MATH, GRADUATE (MG)

MG 5010 Seminar in Mathematics Education (1-4)
The topic for the course is selected by the professor from current developments and issues in mathematics education, such as Mathematics for Exceptional Children, Piaget’s Research, Mathematics Assessment, and Algebra in the K-12 Curriculum. Course may be repeated on a different topic with permission of the department chair.

MG 5320 Middle/Secondary Pedagogy for Number, Quantity, and Algebra (4)
This course focuses on algebraic thinking and concepts central to the Common Core State Standards in Mathematics [CCSSM]. Specifically, the mathematical content of the course aligns with the CCSSM standards (gr. 5-12) in number, quantity, and algebra. Classroom activities explore this mathematical content and the Standards for Mathematical Practice in CCSSM deepening students’ understanding. The activities also demonstrate how mathematical practices can be integrated in the everyday learning experiences of every student. Building on this knowledge students design lesson plans to achieve clear content and process objectives. Classroom discussions focus on thinking processes, mathematical concepts, habits of mind, conceptual understanding, and dispositions that students need in order to develop a deep, flexible, and enduring understanding of mathematics.

MG 5330 Middle/Secondary Pedagogy for Functions and Modeling (4)
This course focuses on functions and modeling concepts central to the Common Core State Standards in Mathematics [CCSSM]. Specifically, the mathematical content of the course aligns with the CCSSM standards (gr. 5-12) in functions and modeling. Students will develop conceptual understanding and confidence working with functions and modeling. Activities are designed to demonstrate how the Standards for Mathematical Practice in CCSSM can be integrated in the everyday learning experiences of every student. Class discussions are centered on thinking processes, habits of mind, conceptual understanding, and dispositions that students need in order to develop a deep, flexible, and enduring understanding of mathematics.

MG 5340 Middle/Secondary Pedagogy for Geometry (4)
This course focuses on Euclidean geometry concepts central to the Common Core State Standards in Mathematics [CCSSM]. The mathematical content of the course aligns with the CCSSM standards (gr. 5-12) in geometry. Students will develop conceptual understanding of geometric properties and relationships, applying and analyzing concepts, procedures, and proofs. Activities are designed to demonstrate how the Standards for Mathematical Practice in CCSSM can be integrated in the everyday learning experiences of every student. Class discussions are centered on thinking processes, habits of mind, conceptual understanding, and dispositions that students need in order to develop a deep, flexible, and enduring understanding of mathematics.

MG 5350 Middle/Secondary Pedagogy for Statistics and Probability (4)
This course focuses on statistics and probability concepts central to the Common Core State Standards in Mathematics [CCSSM]. The mathematical content of the course aligns with the CCSSM standards (gr. 5-12) in statistics and probability. Students will develop conceptual understanding and fluency in statistical concepts, data analysis, and probability. Activities are designed to demonstrate how the Standards for Mathematical Practice in CCSSM can be integrated in the everyday learning experiences of every student. Class discussions are centered on thinking processes, habits of mind, conceptual understanding, and dispositions that students need in order to develop a deep, flexible, and enduring understanding of mathematics.

MG 5360 Topics in Mathematics for Elementary/Middle School Teachers (1-4)
Topics for this course can vary, but may focus on one or more of the following ideas: problem solving, logic and proof, set theory and Venn diagrams, calculus notions, number systems, and mathematical modeling. A standard text on the topic will be used when appropriate. Students may repeat the course with a different topic as its focus with the permission of the department chair.

MG 5840 Topics in Geometry for Middle/Secondary School Teachers (2-4)
Topics for this course can vary, but may focus on one or more of the following: history of Euclidean and non-Euclidean geometry, Euclidean geometries, non-Euclidean geometries, Euclidean geometries in the plane, polyhedra, analytic and transformational geometry, projective geometry, fractals, geometry in the real world, and topology. Investigations may use computer software and Internet resources. Students may repeat the course with a different topic as its focus with the permission of the department chair.

MG 5860 Topics in Mathematics for Middle/Secondary School Teachers (1-4)
Topics for this course can vary, but may focus on one or more of the following ideas: problem solving, logic and proof, set theory and Venn diagrams, topology, real analysis, complex analysis and mathematical modeling. Standard text on the topic will be used when appropriate. Students may repeat the course with a different topic as its focus with the permission of the department chair.

MG 5910 Independent Study (1-4)
An individual study project determined to be of value to students and the Mathematics Department. Students present a talk concerning some portion of their study to a department colloquium during the term. Consent of a faculty supervisor and department chair is required.

MG 5960 Mathematics Teaching Internship (1-9)
This course is the culminating field-based teaching experience for teacher certification students in the Master of Education (MEd) in mathematics or Post Baccalaureate, Middle or Secondary Education programs. Students must have completed early field-based experiences and all coursework for the certification, including any required undergraduate competencies, before taking this course. Teacher candidates pursuing an internship will gradually assume responsibility for a full range of teaching activities encountered in a school situation. Internship provides an opportunity for demonstrating the appropriate professional skills, attitudes and dispositions essential for successful teaching. The teaching field experience is conducted under the supervisory guidance of mentor teacher and university supervisor. An online seminar compliments the experience. Certification candidates who are not pursuing the M.Ed. must have submitted passing scores on the Core Academic Skills for Educators before enrolling. All candidates who will be required to take Praxis II for NH Certification must make arrangements for that testing independently. Prerequisite(s): Completion of all other program requirements for certification by the beginning of the internship semester; permission of the Coordinator of Teacher Certification and Clinical Experiences; and Mathematics Department Program Coordinator.