Department of Mathematics and Statistics
New 2019 Learning Goals

Dearborn Discovery Core

The general education (DDC) requirement at UM-Dearborn allows students to develop their mathematical, logical, reasoning, data analysis, and problem-solving abilities. The Department of Mathematics and Statistics provides DDC students an introductory level exposure to the interconnecting, powerful, and creative nature of mathematics. While developing content specific skills, students grow in persistence and analytical ability in an educationally supportive and inclusive environment.

1. Communication: Students are able to interpret information provided in mathematical form (e.g. with functions, equations, graphs, diagrams, tables, words, geometric figures, etc.)
2. Representation: Students are able to represent information/data in mathematical form as appropriate (e.g. with functions, equations, graphs, diagrams, tables, words, geometric figures, etc.).
3. Problem Solving: Students are able to solve mathematical (e.g. algebraic, geometric, logical, statistical, etc.) problems flexibly, accurately, and efficiently.
4. Reasoning: Students are able to accurately employ logical reasoning (e.g. analyzing evidence, detecting fallacies, drawing a valid conclusion, etc.) and to explain their reasoning while solving problems.

Mathematics Major

The Department of Mathematics and Statistics provides students majoring in mathematics a broad exposure to the interconnecting, powerful, and creative nature of mathematics. While developing content specific knowledge, students grow in persistence and analytical ability in an educationally supportive and inclusive environment.

1. Communication: Students acquire broad and effective mathematical communication skills including the ability to state problems carefully, articulate assumptions, and understand the importance of precise definition, read mathematics with understanding, and communicate ideas clearly and coherently both verbally and in writing.
2. Problem Solving: Students are able to solve mathematical problems flexibly, accurately and efficiently including the ability to recognize patterns and make generalizations, assess the correctness of solutions, create and explore examples, devise and test conjectures, and use technology effectively, when appropriate.
3. Reasoning: Students are able to rigorously employ logical reasoning including the ability to recognize and make mathematically rigorous arguments.
4. Connections: Students are able to connect concepts within and across mathematical disciplines including the ability to link applications to theory.
5. Independence: Students develop mathematical independence and experience open ended inquiry.