Mathematics (MAT)

313 Stevenson Hall, (309) 438-8781
Math.IllinoisState.edu

Chairperson: George F. Seelinger

Programs Offered
Ph.D. in Mathematics Education; M.S. in Mathematics with sequences in Mathematics, Actuarial Science, Applied Statistics, Biomathematics; and Elementary and Middle School Mathematics Education. At the master's level, concentrations are available in secondary mathematics education, pure mathematics, computational mathematics, and applied mathematics. Concentrations are not listed on a student's transcript.

M.S. in Mathematics

Program Requirements
Students must complete either Option I or Option II. Option I requires a culminating experience in the form of an approved master’s project, comprehensive exam, or professional practice. Thesis Option II requires a master’s thesis. Students may complete a sequence in Mathematics, Actuarial Science, Applied Statistics, Biomathematics or in Elementary and Middle School Mathematics Education. Students in the Biomathematics sequence must complete Option II. The culminating experience/thesis project must be approved in advance by the Department’s master’s program committee.

Note: All master's degree programs require a minimum of 50 percent of the non-thesis credit hours applied to the degree to be 400-level courses or above. All electives are subject to approval by the department’s graduate advisor.

Option I—Non-Thesis: This 32 hour option requires:
- 26 hours in mathematics; 16 hours at the 400 level, 12 hours of mathematics courses at the 400 level
- 3 hours: culminating experience in the form of MAT 490 or MAT 498
- Electives as needed to reach required credit minimum

Option II—Thesis: This 30 hour option requires:
- 24 hours in mathematics; 15 hours at the 400 level, 10 hours of mathematics courses at the 400 level
- Electives as needed to reach required credit minimum
- MAT 499 (4-6 hours)

Mathematics Sequence:
- 11 hours: MAT 336, 337, and 347
- 3 mathematics courses numbered 407 or above--
  - Options I or II
Students with the following interests are advised to take the corresponding courses: (1) Secondary mathematics education: 401, 403, 421, 422; (2) Doctoral study in mathematics: 407, 447; (3) Computational mathematics: 356, 361, 363, 461; (4) Applied mathematics: 340, 341, 345, 356, 361, 362, 363.

Actuarial Science Sequence:
- 1 course selected from: MAT 336, 337, 347
- 12 hours: 3 courses selected from: MAT 355, 380, 381, 383, 384, 443, 480, or 483
- 3 mathematics courses numbered 407 or above
- Options I or II
- The Department reserves the right to enforce professional standards of practice as specified by the Society of Actuaries and the Casualty Actuarial Society. These standards may be taken into consideration in program retention decisions.

Applied Statistics Sequence:
- MAT 350, 351
- 1 course from: 336, 337, or 347
- 3 courses selected from: MAT 450, 453, 455, 456, or 458
- Options I or II

Biomathematics Sequence:
Persons seeking cross-disciplinary training in mathematics and biology may select this sequence. This 30 hour sequence requires:
- Thesis option II
- BioCore: MAT 340, 350, 351, 442; BSC 420A36 taken twice under different topics
- 12 hours from the School of Biological Sciences
- 13 hours at the 400 level from outside of the BioCore
- An area of emphasis may be chosen from the following:
  Emphasis in Biostatistics and Modeling: A choice of courses from MAT 353, 356, 362, 450, 453, 455, 456, 458; and BSC 343, 403, 404, 405, 450.37, 471, 486.
  Emphasis in Computation and Bioinformatics: A choice of courses from MAT 356, 361, 363, 461; and BSC 350, 353, 355, 415, 419, 467, 470, 471.
**Elementary and Middle School Mathematics Education Sequence:** Persons who are teaching or who plan to teach at the elementary or middle school level may elect this sequence. *This program does not lead to licensure.*

-  MAT 304, 401, 402, 403, and 409
-  Options I or II
-  Students in this sequence who are considering entering the Mathematics Education Ph.D. program at Illinois State University are advised to take MAT 145 and 146 and, as part of their master's program, the following courses: MAT 304, 309 or 330, 312, 315, 320, 326, 409, 421, and 422

Please see the Ph.D. advisor for more information.

**Doctor of Philosophy in Mathematics Education**

**Program Requirements**

The typical program is approximately 90 hours. A full-time student should expect to complete the required coursework for the program in 3 to 4 years past the bachelor's degree.

Two options are available K-9 or K-12.

The typical program is approximately 90 hours. Program requirements include:

-  6 hours of graduate mathematics content courses
-  30 hours in mathematics education
-  3 hours for a professional project
-  12 hours in research methods
-  6 hours of electives in areas such as mathematics, technology, curriculum, educational psychology, evaluation, supervision, human development, learning theory or measurement
-  a minimum of 15 hours of dissertation credit

Students in the program must demonstrate competence in teaching prospective or practicing mathematics teachers. Some of these requirements may be satisfied by work completed prior to acceptance into the program. The student must also meet the other university requirements for Ph.D. programs listed elsewhere in this catalog. Students must meet the Graduate School's residency requirement for a Doctor of Philosophy degree.

**Mathematics Courses:**

[coursefinder.illinoisstate.edu/directory/mat/](coursefinder.illinoisstate.edu/directory/mat/)

**All Courses:**

[coursefinder.illinoisstate.edu/directory/](coursefinder.illinoisstate.edu/directory/)