

Ph.D. Collegiate Mathematics Education

ADMISSION CRITERIA

Admission to the joint Ph.D. program in collegiate mathematics education requires:

- Master's or Bachelor's Degree in mathematics or applied mathematics. Candidates whose degree is in another related field (for example, computer science, physics, or engineering) and whose background in mathematics is strong are also eligible for admission and are encouraged to apply.
- Quantitative and Verbal score: 1100
Analytical score: 3.0
- TOEFL (minimum score of 600) if from non-English speaking country
- A minimum GPA of 3.0/4.0 is required
- Professional statement of goals/objectives (2 pages)
- Vita
- Three letters of recommendation
- An interview may be required

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DEPARTMENT OF MATHEMATICS
AND SCIENCE EDUCATION
DEPARTMENT OF APPLIED MATHEMATICS

Doctor of Philosophy in Collegiate Mathematics Education

*Educating a New Generation of
Teachers, Researchers, and Leaders*

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**DEPARTMENT OF MATHEMATICS
AND SCIENCE EDUCATION**

**DEPARTMENT OF
APPLIED MATHEMATICS**

IIT has developed a joint Ph.D. program through the collaboration of the departments of Applied Mathematics (AM) and Mathematics and Science Education (MSED).

The objective of the program is to provide advanced education in the teaching and learning of collegiate mathematics through coursework and original research.

These advanced studies will enable graduates to teach a wide range of college level mathematics courses, conduct theoretical and practical research on collegiate mathematics teaching and learning, or develop and evaluate college mathematics curriculum.

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APPLIED MATHEMATICS CORE REQUIREMENTS

AM Core Requirements (21 credit hours):

MATH 500	Applied Analysis I
MATH 553	Discrete Applied Mathematics I
MATH 577	Computational Mathematics I
MATH 515	Ordinary Differential Equations and Dynamical Systems
MATH 532	Linear Algebra
MATH 540	Probability
MATH 476	Statistics

MATHEMATICS AND SCIENCE EDUCATION CORE REQUIREMENTS

MSED Core Requirements (18 credit hours):

MSED 598	Methods of College Teaching in Mathematics and Science
MSED 599	College Teaching Practicum in Mathematics and Science
MSED 601	Critical Analysis in Quantitative Research
MSED 602	Quantitative Research Design and Practicum
MSED 603	Critical Analysis in Qualitative Research
MSED 604	Qualitative Research Design and Practicum

AM Elective Requirements (minimum of 12 credits):

MATH 401	Analysis II
MATH 402	Complex Analysis
MATH 420	Geometry
MATH 5XY	(any 500-level AM courses)

MSED Elective Requirements (minimum of 9 credits):

MSED 503	Advanced Strategies: Mathematics
MSED 521	History/Philosophy of Mathematics
MSED 550	Clinical Supervision in Science/Mathematics
MSED 552	Assessment and Evaluation
MSED 555	Mathematics Curriculum
MSED 571	Problem Solving and Nature of Mathematics

Ph.D. REQUIREMENTS

- 85 credit hours beyond the bachelor's degree
- 32 credits maximum transfer from master's coursework
- 42 maximum transfer of graduate coursework credits; the number of subjects allowed for transfer credit depends on what subject have been recently taken and is decided on a case-by-case basis
- Qualifying exam
- Comprehensive exam
- Dissertation and Defense

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