

MATHEMATICS - 5-YEAR BACHELOR OF SCIENCE AND MASTER OF SCIENCE IN MATHEMATICS

Program Requirements

First Year

	Semester Credit Hours
Fall	
ENGL 104 Composition and Rhetoric or ENGL 103 or Introduction to Rhetoric and Composition	3
MATH 171 Calculus I	4
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ¹	3
Freshman Science elective ²	4
General elective ^{3,4}	1
Semester Credit Hours	15

Spring

MATH 172 Calculus II	4
Select one of the following:	4
CSCE 110 Programming I	
CSCE 111 Introduction to Computer Science Concepts and Programming	
CSCE 121 Introduction to Program Design and Concepts	
CSCE 206 Structured Programming in C	
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ¹	3
Freshman Science elective ²	4
General elective ^{3,4}	1
Semester Credit Hours	16

Second Year

	Semester Credit Hours
Fall	
MATH 221 Several Variable Calculus	4
MATH 300 Foundations of Mathematics	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ¹	3
Science elective ⁵	4
Semester Credit Hours	14

Spring

MATH 308 Differential Equations	3
MATH 323 Linear Algebra	3
PHYS 206 Newtonian Mechanics for Engineering and Science & PHYS 226 and Physics of Motion Laboratory for the Sciences	4

University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ¹	3
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ¹	3

Semester Credit Hours 16

Third Year

Fall

MATH 409 Advanced Calculus I	3
MATH 415 Modern Algebra I	3
Select one of the following:	3
COMM 203 Public Speaking	
COMM 205 Communication for Technical Professions	
COMM 243 Argumentation and Debate	
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ¹	3
Science elective ⁵	3

Semester Credit Hours 15

Spring

MATH 410 Advanced Calculus II or MATH 446 or Principles of Analysis I	3
Select one of the following:	3
MATH 416 Modern Algebra II	
MATH 423 Linear Algebra II	
MATH 472 Elliptic Curve Cryptography	
Select one of the following:	4
OCNG 451 Mathematical Modeling of Ocean Climate	
PHYS 207 Electricity and Magnetism for Engineering & PHYS 227 and Science and Electricity and Magnetism Laboratory for the Sciences	
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ¹	3
Semester Credit Hours	13

Fourth Year

Fall

MATH 411 Mathematical Probability or STAT 414 or Mathematical Statistics I	3
Select one of the following:	3
MATH 427 Introduction to Number Theory	
MATH 431 Structures and Methods of Combinatorics	
MATH 436 Introduction to Topology	
MATH 439 Differential Geometry of Curves and Surfaces	
Science elective ⁵	3
General elective ⁴	3
General elective ⁴	4
Semester Credit Hours	16

Spring

Select 3 hours from the following:	3
MATH 325 The Mathematics of Interest	

MATH 407-499 (http://catalog.tamu.edu/undergraduate/course-descriptions/math/)	
Select 6 hours from the following: ⁶	6
MATH 603-628 (http://catalog.tamu.edu/undergraduate/course-descriptions/math/)	
MATH 630-639 (http://catalog.tamu.edu/undergraduate/course-descriptions/math/)	
MATH 641-644 (http://catalog.tamu.edu/undergraduate/course-descriptions/math/)	
MATH 647-684 (http://catalog.tamu.edu/undergraduate/course-descriptions/math/)	
General elective ⁴	6
Semester Credit Hours	15
Total Semester Credit Hours	120

Fifth Year

Fall	Semester Credit Hours
Graduate Degree ⁷	36
Semester Credit Hours	36
Total Semester Credit Hours	36

¹ Of the 21 hours shown as University Core Curriculum (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/>), 3 must be from language, philosophy and culture, 3 from creative arts, 3 from social and behavioral sciences, 6 from American history, 6 from Government/Political Science.

² Select 4 hours from: ASTR 111, BIOL 111, BIOL 112, CHEM 119, CHEM 120, CHEM 107/CHEM 117. The remaining 4 hours may be selected from: ASTR 111, ATMO 201/ATMO 202, BIOL 111, BIOL 112, CHEM 119, CHEM 120, CHEM 107/CHEM 117, GEOL 101/GEOL 102, OCNG 251/OCNG 252.

³ MATH 170 is highly recommended for math majors co-enrolled in MATH 150, MATH 151, MATH 152, MATH 171 or MATH 172.

⁴ Select from any 100-499 course not used elsewhere, (except ALED 125; ASCC 102; ASTR 109/PHYS 109, ASTR 119/PHYS 119; BMEN 153; ISEN 101; KINE 199; LAND 101; MATH 102-148, MATH 151-168 (<http://catalog.tamu.edu/undergraduate/course-descriptions/math/>), MATH 304, MATH 309, MATH 311, MATH 365, MATH 366, MATH 367, MATH 375, MATH 376; PHYS 109/ASTR 109, PHYS 119/ASTR 119, PHYS 201, PHYS 202, PHYS 205; PSYC 301; STAT 201, STAT 301 - 303 (<http://catalog.tamu.edu/undergraduate/course-descriptions/stat/>); WFSC 101).

⁵ Six (6) hours must be selected from BICH 401-489 (<http://catalog.tamu.edu/undergraduate/course-descriptions/bich/>); BIOL 200-470 (<http://catalog.tamu.edu/undergraduate/course-descriptions/biol/>); CHEM 222-474 (<http://catalog.tamu.edu/undergraduate/course-descriptions/chem/>); CSCE 121, CSCE 411, CSCE 421/STAT 421; GENE 301-452 (<http://catalog.tamu.edu/undergraduate/course-descriptions/gene/>); OCNG 251-252, 401-420 (<http://catalog.tamu.edu/undergraduate/course-descriptions/ocng/>); PHYS 221, 302-305, 307-314, 324-428 (<http://catalog.tamu.edu/undergraduate/course-descriptions/phys/>); STAT 211, STAT 212, STAT 335/CSCE 320, STAT 408. Four (4) hours must be selected from ASTR 111; BICH 401-489 (<http://catalog.tamu.edu/undergraduate/course-descriptions/bich/>); BIOL 111, 112, 200-470, 318-438 (<http://catalog.tamu.edu/undergraduate/course-descriptions/biol/>); CHEM 119, 120, 222-474 ([\[catalog.tamu.edu/undergraduate/course-descriptions/chem/\]\(http://catalog.tamu.edu/undergraduate/course-descriptions/chem/\)\); CSCE 121, CSCE 221; GENE 301-452 \(<http://catalog.tamu.edu/undergraduate/course-descriptions/gene/>\); OCNG 251-252, 401-420 \(<http://catalog.tamu.edu/undergraduate/course-descriptions/ocng/>\); PHYS 221, 302-305, 307-314, 324-428 \(<http://catalog.tamu.edu/undergraduate/course-descriptions/phys/>\).](http://</p>
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⁶ This 6 hours will be used towards both the BS and MS degrees in Mathematics.

⁷ The overall program hours (156 hours) includes 36 hours for a non-thesis option or 32 hours for a thesis option (up to six of which are MATH 691). Up to six hours of graduate courses may double count. MATH 601 is prohibited for all graduate degree plans. Except for the MS teaching track, no distance class may be used on the degree plan nor may MATH 696 appear. For the MS teaching track, students must take four distance courses: MATH 629, MATH 645, MATH 646 and MATH 696. All five tracks require at least 24 credit hours of mathematics of which at most six may be undergraduate. Depending on the MS track, courses outside of mathematics may be required or optional. For additional information, reference <https://www.math.tamu.edu/graduate/masters/> (<https://www.math.tamu.edu/graduate/masters/>) and select the track of interest.

Maximum of 3 hours of MATH 300 or CSCE 222/ECEN 222 may be used in this degree program.

Maximum of 3 hours of MATH 411 or STAT 414 may be used in this degree program.

Maximum of 4 hours of MATH 417, MATH 437 or CSCE 442 may be used in this degree program.

If a grade of D or F is earned in any of the following courses, MATH 151/MATH 171, MATH 152/MATH 172, MATH 221/MATH 251/MATH 253, MATH 300, MATH 323 or MATH 308, this course must be immediately retaken and a grade of C or better earned. The department will allow at most two D's in upper-level (325-499) courses. If a third D is earned, one of the three courses in which a D was earned must be retaken and a grade of C or better earned.

Students desiring teacher certification should consult the requirements for certification before registering for electives.

Graduation requirements include a requirement for 3 hours of International and Cultural Diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/>) courses and 3 hours of Cultural Discourse (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/>) courses. A course satisfying a Core category, a college/department requirement, or a general elective can be used to satisfy this requirement. See academic advisor.