

## Welcome to Applied Mathematics at Illinois Tech!

I am pleased to hear that you are considering to join our family of students and faculty engaged in exploring mathematics. Let me tell you more about studying applied mathematics at Illinois Tech and the endless possibilities that it will open for your future.

Creative thinking and problem solving ability are the most important skills needed for success in the modern workplace. Whether you decide to work in industry or go on to graduate school, your ability to understand complex problems, find creative mathematical solutions to them, and communicate those solutions to your colleagues, is what will determine your success. Mathematics that is applied to real-world problems requires a deep understanding of why, how, and when the techniques work, and how those mathematical ideas can be creatively modified and combined to apply to new problems. So, unlike most of mathematics that you learned in school, your mathematical learning at IIT will focus on building an understanding of how and why the mathematics works – it is not enough to be told how to do the steps of a mathematical technique but to know why that technique works so that when you need to use it in novel applications you can adapt it to the situation at hand.

In your very first semester here at IIT, you will take a course called Math 100 which will give you a taste of the mathematical creativity needed to truly appreciate and apply mathematics. You will be introduced to various parts of modern applied mathematics practiced in our department, you will practice how mathematical arguments, proofs, are constructed, and how new mathematics is created and applied through research and experimentation.

Starting with this course, you will continue to have opportunities to do mathematical research and explore your mathematical interests outside the coursework. Every year several of our students work on research projects with our faculty, often supported by scholarships from the university. Our faculty members also encourage students and write recommendation letters for them to go for summer REUs (Research Experience for Undergraduates) sites at IIT and at dozens of other universities around the country to work on mathematical research in areas of their interest. In the past, students have won awards for their research and written mathematical papers on the new mathematics they created. Our students have placed in the top 1% of participants in national and international competitions on Mathematical Modeling which challenge them to apply mathematics to study and understand real-world phenomena from engineering, natural and social sciences.

These are just some of the opportunities available to you here at Illinois Tech. The possibilities are only limited by your interests and imagination. Our faculty members are always available to help you achieve your goals and prepare you for wherever your interests may lead you. Our students have gone on to Ph.D. programs at the top universities around the country, they have finished co-terminal M.S. programs alongside their B.S. degree here at IIT, they have gone on to graduate programs outside mathematics from geodetic sciences to medicine, they have become teachers in high schools and colleges, and they have joined companies working in diverse areas such cybersecurity, mathematical software, insurance, finance, and more.

Beyond academics and all the opportunities to grow intellectually, you will also be able to

become a part of the family of students and faculty who enjoy spending time with each other. Through a weekly departmental tea, social events involving boardgames, trivia quizzes, talks on popular scientific topics, trips, and much more, all members of our department get to know each other outside of classrooms. You will also have an opportunity to create such events based on your own interests through student led societies like the SIAM (Society of Industrial and Applied Mathematics) chapter, AWM (Association for Women in Mathematics) chapter, ML (Machine Learning) Group, and many more.

I hope to see you here on campus. Please don't hesitate to write to me if I can help you in your decision in any possible way.

Best wishes!

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