

MAS: Mathematics: Algebraic Structures Courses

Courses

MAS 3105 Linear Algebra

College of Sci and Engineering, Department of Mathematics & Statistics

3 sh (may not be repeated for credit)

Prerequisite: [MAC 2312](#)

Systems of linear equation, row echelon form, matrix algebra, determinants and their properties, vector spaces, linear independence, base and dimension, row and column spaces, linear transformations and their matrix representations, similarity, inner product and orthogonality, eigenvalues and eigenvectors, diagonalization, applications of linear algebra. Meets Gordon Rule Theoretical Mathematics Requirement.

MAS 3905 Directed Study

College of Sci and Engineering, Department of Mathematics & Statistics

1-12 sh (may be repeated indefinitely for credit)

MAS 4203 Number Theory

College of Sci and Engineering, Department of Mathematics & Statistics

3 sh (may not be repeated for credit)

Prerequisite: [MHF 3202](#)

Divisibility properties of integers, number-theoretic functions, Diophantine equations, theory of congruences and topics in cryptography. Meets Gordon Rule Theoretical Mathematics Requirement.

MAS 4301 Abstract Algebra

College of Sci and Engineering, Department of Mathematics & Statistics

3 sh (may not be repeated for credit)

Prerequisite: [MHF 3202](#)

Concepts of basic algebraic structures, set, group, ring, integral domain and field. Meets Gordon Rule Theoretical Mathematics Requirement.

MAS 4905 Directed Study

College of Sci and Engineering, Department of Mathematics & Statistics

1-12 sh (may be repeated indefinitely for credit)

MAS 5145 Matrix Theory

College of Sci and Engineering, Department of Mathematics & Statistics

3 sh (may not be repeated for credit)

Canonical forms of matrices, similarity, quadratic forms.

MAS 5905 Directed Study

College of Sci and Engineering, Department of Mathematics & Statistics

1-12 sh (may be repeated indefinitely for credit)

MAS 6219 Analytic Number Theory

College of Sci and Engineering, Department of Mathematics & Statistics

3 sh (may not be repeated for credit)

This course uses analytical methods to analyze and understand basic arithmetic problems. The arithmetic concepts include prime numbers, arithmetic functions, prime producing polynomials, and partitions.

MAS 6329 Topics in Applied Algebra

College of Sci and Engineering, Department of Mathematics & Statistics

3 sh (may not be repeated for credit)

This course is intended to apply the fundamental concepts of abstract algebra to various branches of mathematics, including number theory, combinatorics, and geometry. There will be an emphasis on graph theory, design theory, and coding theory applications.

MAS 6905 Directed Study

College of Sci and Engineering, Department of Mathematics & Statistics

1-12 sh (may be repeated indefinitely for credit)