

# BACHELOR OF SCIENCE, MAJOR IN MATHEMATICS

Code	Title	Hours
<b>Bachelor of Science, Major in Mathematics</b>		
Core Curriculum ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/</a> )		
Component Area I (Communication)		6
Component Area II (Mathematics) satisfied by major		4
Component Area III (Life and Physical Science)		8
Component Area IV (Language, Philosophy, and Culture)		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)		3
<b>Degree Specific Requirements</b>		
Science Courses for Science Majors - Select 8 hours from the following: <sup>1</sup>		8
BIOL 1411 & BIOL 1413	General Botany and General Zoology	
CHEM 1411 & CHEM 1412	General Chemistry I and General Chemistry II	
8 hours from GEOL 1403, GEOL 1404, GEOL 1405, GEOG 1401		
COSC 1436	Programming Fundamentals I	4
ENGL 2332 or ENGL 2333	Wrld Lit I: Before 17 Century <sup>2</sup> World Lit II: 17th C & After	3
PHYS 1411 & PHYS 1422 or PHYS 2426	Introduction To Physics I and Introduction To Physics II Heat, Waves & Modern Physics	8
<b>Major Core</b>		
MATH 1420	Calculus I <sup>3</sup>	4
MATH 1430	Calculus II	4
MATH 2440	Calculus III	4
MATH 3300	Introduction to Math Thought	3
MATH 3376	Differential Equations	3
MATH 3377	Intro to Linear Alg & Matrics	3
MATH 4361	Introductory Analysis	3
MATH 4366	Elementary Analysis	3
MATH 4371	Thry & Appl of Prob & Stat I	3
MATH 4377	Algebraic Structures	3
<b>Major</b>		
Advanced MATH Electives <sup>4</sup>		12
Elective		7
Minor <sup>5</sup>		18
<b>Total Hours</b>		<b>120</b>

<sup>1</sup> Satisfies Core Curriculum requirement for Component Area III (Life and Physical Science).

<sup>2</sup> Satisfies the Core Curriculum requirement for Component Area IV (Language, Philosophy, and Culture).

<sup>3</sup> 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).

<sup>4</sup> Advanced MATH electives do not include MATH 3379/STAT 3379, MATH 3363, MATH 338x, MATH 4367, and MATH 438x.

<sup>5</sup> Includes at least 9 hours of advanced coursework.

The following courses can only be used as required advanced electives by students who are seeking elementary/middle school teacher certification:

Code	Title	Hours
<b>Advanced Electives for Elementary/Middle School Teacher Certification</b>		
MATH 3380	Historical Perspec of Math	3
MATH 3381	Intro - Foundation of Math III	3
MATH 3383	Geometric Meas./Transformation	3
MATH 3384	Foundations of Mathematics	3
MATH 3386	Fundmntls of Probability/Stats	3
MATH 3387	Problem Solving-Middle Sch Mth	3

The following courses can only be used as required advanced electives by students who are seeking secondary teacher certification:

Code	Title	Hours
<b>Advanced Electives for Secondary Teacher Certification</b>		
MATH 4384	Survey of Mathematical Ideas	3
MATH 4385	Mathematical Problem Solving	3

### Notes

Students should use the minor and electives to complete the 42-advanced hour requirement for graduation.

A cumulative minimum major GA of 2.5 is required for students to graduate with a Bachelor of Science in Mathematics.

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, Room 420.

In order to satisfy the Core Curriculum requirement for Component Area III (Life and Physical Science), except in the Department of Physics, the student must take 8 semester credit hours of classes from the following:

Code	Title	Hours
<b>Required Courses</b>		
BIOL 1411 & BIOL 1413 or CHEM 1411 & CHEM 1412	General Botany and General Zoology General Chemistry I and General Chemistry II	8

Any two lab courses from Geology or Geography

### First Year

Fall	Hours	Spring	Hours
Component Area III <sup>1</sup>		4 Component Area III ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaiii</a> ) <sup>1</sup>	4
ENGL 1301 <sup>2</sup>		3 ENGL 1302 <sup>2</sup>	3
HIST 1301 <sup>3</sup>		3 HIST 1302 <sup>3</sup>	3
MATH 1420 <sup>4</sup>		4 MATH 1430	4
	14		14

### Second Year

Fall	Hours	Spring	Hours
Component Area IX ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaix</a> )		3 MATH 3377	3
MATH 2440		4 MATH 3376	3
MATH 3300		3 Minor Course	3
PHYS 1411		4 PHYS 1422 or 2426	4
POLS 2305 <sup>5</sup>		3 POLS 2306 <sup>5</sup>	3
	17		16

**Third Year**

Fall	Hours	Spring	Hours
COSC 1436		4 Component Area V ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareav</a> )	3
Elective		1 ENGL 2332 or 2333 <sup>6</sup>	3
MATH 4361		3 MATH 4366	3
MATH 4371		3 MATH Advanced Elective	3
Minor Course		3 Minor Course	3
		14	15

**Fourth Year**

Fall	Hours	Spring	Hours
Component Area VIII ( <a href="http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii">http://catalog.shsu.edu/undergraduate/academic-policies-procedures/degree-requirements-academic-guidelines/core-curriculum/#componentareaviii</a> )		3 Elective	3
Elective		3 MATH Advanced Elective	3
MATH 4377		3 MATH Advanced Elective	3
MATH Advanced Elective		3 Minor Advanced Course	3
Minor Advanced Course		3 Minor Advanced Course	3
		15	15

Total Hours: 120

- <sup>1</sup> Science Course for Science Majors: BIOL 1411 and BIOL 1413 or CHEM 1411 and CHEM 1412.
- <sup>2</sup> Satisfies Core Curriculum requirement for Component Area I (Communications).
- <sup>3</sup> Satisfies Core Curriculum requirement for Component Area VI (U.S. History).
- <sup>4</sup> Satisfies Core Curriculum requirement for Component Area II (Mathematics) and one semester credit hour of Component Area IX (Component Area Option).
- <sup>5</sup> Satisfies Core Curriculum requirement for Component Area VII (Political Science/Government).
- <sup>6</sup> Satisfies Core Curriculum requirement for Component Area IV (Language, Philosophy, and Culture).

**Notes**

Advanced MATH electives do not include MATH 3379 (<http://catalog.shsu.edu/archives/2020-2021/search/?P=MATH%203379>)/STAT 3379 (<http://catalog.shsu.edu/archives/2020-2021/search/?P=STAT%203379>), MATH 3363 (<http://catalog.shsu.edu/archives/2020-2021/search/?P=MATH%203363>), MATH 338x, MATH 4367 (<http://catalog.shsu.edu/archives/2020-2021/search/?P=MATH%204367>), and MATH 438x.

Minor includes at least 9 hours of advanced coursework.

Students should use the minor and electives to complete the 42-advanced hour requirement for graduation.

A cumulative minimum major GA of 2.5 is required for students to graduate with a Bachelor of Science in Mathematics.

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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 is designed to provide graduates with the following marketable skills:

- Learn, synthesize, and explain sophisticated information.
- Simplify complex problems by generating hypotheses and recognizing fundamental principles.
- Apply logic and quantitative reasoning to solve problems in science and technology.
- Perform proficiently in scientific computing environments, databases and programming languages such as Matlab, Mathematica, SageMath, Excel, Java, and Python.