SIX SIGMA, MINOR

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

Program Description

Six Sigma has been increasingly internalized by companies involved in manufacturing, health care, and service industries. The Six Sigma process has also been used to address environmental concerns such as water quality and energy conservation. Thus, this minor is designed for students who are interested in the Six Sigma statistical methodology for increasing productivity and enhancing quality. The minor will provide students with an understanding of how business models are changing in response to globalization and how the Six Sigma process and product improvement methodology is thus a vehicle for industry prosperity in this climate. Students completing the minor will develop their analytical and statistical skills, and gain a competitive advantage in the work place.

What is Six Sigma?

Six Sigma is a set of processes used by numerous corporations across all sectors designed to improve the quality and efficiency of their processes. The goal of Six Sigma is to implement continuous improvement processes throughout the organization that reduce process defects and variability to a minimum. The implementation of these processes has been shown to improve product and process quality and reduce expenses.

Students completing the minor will:

- be knowledgeable about why organizations use Six Sigma and how they apply it;
- gain experience with using the "Define-Measure-Analyze-Improve-Control" methodology for problem solving and the “Define-Measure-Analyze-Design-Verify” methodology for new product innovation;
- understand the links between customer requirements, product specifications, and process capability;
- understand the theory and application of regression analysis, design of experiments, and statistical quality control for process improvement; and
- be familiar with the project selection process including knowing when to use the Six Sigma methodology.

You Might Like This Program If...

- You are interested in problem solving in business operations, lean manufacturing/business practices, and improving industry efficiencies.
- You wish to become certified as a Six Sigma expert in order to improve your value as an industrial engineer.

The Six Sigma Minor is an 18-credit minor designed for any student interested in the Six Sigma statistical methodology. Industries using Six Sigma skills include: manufacturing, transportation, warehousing, health care, defense, financial services, retail, leisure/hospitality, education, construction, and consulting.

Program Requirements

Requirement	Credits
Requirements for the Minor	18

Requirements for the Minor

A grade of C or better is required for all courses in the minor, as specified by Senate Policy 59-10 (https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/59-00-minors-and-certificates/). In addition, at least six credits of the minor must be unique from the prescribed courses required by a student's major(s).

Code	Title	Credits
Prescribed Courses		
Prescribed Courses: Require a grade of C or better		
IE 305	Product Design, Specification and Measurement	3
IE 322	Probabilistic Models in Industrial Engineering	3
IE 323	Statistical Methods in Industrial Engineering	3
IE 433	Regression Analysis and Design of Experiments	3
IE 434	Statistical Quality Control	3
IE 436	Six Sigma Methodology	3

Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/32-00-advising-policy/)

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