

# MATHEMATICS (PH.D.)

<https://ceps.unh.edu/mathematics-statistics/program/phd/mathematics>

## Description

The Mathematics Ph.D. program provides research opportunities in core mathematics, including operator algebras, algebra, algebraic topology, analysis and complex analysis.

## Admission Requirement

Applicants for the M.S. and Ph.D. degrees must have completed significant undergraduate coursework in mathematics, preferably in algebra, analysis, and topology.

## Applying

Please visit the [Graduate School website](#) for detailed instructions about applying to the program.

## Requirements

Students are advanced to candidacy after meeting the following requirements:

| Code                    | Title       | Credits   |
|-------------------------|-------------|-----------|
| <b>Required Courses</b> |             |           |
| MATH 951                | Algebra I   | 3         |
| MATH 952                | Algebra II  | 3         |
| MATH 953                | Analysis I  | 3         |
| MATH 954                | Analysis II | 3         |
| MATH 955                | Topology I  | 3         |
| <b>Total Credits</b>    |             | <b>15</b> |

Mathematics Ph.D. students must pass written comprehensive examinations in algebra, analysis, topology and an elective subject. Elective subjects include functional analysis, algebraic topology, applied mathematics, statistics, advanced algebra, advanced complex analysis, advanced mathematics education, et al.

Advanced coursework in a minor field (usually within mathematics, but possibly in another area of the mathematical sciences), and a major field (that of the student's intended dissertation work) followed by successful completion of oral examinations in their minor and major areas.

Experience in teaching equivalent to at least half-time for one year.

## Dissertation

Students must complete and submit a dissertation that includes original results in mathematics.

## Student Learning Outcomes

## Program Learning Outcomes

- Students possess doctoral-level competence in the three primary areas of topology, algebra and analysis.

- Students possess specific and specialized breadth, beyond basic doctoral-level competence and in addition to the area of their dissertation research.
- With appropriate guidance from faculty member, students produce a research plan and implement it to obtain original results in mathematics suitable for publication.
- Students possess experience in and instructor-of-record responsibility for university-level mathematics instruction through teaching carried out while in the program.