INSTITUTE MATHEMATICS 1 COMPUTER SCIENCE

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ONLINE **EDUCATION** PROGRAM

Preparing the **Brightest Young Minds** of Today to be the Eminent Thought Leaders of Tomorrow



www.eimacs.com 7435 NW 4th Street Plantation, FL 33317 866.634.6227

THE eIMACS DIFFERENCE

For over 20 years, the Institute for Mathematics and Computer Science has been dedicated to providing talented students with a world-class education in mathematics and computer science. Through our distance learning division, eIMACS, bright middle and high school students develop their critical thinking and logical reasoning skills well beyond that of their peers. Get the ultimate academic advantage with university-level online courses from our Advanced Mathematical Logic and Modern Computer Science tracks.

Innovative Curriculum

The eIMACS curriculum is designed specifically to be both challenging and accessible to talented, young students. It is *not* standard material delivered at an accelerated pace. It is *not* a watered-down college text with added graphics. It *is* true university-level coursework presented in ways that younger audiences find intellectually stimulating and engaging.

Commitment to Service

Before applying to eIMACS, we encourage you to speak to a senior IMACS instructor who will discuss the benefits of our program and answer any questions you may have. After enrolling, each student is assigned a principal instructor who is available by email, phone, and the eIMACS Message Center to answer questions. Senior instructors and technical support are readily available seven days a week, including evenings.

"I have personally examined some of the teaching concepts and materials that have been developed by IMACS. I have determined that they are of outstanding quality." - Professor Gerald J. Sussman, MIT





"There is no doubt that the IMACS curriculum gave me the logical thinking skills and mental framework that inspired and enabled me to develop the Chocolate Fix puzzle system."

> - Mark Engelberg, Developer of ThinkFun's Chocolate Fix logic game

Flexible Schedule

Self-paced, individualized classes allow students to fit eIMACS coursework into their schedules when it's most convenient. The self-contained online interface provides immediate feedback on assignments. Tests are administered and graded entirely online. Unlike other online programs, ours is 100% Web-based — no need to scan, email, or fax handwritten answers.

Official Transcript

When a student completes a course, we provide an official IMACS transcript that reports the student's final grade along with a detailed description of the course content. For those who do well in our program, we provide strong letters of recommendations for college applications. "The skills and confidence IMACS afforded me played a fundamental role in my success during my first year at Wharton." - Troy Daly, Wharton Graduate

COURSE DESCRIPTIONS

Our Advanced Mathematical Logic Track is based on a strong foundation in formal logic and set theory. Students who successfully complete this track develop superior abstract reasoning abilities that make all future classes requiring critical thought — from computer science to engineering to philosophy to pre-law — significantly easier.

Advanced Mathematical Logic Track

Introduction to Logic I

An introduction to Propositional Logic, a branch of modern mathematics that provides the foundation for formal and rigorous mathematical proofs.

Introduction to Logic II

An introduction to Predicate Logic, a so-called "first-order logic" sufficient to formalize all of set theory, which provides the basic language in which most mathematical texts are written.

Set Theory

An introduction to axiomatic set theory, which plays a central role in modern mathematics and is fundamental to understanding math at its most sophisticated levels.

The Modern Computer Science Track teaches the fundamental principles of computer science, which enable students to adapt to any coding environment. Those who complete the track develop strong computational thinking skills and gain significant experience in four programming languages (Scheme, Haskell, Python and Java).

Modern Computer Science Track

University Computer Science I

An introductory programming course that teaches the fundamental principles of computer science and covers topics such as boolean algebra, recursion, numeric algorithms, data structures, and object-oriented programming.

University Computer Science II

An advanced programming course that builds on UCS1 with topics such as ordering/sorting algorithms, infinite lists, list comprehension, function abstraction, and artificial intelligence. Coursework includes a small-scale database project and a significant object-oriented programming project.

AP® Computer Science: Java Programming

A College Board-approved course leading to the AP[®] Computer Science A exam. Exceeds new lab requirement and includes advanced Java topics plus an Android App Development tutorial.

Enrollment Note: Although UCS1 and UCS2 cover material of greater substance than APCS, we recommend that students begin with UCS1. Students who proceed in this manner typically go on to find APCS and the APCS exam much easier than their peers who have not.

"University Computer Science was a unique experience. I enjoyed each lesson as if it were an online game, and it left me wanting to learn more and more." - Katherine Wu, Johns Hopkins Graduate "The IMACS Curriculum Development Group a team of educators, mathematicians, computer scientists, and engineers—has taken great care in creating these online courses. We have years of experience in the classroom working with bright students as they studied this curriculum.

We have gone to great lengths to provide an online environment that comes as close as possible to the experience of having an effective teacher in the classroom. The unique features and tools of our system were custom built to fit our curriculum and not the other way around." - Ted Sweet, Ph.D. IMACS Director of Curriculum Development



APPLICATION AND ENROLLMENT

A prospective student must first pass the IMACS Aptitude Test to enroll in an eIMACS course. The IMACS Aptitude Test can be taken at your convenience with no fee and no obligation. The test is administered online and takes one hour to complete. To register for the aptitude test, visit www.eimacs.com/aptitude.



After the test is completed, IMACS will contact you with the results and further information on our enrollment process. Once enrolled, students have up to 40 weeks to finish a course. eIMACS accounts are active 24 hours a day, seven days a week, so that coursework may be completed at your convenience.

"Before IMACS, I did not realize how interesting and exciting mathematics could be. It taught me advanced thinking skills that helped me succeed in all my math classes and even in my general studies." - Jennifer Hernandez, MIT Graduate

"My son has taken many online programming and math courses, but elMACS was among the best in terms of teaching a fundamental understanding of the concepts rather than the simple mechanics." - David Cordeiro, Parent