MATHEMATICS - 5-YEAR BACHELOR OF SCIENCE/MASTER OF SCIENCE IN MATHEMATICS

The FastTrack Degree Program enables ambitious and academically talented mathematics majors at Texas A&M University to earn both a bachelor's degree and a master's degree within a period of five years after entering A&M.

Amongst the various advantages of the program, upon its completion a student will be in an exceptionally strong position to enter:

- The professional industrial job marketplace;
- A career in secondary education;
- A doctoral program in mathematics, or in a related discipline, at Texas A&M or another university.

The related disciplines include computer science, engineering, physics, statistics, genetics, economics, business administration, education, and biology.

Eligibility for entering a doctoral program in one of these disciplines would depend in part on the undergraduate and graduate external options and areas of emphasis that were reflected in a student’s individual degree plan.

Program Requirements

First Year

Fall

- ENGL 104 or ENGL 103: Composition and Rhetoric or Introduction to Rhetoric and Composition
- MATH 171: Analytic Geometry and Calculus
- Select one of the following:
  - American history
  - Government/Political science
- Freshman Science elective

| Semester Credit Hours | 15 |

Spring

- Elective hours
- MATH 172: Calculus
- Select one of the following:
  - American history

Second Year

Fall

- MATH 220: Foundations of Mathematics
- MATH 221: Several Variable Calculus
- Select one of the following:
  - American history
  - Government/Political science

| Semester Credit Hours | 16 |

Spring

- MATH 308: Differential Equations
- MATH 323: Linear Algebra
- PHYS 218: Mechanics
- Select one of the following:
  - Language, philosophy and culture

| Semester Credit Hours | 14 |

Third Year

Fall

- MATH 409: Advanced Calculus I
- MATH 415: Modern Algebra I
- Elective hours
- Science elective
- Select one from:

| Semester Credit Hours | 16 |

Spring

- MATH 410: Advanced Calculus II

| Semester Credit Hours | 15 |
MATH 416 Modern Algebra II 3
PHYS 208 Electricity and Optics 4
or OCNG 451 or Mathematical Modeling of Ocean Climate
CORE elective 3
Semester Credit Hours 13

Fourth Year
Fall
MATH 411 or STAT 414 Mathematical Probability 3
or Mathematical Statistics I
CORE elective 3
Elective hours 4
Select one from:
MATH 427 Introduction to Number Theory
MATH 431 Structures and Methods of Combinatorics
MATH 436 Introduction to Topology
MATH 439 Differential Geometry of Curves and Surfaces
Science elective 3
Semester Credit Hours 16

Spring
Select one from:
MATH 325 The Mathematics of Interest
MATH 407-MATH 499
Select from: 6
MATH 603-MATH 628
MATH 630-MATH 639
MATH 641-MATH 644
MATH 647-MATH 684
CORE elective 3
Semester Credit Hours 15
Total Semester Credit Hours 120

Fifth Year
Fall
Graduate Degree 8
Semester Credit Hours 36
Semester Credit Hours 36
Total Semester Credit Hours 36

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 101/CHM 111, CHEM 102/CHM 112, CHEM 107/CHM 117.
   The remaining 4 hours may be selected from:
3 Six (6) hours must be selected from BICH 401-489; BIOL 200-470; CHEM 222-474; GENE 301-452; OCNG 251-252, 401-420; PHYS 221, 302-305, 307-314, 324-428. Four (4) hours must be selected from ASTR 111; BICH 401-489; BIOL 111, 112, 200-470, 318-438; CHEM 119, 120, 222-474; GENE 301-452; OCNG 251-252, 401-420; PHYS 221, 302-305, 307-314, 324-428. Select 3 hours from any 200-400-level Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture) course.
4 Three hours must be creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts) and three hours must be social and behavioral sciences (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences). In addition, six hours must be in the area of international and cultural diversity. These may be in addition to other University Core Curriculum (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum) courses, or if a course in this category satisfies an area of the Core, it can be used to meet both requirements. Students desiring teacher certification should consult the requirements for certification before registering for electives.
5 Remaining electives may be selected from any 100-499 course not used elsewhere, (except ALED 125; ASTR 109/PHYS 109, ASTR 119/PHYS 119; BMEN 101; BUSN 100; ISEN 101; KINE 199; LAND 101; MATH 102-148, MATH 151-166; MATH 304, MATH 309, MATH 311, MATH 367, MATH 368, MATH 375, MATH 376; PHYS 109/ASTR 109, PHYS 119/ASTR 119, PHYS 201, PHYS 202, PHYS 205; PSYC 301; STAT 201, STAT 301-303; STLC 102, URPN 200, WFSC 101). This 6 hours will be used towards both the BS and MS degrees in Mathematics.
6 The overall program hours (156 hours) includes 36 hours for a non-thesis option or 32 hours for a thesis option (up to six of which are MATH 691). Up to six hours of graduate courses may double count. MATH 601 is prohibited for all graduate degree plans. Except for the MS teaching track, no distance class may be used on the degree plan or may MATH 696 appear. For the MS teaching track, students must take four distance courses: MATH 629, MATH 645, MATH 646 and MATH 696. All five tracks require at least 24 credit hours of mathematics of which at most six may be undergraduate. Depending on the MS track, courses outside of mathematics may be required or optional. For additional information, reference https://www.math.tamu.edu/graduate/masters and select the track of interest.
Maximum of 4 hours of MATH 147, MATH 151, or MATH 171 may be used in this degree program.

Maximum of 4 hours of MATH 148, MATH 152, or MATH 172 may be used in this degree program.

Maximum of 3 hours of MATH 220 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 3 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 220, 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.