

MATHEMATICS (MATH)

MATH 532 Intr to Number Systems (3 Credits)

INTRODUCTION TO NUMBER SYSTEMS (3) Background concepts and terminology in sets, relations, mapping. Cartesian products; equivalence relations; elementary properties of the counting numbers; numeration systems; arithmetic in base 10 and bases other than 10; divisibility and primes; Euclidean Algorithm; Fundamental Theorem of Arithmetic consequences; the ring of integers modulo m ; Fermat's Theorem, elementary properties of the rational numbers; existence of irrational numbers.

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 535 Algebra For Teachers (3 Credits)

ALGEBRA FOR TEACHERS (3) Sets, real number system, theory of polynomials, elementary functions, determinants and matrices.

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 536 Geom For Tchrs (3 Credits)

GEOMETRY FOR TEACHERS (3) Foundations of geometry, nature of proof, coordinate systems, Euclidean, non-Euclidean and projective geometry.

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 577 Fourier Series (3 Credits)

FOURIER SERIES (3) Study of approximations of functions by orthogonal systems of functions; Fourier series; orthonormal systems and generalized Fourier series, applications to boundary value problems. (Prerequisites: MATH 314 and 333)

Prerequisite(s): (MATH 314 and MATH 333)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 578 Laplace Transforms (3 Credits)

LAPLACE TRANSFORMS (3) Definitions and elementary properties; transform of discontinuous functions; inverse transformations; convolution theorems, application to ordinary differential equations. (Prerequisite: MATH 439)

Prerequisite(s): (MATH 439)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 599 Research & Conferences (3 Credits)

RESEARCH AND CONFERENCE (3) May not be repeated for graduate credit. (Prerequisite: Graduate standing and twelve [12] hours of senior undergraduate or graduate mathematics)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 631 Intro To The Found Of Math (3 Credits)

INTRODUCTION TO THE FOUNDATIONS OF MATHEMATICS (3) Evolution of Mathematical ideals and methods, relations to logic; the axiomatic method; the infinite paradoxes; contradictions. (Prerequisite: Graduate standing)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 633 Theory Functions Real Variable (3 Credits)

THEORY OF FUNCTIONS OF REAL NUMBERS (3) The fundamental part of the theory of functions of a real variable; the topology of the real line, limit, continuity, differentiation, Lebesgue measure, the Lebesgue integral. (Prerequisite: MATH 439)

Prerequisite(s): (MATH 439)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 634 Theory Functions Complex Var (3 Credits)

THEORY OF FUNCTIONS OF COMPLEX VARIABLES (3) The fundamental part of the theory of functions of a complex variable; complex number system, limits continuity, derivatives of complex functions, integration in the complex domain. (Prerequisite: MATH 460 or consent of instructor)

Prerequisite(s): (MATH 460)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 636 Point Set Topology (3 Credits)

TOPOLOGY (3) Introduction to the study of point set topology: topological spaces, metric space, the topology of the real line and real plane, continuous functions, homeomorphisms, product spaces, compactness, connectivity, separation theorems. (Prerequisites: MATH 462 and MATH 439 or instructor's consent)

Prerequisite(s): (MATH 439 and MATH 462)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 637 Functional Analysis (3 Credits)

FUNCTIONAL ANALYSIS (3) Introduction to functional analysis: finite and infinite dimensional vector spaces norms and inner products, Banach space, Hilbert space, L-space, linear operators. (Prerequisites: MATH 636 and MATH 633 or instructor's consent)

Prerequisite(s): (MATH 636 and MATH 633)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 638 Partial Differential Equations (3 Credits)

PARTIAL DIFFERENTIAL EQUATIONS (3) Definitions of equations and their solutions: method of Jacobi and Monge, solutions by quadrature, existence theorems, separation of variables, elliptic, parabolic and hyperbolic systems, and operational methods. (Prerequisites: MATH 376 and MATH 333)

Prerequisite(s): (MATH 333 and MATH 376)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 732 Theory Of Numbers (3 Credits)

THEORY OF NUMBERS (3) Elementary properties of integers, the theorems of Fermat and Wilson the theory of congruencies, quadratic residues, the reciprocity theorem, Diophantine equations, definite and indefinite binary quadratic forms, ternary quadratic forms, regular and irregular forms. (Prerequisite: MATH 331)

Prerequisite(s): (MATH 331)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 733 Abstract Algebra (3 Credits)

ABSTRACT ALGEBRA (3) Advanced topics in modern algebra: generally the topics will be in one or more of the areas: group theory, theory of rings and fields, homological algebra. (Prerequisite: MATH 475)

Prerequisite(s): (MATH 475)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 790 Independent Study Grad (3 Credits)

INDEPENDENT STUDY: Graduate standing / approval of advisor.

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 831 Theory Of Probability (3 Credits)

THEORY OF PROBABILITY (3) Theory of expectation, dependent and independent variables, Tchebycheff's in equality, the probability integral applications to statistical theory. (Prerequisite: MATH 473 and 474)

Prerequisite(s): (MATH 473 and MATH 474)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 832 Finite Differences (3 Credits)

FINITE DIFFERENCES (3) Tables of differences, difference formulas, finite integration with applications, interpolation, approximate integration, beta and gamma functions, difference equations.

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 833 Mathematical Statistics (3 Credits)

MATHEMATICAL STATISTICS (3) Moments, distributions of functions of random variable, internal estimation, limiting distributions, sufficient statistics, point estimation, and statistical hypothesis. (Prerequisite: MATH 474)

Prerequisite(s): (MATH 474)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics

MATH 861 Research Problems (3,6 Credits)

RESEARCH PROBLEMS (3) Investigation by the student of a specific problem in mathematics. (Prerequisite: Approval of the department chairperson)

College/School: Col of Science, Engr & Tech

Department: Department of Mathematics