In this three-credit, 15-week online graduate course, improve a process at work regardless of whether you are in the office, in engineering, or on the manufacturing floor. Through one unified project, you will gain experience using the proven DMAIC (Define, Measure, Analyze, Improve, and Control) approach for long-lasting process improvement while getting the attention of your peers and managers.

Projects

Through a five-phase workplace project, you will gain hands-on experience using the DMAIC framework to reduce defects, waste, non-value-added time, and problems.

Phase 1: Define
Choose a process improvement project and map it with SIPOC (supplier, inputs, process, outputs, and customers). Use Voice of Customer (VOC) to understand expectations and preferences using Critical to Quality (CTQ) outputs. Then, create a project charter and conduct a pre-mortem analysis.

Phase 2: Measure
Use value stream mapping to identify waste in your process. Use the Six Sigma tools of Quality Function Deployment (QFD) and Gage Repeatability and Reproducibility (GR&R) to identify statistical variation in your process.

Phase 3: Analyze
Identify the root cause of issues in your process with an Ishakawa diagram and create a statistical hypothesis for improvement.

Phase 4: Improve
Brainstorm solutions, set up a Plan, Do, Check, and Act (PDCA) cycle, and establish the desired future state.

Phase 5: Control
Establish your implementation plan, including a strategy to ensure that the improvements made are adopted long-term by individuals at your workplace.

Outcomes

Completion of the course enables you to:

- Gain a reliable framework for lean and six sigma endeavors that is internationally known and respected
- Lead a team through the process of systematically identifying, quantifying, and fixing problems
- Get the “eye” for identifying waste through Gemba
- Show that you have successfully saved your employer time, money and/or improved customer satisfaction
- Provide long-lasting process improvements in just a matter of months

Technology

This course is offered through the RensselaerStudio, providing ease of access to all course technologies and software required, any time, anywhere. Synchronous sessions are held throughout the course via Zoom.

Features

Live, online synchronous sessions are scheduled every 2-3 weeks throughout the semester with the instructor and professionals from various industries also participating in this course. Sessions are designed to cultivate your understanding of course concepts and guide your approach as you gain insights from others’ experience.