

Mathematics

What Can I Do With This Major? • Career Pathways

University of St. Thomas

Mathematics at St. Thomas is one of the most rigorous and versatile degrees available. Pure and applied mathematics graduates develop extraordinary analytical reasoning, problem-solving, and quantitative modeling skills that translate across virtually every high-value sector of the economy. From actuarial science and finance to data science, cryptography, and operations research — mathematics is the engine behind modern quantitative decision-making.

CONVENTIONAL CAREER TRACKS

All roles below are accessible with a bachelor's degree and 0–2 years of experience (internships count).

Track	What you'll do	Sample Job Titles (BS)
Actuarial Science & Insurance	Use mathematical models to assess financial risk in insurance, pensions, and investment products.	■ Actuarial Analyst ■ Actuarial Assistant ■ Underwriter (entry) ■ Risk Analyst ■ Benefits Analyst ■ Insurance Data Analyst
Data Science & Analytics	Apply mathematical and statistical modeling to extract insight and build predictive systems from data.	■ Data Analyst ■ Data Scientist (entry) ■ Statistical Analyst ■ Quantitative Analyst ■ Operations Research Analyst ■ Business Intelligence Analyst
Finance & Quantitative Analysis	Model financial instruments, manage risk, and inform investment decisions using rigorous mathematics.	■ Financial Analyst ■ Quantitative Analyst (Quant) ■ Risk Analyst ■ Investment Analyst ■ Derivatives Analyst ■ Credit Risk Modeler
Software & Algorithm Development	Apply mathematical foundations (discrete math, linear algebra, algorithms) to build software systems.	■ Software Engineer ■ Algorithm Developer ■ Backend Engineer ■ Systems Analyst ■ Cryptography Analyst ■ Optimization Analyst
Operations Research & Optimization	Use mathematical optimization, simulation, and modeling to improve complex systems and decisions.	■ Operations Research Analyst ■ Supply Chain Optimizer ■ Logistics Modeler ■ Industrial Engineer (entry) ■ Process Improvement Analyst ■ Scheduling Analyst

NON-CONVENTIONAL & EMERGING TRACKS

Paths that sit at unexpected intersections — often less competitive and equally rewarding.

Emerging Area	Roles You Might Not Expect
Cryptography & Cybersecurity	Cryptographer • Cybersecurity Analyst • Information Security Mathematician • Zero-Knowledge Proof Developer • Blockchain Protocol Analyst

Machine Learning & AI Research	ML Research Engineer • AI Researcher • Reinforcement Learning Analyst • Optimization Engineer (ML) • Numerical Methods Developer
Economics & Policy Research	Economist (entry) • Policy Research Analyst • Econometrician • Federal Reserve Analyst • Think Tank Research Associate
Science & Engineering Support	Mathematical Modeler • Aerospace Analyst • Climate Modeler • Computational Fluid Dynamics Analyst • Biostatistician (entry)

WHERE A GRADUATE DEGREE TAKES YOU

A graduate degree meaningfully expands your ceiling and opens leadership, research, and specialized roles.

Actuarial Exams (P, FM, IFM...)	Actuary — one of the highest-paying and most stable careers accessible from a mathematics degree.	Progress through the actuarial exam series during and after undergraduate study; each passed exam significantly increases salary.
M.S. / Ph.D. Mathematics	University Professor, Research Mathematician, National Lab Scientist, Senior Quantitative Analyst.	Graduate study in pure or applied math is required for academic positions and the most senior quantitative research roles.
M.S. Statistics / Data Science	Data Scientist, Biostatistician, Quantitative Researcher, ML Engineer.	One of the highest ROI graduate paths for mathematics majors — data science employers actively recruit math graduates.
M.S. Financial Mathematics / Quantitative Finance	Quantitative Analyst (Quant), Derivatives Pricing Analyst, Risk Manager, Hedge Fund Analyst.	The specialized graduate credential for Wall Street quant roles; programs at NYU Courant, CMU, and Baruch are top-ranked.

STRATEGIES FOR SUCCESS

- Begin the actuarial exam series (Exam P and FM) before graduation — employers expect at least one passed exam for entry-level actuarial roles.
- Develop programming skills (Python, R, MATLAB, Julia) alongside your mathematical training — employers expect computational fluency.
- Mathematics is one of the best pre-law, pre-med, and pre-finance degrees — the analytical rigor transfers powerfully to these fields.
- Pursue a double major or minor in CS, statistics, or economics to translate your mathematical foundation into immediate career currency.
- The Putnam Mathematical Competition and similar contests signal intellectual caliber to graduate programs and elite employers.
- UST's mathematics faculty have strong research connections — ask about undergraduate research opportunities and independent study projects.

This guide reflects current workforce trends and is updated annually. Job titles may vary by employer, industry, and market. Visit the UST Career Development Center for personalized advising and employer connections.