

# Graduate Certificate in Teaching Secondary Education (9-12) Mathematics

## Required courses

- MDSK 6162:** Planning for K-12 Teaching (3)  
**READ 5255:** Integrating Reading and Writing in the Content Areas (3)  
**EDUC 5100:** Diverse Learners (3)  
**SECD 5140:** The Secondary School Experience (3)  
**MAED 5070:** Teaching Mathematics to Secondary School Learners

## Final course

- MDSK 6161:** Analysis of K-12 Teaching (3)

This final course is a full time student teaching internship requiring employment as a secondary math teacher in an approved high school or a non-paid placement with a licensed math teacher in a public high school. It requires application and approval during the semester prior to the internship.

## Additional requirements for licensure

Other specific background courses in your content discipline, if applicable – See background requirements below

Technology portfolio

## Applying for the teaching license

Application for NC Standard Professional I license to be filed in TEAL Office, with all appropriate forms regarding completion of coursework, technology portfolio, and internship

## Looking ahead

You may wish to apply to the Master of Arts in Teaching (MAT) in Secondary Education at the completion of the Graduate Certificate program: <http://www.unc.edu/gradmiss/index.asp> . All your coursework for the Graduate Certificate will be applied toward the requirements for that degree. Completion of the master's degree leads to the advanced "M" teaching license and a 10% pay raise.

## Secondary Mathematics (9-12) Background Requirements

### Option A: For candidates with a major in mathematics

Candidates following this option must have an undergraduate or graduate major in mathematics. The mathematics major typically involves coursework that meets most of the competencies for teaching secondary mathematics. However, one particular area needed for teaching is often not required of mathematics majors, as shown below

The GPA for background requirements must be at least a 2.5, and no courses may be presented for licensure with grades lower than a C.

#### Required competencies typically met by the math degree:

- Number sense, numeration, and numerical operation (concrete algebraic systems and applications)
- Spatial sense, measurement, and geometry
- Patterns, relationships, functions, symbols, and models: *Calculus*
- Data, probability, and statistics
- Processes of problem solving, reasoning and proof

#### Required competency often not met by the math degree:

Competency Area	Course requirement and UNC Charlotte example	Candidate's course	Grade
Patterns, relationships, functions, symbols and models: <i>Abstract Algebra</i>	<i>A course focused on abstract algebra, e.g.,</i>  MATH 3163: Intro. To Modern Algebra		

## Secondary Mathematics (9-12) Background Requirements

### Option B: For candidates without a major in mathematics

Candidates with degrees in other fields must build to the equivalent of a major in mathematics (24 hours) and present coursework for the competencies noted below. The GPA for background requirements must be at least a 2.5, and no courses may be presented for licensure with grades lower than a C.

Competency Area	Course requirements and UNC Charlotte examples There must be at least one course in each cell unless otherwise noted	Candidate's courses	Grades	Plan for satisfying deficiencies*
Number sense, numeration, and numerical operation (Concrete algebraic systems and applications)	<i>Algebra above the introductory level, e.g.,</i> MATH 2164: Matrices and Linear Algebra			
Patterns, relationships, functions, symbols and models: <i>Abstract Algebra</i>	<i>A course focused on abstract algebra, e.g.,</i> MATH 3163: Intro. To Modern Algebra			
Spatial sense, measurement, and geometry	<i>One upper division course in geometry, e.g.,</i> MATH 3181: Fund. Concepts of Geometry <b>or</b> MAED 3105: Euclidean Geometry			
Patterns, relationships, functions, symbols and models: <i>Calculus</i>	<i>Calculus above the introductory level that covers series and sequences, e.g.,</i> MATH 1242: Calculus II			
Data, probability, and statistics	<i>Statistics course involving collecting, analyzing, displaying, and drawing conclusions from data, e.g.,</i> STAT 2122: Intro. to Probability and Statistics <b>or</b> MATH/STAT 3122: Probability and Statistics I			
Process skills: problem solving, reasoning, and proofs	<i>An upper division course emphasizing logic and proofs, e.g.,</i> MATH 3163: Intro. To Modern Algebra <b>or</b> MATH 3181: Fund. Concepts of Geometry			

**NOTE: Some courses on this list may have prerequisites.**

**NOTE: As you build up to the equivalent of a major in math (24 hours), you may wish to take prerequisites for the required courses above, or you may take MATH or STAT electives. One 3-hour MAED course may be counted in the 24 hours.**

**Remaining 6 - 9 hours of MATH courses to achieve total of 24:**

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