Bachelor of Science Degree in Mathematics

The Bachelor of Science degree in Mathematics is offered with two concentrations: Mathematics and General Mathematical Studies.

The minimum number of semester credit hours required for this degree, including the Core Curriculum requirements, is 120. Thirty-nine of the total semester credit hours required for the degree must be at the upper-division level.

Students choosing the General Mathematical Studies Concentration who wish to pursue teacher certification should satisfy the Core Curriculum requirements consistent with the State Board for Educator Certification.

All required and elective mathematics, computer science, and statistics courses must be completed with a grade of “C” or better.

All candidates for this degree must fulfill the Core Curriculum requirements and the mathematics requirements, which are listed in the following pages. In addition, a candidate for the Bachelor of Science degree in Mathematics must complete the course requirements for the concentration declared by the candidate.

Core Curriculum requirements: Students seeking the Bachelor of Science degree in Mathematics must fulfill University Core Curriculum requirements. The courses listed in the table below satisfy both degree requirements and Core Curriculum requirements; however, if these courses are taken to satisfy both requirements, then students may need to take additional courses in order to meet the minimum number of semester credit hours required for this degree. For a complete listing of courses that satisfy the Core Curriculum requirements, see pages 5–9 of this catalog.

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<th>Core Curriculum Component Area</th>
<th>Courses that Satisfy Core Curriculum and Degree Requirements</th>
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| Communications                                      | English Rhetoric/Composition (6 semester credit hours) <br> All students must take the following six hours to meet this core requirement:  
  WRC 1013 Freshman Composition I <br> WRC 1023 Freshman Composition II |
| Mathematics                                          | Mathematics (3 semester credit hours) <br> This requirement can be satisfied with MAT 1214 Calculus I for mathematics majors. (Students not prepared to begin MAT 1214 must take MAT 1093 Precalculus.) |
| Natural Sciences                                     | Science (6 semester credit hours) <br> Three hours from Level One and three hours from Level Two, or six hours from Level Two will satisfy this core requirement. |
| Humanities & Visual and Performing Arts             | Literature (3 semester credit hours) <br> Any three hours listed under this section in the list of core courses will satisfy this core requirement. <br> The Arts (3 semester credit hours) <br> Any three hours listed under this section in the list of core courses will satisfy this core requirement. |
| Social and Behavioral Sciences                       | United States History and Diversity (6 semester credit hours) <br> Any six hours listed under this section in the list of core courses will satisfy this core requirement. <br> Political Science (6 semester credit hours) <br> POL 1013 Introduction to American Politics, plus three additional hours listed under this section in the list of core courses will satisfy this core requirement. |
Core Curriculum Component Area | Courses that Satisfy Core Curriculum and Degree Requirements
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Social and Behavioral Science (3 semester credit hours) | Any three hours listed under this section in the list of core courses will satisfy this core requirement.
Economics (3 semester credit hours) | Any three hours listed under this section in the list of core courses will satisfy this core requirement.

World Society and Issues | (3 semester credit hours)
Any three hours listed under this section in the list of core courses will satisfy this core requirement.

Mathematics Degree Requirements

All candidates for the Bachelor of Science degree in Mathematics, regardless of concentration, must complete the following 24 semester credit hours of required courses (this includes the 3 semester credit hours of the Core Curriculum requirement in mathematics):

MAT 1214 Calculus I (The student who is not prepared to begin MAT 1214 must take MAT 1093 Precalculus.)
MAT 1224 Calculus II
MAT 2214 Calculus III
MAT 2233 Linear Algebra
MAT 3013 Foundations of Mathematics
MAT 3213 Foundations of Analysis
MAT 4213 Real Analysis I

In addition, a candidate for the Bachelor of Science degree in Mathematics must complete the course requirements for the concentration declared by the candidate.

Mathematics Concentration

All candidates for this concentration must fulfill the Core Curriculum requirements, the mathematics degree requirements, as well as the course requirements necessary for this concentration.

A. 3 or 4 semester credit hours of computer science:
   - CS 1063 Introduction to Computer Programming I
   - OR
   - CS 1713, 1711 Introduction to Computer Programming II and Recitation
     OR
   - CS 2073 Computer Programming with Engineering Applications

B. 18 semester credit hours of required courses:
   - MAT 3613 Differential Equations I
   - MAT 3633 Numerical Analysis
   - MAT 4223 Real Analysis II
   - MAT 4233 Modern Abstract Algebra
   - STA 3003 Applied Statistics
   - STA 3513 Probability and Statistics

C. 9 additional semester credit hours of upper-division courses in mathematics or statistics approved by the student’s advisor

D. 26 or 27 semester credit hours of electives
General Mathematical Studies Concentration

All candidates for this concentration must fulfill the Core Curriculum requirements, the mathematics degree requirements, as well as the course requirements necessary for this concentration.

A. 3 semester credit hours of computer science:

   CS 1063  Introduction to Computer Programming I
   or
   CS 2073  Computer Programming with Engineering Applications

B. 21 semester credit hours of mathematics and/or statistics:

   1. 18 semester credit hours of mathematics:

      MAT 3103  Data Analysis and Interpretation
      MAT 3123  Fundamentals of Geometry
      or
      MAT 4263  Geometry
      MAT 3233  Modern Algebra
      or
      MAT 4233  Modern Abstract Algebra
      MAT 4013  Graphing Calculator Topics
      MAT 4113  Computer Mathematical Topics
      MAT 4303  Capstone Course for Mathematics

   2. 3 approved upper-division semester credit hours in mathematics

C. 3 semester credit hours of required academic foundations:

   COM 1043  Introduction to Communication

D. 30 semester credit hours of electives:

   Students seeking teacher certification should use these hours for the required certification courses. Other students should include among these an additional 6 semester credit hours of upper-division mathematics or statistics courses approved by an undergraduate advisor for the Department of Mathematics.

Certification requirements for students pursuing the General Mathematical Studies Concentration are different from degree requirements. In addition to specific course requirements, teacher certification in Texas also requires passing scores on a Texas Success Initiative approved assessment instrument test and acceptable scores on the state-mandated exit competency test. Complete information may be obtained in the College of Education and Human Development Advising and Certification Center at UTSA.