SPATIAL ANALYSIS AND ENGINEERING DESIGN PRINCIPLES, CERTIFICATE

Requirements for an undergraduate certificate may be completed at any campus location offering the specified courses for the certificate.

Program Description

This certificate provides innovative instruction about the application of new design methods and processes in a variety of engineering disciplines. The certificate emphasizes how to use computer-aided design (CAD) software to create concise drawings to develop an effective design system to provide solutions for specific products, systems, components, or services. The certificate further investigates the significance of industry standards and the practices of spatial analysis and tolerance requirements in design. Contact Douglas Miller at Penn State DuBois, 814-375-4731 or djm290@psu.edu.

What is Spatial Analysis and Engineering Design Principles?

Spatial analysis and design combines both technical and design skills to aid in the development methods for solving engineering problems. Starting with the basic methods and ethics of engineering design and developing computer-aided design (CAD) skills, this program is intended to help develop drafting, design, and CAD skills.

You Might Like This Program If...

You are good with technology, enjoy investigating the design behind parts and components, have every disassembled machines or appliances to see how they work, or have an interest in computer-aided design (CAD) software.

Employment opportunities upon completion of the certificate program have included employers seeking draftsmen, designers, and assistant entry-level engineering and engineering technology level opportunities.

Program Requirements

To earn an undergraduate certificate in Spatial Analysis and Engineering Design Principles, a minimum of 7 credits is required.

Code	Title	Credits
Prescribed Courses		
EDSGN 100	Cornerstone Engineering Design	3
EDSGN 110	Spatial Analysis in Engineering Design	2
EDSGN 210	Tolerancing and Spatial Models	2

No Prerequisites Required.

Certificate Learning Objectives

- An ability to understand and apply the knowledge, techniques, skills, and modern tools of the engineering design processes.
- An understanding of spatial analysis techniques using advanced computer-aided design (CAD).
- An understanding of measurement techniques and importance of tolerances.

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/policies-and-rules-for-undergraduate-students/32-00-advising-policy/)

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