# Applied Mathematical Sciences - BS, Economics Emphasis

## Program Requirements

### First Year

**Fall**
- ENGL 104 or ENGL 103: Composition and Rhetoric or Introduction to Rhetoric and Composition (3 credit hours)
- MATH 171: Calculus I (4 credit hours)
- University Core Curriculum (3 credit hours)
- Freshman Science elective (2 credit hours)
- General elective (4 credit hours)

**Semester Credit Hours**: 15

**Spring**
- ECON 202: Principles of Economics (3 credit hours)
- MATH 172: Calculus II (4 credit hours)
- University Core Curriculum (3 credit hours)
- Freshman Science elective (2 credit hours)
- General elective (4 credit hours)

**Semester Credit Hours**: 15

### Second Year

**Fall**
- MATH 221: Several Variable Calculus (4 credit hours)
- MATH 300: Foundations of Mathematics (3 credit hours)
- STAT 211: Principles of Statistics I (3 credit hours)
- Select one of the following: (4 credit hours)
  - 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**: 15

**Spring**
- MATH 308: Differential Equations (3 credit hours)
- MATH 323: Linear Algebra (3 credit hours)
- ECON 323: Microeconomic Theory (3 credit hours)
- STAT 212: Principles of Statistics II (3 credit hours)
- Select one of the following: (4 credit hours)
  - CSCE 110: Programming I
  - CSCE 111: Introduction to Computer Science Concepts and Programming

**Semester Credit Hours**: 14

### Third Year

**Fall**
- MATH 325: The Mathematics of Interest (3 credit hours)
- MATH 409: Advanced Calculus I (3 credit hours)
- PHYS 206 & PHYS 226: Newtonian Mechanics for Engineering and Science and Physics of Motion Laboratory for the Sciences (4 credit hours)
- University Core Curriculum (3 credit hours)

**Semester Credit Hours**: 16

**Spring**
- MATH 411 or STAT 414: Mathematical Probability or Mathematical Statistics I (3 credit hours)
- MATH 425: The Mathematics of Contingent Claims (3 credit hours)
- Select one of the following: (4 credit hours)
  - 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 (3 credit hours)
- General elective (4 credit hours)

**Semester Credit Hours**: 16

### Fourth Year

**Fall**
- MATH 407-499: (3 credit hours)
- ECON 459: Games and Economic Behavior (University Core Curriculum) (3 credit hours)
- Select one of the following: (3 credit hours)
  - COMM 203: Public Speaking
  - COMM 205: Communication for Technical Professions
  - COMM 243: Argumentation and Debate
- University Core Curriculum (3 credit hours)
- General elective (4 credit hours)

**Semester Credit Hours**: 16

**Spring**
- ISEN 320 or ISEN 340: Operations Research I or Operations Research II (3 credit hours)
- MATH 407-499: (3 credit hours)
- ECMT 463: Introduction to Econometrics (3 credit hours)

**Semester Credit Hours**: 15

### Course Descriptions

- **CSCE 121**: Introduction to Program Design and Concepts
- **CSCE 206**: Structured Programming in C
University Core Curriculum ([link](http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/))

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<th>General elective</th>
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**Semester Credit Hours** | 16 |

**Total Semester Credit Hours** | 120 |

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

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. Of the 18 hours shown as University Core Curriculum ([link](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.

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 ([link](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).

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 ([link](http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/)) and 3 hours of Cultural Discourse ([link](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.