# Lean Sigma Certification Project (Part I)

## ISE 5811

**Credit Hours:**
3.00

**Course Levels:**
Graduate

**Course Components:**
Lecture
Recitation
Lab

**Course Description:**
Focuses on industry sponsored LeanSigma DMAIC Certification Projects. Project Selection, Definition and Measure are covered in this course.

**Prerequisites and Co-requisites:**
Prereq: (5810 or 4120) and permission of instructor.

**Course Goals / Objectives:**

- Reduce to practice the LeanSigma DMAIC methodology (Scientific Method tailored for process improvement) and ISE core curriculum principles and methods
- Be exposed to a broad spectrum of DMAIC projects from a variety of businesses. Real time, in-flight project reviews (e.g. similar to `rounds? in a teaching hospital) are done weekly.
- Develop and refine skills to apply the DMAIC methodology and drive through realization of a significant process improvement project
- Strengthen their project management skills by creating and working with a `living? project plan
- Develop writing and presentation skills through five `tollgate/milestone? meetings, a Final Tollgate Article, an industry standard final report and final tollgate presentation, and a poster depicting the life cycle of the project.
- Develop and deliver `toll-gate? (project milestone) meetings for senior executives for a project and enhance confidence and professional meeting management skills
- Have opportunities to practice and develop skills for core ISE courses such as Statistical Process Control, Design of Experiments, Production Systems Management, Human Factors Engineering, Operations Research, Work Measurement.
- Demonstrate reduction to practice skill for a broad set of process improvement and ISE tools and must demonstrate competence in at least one advanced Lean and Six Sigma method/tool

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**Course Topics:**

- Project Initialization, Sponsor and Core team establishment
- DEFINE—selecting, scoping, defining the problem in the context of the larger system,
- MEASURE—measurement system analysis, measurement planning, value stream mapping, current state process capability, initial root cause analysis.
- ANALYZE—exploratory and confirmatory data analysis on root causes, future state initial conceptual design.

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**Designation:**

Elective