BACHELOR OF SCIENCE, MAJOR IN MATHEMATICS: 4+1 MS MATHEMATICS

Code	Title	Hours
Bachelor of Science, Major in Mathematics: 4+1 MS in Mathematics		
Core Curriculum (https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/)		
Component Area I (Communications)		6
Component Area II (Mathematics) [1]		3
Component Area III (Life and Physical Science) [2]		8
Component Area IV (Language, Philosophy, and Culture) [3]		3
Component Area V (Creative Arts)		3
Component Area VI (U.S. History)		6
Component Area VII (Political Science/Government)		6
Component Area VIII (Social and Behavioral Sciences)		3
Component Area IX (Component Area Option) [1]		4
Degree Specific Requirements		
Science Courses for Science Majors - Select eight hours from the following: [2]		8
BIOL 1406 & BIOL 1407	General Biology I and General Biology II	
CHEM 1411 & CHEM 1412	General Chemistry I and General Chemistry II	
Eight hours from GEOG 1401, GEOL 1403, GEOL 1404, GEOL 1405		
COSC 1436	Programming Fundamentals I	4
ENGL 2332	World Literature I: Before the 17th Century [3]	3
or ENGL 2333	World Literature II: From the 17th Century and After	
KINE 2115	Lifetime Health and Wellness [4]	1
PHYS 1411 & PHYS 1422	Introduction To Physics I and Introduction To Physics II	8
or PHYS 2426	Heat, Waves & Modern Physics	
Major: Foundation		
MATH 1420	Calculus I [1]	4
MATH 1430	Calculus II	4
MATH 2440	Calculus III	4
MATH 3300	Introduction to Mathematics Thought	3
MATH 3376	Differential Equations	3
MATH 3377	Introduction to Linear Algebra and Matrices	3
MATH 4361	Introductory Analysis	3
MATH 4366	Elementary Analysis	3
MATH 4371	Theory and Applications of Probability and Statistics I	3
MATH 4377	Algebraic Structures	3
Major: Prescribed Electives		
Advanced MATH Electives [5]		6
Electives: General		
Advanced General Electives		6
Minor: Required		
Minor [6, 7]		18
4+1 MS in Mathematics [8]		
MATH 5397	Discrete Mathematics	3
MATH 6332	Introduction To Topology	3
MATH 6333	Foundations Of Analysis I	3
MATH 6334	Foundations Of Analysis II	3

MATH 6335	Algebra I	3
MATH 6336	Algebra II	3
MATH 6361	Mathematical Logic	3
MATH 6368	Numerical Linear Algebra	3
Graduate MATH Electives		
Select graduate courses in MATH in consultation with the Graduate Advisor		12
Thesis OR Project + Internship		**6**
Thesis		
MATH 6099	Research and Thesis	
MATH 6398	Research And Thesis	
Project + Internship		
MATH 5300	Mathematics Internship	
MATH 6380	Research Methods in Mathematics	
Total Hours		**156**

1 MATH 1420 satisfies the Core Curriculum requirement for Component Area II (Mathematics) and one semester credit hour of the Core Curriculum requirement for Component Area IX (Component Area Option).

2 Satisfies Core Curriculum requirement for Component Area III (Life and Physical Science).

3 Satisfies Core Curriculum requirement for Component Area IV (Language, Philosophy, and Culture).

4 If KINE 2115 is used to satisfy the Core Curriculum requirement for Component Area IX (Component Area Option), an additional credit hour will be needed as a General Elective.

5 Advanced MATH electives do not include MATH 3363, MATH 3379/STAT 3379, MATH 3380, MATH 3381, MATH 3383, MATH 3384, MATH 3386, MATH 3387, MATH 4367, MATH 4384, and MATH 4385. (MATH 3363, MATH 4367, MATH 4384, and MATH 4385 are designed for students in the BS, Double Major in Education and Mathematics.)

6 Minor includes at least nine hours of advanced coursework.

7 The following minor cannot be paired with this degree program: Minor in Mathematics.

8 Students planning to pursue the 4+1 Mathematics option must complete the Graduate Application process and be accepted to the MS in Mathematics program. In order to apply to the 4+1 Mathematics program, students must complete all undergraduate degree plan requirements (minimum of 120 semester credit hours) and all admission requirements. Once a student is accepted to the graduate Mathematics program, students are eligible to begin the Mathematics program upon completion of all admission requirements.

Code	Title	Hours
Undergraduate/Graduate Course Crosswalk		
The undergraduate course requirements identified below are satisfied by the corresponding (row) graduate courses identified below.		
Undergraduate Level Courses		
MATH 4369	Foundations of Analysis (satisfied by MATH 6333)	3
MATH 4378	Abstract Algebra (satisfied by MATH 6335)	3
Graduate Level Course Replacements		
MATH 6333	Foundations Of Analysis I	3
MATH 6335	Algebra I	3

Notes

Students must earn a 2.0 minimum overall GPA in all coursework to complete the BS in Mathematics degree.

Students must meet a 2.5 minimum overall major GPA in all major coursework to complete the BS in Mathematics degree.

Students must earn a 2.0 minimum SHSU GPA in all coursework to complete the BS in Mathematics degree.

Students must meet a 2.5 minimum SHSU major GPA in all major coursework to complete the BS in Mathematics degree.

Students should use the Minor and Advanced Electives to complete the 42-advanced hour requirement for graduation.

Anyone considering a degree in Mathematics should consult an advisor in the Department of Mathematics prior to registering for any courses. For more information, please visit the Lee Drain Building, Suite 420.

First Year

Fall	Hours	Spring	Hours
Component Area III (https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii)[1]	4	Component Area III (https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii)[1]	4
COSC 1436	4	Component Area V (https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav)	3
ENGL 1301[2]	3	ENGL 1302[2]	3
KINE 2115[3]	1	MATH 1430	4
MATH 1420[4]	4	MATH 3377	3
	16		**17**

Second Year

Fall	Hours	Spring	Hours
ENGL 2332 or 2333[5]	3	Component Area IX (https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix)	3
MATH 2440	4	Advanced MATH Electives[6]	6
MATH 3376	3	MATH 3300	3
MATH 4371	3	PHYS 1422 or 2426	4
PHYS 1411	4		
	17		**16**

Third Year

Fall	Hours	Spring	Hours
Component Area VIII (https://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii)	3	HSTY 1302[7]	3
Advanced MATH Electives[6]	3	MATH 4366	3

HSTY 1301[7]	3	MATH 4377	3		
MATH 4361	3	Minor Electives[8]	6		
Minor Electives[8]	3	POLS 2306[9]	3		
POLS 2305[9]	3				
	18		**18**		

Fourth Year

Fall	Hours	Spring	Hours	Summer	Hours
General Electives	3	MATH 6332	3	Graduate MATH Electives[10]	3
MATH 6333	3	MATH 6334	3	Thesis or Project + Internship[11]	6
MATH 6335	3	MATH 6336	3		
Minor Electives[8]	9				
	18		**9**		**9**

Fifth Year

Fall	Hours	Spring	Hours
Graduate MATH Electives[10]	3	Graduate MATH Electives[10]	6
MATH 6368	3	MATH 5397	3
MATH 6379	3		
	9		**9**

Total Hours: 156

1. Science Courses for Science Majors: BIOL 1406 and BIOL 1407 or CHEM 1411 and CHEM 1412 or eight hours from GEOG 1401, GEOL 1403, GEOL 1404, GEOL 1405.
2. Satisfies Core Curriculum requirement for Component Area I (Communications).
3. If KINE 2115 is used to satisfy the Core Curriculum requirement for Component Area IX (Component Area Option), an additional credit hour will be needed as a General Elective.
4. Satisfies Core Curriculum requirement for Component Area II (Mathematics) and one semester credit hour of Component Area IX (Component Area Option).
5. Satisfies Core Curriculum requirement for Component Area IV (Language, Philosophy, and Culture).
6. Advanced MATH electives do not include MATH 3363, MATH 3379/STAT 3379, MATH 3380, MATH 3381, MATH 3383, MATH 3384, MATH 3386, MATH 3387, MATH 4367, MATH 4384, and MATH 4385. (MATH 3363, MATH 4367, MATH 4384, and MATH 4385 are designed for students in the BS, Double Major in Education and Mathematics.)
7. Satisfies Core Curriculum requirement for Component Area VI (U.S. History).
8. The following minor cannot be paired with this degree program: Minor in Mathematics.
9. Satisfies Core Curriculum requirement for Component Area VII (Political Science/Government).
10. Select graduate courses in MATH in consultation with the Graduate Advisor.
11. Students choosing the Thesis option must take MATH 6099 and MATH 6398. Students choosing the Project + Internship option must take MATH 5300 and MATH 6380.

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The Texas Higher Education Coordinating Board (THECB) marketable skills initiative is part of the state's **60x30TX plan** and was designed to help students articulate their skills to employers. Marketable skills are those skills valued by employers and/or graduate programs that can be applied in a variety of work or education settings and may include interpersonal, cognitive, and applied skill areas.

The BS in Mathematics: 4+1 MS in Mathematics is designed to provide graduates with the following marketable skills:

- Expertise in mathematical analysis and problem solving that is applicable in a wide variety of industry-related positions.
- Expertise in mathematical writing.
- Experience in multiple phases of course preparation and teaching of mathematics at the freshman level.
- Preparation for further study at the doctoral level in mathematics and closely related areas.
- Proficiency in a variety of scientific computing environments and programming languages.