Major Work of NC Local Option Math II

High School	
Major Clusters	**Supporting/Additional Clusters**

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The Real Number System • Extend the properties of exponents to rational exponents. **Quantities** • Reason quantitatively and use units to solve problems. **Seeing the Structure in Expressions** • Interpret the structure of expressions. • Write expressions in equivalent forms to solve problems. **Arithmetic with Polynomials and Rational Expressions** • Understand the relationship between zeros and factors of polynomials. **Creating Equations** • Create equations that describe numbers or relationships. **Reasoning with Equations and Inequalities** • Understand solving equations as a process of reasoning and explain the reasoning. • Represent and solve equations and inequalities graphically. **Interpreting Functions** • Understand the concept of a function and understand function notation. • Interpret functions that arise in applications in terms of the context. • Analyze functions using different representations.	**Arithmetic with Polynomials and Rational Expressions** • Perform arithmetic operations on polynomials. **Reasoning with Equations and Inequalities** • Solve equations and inequalities in one variable. • Solve systems of equations. **Building Functions** • Build new functions from existing functions. **Congruence** • Experiment with transformations in the plane. • Understand congruence in terms of rigid motions. • Make geometric constructions. **Similarity, Right Triangles, and Trigonometry** • Apply trigonometry to general triangles. **Expressing Geometric Properties with Equations** • Translate between the geometric description and the equation for a conic section. (Here because of circles.)

Building Functions

- Build a function that models a relationship between two quantities.

Congruence

- Prove geometric theorems.

Similarity, Right Triangles, and Trigonometry

- Define trigonometric ratios and solve problems involving right triangles.

Modeling with Geometry

- Apply geometric concepts in modeling situations.

Making Inferences and Justifying Conclusions

- Make inferences and justify conclusions from sample surveys, experiments, and observational studies.

Geometric Measurement and Dimension

- Visualize relationships between two-dimensional and three-dimensional objects.

Making Inferences and Justifying Conclusions

- Understand and evaluate random processes underlying statistical experiments.

Conditional Probability and the Rules of Probability

- Understand independence and conditional probability and use them to interpret data.
- Use the rules of probability to compute probabilities of compound events in a uniform probability model.