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

This combination 5-year program is uniquely designed to open doors for high-achieving undergraduate students to simultaneously pursue a Bachelor of Science in Applied Mathematics, Economics emphasis, and a Master of Science in Economics non-thesis option.

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 [1]	4
University Core Curriculum (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [2]		3
Freshman Science elective [3]		4
General elective [4]		1
	Semester Credit Hours	**15**

Spring

ECON 202	Principles of Economics	3
MATH 172	Calculus II [1]	4
University Core Curriculum (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [2]		3
Freshman Science elective [3]		4
General elective [4]		1
	Semester Credit Hours	**15**

Second Year

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 323	Linear Algebra	3
ECON 323	Microeconomic Theory	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	
	Semester Credit Hours	**15**

Third Year

Fall

MATH 325	The Mathematics of Interest	3
MATH 409	Analysis on the Real Line	3
PHYS 206 & PHYS 226	Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences	4
University Core Curriculum (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [2]		3
	Semester Credit Hours	**13**

Spring

ECON 203	Principles of Economics	3
MATH 411 or STAT 414	Mathematical Probability or Mathematical Statistics I	3
MATH 425	The Mathematics of Contingent Claims	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 (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [2]		3
	Semester Credit Hours	**16**

Fourth Year

Fall

ECON 607 or ECMT 673	Foundations of Microeconomic Theory [5] or Economic Analytics	3
MATH 407-499 (https://catalog.tamu.edu/undergraduate/course-descriptions/math/)		3
MATH 437	Principles of Numerical Analysis	4
Select one of the following:		3
COMM 203	Public Speaking	
COMM 205	Communication for Technical Professions	
COMM 243	Argumentation and Debate	
University Core Curriculum (https://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/) [2]		3
	Semester Credit Hours	**16**

Spring

ECMT 463	Introduction to Econometrics	3
MATH 407-499 (https://catalog.tamu.edu/undergraduate/course-descriptions/math/)		3
ECON 611 or ECMT 674	Foundations of Macroeconomic Theory [5] or Economic Forecasting	3

University Core Curriculum (https://catalog.tamu.edu/ undergraduate/general-information/university-core- curriculum/) [2]		3
General elective [4]		3-4
	Semester Credit Hours	**16**
Fifth Year		
Fall		
ECON 607 or ECMT 673	Foundations of Microeconomic Theory or Economic Analytics	3
ECON 675	Capstone for Financial Economics/ Financial Econometrics	3
ECON/ECMT electives [6]		6
	Semester Credit Hours	**12**
Spring		
ECON 611 or ECMT 674	Foundations of Macroeconomic Theory or Economic Forecasting	3
ECON/ECMT electives [6]		9
	Semester Credit Hours	**12**
Summer		
ECON 684	Professional Internship [7]	6
	Semester Credit Hours	**6**
	Total Semester Credit Hours	**150**

[1] 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.

[2] Of the 18 hours shown as University Core Curriculum (https:// 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.

[3] 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.

[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 (https://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, STAT 302, STAT 303).

[5] These hours will be applied towards the BS Applied Mathematics and MS Economics degrees.

[6] Economics graduate advisor will assist with the graduate course electives.

[7] Students may participate in an ECON 684 or enroll for two courses during the summer immediately following completion of their final Spring semester Bachelor course requirements.

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

This program includes a total of 156 hours, which up to 6 hours may be applied toward both the Bachelor of Science in Applied Mathematics and the Master of Science in Economics (Non-Thesis Option).