

APPLIED MATHEMATICS - PH.D.

College of Arts and Sciences
Department of Mathematical Sciences
www.kent.edu/math

About This Program

The Ph.D. degree in Applied Mathematics is for those interested in becoming professional scholars, college and university teachers or independent workers in private, industrial or government research institutions.

Contact Information

- Program Coordinator: **Artem Zvavitch** | azvavitch@kent.edu | 330-672-3316
- Connect with an Admissions Counselor: U.S. Student | International Student

Program Delivery

- **Delivery:**
 - In person
- **Location:**
 - Kent Campus

Examples of Possible Careers and Salaries*

Data scientists and mathematical science occupations, all other

- 30.9% much faster than the average
- 33,200 number of jobs
- \$98,230 potential earnings

Mathematical science teachers, postsecondary

- 1.3% slower than the average
- 60,100 number of jobs
- \$73,650 potential earnings

Mathematicians

- 3.0% about as fast as the average
- 2,900 number of jobs
- \$110,860 potential earnings

Natural sciences managers

- 4.8% about as fast as the average
- 71,400 number of jobs
- \$137,940 potential earnings

Statisticians

- 34.6% much faster than the average
- 42,700 number of jobs
- \$92,270 potential earnings

* Source of occupation titles and labor data comes from the U.S. Bureau of Labor Statistics'

Occupational Outlook Handbook. Data comprises projected percent change in employment over the next 10 years; nation-wide employment numbers; and the yearly median wage at which half of the workers in the occupation earned more than that amount and half earned less.

For more information about graduate admissions, visit the graduate admission website. For more information on international admissions, visit the international admission website.

Admission Requirements

- Passage of the departmental qualifying examination at the master's level
- Master's degree from an accredited university or college
- Official transcript(s)
- Résumé or vita
- Goal statement
- Three letters of recommendation
- English language proficiency - all international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning one of the following:
 - Minimum 525 TOEFL PBT score
 - Minimum 71 TOEFL IBT score
 - Minimum 74 MELAB score
 - Minimum 6.0 IELTS score
 - Minimum 50 PTE score
 - Minimum 100 Duolingo English score

Application Deadlines

- **Fall Semester**
 - Application deadline: March 1
- **Spring Semester**
 - Application deadline: October 1
- **Summer Term**
 - Application deadline: March 1

Applications submitted after these deadlines will be considered on a space-available basis.

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements		
Mathematics (MATH) Doctoral-Level Coursework (70000 or 80000 level) ¹		30
<i>Culminating Requirement</i>		
MATH 87199	DISSERTATION I ²	30
Minimum Total Credit Hours:		60

- ¹ A cognate of maximum 10 credit hours may be counted toward the completion of the degree subject to the approval of the student's advisor and the graduate studies committee.
- ² Each doctoral candidate, upon admission to candidacy, must register for MATH 87199 for a total of 30 credit hours. It is expected that a doctoral candidate will continuously register for Dissertation I, and thereafter MATH 87299, each semester, until all requirements for the degree have been met. It is expected that candidates will present the results of their research in a defense open to students and faculty, at which the dissertation will be presented and defended before the dissertation committee.

Candidacy

This examination will be a comprehensive examination in the field of the major subject, and will be a substantially deeper test than the qualifying examination.

Program Learning Outcomes

Graduates of this program will be able to:

1. Understand and appreciate connections between mathematics and other disciplines.
2. Be aware of and understand a broad range of mathematical subdisciplines.
3. Obtain a broader and deeper understanding of core applied mathematics subdisciplines, including numerical analysis, probability and mathematical statistics.
4. Obtain a deep understanding of some subdiscipline.
5. Engage effectively in problem solving, including exploring examples, devising and testing conjectures and assessing the correctness of solutions.
6. Reason in mathematical arguments at a level appropriate to the discipline, including posing problems precisely, articulating assumptions and reasoning logically to conclusions.
7. Approach mathematical problems creatively, including trying multiple approaches and modifying problems when necessary to make them more tractable.
8. Develop and carry out a research program in applied mathematics.
9. Communicate mathematics clearly both orally and in writing.
10. Teach university-level mathematics effectively.