SIX SIGMA, CERTIFICATE

This certificate is designed to teach students fundamental Six Sigma principles. Six Sigma is a data-driven approach to improving business processes by increasing process quality and efficiency and is widely adopted in industry. Students may choose from a variety of courses in each of the three main areas: statistical foundations for quality engineering, contemporary industrial data analytics, and manufacturing foundation and project management. Upon completion of this certificate, students will have gained the background knowledge needed to pass the Six Sigma Green Belt certification exam administered by the American Society for Quality (ASQ).

The program is open to any degree-seeking undergraduate engineering student with a plan of study that fulfills the certificate requirements. Applications can be submitted at any time, but students are encouraged to apply early to ensure a smooth and successful completion of the program.

HOW TO GET IN

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All current undergraduate students in the College of Engineering are eligible to complete the Certificate in Six Sigma. Students should submit an online declaration form at https://engineering.wisc.edu/programs/certificates/six-sigma/declaration (https://engineering.wisc.edu/programs/certificates/six-sigma/declaration/).

REQUIREMENTS

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- Students must complete certificate courses with a GPA of 2.000 or higher.
- Courses completed on a pass/fail or audit basis will not count toward these requirements.

Code	Title	Credits
Statistical foundations for quality engineering		
Choose one:		3
I SY E/M E 512	Inspection, Quality Control and Reliability	
I SY E 612	Information Sensing and Analysis for Manufacturing Processes	
I SY E 575	Introduction to Quality Engineering	
Contemporary industrial data analytics		
Choose one:		3
I SY E 412	Fundamentals of Industrial Data Analytics	
I SY E 521	Machine Learning in Action for Industrial Engineers	
I SY E 649	Interactive Data Analytics	
I SY E 562	Human Factors of Data Science and Machine Learning	
Manufacturing foundation and project management		
Choose one:		3
I SY E 415	Introduction to Manufacturing Systems, Design and Analysis	
I SY E 515	Engineering Management of Continuous Process Improvement	
I SY E/M E 510	Facilities Planning	
I SY E 605	Computer Integrated Manufacturing	
I SY E/M E 641	Design and Analysis of Manufacturing Systems	
Elective		
Choose one additional course from any category above		3
Total Credits		**12**

CERTIFICATE COMPLETION REQUIREMENT

This undergraduate certificate must be completed concurrently with the student's undergraduate degree. Students cannot delay degree completion to complete the certificate.

LEARNING OUTCOMES

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1. Understand and apply the core Six Sigma methodologies (DMAIC: Define, Measure, Analyze, Improve, Control) to effectively solve real-world problems.
2. Demonstrate an understanding of how Six Sigma enhances process efficiency and reduces variation.
3. Collect, analyze, and interpret data using statistical tools to monitor processes and inform decision-making.
4. Gain experience in managing engineering projects from problem definition through solution implementation and control.
5. Develop the ability to lead and collaborate effectively within cross-functional teams.