

Graduate Certificate in Applied Mathematics

The Graduate Certificate in Applied Mathematics is designed to enhance training in various aspects of applied mathematics. It is intended for students who are currently pursuing a graduate degree in a discipline outside of the Mathematics Department, or for students who wish to pursue the certificate as a stand-alone program.

Admission to Graduate Studies

Admission Requirements

- All applicants must meet the requirements outlined in the Admission to Graduate Study (<https://policy.ku.edu/graduate-studies/admission-to-graduate-study/>) policy.
- Bachelor's degree: A copy of official transcripts showing proof of a bachelor's degree (and any post-bachelor's coursework or degrees) from a regionally accredited institution, or a foreign university with equivalent bachelor's degree requirements is required.
- English proficiency: Proof of English proficiency (<https://gradapply.ku.edu/english-requirements/>) for non-native or non-native-like English speakers is required. There are two bands of English proficiency, including Admission and Full proficiency. For applicants to online programs, Full proficiency is required.

Admission to the Graduate Certificate in Applied Mathematics

Applicants must submit a graduate application online. (<https://gradapply.ku.edu/apply/>) The prerequisites for admission are:

- Current enrollment in a KU graduate program outside the Department of Mathematics, or as a non-degree-seeking student
- Completion of two MATH graduate courses from those listed in the Certificate Requirements, with a minimum 3.0 GPA. These courses can then count towards the 12 credits required for the certificate.

The Department of Mathematics evaluates candidates and makes recommendations to the Office of Graduate Studies regarding admission. The Department ordinarily does not award GTA positions to students accepted to the Graduate Certificate program. Further information about applications and admissions is available from the Department of Mathematics. (<https://math.ku.edu/admission-graduate-program/>)

Contact the department:

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The certificate requires the completion of four courses from the following list:

Code	Title	Hours
Select four MATH courses from the following list:		12
MATH 601	Algebraic Topics in Computing: _____	
MATH 605	Applied Regression Analysis	
MATH 611	Time Series Analysis	
MATH 630	Actuarial Mathematics	
MATH 647	Applied Partial Differential Equations	
MATH 648	Calculus of Variations and Integral Equations	
MATH 650	Nonlinear Dynamical Systems	
MATH 724	Combinatorial Mathematics	
MATH 725	Graph Theory	
MATH 727	Probability Theory	
	or MATH 627 Probability	
MATH 728	Statistical Theory	
	or MATH 628 Mathematical Theory of Statistics	
MATH 750	Stochastic Adaptive Control	
MATH 765	Mathematical Analysis I	
MATH 766	Mathematical Analysis II	
MATH 781	Numerical Analysis I	
MATH 782	Numerical Analysis II	
MATH 783	Applied Numerical Methods for Partial Differential Equations	
MATH 850	Differential Equations and Dynamical Systems	
MATH 851	Topics in Dynamical Systems: _____	
MATH 865	Stochastic Processes I	
MATH 866	Stochastic Processes II	
MATH 874	Statistical Decision Theory	
MATH 881	Topics in Advanced Numerical Linear Algebra: _____	
MATH 882	Topics in Advanced Numerical Differential Equations: _____	
MATH 950	Partial Differential Equations	
MATH 951	Topics in Advanced Partial Differential Equations II: _____	
Total Hours		12

Other courses (600 level or above) may be substituted with the approval of the Director of Graduate Studies. At least two courses must be at the 700 level or above. Courses should be selected in consultation with an advisor.

At the completion of this program, students will be able to:

- Demonstrate broad and/or deep understanding of core areas of applied/applicable mathematics that are represented in the Department of Mathematics and apply them to disciplinary research.
- Model applied problems (arising in science, engineering, or other fields) using mathematics, and apply the resulting mathematical models to solve the original problems.
- Communicate applied/applicable mathematics effectively both orally and in writing.