MATHEMATICS

Leon Brin
CHAIRPERSON
Engleman D 115
(203) 392-5493 – Fax (203) 392-6808
mathchair@SouthernCT.edu
Department Secretary: (203) 392-5576

Therese Bennett, Professor
Leon Brin, Professor
Braxton Carrigan, Associate Professor
Aaron Clark, Professor
Alain D'Amour, Professor
Emmett Dennis, Associate Professor
Maria Diamantis, Professor
Joseph Fields, Professor
Ross Gingrich, Associate Professor
Cynthia Gubitose, Associate Professor
Martin Hartog, Professor
Jooyoun Hong, Professor
John Kavanagh, Professor
Klay Kruczek, Associate Professor
Raymond Mugno, Professor
Yulei Pang, Assistant Professor
Valeriu Pinciu, Professor
John Scheuermann, Assistant Professor
Patrick Starvaggi, Assistant Professor
Robert Vaden-Goad, Associate Professor

MAJOR IN MATHEMATICS

The major provides the basic mathematical tools for applications in business and industry, such as actuarial science, computer work, statistics, operations research, teaching mathematics at the secondary school level, or pursuing graduate studies in mathematics, statistics, or related fields.

Additional elective courses in mathematics and the area of application should be chosen in consultation with a departmental adviser and can be selected to further career or graduate school objectives.

MATHEMATICS COURSES

Entry into 100 level mathematics courses is based on the results of the mathematics placement process used by Southern. Additional information about the placement process is available at SouthernCT.edu/placement
Students may not receive credits toward graduation for both MAT 139 and 150 or both MAT 178 and 250 or both MAT 221 and 320.

Students may not receive more than 3 credits toward graduation from among MAT 100, 100P, 101, and 102 (formerly 119). Students taking both MAT 120 and MAT 122 can receive at most 4 credits toward graduation.
The department offers the following:

Mathematics, B.A.
Mathematics, B.S - Concentration: Applied
Mathematics 7-12, B.S.
Minor in Mathematics
MATHEMATICS, B.S. - CONCENTRATION: APPLIED

120 Overall Credits Required

LIBERAL EDUCATION PROGRAM AND WRITING REQUIREMENTS

Liberal Education Program

46 Credits Required
Students must complete a comprehensive three-tiered Liberal Education Program (LEP). View all requirements of the tiers on the Liberal Education Program.

While the choice of courses that fulfill the requirements is generally left up to students, some departments require that students select specific courses to complement their major. This major has specific Tier requirements/restrictions for the following:

Tier 1 - Quantitative Reasoning:
MAT 150 - Calculus I ('C-' or better)

Writing Requirements ("W-Courses")

Three W-courses are required. These may not be taken until after a student has passed ENG 112 — Writing Arguments. W-courses may count toward LEP, major, or cognate requirements, as well as free electives. Course sections that meet this requirement are designated by section numbers ending in “W”.

Transfer students who enter with 60 to 89 credits are required to pass two W-courses, while transfer students who enter with 90 credits or more must pass one W-course.

MAJOR REQUIREMENTS

40 Credits Required
In those mathematics courses which the student applies toward the major in mathematics, he/she must have a GPA of 2.0 and, at most, one grade below C-.

Requirements:
MAT 151 — Calculus II ('C-' or better)
MAT 245 — Differential Equations
MAT 250 — Foundations of Mathematics: An Introduction ('C-' or better)
MAT 252 — Calculus III ('C-' or better)
MAT 320 — Probability and Statistics I
MAT 322 — Numerical Analysis I
MAT 372 — Linear Algebra (‘C-’ or better)
MAT 378 — Discrete Mathematics
MAT 488 — Seminar in Mathematical Modeling

Select one:
• MAT 321 — Mathematical Statistics
• MAT 325 — Design of Experiments
• MAT 326 — Regression Analysis

Select two:
• MAT 375 — Abstract Algebra I
• MAT 450 — Analysis
• MAT 480 — Topology

COGNATE REQUIREMENTS

9 Credits Requirement

Requirements:
CSC 152 — Computer Programming I

Select two cognate courses beyond those used to satisfy the Liberal Education Program Requirements from any of the following areas of application. Selections must be approved through memo from the Mathematics department to the Registrar’s Office.

• Biology
• Chemistry
• Computer Science
• Earth Science
• Economics
• Physics
• or other approved area

FREE ELECTIVES

Remaining credits to reach Overall Credits Required (listed above).
MATHEMATICS 7-12, B.S.

This program has a separate admission process. Please consult the admission requirements for this program for more information.

Overall GPA of 2.7 Required
120 Overall Credits Required

LIBERAL EDUCATION PROGRAM AND WRITING REQUIREMENTS

Liberal Education Program

46 Credits Required

Students must complete a comprehensive three-tiered Liberal Education Program (LEP). View all requirements of the tiers on the Liberal Education Program.

While the choice of courses that fulfill the requirements is generally left up to students, some departments require that students select specific courses to complement their major. This major has specific Tier requirements/restrictions for the following:

Tier 1 – Quantitative Reasoning:
MAT 150 – Calculus I (‘C+’ or better)

Tier 2 – American Experience (select one):
HIS 110 – United States History I
HIS 111 – United States History II

Tier 2 - Creative Drive
MAT 260 - Geometry and the Arts

Tier 2 – Mind and Body:
SHE 203 – School Health

Tier 2 - Social Structure, Conflict, and Consensus
EDU 200 - Teachers, Schools, and Society

Tier 3 – Capstone:
MAT 496 – Student Teaching Seminar - Mathematics

Writing Requirements (“W-Courses”)

Three W-courses are required. These may not be taken until after a student has passed ENG 112 — Writing Arguments. W-courses may count toward LEP, major, or cognate requirements, as well as free electives. Course sections that meet this requirement are designated by section numbers ending in “W”.

Transfer students who enter with 60 to 89 credits are required to pass two W-courses, while transfer students who enter with 90 credits or more must pass one W-course.

MAJOR REQUIREMENTS

63 Credits Required

**Mathematics Requirements**
36 Credits Required
A grade of C+ or better is required in MAT 151. Furthermore, in those MAT courses which the student applies toward the major, he/she must have a minimum GPA of 2.3, no grade below a C-, and in at least 50% of the courses must have a grade of B- or better. Note that for certification candidates, MAT GPA is calculated using MAT 150 and all required MAT courses shown below (this includes replacement grades - only one grade replacement will be dropped). This GPA will be calculated by the Mathematics Certification Coordinator and, in most cases, will not match the area GPA.

Requirements:
- MAT 151 – Calculus II (‘C+‘ or better)
- MAT 250 – Foundations of Mathematics: An Introduction (‘C-‘ or better)
- MAT 252 – Calculus III (‘C-‘ or better)
- MAT 300 – History of Mathematics
- MAT 320 – Probability and Statistics I
- MAT 360 – Foundations of Geometry
- MAT 372 – Linear Algebra (‘C-‘ or better)
- MAT 375 – Abstract Algebra I
- MAT 378 – Discrete Mathematics
- MAT 405 – Elementary Mathematics from an Advanced Standpoint
- MAT 408 - Technology for Teaching Secondary Math Education

**Education Requirements**
24 Credits Required

Requirements:
- EDU 316 - Child Development and Psychology for Educators
- EDU 413 – Secondary Education
- EDU 471 - Supporting English Learners for School Success (formerly IDS 471)
- MAT 490 – Teaching Mathematics in the Secondary School
- MAT 494 – Student Teaching (Mathematics)
- RDG 470 - Literacy in the Content Areas
- SED 482 – Teaching Exceptional Students in the Secondary Education Classroom

**Cognate Requirements**

3 Credits Required
CSC 152 – Computer Programming I

FREE ELECTIVES

Students must take remaining credits to reach Overall Credits Required (listed above).
MATHEMATICS, B.A.

120 Overall Credits Required

LIBERAL EDUCATION PROGRAM AND WRITING REQUIREMENTS

Liberal Education Program

46 Credits Required

Students must complete a comprehensive three-tiered Liberal Education Program (LEP). View all requirements of the tiers on the Liberal Education Program.

While the choice of courses that fulfill the requirements is generally left up to students, some departments require that students select specific courses to complement their major. This major has specific Tier requirements/restrictions for the following:

Tier 1 - Quantitative Reasoning:
MAT 150 - Calculus I (‘C-’ or better)

Writing Requirements (‘W-Courses’)

Three W-courses are required. These may not be taken until after a student has passed ENG 112 — Writing Arguments. W-courses may count toward LEP, major, or cognate requirements, as well as free electives. Course sections that meet this requirement are designated by section numbers ending in “W”.

Transfer students who enter with 60 to 89 credits are required to pass two W-courses, while transfer students who enter with 90 credits or more must pass one W-course.

MAJOR REQUIREMENTS

36 Credits Required

In those mathematics courses which the student applies toward the major in mathematics, he/she must have a GPA of 2.0 and, at most, one grade below C-.

Requirements:
MAT 151 - Calculus II (‘C-’ or better)
MAT 250 - Foundations of Mathematics: An Introduction (‘C-’ or better)
MAT 252 - Calculus III (‘C-’ or better)
MAT 320 - Probability and Statistics I
MAT 372 - Linear Algebra (‘C-’ or better)
MAT 375 - Abstract Algebra I
MAT 450 - Analysis
Select one:

• MAT 488 - Seminar in Mathematical Modeling
• MAT 498 - Seminar in Mathematics

Select, with approval of a departmental advisor, three courses from:

• MAT 245 - Differential Equations
• MAT 300 - History of Mathematics
• MAT 321 - Mathematical Statistics
• MAT 322 - Numerical Analysis I
• MAT 325 - Design of Experiments
• MAT 326 - Regression Analysis
• MAT 360 - Foundations of Geometry
• MAT 370 - Number Theory
• MAT 376 - Abstract Algebra II
• MAT 378 - Discrete Mathematics
• MAT 398 - Special Topics in Mathematics
• MAT 405 - Elementary Mathematics from an Advanced Standpoint
• MAT 480 - Topology
• MAT 488 - Seminar in Mathematical Modeling
• MAT 498 - Seminar in Mathematics

COGNATE REQUIREMENTS

3 Credits Required

CSC 152 - Computer Programming I

FREE ELECTIVES

Remaining credits to reach Overall Credits Required (listed above).