

Applied Mathematics, PhD

LAAPMPHD

Are you passionate about making a difference in the world of climate or environmental issues, or advancing the fight against cancer or infectious diseases? You can apply your enhanced mathematics expertise to devising solutions to these types of current problems.

Program description

Degree awarded: PHD Applied Mathematics

This PhD program in applied mathematics is intended for students with superior computational and mathematical modeling ability. It emphasizes a solid mathematical foundation and promotes creative scholarship in an application discipline.

The School of Mathematical and Statistical Sciences has faculty in applied mathematics with outstanding transdisciplinary research programs that have strong external funding. Current research interests include mathematical epidemiology and mathematical ecology, mathematical neuroscience, environmental fluid dynamics and high-performance computing, imaging and inverse problems, supply chain dynamics, control and optimization, computational methods for ordinary and partial differential equations, analysis of differential equations, and geophysical and environmental fluid dynamics.

At a glance

- **College/School:** [The College of Liberal Arts and Sciences](#)
- **Location:** [Tempe](#)

Degree requirements

84 credit hours, a written comprehensive exam, a prospectus and a dissertation

Required Core (3 credit hours)

APM 505 Applied Linear Algebra (3)

Other Requirements (12 credit hours)

APM 501 Differential Equations I (3)

APM 502 Differential Equations II (3)

APM 503 Applied Analysis (3)

APM 504 Applied Probability and Stochastic Processes (3)

APM 506 Computational Methods (3)

Electives and Research (57 credit hours)**Culminating Experience (12 credit hours)**

APM 799 Dissertation (12)

Additional Curriculum Information

Students must pass:

- two qualifying examinations
- a written comprehensive examination
- an oral dissertation prospectus defense

Students should see the department website for examination information.

Each student must write a dissertation and defend it orally in front of five dissertation committee members.

Electives are chosen from math or related area courses approved by the student's supervisory committee.

Students choose four out of the five courses listed for other requirements.

Admission requirements

Applicants must fulfill the requirements of both the Graduate College and The College of Liberal Arts and Sciences.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree in mathematics, applied mathematics, economics, engineering or a natural science from a regionally accredited institution.

Applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in the last 60 hours of their first bachelor's degree program or a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in an applicable master's degree program

All applicants must submit:

1. graduate admission application and application fee
2. official transcripts
3. statement of education and career goals
4. resume
5. three letters of recommendation
6. proof of English proficiency

Additional Application Information

An applicant whose native language is not English must provide proof of [English proficiency](#) regardless of their current residency.

To demonstrate their competitiveness in an applicant pool, applicants must show evidence of coursework in linear algebra (equivalent to ASU course MAT 342 or MAT 343) and advanced calculus (equivalent to ASU course MAT 371). It is desirable that applicants have scientific programming skills.

Tuition information

When it comes to paying for higher education, everyone's situation is different. Students can learn about [ASU tuition and financial aid](#) options to find out which will work best for them.

Application deadlines

Fall

[expand](#)

Program learning outcomes

Program learning outcomes identify what a student will learn or be able to do upon completion of their program. This program has the following program outcomes:

- Apply concepts and skills from applied mathematics to conduct original research.
- Able to complete original research in applied mathematics.
- Apply advanced computational methods in their coursework and research.

Career opportunities

Foundational knowledge in mathematics is required for building careers in science and technology. It can be applied in many different types of professions in fields that include engineering, life sciences, business, and economic and social sciences. These are just a few of the top careers possible with a doctorate in applied mathematics:

- biostatistician
- data scientist
- engineer

- financial analyst
- government and military researcher
- industrial researcher
- mathematical modeling expert
- mathematician
- medical researcher
- operations research analyst
- university instructor and faculty member

Contact information

[School of Mathematical and Statistical Sciences](#) | WXMLR A213
grad.math@asu.edu | 480-965-3951