



COLLEGE OF ARTS + SCIENCES

Computational Mathematics



Math has always been the language we use to explain the world. Computation is quickly becoming the language we use to change it. Why not learn both and be unstoppable? At the intersection of these two fields, scholars and professionals are doing things like writing new machine learning algorithms, improving our systems' processing ability, and challenging our established technological paradigms. At Loyno, we'll give you the tools you need to speak that language, to be an architect and an innovator, so that you can plan, create, deploy, analyze, and improve the systems on which the world runs—and make a career out of blowing our minds.

This is the place.

In the past decade, New Orleans has become a hub for entrepreneurs in all sectors. Every new business wants to have the best tech department in the city, and new businesses need new tech minds. The rising demand for tech professionals coincides with growth in politics, music, government, nonprofits, industry, tourism, education, and much more. Here, you'll find internship and career opportunities where you can practically apply your theories and methods.

Here at Loyno, we'll give you hands-on experiences and opportunities to apply what you learn in real ways. Network with your peers in our professional mathematics club, Pi Mu Epsilon. Spend a semester abroad and study mathematics in England, Turkey, or Korea. Study and conduct research in our multimedia resource labs using our computing software, reference materials, and tutoring services. Take an internship; conduct undergraduate research with faculty—at Loyola, we're all about learning by doing.

Courses

In addition to our foundational mathematics core, you will also complete adjunct computation courses and a research project while choosing electives tailored to the programs that interest you. Here's a sample of what you can expect to learn and do:

Introduction to Programming I

This course is an introduction to concepts and terminology in computer programming. Topics include interface builders and problem-solving techniques in various programming environments. Emphasis is placed on the basics of software design and on elementary applications to mathematics and other disciplines.

Introduction to Programming II

This course is a continuation of Introduction to Programming I. Topics include object-oriented programming, software development, and data structures such as stacks, queues, trees, and lists and the further exploration of the applications of programming to mathematics and other disciplines.

Introduction to Linear Algebra

This course introduces topics in matrix algebra for applications that are basic to future coursework in mathematics. Topics include vector spaces, determinants, matrices, linear transformations, and eigenvectors.

Introduction to Differential Equations

This course examines the fundamental methods of solving elementary differential equations. Topics include exact solutions, series solutions, numerical solutions, and solutions using Laplace transforms.