2024-2025

Bachelor of Science in Mathematics with a Concentration in Applied Mathematics

Math (120 hrs.)

Mathematics (48 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			
4010	Modern Algebra I	3			
4210	Numerical Analysis I	3			
4220	Numerical Analysis II	3			
3430 4410 4310	College Geometry **or** Differential Geometry **or** Intro. Topology I	3			
4510	Advanced Math for Engineers	3			
4530	Linear Algebra I	3			
4470	Probability & Statistics I	3			
4110	Advanced Calculus I	3			

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

One Sequence from **Applied Mathematics Sequence** List: 3070-3080, 4050-4060; 4250-4260; 4470-4480; 4550-4560; or any two of the three: 4050, 4350, or 4360.

Recommended Mathematics Electives:

4110 Advanced Calculus II

4540 Linear Algebra II

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: Senior Exit Exam

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 (4 or 2 hrs.)

CSC 1300	Intro to Prob Sol & Comp Programming **OR**	4			
ENGR 1120	Prog for Engineers	2			

Communication (3 hrs.)

COMM 2025 PC 2500	Fundamentals of Communication, **OR** Communicating in the Profession	3			

Electives (enough credits to complete 120 hours.)

Recommended:

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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
Humanities/Fine Arts Elective	3	CSC 1300 Intro Prob. Sol & Comp Prog.	4
Electives	6	**OR**	
		ENGR 1120 Programing for Engineers	2
		COMM 2025 Fund of Communication	3
		OR	
		PC 2500 Comm. in the Profession	3
		Social/Behavioral Science Electives	6
		Humanities/Fine Arts Electives	3
Total	**31**	**Total**	**30 or 32**
Junior Year	**Sem. Hrs.**	**Senior Year**	**Sem. Hrs.**
MATH 3810 Complex Variables	3	MATH 4110 Advanced Calculus I	3
MATH 4010 Modern Algebra I	3	MATH 4220 Numerical Analysis II	3
MATH 4530 Linear Algebra I	3	MATH 4510 Applied Math for Engineers	3
MATH 4210 Numerical Analysis I	3	Mathematics**	12
MATH 4470 Probability and Statistics I	3	Electives	9
HIST 2010 Early US History	3		
HIST 2020 Modern US History	3		
MATH 3430, 4410, or 4310	3		
Electives	6		
Total	**30**	**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 upper-division sequences. The approved sequences are organized into pure mathematics and applied mathematics categories as shown below. The student must complete at least one sequence from each category.

Pure Mathematics Sequence List: MATH 4010-4020, 4110-4120, 4310-4320, 4530-4540; or 4850-4860.

Applied Mathematics Sequence List: MATH 3070-3080, 4050-4060; 4250-4260; 4470-4480; 4550-4560; or any two of the three: 4050, 4350, or 4360.