DEPARTMENT OF MATHEMATICS

The Department of Mathematics offers Master of Science degree in Mathematics with four concentrations: Pure Mathematics, Applied-Industrial Mathematics, Mathematics Education, and General Mathematical Studies.

Master of Science Degree in Mathematics

Program Admission Requirements

In addition to satisfying the University-wide graduate admission requirements, a Bachelor of Arts or Bachelor of Science in Mathematics is highly recommended as preparation. However, exceptional applicants with a bachelor's degree in a closely related field may also be considered for admission. Students who do not qualify for unconditional admission should anticipate that additional undergraduate and/or graduate coursework may be required to complete the degree. It is recommended that the applicant submit two letters of reference, preferably from those who can speak to the applicant's mathematical abilities.

Degree Requirements

Degree candidates are required to successfully complete 30 semester credit hours in one of four concentrations:

1. Pure Mathematics
2. Applied-Industrial Mathematics
3. Mathematics Education
4. General Mathematical Studies

Code	Title	Credit Hours
A. Students must complete the following 15 hours of required coursework:		**15**
MAT 5653	Differential Equations I	
MAT 5283	Linear Algebra	
MAT 5603	Numerical Analysis	
One course from the Algebra and Analysis area		
MAT 5173	Algebra I	
MAT 5203	Theory of Functions of a Real Variable I	
One course from the Discrete Mathematics area		
MAT 5423	Discrete Mathematics I	
MAT 5123	Introduction to Cryptography	
B. Required courses for the concentrations		**9-12**
Pure Mathematics (12)		
Completion of two qualifying examination sequences. Each sequence consists of two courses.		
Applied-Industrial Mathematics (9)		
AIM 5113	Introduction to Industrial Mathematics	
AIM 6943	Internship and Research Project	
MAT 5323	Mathematical Modeling	
Mathematics Education (9)		
Ramp Courses (Optional):		
MAT 5033	Foundations and Fundamental Concepts of Mathematics	
MAT 5103	Introduction to Mathematical Analysis	
Required Courses:		
MAT 5963	Introduction to Mathematics Education Research	
MAT 5023	Problem-Solving Seminar	
MAT 5043	Euclidean and Non-Euclidean Geometry	
General Mathematical Studies (9)		
Complete 9 hours of graduate-level coursework in the Department of Mathematics. Must be approved by the Graduate Advisor of Record.		
C. Electives		**3-6**
With the advice and approval of the Graduate Advisor of Record, students should choose the requisite number of graduate-level courses from Mathematics or related disciplines to complete their degree, respecting the conditions imposed in the following and preceding sections. The selection of topics courses is authorized by the Graduate Advisor of Record.		
Total Credit Hours		**30**

Applied-Industrial Mathematics (AIM) Courses

AIM 5113. Introduction to Industrial Mathematics. (3-0) 3 Credit Hours. Prerequisite: MAT 1213, MAT 1223, and MAT 2233, or consent of instructor. The topics covered include quality control, Monte Carlo methods, linear programming, model fitting, frequency domain methods, difference and differential equations, and report writing. The course is not designed to substitute for any specialized course covering these topics in detail, but rather to survey their real-world applications. This course has Differential Tuition. Course Fee: GS01 $90.

AIM 6943. Internship and Research Project. (0-0) 3 Credit Hours. Prerequisite: Completion of at least 18 semester credit hours of coursework in mathematics and consent of the student's Supervising Professor; confirmation of approved internship. Provides students with hands-on experience in industrial mathematics or a related field in a professional environment. The research work may be either an extended project or a variety of shorter assignments. May be repeated for credit, but no more than 6 credit hours will apply toward the Master's degree. This course has Differential Tuition. Course Fee: GS01 $90.

Mathematics (MAT) Courses

MAT 5023. Problem-Solving Seminar. (3-0) 3 Credit Hours. Students will have the opportunity to engage in extensive experience and practice in solving mathematical problems. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5033. Foundations and Fundamental Concepts of Mathematics. (3-0) 3 Credit Hours. Topics include set theory, Peano axioms, axiomatic construction of the natural numbers integers, rational development of functions, and cardinality. This course is a re-introduction to proof-based mathematics. Students will have the opportunity to connect abstract mathematical concepts to developmental understandings of numbers and operations. This course may only be applied to the Master of Science degree with the approval of the Graduate Advisor of Record. This course has Differential Tuition. Course Fee: GS01 $90; MFSM $35.

MAT 5043. Euclidean and Non-Euclidean Geometry. (3-0) 3 Credit Hours. Topics will be selected from advanced Euclidean and non-Euclidean geometry, and solid analytic geometry. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5053. Perspectives on Teaching. (3-0) 3 Credit Hours.
This course will include topics from mathematics education research about evidence-based practices for teaching and learning secondary and tertiary mathematics. Students will have the opportunity to explore these topics while focusing on specific mathematical content (e.g., Calculus, Geometry, Algebra) relevant to their career goals. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5103. Introduction to Mathematical Analysis. (3-0) 3 Credit Hours.
Prerequisite: MAT 4213 or consent of instructor. Topics are selected from: axiomatic construction of the reals, metric spaces, continuous functions, differentiation and integration, partial derivatives, and multiple integration. This course may not be applied to the Master of Science degree in Mathematics without approval of the Graduate Advisor of Record. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5113. Computing for Mathematics. (3-0) 3 Credit Hours.
Prerequisite: MAT 1313 or an equivalent or consent of the instructor. Project-based modular course allowing individualized learning of computer tools and skills most relevant to each mathematics student. Available modules include: LaTeX typesetting, calculation and visualization in Desmos and GeoGebra, introduction to general-purpose programming in Python, and specialized tools including Sage, Mathematica, Matlab/Octave, R, etc. (Same as MAT 4113. Credit can not be earned for both MAT 5113 and MAT 4113.) This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5123. Introduction to Cryptography. (3-0) 3 Credit Hours.
Prerequisite: MAT 4213. Congruences and residue class rings, Fermat's Little Theorem, the Euler phi-function, the Chinese Remainder Theorem, complexity, symmetric-key cryptosystems, cyclic groups, primitive roots, discrete logarithms, one-way functions, public-key cryptosystems, digital signatures, finite fields, and elliptic curves. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5133. Mathematical Biology. (3-0) 3 Credit Hours.
Prerequisite: MAT 1193 or equivalent or consent of instructor. A broad introduction to nonlinear dynamics. Topics may include discrete and continuous models, flows on the line, linear stability analysis, matrix operations and eigenvalues, flows on the plane, bifurcations, discrete dynamical systems, higher-dimensional systems, and others. The biological problems studied include: Molecular processes (glycolysis, lactose operon, etc.), physiological processes (single neuron), and ecological processes (predator-prey, competing species, infectious disease modeling). (Same as MAT 4133. Credit can not be earned for both MAT 4133 and MAT 5133.) This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5143. Cryptography II. (3-0) 3 Credit Hours.
Prerequisite: MAT 1313, or CS 2233 and CS 2231, or instructor consent. Topics may include: (1) Introduction to post-quantum cryptography, (2) Quantum computing, (3) Hash-based Digital Signature Schemes, (4) Code-based cryptography, (5) Lattice-based Cryptography, (6) Multivariate Public Key Cryptography, and (7) Homomorphic encryption. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5153. Data Analytics. (3-0) 3 Credit Hours.
Prerequisite: MAT 1214, MAT 2233, and MAT 4113 or CS 1063 or CS 1083 or CS 1093, or equivalent, or consent of instructor. This course is intended to develop practical marketable skills in data analytics using rigorous mathematical methodologies via SQL, Python, and Git. The mathematical topics covered involve: Singular value decomposition, single and multiple discriminant analysis, integral transforms with orthogonal and non-orthogonal functions/data and their connection with regression techniques, and nonlinear discriminants through dimensionality augmentation (artificial neural networks). The course covers techniques to characterize the context of a data problem, and addresses issues related to reproducibility of computational results. (Same as MAT 4153. Credit can not be earned for both MAT 4153 and MAT 5153.) This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5163. Probability Theory and Computing. (3-0) 3 Credit Hours.
Prerequisite: CS 3333 or MAT 2313 or equivalent or permission of instructor. Topics may include: expectation and moments of random variables, Gaussian distribution, moment generating functions, the Central Limit Theorem, basic concentration inequalities (Chernoff's and Hoeffding's), discrete probabilistic structures and computing, bucket sort algorithm, Poisson approximation, Johnson-Lindenstrauss dimensionality reduction lemma, etc. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5173. Algebra I. (3-0) 3 Credit Hours.
Prerequisite: MAT 4233 or consent of instructor. The opportunity for development of basic theory of algebraic structures. Areas of study may include monoids, semigroups, groups, isomorphism theorems, free groups, group extensions and group actions, Sylow theorems, group chains and composition series, nilpotent and solvable groups, cohomology of groups. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5183. Algebra II. (3-0) 3 Credit Hours.
Prerequisite: MAT 5173. Areas of study may include: Vector space codes, introduction to rings, ring codes, introduction to algebraic geometry, and algebraic geometry codes. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5203. Theory of Functions of a Real Variable I. (3-0) 3 Credit Hours.
Prerequisite: MAT 4213 or consent of instructor. Measure and integration theory. (Credit cannot be earned for both MAT 5203 and MAT 5103.) This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5213. Theory of Functions of a Real Variable II. (3-0) 3 Credit Hours.
Prerequisite: MAT 5203. Further development of measure and integration theory, metric space topology, and elementary Banach space theory. This course has Differential Tuition. Course Fee: GS01 $90; LRS1 $46.20; STSI $21.60.

MAT 5223. Theory of Functions of a Complex Variable I. (3-0) 3 Credit Hours.
Prerequisite: MAT 3213 or MAT 4213. Complex integration, Cauchy's theorem, calculus of residues, and power series. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5233. Theory of Functions of a Complex Variable II. (3-0) 3 Credit Hours.
Prerequisite: MAT 5223. Infinite products, entire functions, Picard's theorem, Riemann mapping theorem, and functions of several complex variables. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5243. General Topology I. (3-0) 3 Credit Hours.
Prerequisite: MAT 4273 or consent of instructor. Topological spaces, metric spaces, continua, and plane topology. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5253. General Topology II. (3-0) 3 Credit Hours.
Prerequisite: MAT 5243. Topics may include: Metrizable topological spaces, function spaces, covering spaces, homotopy theory and fundamental groups, classification of surfaces, and others. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5283. Linear Algebra. (3-0) 3 Credit Hours.
Prerequisite: MAT 2233 or an equivalent. A study of linear algebraic structures that may include linear transformations, inner product spaces, eigenvalues, Cayley-Hamilton theorem, similarity, the Jordan canonical form, spectral theorem for normal transformation and applications. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5293. Numerical Linear Algebra. (3-0) 3 Credit Hours.
Prerequisite: MAT 2233 or an equivalent. Direct and iterative methods for solving general linear systems, the algebraic eigenvalue problem, least squares problems, and solutions of sparse systems arising from partial differential equations. (Formerly CS 5293. Credit cannot be earned for both MAT 5293 and CS 5293.) This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5323. Mathematical Modeling. (3-0) 3 Credit Hours.
Prerequisite: MAT 3633 or equivalent. Techniques of mathematical modeling for applications, including ordinary and partial differential equations, stochastic models, discrete models and optimization, modeling error and uncertainty quantification. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5373. Mathematical Foundation of Statistics I. (3-0) 3 Credit Hours.
Prerequisite: Calculus 1 (MAT 1213 or MAT 1214) or equivalent. Topics may include: key concepts in statistics, including populations and samples, descriptive statistics, probability, discrete and continuous distributions, transformations, jointly distributed random variables, covariance and correlation, order statistics, and the Central Limit Theorem. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5383. Mathematical Foundation of Statistics II. (3-0) 3 Credit Hours.
Prerequisite: Mathematical Foundation of Statistics I (MAT 4373 or MAT 5373) or equivalent. Mathematical Statistics II is an advanced course that delves into point estimation, sufficiency, confidence intervals, hypothesis testing, inferences based on two samples, analysis of variance (ANOVA), and regression analysis. The course builds on the foundations established in Mathematical Statistics I and equips students with a deeper understanding of statistical methods for data analysis, inference, and prediction, which is essential for numerous applications in various disciplines. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5403. Functional Analysis I. (3-0) 3 Credit Hours.
Prerequisite: MAT 2233, MAT 4273, and MAT 5203, or their equivalents. Topological vector spaces, inner product spaces, normed spaces, Hilbert spaces and Banach spaces, dual spaces, Hahn-Banach theorem, and bounded linear operators. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5413. Functional Analysis II. (3-0) 3 Credit Hours.
Prerequisite: MAT 5403. Riesz representation theorem, spectral theory, Banach algebras, and C*-algebras. This course has Differential Tuition. Course Fee: GS01 $90; LRS1 $46.20; STSI $21.60.

MAT 5423. Discrete Mathematics I. (3-0) 3 Credit Hours.
Prerequisite: MAT 1313, or CS 2233, or instructor consent. Topics may include (1) Propositional logic: Axioms and Rules of Inference. (2) Limitations of propositional logic: Informal introduction to quantifiers and syllogisms. (3) Predicate Logic: Existential and universal quantification, free variables, and substitutions. (4) Sets and Boolean algebras: Operations on sets. Correspondences among finitary set operations, propositional logic, and quantifiers. (5) Relations, ordered sets, and bounds. (6) Functions, operations, and inverses. (7) Well-ordering relations, induction, and choice functions. (8) Computability, classical and contemporary computational models, and limitations of computation. (Same as MAT 3003. Credit can not be earned for both MAT 3003 and MAT 5412.) This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5433. Discrete Mathematics II. (3-0) 3 Credit Hours.
Prerequisite: MAT 1313, or CS 2233, or instructor consent. Topics may include: (1) Basic counting principles: Permutations, combinations, binomial coefficients, and arrangements with repetitions. (2) The Inclusion-Exclusion principle. (3) Graph models: Isomorphisms, edge counting, and planar graphs. (4) Covering circuits and graph coloring: Euler circuits, Hamilton circuits, graph coloring, and Ramsey's theorem. (5) Network algorithms: Shortest path, minimum spanning trees, matching algorithms, and transportation problems. (6) Order relations: Partially ordered sets, totally ordered sets, extreme elements (maximum, minimum, maximal, and minimal elements), well-ordered sets, and maximality principles. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5443. Logic and Computability. (3-0) 3 Credit Hours.
Prerequisite: MAT 1214 and MAT 3013, or instructor consent. Topics may include: Axiomatizations of propositional and first-order logics, completeness and compactness, structures, compactness, the Henkin method of constructing models by constants, ultraproducts, and real-valued logic and applications. (Same as MAT 3313. Credit can not be earned for both MAT 3313 and MAT 5443). This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5453. Quantum Logic. (3-0) 3 Credit Hours.
Prerequisite: MAT 4213. Topics include: Hilbert spaces, operators, observables, and states in general, spectral theory, the Schrödinger equation, the non-Boolean logic of quantum mechanics, non-classical structures, realism, contextuality, local causality, and entanglement. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5463. High Dimensional Probability with Algorithmic Applications. (3-0) 3 Credit Hours.
Prerequisite: MAT 5163 and MAT 5283 or equivalents. Topics may include: basic inequalities for random variables, Concentration Inequalities: Sub-gaussian and sub-exponential concentration, Chernoff, and Hoeffding. Applications to random networks. High-dimensional vectors: covariance estimation and Principal Component Analysis. Sub-gaussian vectors in high dimensions. Applications to randomized rounding in discrete optimization. Random matrices: net arguments, tail bounds, applications to numerical analysis, community detection, and error correcting codes. Stochastic processes: Gaussian width and basic inequalities for supremum of stochastic processes and applications. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5553. Harmonic Analysis. (3-0) 3 Credit Hours.
Prerequisite: MAT 3223 and MAT 4223, or consent of the instructor. Topics may include properties of Fourier series, convergence and summability, Hardy spaces, boundary behavior and harmonic functions, and other topics at the discretion of the instructor. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5603. Numerical Analysis. (3-0) 3 Credit Hours.
Prerequisite: MAT 3633 or consent of instructor. Emphasis on the mathematical analysis of numerical methods. Areas of study include solution of nonlinear equations and function optimization, approximation theory and numerical quadrature. (Same as CS 5603. Credit cannot be earned for both MAT 5603 and CS 5603.) This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5613. Numerical Solutions of Differential Equations. (3-0) 3 Credit Hours.
Prerequisite: MAT 5603 or an equivalent. Emphasis on the mathematical analysis of numerical methods. Areas of study include the analysis of single and multistep methods of ordinary differential equations. Analysis of finite difference and finite element methods for partial differential equations. This course has Differential Tuition. Course Fee: GS01 $90; LRS1 $46.20; STSI $21.60.

MAT 5643. Optimal Control and Calculus of Variations. (3-0) 3 Credit Hours.
Prerequisite: MAT 3613 or consent of the instructor. This course will cover: basic optimal control problems, optimality conditions, adjoint equation, transversality condition, interpretation of the adjoint, Bang-Bang control and applications, Pontryagin's Maximum Principle and applications, existence and uniqueness results, Principle of Optimality, The Hamiltonian and Autonomous Problems, examples of variational methods, basic calculus of variations problems, and Euler-Lagrange equation. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5653. Differential Equations I. (3-0) 3 Credit Hours.
Prerequisite: MAT 3613 and MAT 4213, or consent of instructor. Solution of initial-value problems, linear systems with constant coefficients, exponentials of operators, canonical forms and generic properties of operators, and contractions. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5663. Differential Equations II. (3-0) 3 Credit Hours.
Prerequisite: MAT 5653. Dynamic systems, the fundamental existence and uniqueness theorem, stability, the Poincare-Bendixson theorem, introduction to perturbation, and bifurcation theory. This course has Differential Tuition. Course Fee: GS01 $90; LRS1 $46.20; STSI $21.60.

MAT 5673. Partial Differential Equations I. (3-0) 3 Credit Hours.
Prerequisite: MAT 3623 and MAT 5663, or consent of instructor. Classical theory of initial value and boundary value problems for partial differential equations, including the heat equation, wave equation, and Laplace equation, et al., and non-linear first and second order partial differential equations and calculus of variation. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5683. Partial Differential Equations II. (3-0) 3 Credit Hours.
Prerequisite: MAT 5673. Modern topics in partial differential equations. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5863. Mathematical Physics. (3-0) 3 Credit Hours.
Prerequisite: MAT 2214 or MAT 2213, and MAT 3623 or equivalent, or consent of the instructor. Topics may include (1) Complex analysis in physics, (2) Differential equations: dynamical systems, non-linearity, and chaos, (3) Nonlinear waves in PDEs: continuous systems, Hamiltonian formulation of plasmas and liquids, KdV equation, nonlinear Schroedinger equation, and Sine/Klein-Gordon equation(s), (4) Asymptotic analysis methods and time-dependent/independent perturbation theory, (5) Functional analysis in mathematical physics, (6) Mathematical formalism of PDEs, (7) Group theory and Lie algebras, and (8) Tensor calculus: theory and applications. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5963. Introduction to Mathematics Education Research. (3-0) 3 Credit Hours.
Prerequisite: Consent of instructor. An introduction to important research and findings in mathematics education. Students will gain experience with interpreting education research and translating it into practice. Students will work on projects designed to help them investigate their own teaching practice. Topics include: mathematical learning theories, philosophical perspectives of mathematics, explorations of mathematical content, research on student learning, and critical perspectives on mathematics education. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5973. Directed Research. (0-0) 3 Credit Hours.
Prerequisite: Graduate standing and permission in writing (form available) from the instructor and the student's Graduate Advisor of Record. The directed research course may involve either a laboratory or a theoretical problem. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the Master's degree. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 5983. Topics in Applied Mathematics. (3-0) 3 Credit Hours.
Prerequisite: Graduate standing or consent of instructor. In-depth study of current topics in applied mathematics. May be repeated for credit when topics vary. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 6603. Optimization Techniques in Operations Research. (3-0) 3 Credit Hours.
Prerequisite: MAT 1224 and MAT 2233 or CS 3333. Topics may include discrete, continuous, linear, and non-linear optimization, optimality conditions, Lagrange multipliers, duality theory, applications of linear programming in computer science and discrete optimization, gradient descent, Newton iteration (i.e., first and second order methods), and applications of first and second order methods to engineering. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 6953. Independent Study. (0-0) 3 Credit Hours.
Prerequisite: Graduate standing and permission in writing (form available) from the instructor and the student's Graduate Advisor of Record. Independent reading, research, discussion, and/or writing under the direction of a faculty member. For students needing specialized work not normally or not often available as part of the regular course offerings. May be repeated for credit, but not more than 6 hours, regardless of discipline, will apply to the Master's degree. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 6961. Comprehensive Examination. (0-0) 1 Credit Hour.
Prerequisite: Approval of the appropriate graduate program committee to take the Comprehensive Examination. Independent study course for the purpose of taking the Comprehensive Examination. May be repeated as many times as approved by the Graduate Program Committee. Enrollment is required each term in which the Comprehensive Examination is taken if no other courses are being taken that term. The grade report for the course is either "CR" (satisfactory performance on the Comprehensive Examination) or "NC" (unsatisfactory performance on the Comprehensive Examination). This course has Differential Tuition. Course Fee: GS01 $30.

MAT 6963. Topics in Mathematics Education. (3-0) 3 Credit Hours.
Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. This course may be repeated for credit when topics vary but not more than 9 hours may be applied toward the Master's degree. This course may not be applied toward the Master of Science degree in Mathematics with a concentration in Mathematics. This course has Differential Tuition. Course Fee: DL01 $75; GS01 $90; MFSM $35.

MAT 6973. Special Problems. (3-0) 3 Credit Hours.
Prerequisite: Consent of instructor. An organized course offering the opportunity for specialized study not normally or not often available as part of the regular course offerings. Special Problems courses may be repeated for credit when topics vary, but not more than 6 hours, regardless of discipline, will apply to the Master's degree. This course has Differential Tuition. Course Fee: GS01 $90.

MAT 6983. Master's Thesis. (0-0) 3 Credit Hours.
Prerequisite: Permission from the Graduate Advisor of Record and thesis director. Thesis research and preparation. May be repeated for credit, but not more than 6 hours will apply to the Master's degree. Credit will be awarded upon completion of the thesis. Enrollment is required each term in which the thesis is in progress. This course has Differential Tuition. Course Fee: GS01 $90.