Mathematics and Science Education Ph.D. REQUIREMENTS

Vanderbilt University requires students to take 72 hours of work to earn a PhD. These hours can be fulfilled through transfer of graduate credits, course work, independent studies, and dissertation work. The number of hours transferred and the number of hours counted toward dissertation work vary according to each student's particular circumstances. Typically students who enter with a Masters degree with coursework relevant to their area of study will be able to complete coursework in three years. Students with less prior coursework typically will require additional time.

	Fall Courses	*Spring Courses*	*Expected Products*
Year 1	Intro. to Statistical Inference^ Learning and Instruction* Inquiry in Education* Research Group *(no credit)	MSE Seminar #1~ Research Group * (for credit Elective~	*First Year Paper (presented as poster Fall of second year)*
Year 2	Research Methods #1* Elective Elective Research Group * (no credit)	Research Methods #2* Teaching as a Social Practice* Research Group * (for credit	*Second year paper (presented Fall of third year)*
Year 3	Electives	Electives	*Major Area Paper (depending on coursework needs*
Year 4			*Dissertation proposal (depending on progress)*
Year 5	Dissertation		

* Required by the Teaching & Learning Department
~ Required by MSE
^ Vanderbilt Graduate Program Requirement

Teaching and Learning requirements:
- **Core courses**:   **24 hours**
  - Statistics (PSY-GS 8858)
  - Inquiry into Education (EDUC 8010)
  - Advanced Learning and Instruction (EDUC 8030)
  - Teaching as Social Practice (EDUC 8020)
  - Research Methods: Two courses selected in consultation with your advisor
- Research Groups: Participation for two years, 3 credits years one and two. Participation in later years is optional and may be for variable credit.
- Research Papers:
  - Year one: poster presentation to the department and other PhD students
  - Year two: presentation to the department and other PhD students
- Major Area Paper (MAP) completed and defended in year three

Specialization   **30 hours**
Electives   **9 hours**
Dissertation   **9 hours**

Mathematics and Science Education requirements

In addition to completing all departmental requirements for Teaching and Learning, students in the MSE sequence also will complete the following requirements:

Required MSE Seminars:
All entering students will be expected to take a required MSE Seminar each of their first two semesters. These will be selected from the following list, taught according to faculty availability in any given year:

Disciplinary Literacies in Mathematics/Science,
Learning in/out of School,
Institutional Settings for Learning
Interplay between Learning and Development,
Modeling and Forms of Argumentation,
Teaching and Professional Development in Higher Education,
Diversity and Equity in MSE

Specialized Area of Expertise

Each student will develop a program of studies designed to enable him or her to acquire expertise in a given area that is consistent with his or her career objectives and prior education and research-related experiences. Students select courses and develop a description of their area of expertise through discussion with and approval of their advisors. Each year the program reviews each students' plans along with materials required as part of the students' annual review materials.

Research Presentation Competence

Students will develop competence presenting research results by engaging in varied activities related to presenting research findings. First year projects (developed with advisor) will be shared with the department in the form of a poster presentation. Second year papers will be presented to the department in the form of a conference presentation. In addition, students will develop and submit abstracts seeking the opportunity to present research at national conferences. Students are encouraged to submit papers to national conferences as early as possible.