

# COMPUTATIONAL MATHEMATICS

COLLEGE OF ARTS + SCIENCES



## 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.

**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 Loyola, 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.

## *Possible Careers:*

- Computer engineer
- Computer programmer
- Software developer
- Statistician
- Financial analyst

**ATTENDING LOYOLA** means being in the heart of New Orleans. Our campus is located in the city's historic Uptown neighborhood, just a short drive from the Central Business District, the city's hub of innovation and strategic thinking. You'll learn to hone your talents in the city named #1 new brainpower city in America and the #5 city in the U.S. for women in tech.