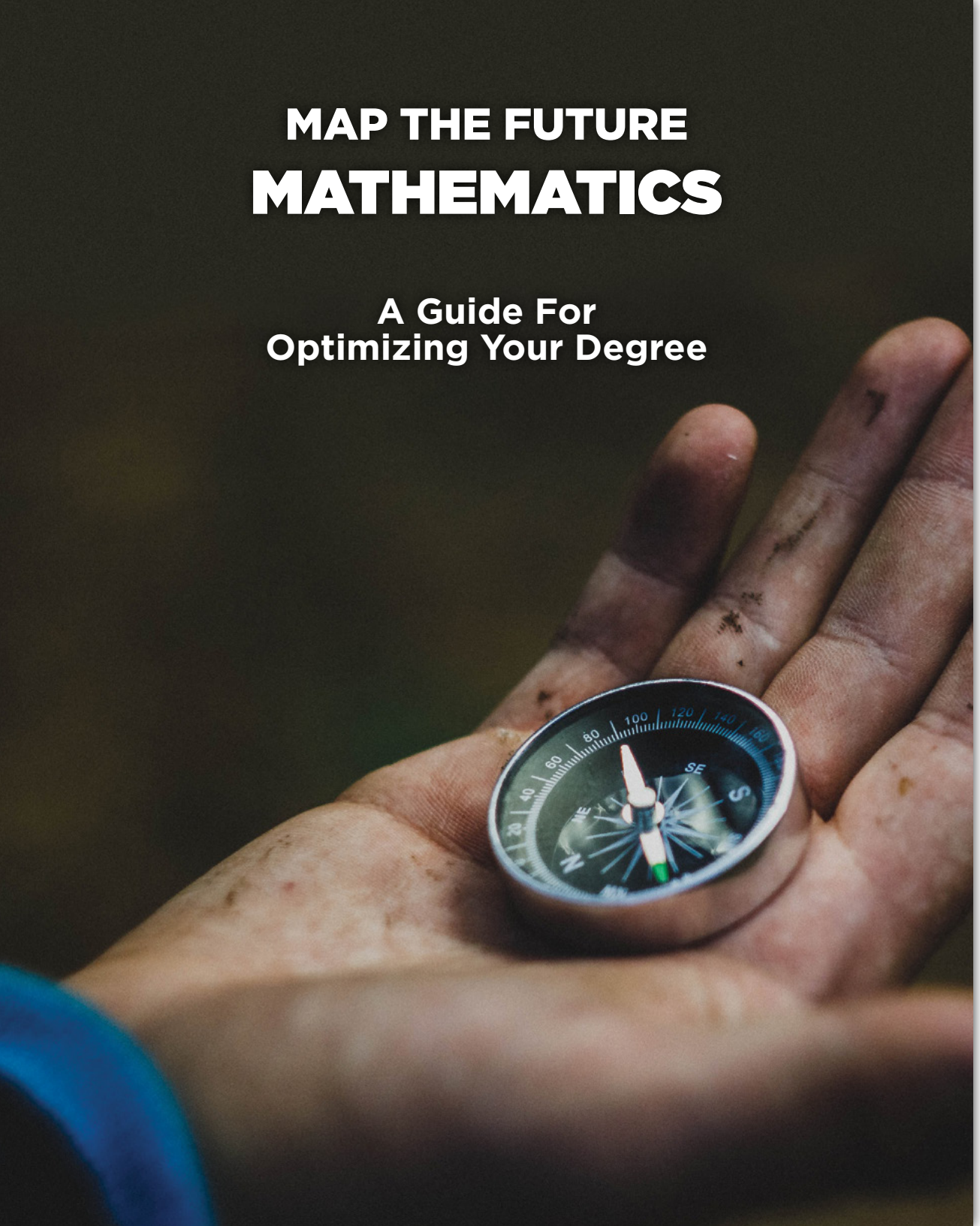
MAP THE FUTURE
MATHEMATICS

A Guide For Optimizing Your Degree



This career map provides a general blueprint of how to navigate your under-graduate program. The map highlights quality experiences to supplement your coursework and identify academic milestones for years one through four.

Take advantage of the rich resources the university and Chattanooga community have to offer as you prepare for post-college years. During your time here, forge connections, participate in organizations and utilize exploratory learning options to gain real-world experiences outside of the classroom.

THE UNIVERSITY OF TENNESSEE
CHATTANOOGA

ABOUT THE COLLEGE OF ARTS AND SCIENCES

Our mission is to provide an environment for intellectual curiosity and a foundation for life-long learning, thinking, reflection and growth. We do this by: equipping students with transferable skills, encouraging cultural and intellectual diversity and advancing knowledge through research and creative activities.

Small classes, careful advising and personal attention make our commitment work for students majoring in the fine arts, the humanities, the sciences and behavioral sciences, and for students preparing for professional study through a liberal education.

YOUR MATH DEGREE

Our faculty are highly active in research and are committed to providing students with the knowledge and skills necessary to meet their career goals. With over 70 declared majors, an active Pi Mu Epsilon Chapter and a weekly colloquium series, our department provides a diverse learning environment to pursue a variety of interests in the field of mathematics.

Mathematics provides a great preparation for a variety of jobs, and in the current job market many employers are desperate for applicants that have mathematics backgrounds and problem solving skills. Math majors are increasingly in demand and a mathematics degree from UTC can provide you with critical thinking skills and technical training that will give you access to numerous fulfilling, higher-paid jobs.

The Programs

The B.S. in applied mathematics is a degree program designed to respond to the growing influence of mathematics in business and industrial practices. Students choose to focus their studies in one of the available concentrations:

General Mathematics
Actuarial Science
STEM Education: Students earn a degree in mathematics and certification to teach high school or middle school math.

utc.edu/mathematics

INCOMING FRESHMAN SCHOLARSHIPS

Marjorie Watson Mathematics Scholarship
Dorothy Dean Shelton Mathematics Scholarship

SCHOLARSHIPS AND AWARDS

Specific to Math majors:

Actuarial Science Award

Recognizes students for passing the Actuarial examinations.

Freshman Mathematics Award

Awarded to the student who scores the highest of all participants on the Freshman Mathematics Award Test.

James G. Ware Mathematics Education Award

Goes to an outstanding student planning to teach mathematics at the high school level.

John W. Jayne Memorial Mathematics Award

Given each year to an outstanding mathematics student.

Ruth Clark Perry Memorial Mathematics Award

Awarded to an outstanding upper class woman ma-joring in mathematics.

Winston L. Massey Memorial Mathematics Award

For an outstanding upper class man majoring in mathematics.

Karel and Harriet Hujer Scholarship

One-time scholarship is awarded to an outstanding student in mathematics.

EXPERIENTIAL LEARNING

FACULTY RESEARCH

We encourage our students to collaborate with faculty as they engage in research. Current research includes:

- Difference Equations
- Fluid Mechanics
- Graph Theory
- Linear Algebra and Matrix Theory
- Mathematical Biology
- Mathematics Education
- Number Theory
- Numerical Analysis
- Operations Research and Mathematical Programming
- Operator Theory
- Ordinary Differential Equations
- Partial Differential Equations
- Probability Theory
- Statistics

GRADUATE STUDY AT UTC

Students who complete the B.S. in Mathematics are prepared to begin work in the Master of Science program in Applied Mathematics at UTC and can choose to continue with a Ph.D. in Computational Science. These graduate degrees offer the following concentrations:

- MS Applied Mathematics
- MS Applied Statistics
- MS Education
- MS Pre-professional
- PhD Computational and Applied Mathematics

CAREER POSSIBILITIES

Are you starting college with a specific career in mind? Mathematics graduates excel in these fields and more.

Visit University Career Services at utc.edu/career-student-employment for a detailed list of career possibilities.

Mathematics and Computational Science

- Theoretical
- Applied
- Modeling and Simulation
- Numerical Methods and Analysis
- Statistics and Probability
- Engineering Analysis
- Differential Equations
- Operations Research
- Discrete Mathematics
- Accounting and Finance
- Computer Programming
- Computer Systems
- Analysis Operations
- Sales and Marketing Management
- Actuarial Science
- Engineering
- Analysis and Control of Processes
- Optimization and Scheduling of Resources

Education

- Teaching
- Research
- Higher Education Administration

Computers

- Programming
- Systems Development
- Systems Analysis
- Software Development
- Network Administration
- Web Administration
- Technical Support
- Training

Insurance

- Actuarial Science
- Risk management/Assessment
- Loss management/Control
- Underwriting
- Banking and Finance
- Corporate and Consumer Credit Analysis
- Commercial Lending
- Trust Management
- Capital Services and Mergers and Acquisitions
- Mortgage Loans
- Originations and Packaging
- Branch Management
- Operations
- Cash Management
- Credit scoring and Risk Management
- Private Banking
- Financial Analysis
- Investment Banking

Other Business Areas

- Buying
- Purchasing
- Industrial sales
- Consumer Product Sales
- Financial Services Sales
- Services Sales
- Advertising Sales
- E-commerce
- Customer Service
- Sales management: District, regional, and higher

THE UNIVERSITY OF TENNESSEE CHATTANOOGA

SUCCESS TRACK: MATHEMATICS
DEGREE: BA IN MATHEMATICS AND GENERAL MATHEMATICS

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	PROF. DEVELOP.
EXPLORATION	Explore your interests and identify your strengths with resources available through University Career Services. Use General Education courses to explore other fields.	Attend the weekly UTC Math Colloquium at least once. Talk with at least two faculty members about career plans, including graduate school options.	Attend the weekly UTC Math Colloquium at least twice a semester. Begin contacting graduate school prospects and employers relevant to your career path.	Attend the weekly UTC Math Colloquium regularly. Visit graduate schools or employers in your career path.	As a student, you are eligible for free membership in the American Mathematical Society (AMS). Ask your department head for information.
ACADEMIC MILESTONES	Complete MATH 1950 & 1960, Calculus with Analytic Geometry I & II, MATH 2200 Elementary Linear Algebra, Rhetoric & Composition I & II. Fill out schedule with General Education courses.	Complete MATH 3000 Introduction to Logic & Proof, MATH 2560 Calculus with Analytic Geometry III, MATH 2450 Differential Equations. Begin 3000-level major courses and continue General Education.	Complete MATH 3510 Introduction to Analysis I, a statistics course (MATH 3100 or 4130/4140), an algebra course (MATH 3250 or 4200). General Education should be complete or nearly complete.	Complete remaining mathematics electives at the 3000-4000 level. Apply to graduate before Fall Break. Complete Senior Exit Exam in February.	The AMS as well as the Mathematical Association of America (MAA) and the Society for Industrial and Applied Mathematics (SIAM) offer regional and national conferences each year. Plan to attend one before graduation.
CONNECTIONS	Join the UTC Math Club. Attend the fall and spring Advising Night events.	Get involved with a student organization and attend a concert, play or other cultural event on campus.	Contact faculty about possible student research projects. Participate with Pi Mu Epsilon and other social service projects. Visit STEM Night events at local schools to promote mathematics.	Apply for student membership in American Mathematical Society (AMS). Attend an AMS, MAA or SIAM conference.	The National Science Foundation (NSF) supports Research Experiences for Undergraduates (REUs) around the U.S. Begin looking for a program that interests you in your second year.
READINESS	Meet with University Career Services. Identify four skills employers want and begin cultivating them now. Attend a part-time job fair in fall or spring.	Discuss internship opportunities with your advisor and prepare your curriculum vitae (CV). Look into Research Experiences for Undergraduates (REUs), and consider applying during third year.	Apply for internship opportunities and refine job interview skills. Identify REU programs of interest and apply. Attend a graduate school fair. Prepare to take the GRE. Update your CV.	Prepare to take the GRE if attending graduate school. Update your CV and prepare a professional LinkedIn profile.	Maximize your potential career options by attending graduate school. Your advisor can help you locate program in areas of interest to you, and get you started on applications.
ACHIEVEMENT	Complete 30 credit hours. Visit your advisor at least twice. Have your second year mapped out and a general plan for years three and four.	Complete 60 credit hours, including the entire Calculus sequence and Proofs. Have your third year mapped out and a general plan for year four.	Complete 90 credit hours, including 15 hours of courses at the 3000-4000 level. Check all graduation requirements will be complete by the end of fourth year.	Complete 120 credit hours, including 39 hours at the 3000-4000 level. Attend commencement. Join the Alumni Association.	

MATHEMATICS STEM EDUCATION
utc.edu/stem-education/

Participation in the STEM Education program gives students valuable hands-on teaching experience, a four-year degree in their respective field and completion of requirements necessary to earn a teaching license. Mathematics majors who choose the STEM Education concentration should successfully meet these milestones as they navigate the mathematics curriculum.

FIRST YEAR

STEM 1030 and STEM Checkpoint 1.
Meet with STEM advisor in addition to meeting with your academic advisor.

SECOND YEAR

STEM 2010, 2020 and STEM Checkpoint 2.
Meet with STEM advisor in addition to meeting with your academic advisor.

THIRD YEAR

STEM 3010, 3020 and STEM Checkpoint 3.
Apply for Apprentice Teaching.
Prepare to take the Praxis.
Meet with STEM advisor in addition to meeting with your academic advisor.

FOURTH YEAR

STEM 4010, 4020 (Apprentice Teaching) and STEM Checkpoint 4.
Meet with STEM advisor in addition to meeting with your academic advisor.