

# APPLIED MATHEMATICAL SCIENCES - BS, STATISTICS EMPHASIS

## 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 ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		3
Freshman Science elective <sup>1</sup>		4
General elective <sup>3,4</sup>		1
Semester Credit Hours		15

### Spring

ECON 202 or ECON 203	Principles of Economics or Principles of Economics	3
MATH 172	Calculus II	4
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		3
Freshman Science elective <sup>1</sup>		4
General elective <sup>3,4</sup>		1
Semester Credit Hours		15

### Second Year

Fall		Semester Credit Hours
MATH 221	Several Variable Calculus	4
MATH 300	Foundations of Mathematics	3
STAT 211	Principles of Statistics I	3
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	
Semester Credit Hours		14

### Spring

MATH 308	Differential Equations	3
MATH 323	Linear Algebra	3
STAT 212	Principles of Statistics II	3
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 ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		3
Semester Credit Hours		16

### Third Year

#### Fall

MATH 409	Advanced Calculus I	3
PHYS 206 & PHYS 226	Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences	4
STAT 404	Statistical Computing	3
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		3
General Elective <sup>4</sup>		3
Semester Credit Hours		16

#### Spring

MATH 417 or MATH 437	Numerical Methods or Principles of Numerical Analysis	4
STAT 408	Introduction to Linear Models	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 ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		3
Semester Credit Hours		14

### Fourth Year

#### Fall

ISEN 320 or ISEN 340	Operations Research I or Operations Research II	3
MATH 411 or STAT 414	Mathematical Probability or Mathematical Statistics I	3
Select 6 hours from the following:		6
MATH 325	The Mathematics of Interest	
MATH 407-499 ( <a href="http://catalog.tamu.edu/undergraduate/course-descriptions/math/">http://catalog.tamu.edu/undergraduate/course-descriptions/math/</a> )		
STAT 415	Mathematical Statistics II	
STAT 485	Directed Studies	
STAT 489	Special Topics in...	
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>2</sup>		3
Semester Credit Hours		15

#### Spring

Select 6 hours from the following:		6
CSCE 210 -470 ( <a href="http://catalog.tamu.edu/undergraduate/course-descriptions/csce/">http://catalog.tamu.edu/undergraduate/course-descriptions/csce/</a> ) <sup>5</sup>		

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ISEN 320	Operations Research I	
ISEN 340	Operations Research II	
MATH 325	The Mathematics of Interest	
MATH 407-499	( <a href="http://catalog.tamu.edu/undergraduate/course-descriptions/math/">http://catalog.tamu.edu/undergraduate/course-descriptions/math/</a> )	
STAT 335-482	( <a href="http://catalog.tamu.edu/undergraduate/course-descriptions/stat/">http://catalog.tamu.edu/undergraduate/course-descriptions/stat/</a> )	
Select one of the following:		3
COMM 203	Public Speaking	
COMM 205	Communication for Technical Professions	
COMM 243	Argumentation and Debate	
General elective <sup>3</sup>		6
Semester Credit Hours		15
Total Semester Credit Hours		120

(<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.

- <sup>1</sup> 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.
- <sup>2</sup> Of the 18 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, 6 from American history, 6 from Government/Political Science.
- <sup>3</sup> MATH 170 is highly recommended for math majors co-enrolled in MATH 150, MATH 151, MATH 152, MATH 171 or MATH 172.
- <sup>4</sup> 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, 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 201, PHYS 202, PHYS 205; PSYC 301; STAT 201, STAT 301, STAT 302, STAT 303; WFSC 101).
- <sup>5</sup> Except CSCE 222/ECEN 222, CSCE 285, CSCE 289, CSCE 291.

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 course (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/>)s and 3 hours of Cultural Discourse