LEARNING OUTCOMES: APPLIED MATHEMATICS, MS

Learning outcomes for the Master of Science in Applied Mathematics

Optimization and Algorithms Track

1. Students will gain fundamental understanding in at least four of the seven core subjects of graph theory, combinatorics, numerical analysis, algorithms, applied statistics, linear programming, nonlinear programming.
2. Students will gain breadth of knowledge in at least three of the following areas: optimization, control theory and coding theory, combinatorics/graph theory, algorithms/theory of computation, statistics.
3. Students will gain experience in original research in applied mathematics, if desired. This goal applies to students on the thesis track of this program.

Applications to the Sciences Track

1. Students will gain depth of understanding of the theory of differential equations and dynamical systems.
2. Students will gain the ability to engage with theoretical mathematical thinking in areas relevant to the application of differential equations and dynamical systems to the sciences, at the graduate level.
3. Students will gain exposure to the application of mathematics in one or more of the sciences.
4. Students will gain experience in original research in applied mathematics, if desired. This goal applies to students on the thesis track of this program.

Computational Science and Engineering (CSE) Track

1. Students will gain a fundamental understanding of the theory of differential equations/dynamical systems.
2. Students will gain a fundamental understanding, at the graduate level, of at least one of the core subjects of abstract algebra, real analysis, complex analysis.
3. Students will gain an understanding of the use of computational techniques in the study of applied mathematics.
4. Students will gain experience in original research in applied mathematics, if desired. This goal applies to students on the thesis track of this program.