PhD in Education: Mathematics 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 **and**
- SCFD 6113  Theoretical Foundations of Inquiry **and**
- 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
- MATH 5913  Introduction to Research in Mathematics Education
- MATH 6923  Research in Undergraduate Mathematics Education

**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 – Mathematics 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
- SMED 5253: Rational Number Concepts, Proportional Reasoning, and Classroom Interactions at the Elementary Level (PK-6)
- SMED 5263: Assessment and Evaluation in School Mathematics
- SMED 5270: Practicum in School Mathematics
- SMED 5273: Number Concepts and Assessment at the Elementary Level (PK-6)
- SMED 5283: Problem-Centered Learning in Mathematics
- SMED 5293: Teaching and Learning Mathematics in Technology
- SMED 5613: Effective Teaching of Mathematics in the Secondary School
- SMED 5750: Seminar in Mathematics Education
- SMED 5913: Geometry, Spatial Visualization, and Learning Trajectories at the Elementary Level (PK-6)
- SMED 5923: Algebra and Mathematical Tasks at the Elementary Level (PK-6)
- SMED 5933: Teaching Measurement and Data at the Elementary Level (PK-6)
- SMED 5943: Mathematics Leadership and Coaching

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 Mathematics 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