



# STEM EDUCATION PhD PROGRAM

## North Dakota State University

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Applicants are invited for NDSU's interdisciplinary PhD program in Science-Technology-Engineering-Mathematics (STEM) Education. The purpose of this interdisciplinary program is to prepare future college faculty whose research focus is on teaching and learning at the collegiate level *and* who can successfully teach at the undergraduate/graduate level in their selected STEM discipline.

Coursework will center on graduate-level courses in the discipline area, a common core of STEM Education courses, and elective courses focused on research training. The candidate's dissertation research will be supervised by an interdisciplinary team of faculty and will investigate teaching and learning within/across one or more STEM disciplines.

Although interdisciplinary in nature, graduate students in the STEM Education PhD Program will have an academic home in the STEM department/program of their discipline preference. Graduate committee membership will include faculty from the STEM Education program and from the department/program of discipline preference.

The STEM Education PhD program works in collaboration with (a) existing educational research programs in STEM disciplines (e.g., Biological Sciences); (b) NDSU's College Teaching Certificate Program; and (c) extramurally-funded STEM educational research projects already established at NDSU.

### **STEM EDUCATION PROGRAM REQUIREMENTS:**

Applicants must have a Masters Degree or equivalent for full admission. The program requires 60 semester hours beyond the Masters Degree. Additionally, by completion of the doctorate, the coursework must include either a Masters Degree or its equivalent coursework in the chosen STEM discipline (this applies if the Masters Degree is in Education or another related field). In consultation with the student's graduate committee, a plan of study will be developed to ensure that the student has a strong background in (a) curriculum, teaching, learning, and assessment; (b) educational research; and (c) content expertise within their discipline.

#### **Core Didactic Courses (9 SH):**

- STEM\* 704: STEM Curriculum & Assessment (3 SH)
- Education 705: Teaching College Science (3 SH)
- STEM\* 706: Research Methods in STEM (3 SH)

**Educational Research Seminar** (continuing enrollment throughout program, each Fall & Spring semester):

- Education 790: Seminar: Research in STEM Education (1 SH)

**Elective Graduate Courses in STEM Discipline and/or Education** (minimum of 18 SH, to meet minimum of 27 SH coursework requirement):

- Didactic courses selected with approval of the graduate committee to strengthen preparation in the STEM discipline, educational research, and/or in education.

**Doctoral Dissertation** (minimum 9 SH):

- Education 799: Doctoral Dissertation (1-15 SH)

\* Prefix approval pending.

Students enrolled in program must maintain an overall GPA  $\geq 3.0$  both within the content area and the education courses. If the GPA in either component should drop below 3.0, then the student is placed onto probation within the program for the following semester. If at the end of that semester the GPA still remains below 3.0, the student is subject to dismissal from the program.

**PROGRAM ASSESSMENT:**

1. **Admission:** Applicants will include a written statement describing their academic preparation for the program, their interests in STEM education, and their goals for doctoral research.
2. **Comprehensive examination:** To be completed at the end of the didactic coursework for the degree.
3. **Final defense of dissertation:** Successful defense of the dissertation is the final requirement of the program.

**For further information, contact:**

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