MATHEMATICS - BS

Program Requirements

First Year

Fall		Semester Credit Hours
ENGL 104 or ENGL 103	Composition and Rhetoric 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 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

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 & PHYS 226	Newtonian Mechanics for Engineering and Science 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	Analysis on the Real Line	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 or MATH 446	Multivariate Real Analysis or Analysis on Metric Spaces	3
MATH 416 or MATH 472	Modern Algebra II or Elliptic Curve Cryptography	3
Select one of the following:		4
OCNG 451	Mathematical Modeling of Ocean Climate	
PHYS 207 & PHYS 227	Electricity and Magnetism for Engineering 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 or STAT 414	Mathematical Probability or Mathematical Statistics I	3
MATH elective [6]		3
Science elective [5]		3
General elective [4]		3
General elective [4]		4
	Semester Credit Hours	**16**

Spring

MATH elective [6]		9
General elective [4]		6
	Semester Credit Hours	**15**
	Total Semester Credit Hours	**120**

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; KINE 199; LAND 101; MATH 102-148 (http://catalog.tamu.edu/undergraduate/course-descriptions/math/), 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; PBSI 301, PHYS 101-125 (http://catalog.tamu.edu/undergraduate/course-descriptions/phys/), PHYS 201, PHYS 202, PHYS 205; STAT 201, STAT 301-303 (http://catalog.tamu.edu/undergraduate/course-descriptions/stat/);).

[5] Four (4) hours must be selected from ATMO 335, ATMO 336, ATMO 435; ASTR 111; BICH 401-489 (http://catalog.tamu.edu/undergraduate/course-descriptions/bich/); BIOL 111, BIOL 112, BIOL 200-470 (http://catalog.tamu.edu/undergraduate/course-descriptions/biol/); CHEM 119, CHEM 120, CHEM 222-474 (http://catalog.tamu.edu/undergraduate/course-descriptions/chem/); CSCE 110, CSCE 111, CSCE 206, CSCE 221; GENE 301-452 (http://catalog.tamu.edu/undergraduate/course-descriptions/gene/); OCNG 251, OCNG 252, OCNG 310, OCNG 320, OCNG 330, OCNG 340, OCNG 411, OCNG 425,OCNG 443, OCNG 451, OCNG 453; PHYS 221, PHYS 222, PHYS 302-305, PHYS 307-314 (http://catalog.tamu.edu/undergraduate/course-descriptions/phys/), PHYS 324-428 (http://catalog.tamu.edu/undergraduate/course-descriptions/phys/). Six (6) hours must be selected from ATMO 335, ATMO 336, ATMO 435; 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 120, CSCE 221, CSCE 320/STAT 335, CSCE 411, CSCE 421; GENE 301-452 (http://catalog.tamu.edu/undergraduate/course-descriptions/gene/); OCNG 251-252, (http://catalog.tamu.edu/undergraduate/course-descriptions/ocng/) OCNG 310, OCNG 320, OCNG 330, OCNG 340, OCNG 411, OCNG 425, OCNG 443, OCNG 451, OCNG 453; PHYS 221, (http://catalog.tamu.edu/undergraduate/course-descriptions/phys/) PHYS 222, PHYS 302-305, 307-314, 324-428 (http://catalog.tamu.edu/undergraduate/course-descriptions/phys/); STAT 211, STAT 212, STAT 335/CSCE 320, STAT 408, STAT 421.

[6] Twelve hours must be selected from MATH 407-499 (http://catalog.tamu.edu/undergraduate/course-descriptions/math/). Students are required to take at least one of the following: MATH 427, MATH 431, MATH 436, MATH 439. Students are encouraged to take MATH 412, MATH 414, MATH 442, or MATH 470. Students who plan to attend graduate school are encouraged to take MATH 447. Departmental permission is required to take MATH 485 or MATH 491.

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.