

## Doctorate of Philosophy in Engineering Education

**The Doctorate of Philosophy in Engineering Education** is offered through the Engineering and Technology Education Department. Emphasis is on the learning and teaching of engineering design. Engineering Design is a decision-making process which utilizes results from basic sciences, mathematics, and the engineering sciences. This program produces doctoral students with proficiency in developing engineering design skills in others, and expertise in research into how those skills are best learned and taught.



**Program graduates are expected to:** Be familiar with the theory and practice of engineering education, and are adept at those aspects within their specific area of engineering specialization.

Have the ability to conduct research in engineering education in areas such as engineering epistemologies, engineering learning mechanisms, engineering learning systems, engineering diversity and inclusiveness, technology-enhanced learning, distance delivery, and engineering assessment.

Have the ability to develop, implement, and assess engineering curricula at high school and university levels.

**Program Requirements:** To meet program expectations, students will complete a minimum of sixty credit hours, combining course work and research, and must have an **accredited degree in an engineering discipline**. The curriculum is divided into three components:

### Engineering Education Core

This curricular component recognizes that engineering education is an emerging discipline. As such, students will take courses to strengthen their understanding of engineering education as a discipline.

### Area of Specialization

This component allows students to develop an in-depth knowledge in **one** area of engineering education. Students will identify a research area approved through the department and take courses within that area. The research area and courses will be identified and chosen with the advice and approval of the student's doctoral advisory committee. Three credits of these courses must be taken outside the ETE Department.

### Research Component

This component ensures that program graduates have the skills necessary for, and experience in performing engineering education research, and has two sections. First is a series of courses in research methods. Education research methodologies fall into two broad categories, quantitative and qualitative. Students will take one course focused on each of these techniques, followed by an advanced course in the methodology being used in their dissertation. In the second section, students develop a research project that culminates in a dissertation.



For more information regarding the Program, visit our web site: [www.ete.usu.edu](http://www.ete.usu.edu) or contact the ETE department at: (435) 797-1795 or [eteinfo@usu.edu](mailto:eteinfo@usu.edu)