PhD in Education: Science Education
Degree Information

The faculty members in the Ph.D. in Education have designed the curriculum to provide the knowledge, skills, and experiences necessary for understanding teaching and learning. Students plan their programs in consultation with their advisors and dissertation committees. The total number of hours required for the degree is **69 hours** past the master's degree, and all hours listed are required minimums. Some programs may require more than the 69-hour minimum. Students may take additional hours. The degree has the following components:

**COURSEWORK**

**Common Program Core:** 9 credit hours

- SCFD 6983  Diversity & Equity Issues in Education
- SCFD 6113  Theoretical Foundations of Inquiry
- CIED 6503  Doctoral Seminar

**Extended Inquiry:** 12 credit hours
At least six of these hours, selected from courses such as those listed below, should be composed of the same type of research method (i.e., quantitative, qualitative, historical, etc.). Students should work with their advisory committee to select the appropriate 12 hours for their program of study.

- CIED 6073  Advanced Pedagogical Research
- CIED 6253  Designing and Conducting Mixed Methods Research
- REMS 6003  Analysis of Variance
- REMS 6013  Multiple Regression Analysis
- REMS 6023  Psychometric Theory
- REMS 6033  Factor Analysis in Behavioral Research
- REMS 6663  Applied Multivariate Research
- REMS 5963  Computer Applications in Nonparametric Data Analyses
- SCFD 6123  Qualitative Research I
- SCFD 6190  Qualitative Research: Selected Methods
- SCFD 6193  Qualitative Research II

**Cognate area:** 9 credit hours
The doctoral advisory committee will work with individual students to select the most appropriate courses to enhance their knowledge within their specializations.

**Independent Research:** 15 credit hours

- CIED 6000  Dissertation

**Specialization – Science Education:** 24 credit hours

All students will take the following 9 hours:

- SMED 6223: Instruction and Learning in Science and Mathematics Education
- SMED 6233: Affective Issues in Science and Mathematics Education
- SMED 6750: Research in Mathematics and Science Education
Select 15 hours from the following:

CIED 5850: Directed Study
CIED 6910: Practicum
CIED 6850: Directed Study
CIED 5193: Inquiry and Problem-Based Learning in Science Education.
CIED 5720: Education Workshop.
CIED 5850: Directed Study
CIED 6850: Directed Study
CIED 6910: Practicum
SMED 5050: Integrating Mathematics and Science Applications
SMED 5223: Teaching Science in the Elementary School
SMED 5243: Environmental Education in the Curriculum
SMED 5280: Workshop in Science Education
SMED 6123: Teaching the Nature of Science in Secondary Science Education.
CIED 6013: Assessment in Science Education.

In addition to the requirements listed above for degree completion, students must have (a) presented at a professional conference and (b) submitted an article for publication. Faculty will support and mentor candidates through these processes.

For more information, please feel free to contact the Science Education faculty coordinator:

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Note: Students will proceed through their degree programs with the assistance and guidance of a faculty advisor and an advisory committee. The student develops a plan of study, submits a dissertation proposal, completes a qualifying examination, and completes a dissertation following the procedures outlined by the Graduate College, the Ph.D. program, and the degree option. (See the program web site and the University Catalog for further detail about the expectations for the degree.)

Note: Students should download the STCL graduate student handbook at http://education.okstate.edu/phded