

TECHNOLOGY, ENGINEERING & DESIGN EDUCATION**Accepting Applications for Fall 2019**

PhD in Learning and Teaching in STEM

Program Area of Study: *Engineering and Technology Education*

Accepting Applications now through early Spring 2019

We Anticipate up to 3 (three) TA positions for Fall 2019

This PhD program within the Department of STEM Education, program area of Technology, Engineering and Design Education (K-12), is for students who wish to become leaders through scholarly pursuits in engineering and technology learning, teaching, and practice. In addition to the essential habits of mind and practice unique to engineering and technology, the program will also promote 21st Century and “Technology” skills that are necessary for influencing public policy, educational reform, and promoting technological literacy. Engineering education is a rapidly emerging field not only in the post-secondary arena, but in K-12 settings as well. The Next Generation Science Standards and the National Standards for Technological Literacy include engineering as an essential learning focus.

This degree within the College of Education combines current engineering and technology education faculty from both the College of Engineering and College of Education where fruitful partnerships currently exist. Through these partnerships, this program area of study will offer a unique and innovative concentration that would have specializations in areas: K-12 outreach education, post-secondary teacher education and instruction, engineering education research, and community college service.

An inherently cross-disciplinary program, graduates are prepared for successful positions across engineering education and technology education enterprises: engineering faculty positions in all types of universities; educational research; university assessment staff; engineering policy; industry training management; and K-12 district or local area specialists.

If interested, please contact:

Dr. Cameron DeLeon Denson

Associate Professor

Graduate Program Coordinator

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<https://ced.ncsu.edu/programs/doctoral-engineering-and-technology-education/>

**PhD in Learning and Teaching in STEM
Program Area of Study: Engineering and Technology Education**

**Curriculum Display
TOTAL HOURS = 60 (minimum)**

Graduates of our program become rising leaders in engineering and technology education in K-12 formal and non-formal settings. Through scholarly pursuits in the field, learning and teaching, and public policy they take positions as scholars, supervisors, teacher educators, non-formal science/engineering educators, entrepreneurs, designers, and as faculty members in institutions of higher education.

PAS Core Courses

Program Area of Study: Engineering and Technology Education	24 hrs
TED 750 Foundations in K-12 Engineering and Technology Education	3
TED 755 Developing and Implementing Engineering and Technology Education	3
TED 757 Leadership Development in Engineering and Technology Education	3
TED 821 Special Problems in Engineering and Technology Education	3
Specialty Courses Take graduate courses (500 or above level) that deepen or broaden your understanding of topics related to the focus of your research and future career interests. Courses should be chosen in consultation with your advisor	12

PhD Core Courses

Learning and Teaching in STEM Required Courses	6 hrs
EMS 7** Foundational Learning Theories in STEM Education	3
EMS 7** Contemporary Topics and Issues in STEM Education	3

College Course Requirements

Scholar Leaders Courses	6 hrs
Scholar Leader 1: <i>Diversity and Equity in Schools and Communities</i>	3
Scholar Leader 2: <i>Systematic Change in Education and Society</i>	3

Research Methods	15 hrs
ED 710 Applied Quantitative Methods in Education, or its equivalent	3
ED 730 Introduction to Qualitative Research in Education, or its equivalent	3
ED 711 Applied Quantitative Methods in Education II, or its equivalent OR ED 731 Advanced Qualitative Research and Data Analysis in Education, or its equivalent	3
Two more advanced research methods courses taken from the following list or their equivalent:	6
• ED 711 Applied Quantitative Methods in Education II	
• ED 731 Advanced Qualitative Research and Data Analysis in Education	
• ED 750 Mixed Methods Research in Education	
• ED 712 Survey Methods in Educational Research	
• ED 795 Special Topics in Education Research	
• ST 505 Applied Nonparametric Statistics	
• TED 692/810/821 Research Experiences in Technology Education	
• Courses in the College of Education, Engineering, Statistics, or Psychology (500 level or above)	

Dissertation Research	9 hrs
TED 895 Doctoral Dissertation Research	9

* It is expected that you will have a STEM related degree, experience, or coursework in addition to and/or as part of the required PhD course work.