



CLEMSON
UNIVERSITY



What do we offer?

The Engineering and Science Education Department (ESED) offers graduate students in the STEM disciplines either a PhD degree or a graduate certificate. Any student with a foundation degree (BS) in science, technology, engineering, or mathematics can apply to the PhD program in Engineering and Science Education. Admitted students pursue a MS level of knowledge in a STEM discipline, coursework that prepare them for research in education, and a dissertation that investigates various aspects of learning and teaching in STEM or how to broaden participation in the STEM disciplines.

Contact Information

For all inquiries, questions, and further information, please contact:

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Engineering and Science Education Department

Established
2006

Mission: To prepare doctoral students who will inspire the next generation of engineers and scientists by creating and communicating new knowledge through robust research in education and teaching at the foundational levels of the STEM disciplines.



Where do our students go?

ESED which was founded in 2006 is a unique program found nowhere else. No other university offers graduate work in a department that combines engineering and science education research. The alumni from the ESED PhD program are in tenure track positions or lecturer positions at Clemson, Purdue, University of Nevada Reno, Northwestern College, and the College of New Jersey. Alumni who have the certificate are in positions at Clemson, Rose-Hulman Institute of Technology, Louisiana Tech University, Furman University, Virginia Tech, University of Houston, Oklahoma University, North Carolina State University, and many other college and universities throughout the US.

Recommended Sequence of Courses

Seminar (1 credit hour)

- **ESED 8000** Seminar in Engineering and Science Education

Pedagogy (3 credit hours)

- **ESED 8200** Teaching Undergraduate Engineering
- **ESED 8210** Teaching Undergraduate Science

Education Research Methods (3 credit hours)

- **ESED 8710** Engineering and Science Education Research Methods

Professional Preparation (3 credit hours)

- **ESED 8250** Engineering and Science Student Strategies
- **ESED 8750** Current Issues in STEM Education Research
- **ESED 8880** Preparing for the Professoriate

Practicum (1 credit hour)

- **ESED 8610** Practicum in Engineering and Science Education Note: Student must have current teaching/mentoring experience involving direct student contact at the university level.

Total credit hours: 11

Course substitutions are allowed but subject to formal request and approval by the Graduate Coordinator.

Certificate in Engineering and Science Education

The graduate certificate is open to any PhD student in science (e.g., chemistry, physics, geosciences, biology), engineering (e.g., industrial, chemical, mechanical, electrical), or mathematics. It is preferred that students have at least one year of graduate coursework completed and are in good standing. The certificate requires 11 credit hours of coursework that equips the students to teach or provide programming in higher education settings from two-year community college, four-year colleges or universities, and research universities. The certificate provides an advantage that PhD students in the STEM disciplines at most other universities do not have. The ESED certificate gives Clemson graduates a competitive edge.

