Candidates also complete a secondary education professional program. Endorsement courses require a cumulative GPA of 2.5 or better and a grade of C (2.0) or better for individual courses. Course substitutions must be clearly noted below.

### Chemistry and Mathematics (103 - 121 Credits)

- **Choose either:**
  - CHEM 161 - General Chemistry I (5)
  - CHEM 162 - General Chemistry II (5)
  - CHEM 163 - General Chemistry III (5)
  - CHEM 333 - Analytical Chemistry (5)
  **or**
  - CHEM 125 - General Chemistry I, Honors (5)
  - CHEM 126 - General Chemistry II, Honors (5)
  - CHEM 225 - General Chemistry III, Honors (5)
- **CHEM 461 - Physical Chemistry (4)**
- **CHEM 462 - Physical Chemistry (4)**
- **Choose either option A or B:**
  - **Option A:**
    - CHEM 251 - Elementary Organic Chemistry (5)
    - CHEM 375 - Elements of Biochemistry (4)
  - **Option B:**
    - CHEM 351 - Organic Chemistry (4)
    - CHEM 352 - Organic Chemistry (4)
    - CHEM 353 - Organic Chemistry (3)
    - CHEM 354 - Organic Chemistry Laboratory I and CHEM 375 – Elements of Biochemistry (4) **or**
    - CHEM 471 - Biochemistry I (4)
    - CHEM 472 - Biochemistry II (4)
    - CHEM 473 - Molecular Biology (3)
- **Choose either:**
  - MATH 124 - Calculus and Analytic Geometry I (5) and MATH 125 - Calculus and Analytic Geometry II (5)
  **OR**
  - MATH 134 - Calculus I Honors (5) and MATH 135 - Calculus II Honors (5)
  **OR**
  - MATH 138 - Accelerated Calculus (5)
- **Choose either:**
  - MATH 204 - Elementary Linear Algebra (4) & MATH 331 - Ordinary Differential Equations (4)
  **OR**
  - MATH 203 - Linear Algebra and Differential Equations I & MATH 303 - Linear Algebra and Differential Equations II (4)
  - MATH 224 - Multivariable Calculus and Geometry I (5)
  - MATH 309 - Introduction to Proof in Discrete Mathematics (4)
  - MATH 360 - Euclidean and Non-Euclidean Geometry (4)
  - MATH 419 - Historical Perspectives of Mathematics (3)
  - MATH 483 - Methods of Teaching Secondary Mathematics (4)
  - At least two of the following:
    - MATH 307 - Mathematical Computing (4)
    - MATH 341 - Probability and Statistical Inference (4)
    - MATH 410 - Mathematical Modeling (4)
    - PHYS 161 - Physics with Calculus I (5)
    - PHYS 162 - Physics with Calculus II (5)
    - PHYS 163 - Physics with Calculus III (5)
    - SCED 370 - Science and Society (3)
    - SCED 481 - Fundamentals of Teaching Science (2)
    - SCED 491 - Methods in Secondary Education for Science (5)
    - NES Chemistry Test Code 306
    - NES Mathematics Test Code 304

**Outstanding Courses:**

Authorized Signature / Date: August 2019