2024-2025

Bachelor of Science in Mathematics with a Concentration in Statistics and Data Science

Math (120 hrs.)

Mathematics (51 hrs.)

Course	Course Title	Credits	Grade	√	Sem.
1910	Calculus I	4			
1920	Calculus II	4			
2010	Intro. Linear Algebra	3			
2110	Calculus III	4			
2120	Differential Equations	3			
3810	Complex Variables	3			
3400	Intro Concepts Math	3			
3070	Statistical Methods I	3			
3080	Statistical Methods II	3			
4010	Modern Algebra I	3			
3430 4410 4310	College Geometry **or** Differential Geometry **or** Intro. Topology I	3			
4530	Linear Algebra I	3			
4470	Probability & Statistics I	3			
4480	Probability & Statistics II	3			
4110	Advanced Calculus I	3			
4993	Capstone Course	3			

One Sequence from **Pure Mathematics Sequence** List: 4010-4020; 4110-4120; 4310-4320; 4530-4540 **(Recommended)**; or 4850-4860

Recommended Mathematics Electives:
4060 Cryptography
4210 Numerical Analysis I
4220 Numerical Analysis II
4350 Combinatorics

History (6 hrs.)

2010	Early US History	3			
2020	Modern US History	3			

Humanities/Fine Arts (6 hrs.)

Social/Behavioral Science (6 hrs.)

Exams Required for Graduation: The Senior Exit Exam and the Major Field Test will be given to students during their senior year in the Math Department (it is not a required exam for graduation, but is needed for testing results and data).

English (9 hrs.)

Course	Course Title	Credits	Grade	√	Sem.
1010	English Comp. I	3			
1020	English Comp. II	3			
2130 2235 2330	Top. American Lit. Top. British Lit., or Top. World Lit.	3			

Natural Science Sequence (8 hrs.)
8 credit hours chosen from the TTU General Education Core Courses in the Natural Sciences. These credit hours must come from two 4-credit hour courses in the same discipline. The possible disciplines are ASTR, BIOL, CHEM, GEOL/GEOG, and PHYS.

Computer Science (27 hrs.)

CSC 1300	Intro to Prob Sol & Comp Programming	4			
CSC 1310	Data Structures & Algorithms	4			
CSC 2220	Data Science & AI for Everyone	3			
CSC 2310	Object Oriented Programming	4			
CSC 3220	Fundamentals of Data Science	3			
CSC 3300	Database Mgmt Systems	3			
CSC 4220	Data Mining & Machine Learning	3			
CSC 4260	Artificial Intelligence	3			

Communication (3 hrs.)

COMM2025 PC 2500	Fundamentals of Communication, **OR** Communicating in the Profession	3			

Electives (enough credits to complete 120 hours):

Math (120 hrs.)

Freshman Year	Sem. Hrs.	Sophomore Year	Sem. Hrs.
MATH 1910 Calculus I	4	MATH 2010 Intro. Linear Algebra	3
MATH 1920 Calculus II	4	MATH 2110 Calculus III	4
ENGL 1010 English Comp. I	3	MATH 2120 Differential Equations	3
ENGL 1020 English Comp II	3	MATH 3400 Concepts of Math	3
Natural Science Sequence*	8	ENGL 2130, or 2235, or 2330	3
CSC 1310 Data Struct. & Algorithms	4	COMM 2025 Fund of Communication	3
CSC 1300 Intro Prob. Sol & Comp Prog.	4	**OR**	
		PC 2500 Comm. in the Profession	3
		Social/Behavioral Science Electives	6
		Humanities/Fine Arts Electives	6
Total	**30**	**Total**	**31**

Junior Year	Sem. Hrs.	Senior Year	Sem. Hrs.
MATH 3810 Complex Variables	3	MATH 4530 Linear Algebra I	3
MATH 3070 Statistical Methods I	3	MATH 4110 Advanced Calculus I	3
MATH 3080 Statistical Methods II	3	MATH 4993 Mathematical Research	3
MATH 4470 Probability and Statistics I	3	Mathematics**	6
MATH 4480 Probability and Statistics II	3	CSC 3220 Fundamentals of Data Science	3
HIST 2010 Early US History	3	CSC 3300 Database Mgmt Systems	3
HIST 2020 Modern US History	3	CSC 4220 Data Mining & Machine Learning	3
MATH 3430, 4410, or 4310	3	CSC 4260 Artificial Intelligence	3
CSC 2220 Data Science and AI	3	Electives	3
CSC 2310 Object Oriented Prog.	4		
Total	**31**	**Total**	**30**

* 8 credit hours chosen from the TTU General Education Core Courses in the Natural Sciences. These credit hours must come from two 4-credit hour courses in the same discipline. The possible disciplines are ASTR, BIOL, CHEM, GEOL/GEOG, and PHYS.

** Upper-division mathematics courses (3000 or higher). The student must complete at least one sequence from **Pure Mathematics Sequence List**: MATH 4010-4020, 4110-4120, 4310-4320, 4530-4540 (**Recommended**); or 4850-4860.