Graduate Certificate in Mathematics

This is an 18-hour program designed for student who are not seeking a full master's degree, but need 18 hours of graduate math content to meet state requirements for teaching at the community college level or to teach dual-credit high school courses.

Program Requirements

To complete the certificate program, the student must take 18 hours of graduate mathematics courses, consisting of the following:

- MA 701 Mathematical Proofs
- Any course in the algebra area*
- Any course in the analysis area**
- Any course in the statistics and applied mathematics area***
- Two additional graduate mathematics courses****

* Algebra courses include:

- MA 728 Vector Spaces
- MA 740 Number Theory
- MA 741 Group Theory
- MA 742 Ring Theory
- MA 743 Field Theory
- Special topics courses approved by the graduate committee.

** Analysis courses include:

- MA 715 Topology
- MA 734 Complex Variables
- MA 735 Advanced Calculus I
- MA 736 Advanced Calculus II
- Special topics courses approved by the graduate committee

*** Statistics and applied mathematics courses include:

- MA 532 Mathematical Statistics I
- MA 732 Categorical Data Analysis
- MA 733 Mathematical Statistics II
- MA 738 Applied Differential Equations
- MA 758 Wavelets
- MA 760 Numerical Analysis
- MA 762 Optimization Techniques
- MA 763 Simulation Techniques
- MA 764 Regression Analysis
- MA 765 Numerical Linear Algebra

- Special topics courses approved by the graduate committee

**** 500- and 700-level math courses at ESU can be applied to the certificate with the exception of courses that are considered to be outside the standard mathematics curriculum (such as MA 793 Math in the Common Core and MA 510 Technology in Mathematics). If there is any doubt as to whether a class you want to take counts toward the certificate, speak with your advisor.

Applying to the Certificate Program

Students must apply and be accepted to the certificate program. The admission requirements are the same as those for the master's degree. Specifically, applicants must exhibit computational fluency to the level of Calculus I and II (and extra courses such as Differential Equations, Linear Algebra, and Statistics are desirable) and they must provide evidence of experience writing mathematical proofs (at the level of an upper-division course such as Abstract Algebra).

Applications for the certificate program can be found online at
http://www.emporia.edu/grad/admissions/