Note: Students may use 3 hours of MATH for Foundations Curriculum (FC) credit and for the concentrations.

The Mathematics Concentrations are administered by the Department of Mathematics, Science, and Instructional Technology Education (MSITE). Although students who use the concentrations are advised in other departments, MSITE is ready to assist students with questions about the concentrations (prestonr@ecu.edu or 252-328-9355).

Middle grades education majors should use the 24-hour concentration. Students in business or vocational education, elementary education, health education, or physical education do an 18-hour concentration, but can opt to do the 24-hour version.

24-Hour Concentration
MATE 1267. Functional Relationships (3)
MATE 2067. Data and Probability Explorations (3)
MATE 3067. Algebra and Number Foundations (3)
MATE 3167. Geometry and Measurement (3)
MATE 3267. Concepts in Discrete Mathematics (3)
MATE 3367. Mathematical Modeling (3)
MATH 1065. College Algebra (3)
MATH 2119. Elements of Calculus (3)

18-Hour Concentration
MATE 1267. Functional Relationships (3)
MATE 2067. Data and Probability Explorations (3)
MATE 3067. Algebra and Number Foundations (3)
MATE 3167. Geometry and Measurement (3)
MATE 3267. Concepts in Discrete Mathematics (3)
MATH 1065. College Algebra (3)

Diagram of the General and Specific Mathematics Content for the Mathematics Concentrations
(Arrows Indicate Pre-Requisites)
Courses for Mathematics Concentrations

MATE 1267. Functional Relationships (3) (S) P: MATH 1065 or equivalent. Problem-solving approach to the study of functions for teachers. Study includes polynomial, exponential, logarithmic, logistic, and trigonometric functions from multiple representations, particularly using visual technology and making real-world applications. Applications taken from K-12 mathematics.

MATE 2067. Data and Probability Explorations (3) (F) (S) P: MATH 1065 or equivalent. Conceptual development and exploration of notions in data analysis and probability for teachers. Collection, organization, representation, and analysis of data from experiments and surveys. Probabilistic analysis for the purposes of judging claims and making decisions. Applications taken from K-12 mathematics.

MATE 3067. Algebra and Number Foundations (3) (F) (S) P: MATH 1065 or equivalent. Problem-solving development of important concepts in number and algebra for teachers. Focus on properties of integers, rationals, and real numbers; properties of linear, quadratic, and cubic functions; multiple representations (physical models, graphs, equations, tables) of relations, functions, equations, and inequalities. Applications taken from K-12 mathematics.

MATE 3167. Geometry and Measurement (3) (F) (S) P: MATH 1065 or equivalent. Tool-based development of important concepts in Euclidean geometry and measurement for teachers. Focus on inductive reasoning, deductive reasoning, and informal and formal proof. Use of tools (technology and instruments) to explore issues in measurement. Applications taken from K-12 mathematics.


MATH 1065. College Algebra (3) (F,S,SS) FC:MA May not be taken by students who have credit for MATH 1085. P: Appropriate score on math placement test. Topics include sets; linear, quadratic, polynomial, and exponential functions; inequalities; permutations; combinations; binomial theorem; and mathematical induction.

MATH 2119. Elements of Calculus (3) (F,S,SS) (FC:MA) May not receive credit for MATH 2119 after having received credit for a higher numbered calculus course. P: MATH 1065 with minimum grade of C. Elementary differentiation and integration techniques. Proofs not emphasized.