

# PURE MATHEMATICS - PH.D.

## College of Arts and Sciences

Department of Mathematical Sciences  
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 Kent Campus  
 330-672-2430  
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 www.kent.edu/math

## Description

The Ph.D. degree in Pure Mathematics is for students interested in becoming professional scholars, college and university teachers or independent workers in private, industrial or government research institutions. Kent State's pure mathematics Ph.D. program is one of six in the state public university system, and one of only two in Northeast Ohio. In broad terms, the faculty areas of research lie in functional analysis and operator theory, Lie representation theory, approximation theory, finite groups, character theory, number theory, large scale systems of equations, numerical and scientific computation and probability and stochastic processes.

## FULLY OFFERED AT:

- Kent Campus

## Admission Requirements

- Passage of the departmental qualifying examination at the master's level in algebra and analysis
- Master's degree from an accredited university or college for unconditional admission
- Official transcript(s)
- Goal Statement
- Résumé or vita
- 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 (paper-based version)
  - Minimum 71 TOEFL IBT score (Internet-based version)
  - Minimum 74 MELAB score
  - Minimum 6.0 IELTS score
  - Minimum 50 PTE score

For more information about graduate admissions, please visit the Graduate Studies admission website. For more information on international admission, visit the Office of Global Education's admission website.

## Program Learning Outcomes

Graduates of this program will be able to:

1. Understand and appreciate connections among different subdisciplines of mathematics.
2. Be aware of and understand a broad range of mathematical subdisciplines.

3. Obtain a broader and deeper understanding of core mathematics subdisciplines of algebra and analysis.
4. Obtain a deep understanding of some subdiscipline.
5. Reason in mathematical arguments at a deep level, including using precise definitions, articulating assumptions and reasoning logically to conclusions.
6. Engage effectively in problem solving, including exploring examples, devising and testing conjectures and assessing the correctness of solutions.
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 mathematics.
9. Communicate mathematics clearly both orally and in writing.
10. Teach university-level mathematics effectively.

## Program Requirements

### Major Requirements

[PHD-PMTH]

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

- <sup>1</sup> Each student is required to take a set of basic courses as outlined in the Departmental Information and Policy Guide. Students may petition to have specific course requirements waived if minimum B grade was obtained for an equivalent course at another institution. The basic courses will prepare the student for the candidacy examination.
- <sup>2</sup> 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, including summer, 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 for Degree

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.

### Graduation Requirements

Students present at least one seminar during their graduate career.