

APPLIED MATHEMATICS - BS, ACTUARIAL SCIENCE EMPHASIS

Program Requirements

First Year

	Semester Credit Hours	
Fall		
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

ECON 202 or ECON 203	Principles of Economics or Principles of Economics	3
MATH 172	Calculus II	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

Second Year

	Semester Credit Hours	
Fall		
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 206	Structured Programming in C	
Semester Credit Hours		14

Spring

MATH 308	Differential Equations	3
MATH 325	The Mathematics of Interest	3
STAT 212	Principles of Statistics II	3
Select one of the following:		3-4
CSCE 110	Programming I	
CSCE 111	Introduction to Computer Science Concepts and Programming	
CSCE 120	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

Semester Credit Hours 15

Third Year

	Semester Credit Hours	
Fall		
MATH 323	Linear Algebra	3
MATH 411 or STAT 414	Mathematical Probability ⁵ or Mathematical Statistics I	3
PHYS 206 & PHYS 226	Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences	4
Select 3 hours from the following:		3
ECMT 463	Introduction to Econometrics	
ECON 311-489 (http://catalog.tamu.edu/undergraduate/course-descriptions/econ/)		
FINC 309-489 (http://catalog.tamu.edu/undergraduate/course-descriptions/finc/)		
University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) ¹		3
Semester Credit Hours		16

Spring

MATH 409	Analysis on the Real Line	3
MATH 419	Applications of Actuarial Science	3
Select 3 hours from the following:		3
ECMT 463	Introduction to Econometrics	
ECON 311-489 (http://catalog.tamu.edu/undergraduate/course-descriptions/econ/)		
FINC 309-489 (http://catalog.tamu.edu/undergraduate/course-descriptions/finc/)		
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		16

Fourth Year

	Semester Credit Hours	
Fall		
MATH 425	The Mathematics of Contingent Claims	3
Select 3 hours from the following:		3
CSCE 210-470 (http://catalog.tamu.edu/undergraduate/course-descriptions/csce/) ⁶		
ISEN 320	Operations Research I	
ISEN 340	Operations Research II	
MATH 407-499 (http://catalog.tamu.edu/undergraduate/course-descriptions/math/)		
STAT 335-482 (http://catalog.tamu.edu/undergraduate/course-descriptions/stat/)		
Select 3 hours from the following:		3

ECMT 463	Introduction to Econometrics	
ECON 311-489 (http://catalog.tamu.edu/undergraduate/course-descriptions/econ/)		
FINC 309-489 (http://catalog.tamu.edu/undergraduate/course-descriptions/finc/)		
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
Semester Credit Hours		15
Spring		
MATH 437	Principles of Numerical Analysis	4
Select 3 hours from the following:		3
CSCE 210-470 (http://catalog.tamu.edu/undergraduate/course-descriptions/csce/) ⁶		
ISEN 320	Operations Research I	
ISEN 340	Operations Research II	
MATH 407-499 (http://catalog.tamu.edu/undergraduate/course-descriptions/math/)		
STAT 335-482 (http://catalog.tamu.edu/undergraduate/course-descriptions/stat/)		
General elective ^{3,4}		6-7
Semester Credit Hours		14
Total Semester Credit Hours		120

¹ 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; and 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. MATH 200 is also highly recommended for math majors co-enrolled in 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, 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 201, PHYS 202, PHYS 205; STAT 201, STAT 301 - 303 (<http://catalog.tamu.edu/undergraduate/course-descriptions/stat/>)).

⁵ MATH 411 should be taken the semester after taking MATH 221.

⁶ Except CSCE 222/ECEN 222, CSCE 285, CSCE 289, CSCE 291, CSCE 402.

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 grades of D 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 courses (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/>) 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.

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