Career Opportunities

Students who earn a master of science degree in Applied Mathematics study mathematics and statistics and learn how to apply these subjects to tackle problems in engineering and other fields. Graduates find employment as:

- Industrial mathematicians, scientists, and engineers
- Professionals in the financial services industry
- Actuaries
- Researchers
- Consultants
- Community college instructors

Unique Program Features

Faculty from Industry. Seventy-five graduate engineering faculty members work in Silicon Valley and maintain a strong industry connection. In addition to their business perspective, they are also instrumental in helping students link up with Bay Area employers for internship and job opportunities.

Student Services for Working Professionals. SCU recognizes the pressures that part-time students experience in balancing competing demands on their time. We are dedicated to streamlining the administrative processes by providing students with the highest level of student services.

Engineering Graduate Programs

Founded in 1912, the School of Engineering educates tomorrow's technical leaders in small and rigorous classes taught by expert faculty members. Our outstanding graduate programs offer master's, engineer's, and Ph.D. degrees, as well as open university, and professional certificate programs.

Education Fitting Your Work Schedule, At Your Own Pace

Santa Clara University provides full-time students and busy working professionals in Silicon Valley with various education options to match their personal needs and work schedules, including:

- **Degree Programs**–full-time and part-time
- **Certificate Programs**–full-time and part-time
- **Open University**–take only the courses that interest you
- **One-Day Emerging Topic Programs**–focus on a single technology topic

To accommodate our students' busy work and internship schedules, all of our graduate engineering classes are held outside of normal business hours, with early morning classes at 7 a.m. to 9 a.m., evening classes starting at 5 p.m. and 7 p.m., and weekend classes. Our flexibility allows you to complete the program at your own pace.

For further information, please contact:
Graduate Engineering Services
Santa Clara University
500 El Camino Real
Santa Clara, CA 95053
408-554-4313

www.scu.edu/engineering/graduate
www.scu.edu/engineering/amth

FSC Logo

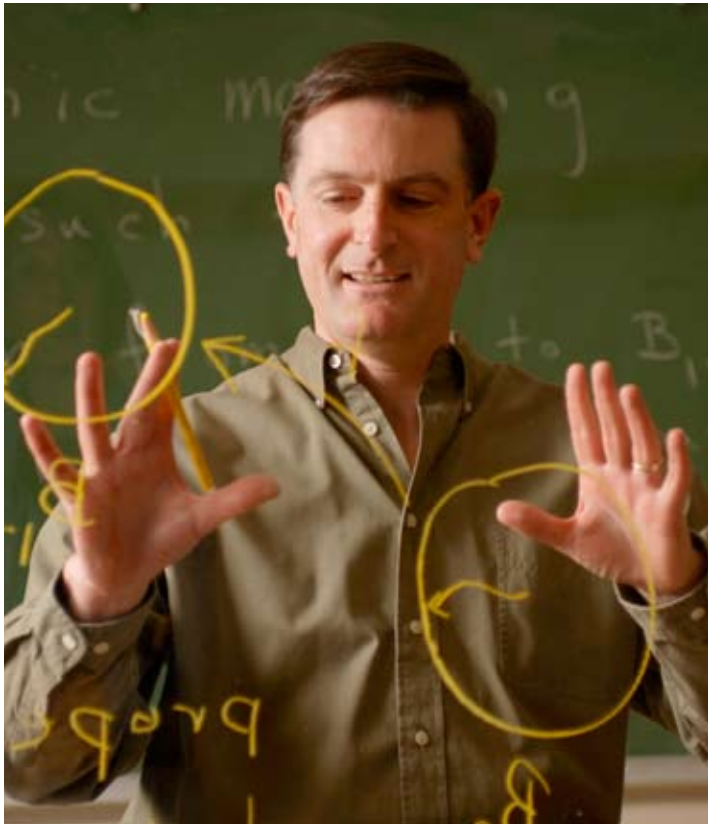
Santa Clara University

The Jesuit university in Silicon Valley

SANTA CLARA UNIVERSITY

GRADUATE PROGRAMS

Applied Mathematics



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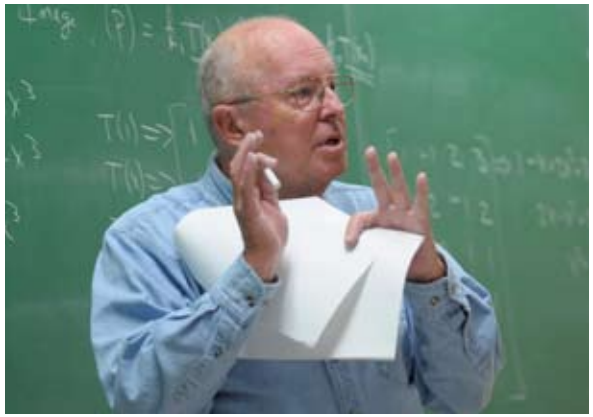
Applied Mathematics Graduate Program



The Department of Applied Mathematics serves students throughout the School of Engineering via courses that bridge mathematical theory and application to engineering. Working professionals who seek to further their careers by the study of mathematics and its applications to engineering appreciate the depth, breadth, and flexibility of our master's program in applied mathematics. The department does not award doctoral degrees, but its courses are available to students pursuing such degrees or certificates in other departments and to those enrolled in the non-degree program called Open University.

In exploring applied mathematics, our students learn to be the problem solvers of tomorrow. They study fundamental concepts and develop tools needed to model the physical world and to tackle the complexities of modern engineering. New courses arise as warranted; indeed, courses in the innovative and exciting fields of mathematical finance and cryptology arose from requests by students.

Master of Science Program

The master of science degree provides the opportunity to study mathematics and statistics in depth and with breadth on a part-time or full-time basis. The program is designed primarily for professional engineers, scientists, and mathematicians.

Guided by a faculty advisor, students tailor their program of study to their own particular interests and goals. Generally, students complement courses in our department with study in other engineering departments or in finance. A thesis option is available.

The Applied Mathematics Program is open to those students who have earned a B.S. degree in engineering, science, or mathematics, provided the student has completed a program in undergraduate mathematics that parallels the program of the mathematics major at Santa Clara University. The undergraduate program at Santa Clara includes calculus and differential equations, abstract algebra, linear algebra, advanced calculus or real analysis; and a minimum of five upper-division courses chosen from the areas of analysis, complex variables, partial differential equations, numerical analysis, logic, probability, and statistics.

Courses for the master's degree must result in a total of 45 units. These units may include courses from other fields with permission of the Applied Mathematics Department advisor.

A minimum of 12 quarter units must be in 300-level courses. All School of Engineering graduate core requirements must be met as part of the 45 units in total.

Concentration in Mathematical Finance within the Master of Science in Applied Mathematics

The Department of Applied Mathematics offers a concentration in mathematical finance within its master's degree program. Approximately half of the required courses are taken from the Department of Applied Mathematics, and others from SCU's Leavey School of Business. Students gain the grounding they need in suitable areas of mathematics and business in this concentration. For further information, please consult with the chair of the department.

Required Components for Concentration

ACTG 300 Financial Accounting (3 units)

ACTG 303 Corporate Financial Reporting or 319 Financial Statement Analysis (3 units)

AMTH 210 and 211 (or 212) Discrete and Continuous Probability (4 units)

AMTH 220 and 221 Numerical Analysis (4 units)

AMTH 245 and 246 (or 247) Linear Algebra (4 units)

AMTH 313 Time Series Analysis (2 units)

AMTH 344 Linear Regression (2 units)

AMTH 362 Stochastic Processes I (2 units)

AMTH 374 Partial Differential Equations I (2 units)

ECON 401 Economics for Business Decisions (3 units)

FNCE 451 Financial Management (3 units)

FNCE 455 Investments (3 units)

FNCE 474 Risk Management with Derivative Securities (3 units)

FNCE 696 (cross-listed as AMTH 367 and MATH 125) Mathematical Finance (3 units)

Any additional units required to meet the engineering graduate core

Recommended, but not Required, Components for Concentration:

AMTH 358 Fourier Transforms (2 units)

AMTH 363 Stochastic Processes II (2 units)

AMTH 397 Master's Thesis or Project (3 units)

FNCE 484 Financial Engineering (3 units)

FNCE 712 Monte Carlo Simulation (1 unit)

FNCE 710 Default Modeling (1 unit)