Online Tutoring](#). ASU also has four Graduate Writing Centers that specifically serve students enrolled in 500, 600, and 700 level classes. These centers offer assistance for graduate students at any stage of the writing process. More information is at [ASU Graduate Writing Services](#).

## ***DISABILITY RESOURCES***

**Disability Accommodations:** Qualified students with disabilities who will require disability accommodations in this class are encouraged to make their requests to the Instructor at the beginning of the semester. Prior to receiving disability accommodations, verification of eligibility from the Disability Resource Center (DRC) is required. Disability information is confidential.

**Establishing Eligibility for Disability Accommodations:** Students who feel they will need disability accommodations in this class but have not registered with the Disability Resource Center (DRC) should immediately contact the DRC on the campus where this class is held. Campus-specific location and contact information, as well as information on eligibility and documentation policies, can be found at the [ASU DRC website](#).

## ***TITLE IX FEDERAL LAW***

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources for ASU at [Sexual Violence Awareness and Response](#)

## ***ASU STUDENT ACADEMIC INTEGRITY POLICY***

Cheating, in any form, absolutely, positively will not be tolerated. Ensure that you are familiar with ASU's Student Academic Integrity Policy ([Student Academic Integrity Policy](#)) and other student resources located at [ASU Academic Integrity](#). Violations will be managed in accordance with the policy. If you cheat, you will receive a sanction, and you will be reported to the Dean's Office.

**Note that Student Obligation "14" means this:** Asking an instructor to change your grade because you need a higher grade to keep a scholarship, maintain athletic eligibility, get off academic probation, or for any reason not relevant to your academic achievement in this class is a violation of the Academic Integrity Policy.