# MATHEMATICS MINOR

## Program Requirements

| Code | Title | Credits |
| --- | --- | --- |
| **Required Courses** | | |
| MTH-2210 | Calculus and Analytic Geometry I | 4 |
| MTH-2220 | Calculus and Analytic Geometry II | 4 |
| MTH-2230 | Calculus and Analytic Geometry III | 4 |
| **Selected Courses** | | |
| Select 8 semester hours of additional courses offered in the mathematics program at the 3000-level or above [1] | | 8 |
| **Total Credits** | | **20** |

[1] Excluding EDU-3240 Secondary Methods in Mathematics and Computer Science, MTH-2810-9 Selected Topics in Mathematics/MTH-3810-9 Selected Topics in Mathematics/MTH-4810-9 Selected Topics in Mathematics, MTH-3830 Directed Study in Mathematics/MTH-4830 Directed Study in Mathematics, MTH-4970 Research in Mathematics, MTH-4980 Independent Study in Mathematics, and MTH-4990 Senior Capstone in the Mathematical Sciences.

## Regulations Governing Minors

a. Minors at Aurora University are optional. They are not required for graduation.

b. A minor shall comprise a minimum of 18 semester hours.

c. At least 25% of the credits applied to a minor must be earned at AU.

d. Each minor must be developed and monitored by an approved program committee of the faculty; new or substantially revised minors require the approval of the Board of Trustees based on recommendations from the program committee, the appropriate school/college governance bodies, the Academic Dean, appropriate university governance bodies, the Chief Academic Officer, and the President.

e. Beyond the minimum coursework requirement, the content, structure, and extent of a minor are prerogatives of the individual program committees within the schools and colleges of the university, except as otherwise defined or restricted by the academic regulations.

f. No "D" will apply toward minors.

g. A maximum of four (4) semester hours of credit/no credit coursework will apply toward a minor.

Student Learning Outcomes

These outcomes are a subset of the department outcomes and are all embedded in the calculus sequence required for the minor.

a. Knowledge of Mathematical Problem Solving: Students will be able to solve correctly a wide variety of problems using both basic mathematics skills and advanced mathematical techniques and to apply these techniques to other disciplines. (Mathematical content and its application)  This will be evidenced through the sub-indicators:
   - Apply and adapt a variety of appropriate strategies to solve problems.
   - Solve problems that arise in mathematics and those involving mathematics in other contexts.

b. Knowledge of Mathematical Communication: Students will communicate mathematics clearly in written form. (Communication Skills)  This will be evidenced through the sub-indicators:
   - Use the language of mathematics to express ideas precisely.
   - Organize mathematical thinking through communication.

c. Knowledge of Mathematical Connections: Students will learn to draw connections among mathematical branches and related disciplines. (Interconnection between mathematical branches and related disciplines (science))  This will be evidenced through the sub-indicators:
   - Recognize and use connections among mathematical ideas
   - Recognize and apply mathematics in contexts outside of mathematics

d. Knowledge of Mathematical Representation: Students will learn to represent and utilize mathematical concepts in various ways. (Representation and utilization of mathematical concepts)  This will be evidenced through the sub-indicators:
   - Create and use representations to organize, record, and communicate mathematical ideas.
   - Select, apply, and translate among mathematical representations to solve problems.

e. Knowledge of Technology: Students will use technology to deepen mathematical understanding and to enhance problem-solving skills. (Use of technology)  This will be evidenced through the sub-indicators:
   - Use knowledge of mathematics to select and use appropriate technological tools, such as but not limited to, spreadsheets, dynamic graphing tools, computer algebra systems, dynamic statistical packages, graphing calculators, data-collection devices, and presentation software.