BACHELOR OF SCIENCE IN MATHEMATICS

Web Site: https://twu.edu/mathematics/undergraduate-programs/

The B.S. in Mathematics prepares students for opportunities across all industries throughout the world. Mathematical experts are in high demand and the job market continues to grow. Courses emphasize analytical thinking and problem-solving skills that create a strong foundation not just in mathematics, but in many other fields as well. Small classes promote active engagement with faculty and empower students to succeed.

Marketable Skills

Defined by the Texas Higher Education Coordinating Board's 60x30 Strategic Plan (https://reportcenter.highered.texas.gov/agency-publication/miscellaneous/thecb-60x30-strategic-plan/) as, "Those skills valued by employers that can be applied in a variety of work settings, including interpersonal, cognitive, and applied skills areas. These skills can be either primary or complementary to a major and are acquired by students through education, including curricular, co-curricular, and extracurricular activities."

1. Apply mathematical theories and techniques to the solution of practical problems in business, engineering, the sciences, or other fields.
2. Develop mathematical or statistical models of phenomena to be used for analysis or for computational simulation.
3. Determine appropriate methods for data analysis.
4. Perform computations and apply methods of numerical analysis to data.
5. Demonstrate personal accountability and work habits, integrity, and ethical behavior.
6. Assemble sets of assumptions and explore the consequences of each set.
7. Proficient in the software tools to achieve the skills listed, such as Matlab and R, SAS, SPSS, modeling software.

Admissions

All applicants must meet the general undergraduate admission requirements (https://catalog.twu.edu/undergraduate/admission-information/).

Degree Requirements

Total Semester Credit Hours (SCH): 120

Major: 42 SCH **Required Minor:** 18 SCH

Program Code: MATH.BS **CIP Code:** 27.0101.00

Texas Core Curriculum

Code	Title	SCHs
ENG 1013	Composition I	3
ENG 1023	Composition II	3
Mathematics		3
Life & Physical Sciences		6
Language, Philosophy, & Culture		3
Creative Arts		3
HIST 1013	History of the United States, 1492-1865	3
HIST 1023	History of the United States, 1865 to the Present	3
POLS 2013	U.S. National Government	3
POLS 2023	Texas Government	3
Social & Behavioral Sciences		3
CAO: Women's Studies		3
CAO: First Year Seminar, Wellness or Mathematics		3
Total SCHs		**42**

Courses Required for Major

Code	Title	SCHs
Required Mathematics Courses		
MATH 2014	Calculus I	4
MATH 2024	Calculus II	4
MATH 3013	Discrete Mathematics	3
MATH 3053	Abstract Algebra	3
MATH 3063	Linear Algebra	3
or MATH 3073	Matrix Methods	
MATH 3083	Elementary Number Theory	3
MATH 3104	Calculus III	4
MATH 3123	Differential Equations	3
MATH 4013	Probability and Statistics	3
MATH 4873	Real Analysis	3
Mathematics Electives		
Select 9 additional semester credit hours in mathematics. MATH 1013, MATH 1023, MATH 1303, and MATH 1313 may not be counted toward the major		9
Total SCHs		**42**

Departmental Requirements ("C" or higher required)

Code	Title	SCHs
CSCI 2003	Software Systems Design and Tools	3
or CSCI 1203	Computing Skills for a Digital World	
CSCI 3013	Applied Computational Thinking	3
Minor (select courses with advisor)		18
Electives		12

Specializations

Descriptions of specialized programs for mathematics students interested in engineering studies, computational math, statistics, or teacher certification can be found on our website.

Recommended Plan of Study for the B.S. in Mathematics

First Year

Fall		TCCN	SCHs
MATH 1313	Trigonometry	MATH 1316	3
CSCI 1203 or 2003	Computing Skills for a Digital World or Software Systems Design and Tools	COSC 1301	3
ENG 1013	Composition I	ENGL 1301	3

HIST 1013	History of the United States, 1492-1865	HIST 1301	3
Elective			3
UNIV 1231	Learning Frameworks: the First-Year Seminar	EDUC 1100, EDUC 1200, EDUC 1300	1
	SCHs		**16**
Spring		**TCCN**	
MATH 1703	Elementary Statistics I	MATH 1342	3
ENG 1023	Composition II	ENGL 1302	3
HIST 1023	History of the United States, 1865 to the Present	HIST 1302	3
Creative Arts Core			3
	SCHs		**12**
Second Year			
Fall		**TCCN**	
MATH 2014	Calculus I	MATH 2413	4
POLS 2013	U.S. National Government	GOVT 2305	3
Life/Physical Sciences Core			3
Language, Philosophy, and Culture Core			3
Social/Behavioral Science Core			3
	SCHs		**16**
Spring		**TCCN**	
MATH 2024	Calculus II	MATH 2414	4
MATH 2053	Women and Minorities in Engineering, Mathematics, and Science		3
MATH 3073	Matrix Methods		3
POLS 2023	Texas Government	GOVT 2306	3
Life/Physical Sciences Core			3
	SCHs		**16**
Third Year			
Fall		**TCCN**	
MATH 3053	Abstract Algebra		3
MATH 3104	Calculus III		4
Minor			3
Minor			3
MATH Elective (Major)			3
	SCHs		**16**
Spring		**TCCN**	
MATH 3083	Elementary Number Theory		3
MATH 3123	Differential Equations		3
Minor			3
Elective			3
Elective			3
	SCHs		**15**
Fourth Year			
Fall		**TCCN**	
MATH 3063	Linear Algebra		3
MATH 4013	Probability and Statistics		3
Minor			3
Minor (Upper Level)			3
MATH Elective			3
	SCHs		**15**
Spring		**TCCN**	
MATH 4873	Real Analysis		3
CSCI 3013	Applied Computational Thinking		3
MATH Elective (Major)			3
Minor (Upper Level)			3
Elective			2
	SCHs		**14**
	Total SCHs:		**120**