



ED.M. IN MATHEMATICS EDUCATION WITH INITIAL CERTIFICATION: MATHEMATICS K-12 TEACHING (4+1)

Revised Summer, 2024 -- For students earning a bachelor's degree in May, 2026 or later

*Students who complete this program successfully will receive an Ed.M. in Mathematics Education from the GSE as well as a nomination to the New Jersey Department of Education for a **Certificate of Eligibility with Advanced Standing (CEAS) in Mathematics (K-12)***

I. PROGRAM DESCRIPTION: The Ed.M. in Mathematics Education with initial certification program is designed for Rutgers undergraduate students who wish to teach mathematics in grades K-12. This program provides undergraduates with an opportunity to earn their bachelor's degree, a master's degree, and an initial teacher certification with just one additional year of study. Rutgers undergraduates do preliminary coursework as advised during the first three undergraduate years, including undergraduate coursework in mathematics or a closely related field. They are admitted to the program during the spring semester of junior year and enter the professional education sequence during senior year. After students are awarded a bachelor's degree by the undergraduate college, they continue with the professional sequence for a fifth year of full-time graduate study at the GSE.

Upon completion of all program requirements, students earn an Ed.M. in Mathematics Education and the GSE will make a nomination to the New Jersey Department of Education on behalf of the student to receive a Certificate of Eligibility with Advanced Standing (CEAS) in Teacher of Mathematics (K-12).

The Ed.M. in Mathematics Education with Initial Certification in Mathematics K-12 Teaching (4+1) program offers a range of foundational and specialized topics in mathematics education using a cohort model. Research-driven curriculum includes courses focused on the learning and teaching of mathematics, techniques and strategies for studying children's mathematical thinking, the uses of technology in mathematics teaching, and topics within mathematics itself.

In alignment with the GSE's mission, all teacher preparation programs and courses are designed to prepare teacher candidates to be culturally responsive practitioners and effectively teach diverse learners by fostering a deep understanding of students from historically underserved linguistic, economic, and cultural backgrounds and communities. Pedagogy courses aimed at meeting the specific learning needs of middle and high school students, along with carefully crafted internships under the guidance of experienced teachers and expert faculty providing feedback, ensure that candidates are well-prepared as teachers to advance equity and excellence in their content area.

II. MAJOR: Every candidate for certification in Mathematics Education must complete at least 30 credits in mathematics, computer science, and statistics. A minimum of twelve credits must be at the 300 or 400 level.

III. APPLICATION REQUIREMENTS: To be considered for admission to the program, applicants must provide the following before the application deadline:

1. Personal statement
2. One letter of recommendation
3. Official undergraduate transcripts - the New Jersey Department of Education requires a minimum GPA of 2.75 to be admitted to a teacher education program.

(NOTE: Praxis Core, SAT, GRE, ACT or other basic skills exams are no longer required as of January 1, 2025. Admission to the GSE Teacher Education Programs is competitive. Meeting the minimum requirements above does not guarantee admission.)

IV. HOW TO APPLY: Applications are submitted online at the Graduate Admissions website:

<https://newbrunswickgrad.rutgers.edu/>

1. Click on "Create Account or Login" and follow the instructions given.
2. Under "Start an application today!", click **Apply Now**
Application Selection
3. For "Level of Application", select **Graduate**
4. For "Applicant Type", select **Degree**
5. Continue filling out the application, following the on-screen instructions.
Program of Study
6. Under "Program Information", make sure **Degree** is selected for "Applicant Type"
7. For "Degree Type", select **Master's (e.g. MA, MS, EdM, MFA)**
8. For "Area of Study", select **Education**
9. For "Location/Instructional Method", select **New Brunswick**
10. For "Program Selection", select **Education - Mathematics - 5 Year (EDM) New Brunswick**
11. For "Term", select the summer semester after your May undergraduate graduation date.
12. Complete the rest of the application by providing the requested information.
13. Enter payment information for the non-refundable application fee.
14. Submit your application.

V. GENERAL EDUCATION REQUIREMENTS: Students must complete coursework in each of the following areas by completion of the program; fulfillment of these courses is not required for admission into the program. It is highly recommended that you coordinate the elements of this list with those of the general distribution requirements of your undergraduate college to make the most efficient use of your time. Courses should be selected in conjunction with the undergraduate program advisor.

Some of these requirements may be taken during the fifth year as a graduate elective as noted below.

| <u>General Education Requirements</u> | |
|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Math: two courses | (Follow SAS/SEBS Core Quantitative and Formal Reasoning requirement (QQ, QR)) |
| 2. Science: two courses | (Follow SAS/SEBS Core Natural Sciences requirement) |
| 3. Educational Technology | 15:254:548 Technology in Mathematics Teaching (taken in Phase 2) |
| 4. Human Development: one course | (Course may be used to fulfill one elective requirement if taken in the fifth year) 05:300:306 Educational Psychology: Principles of Classroom Learning or 05:300:307 Human Development: Birth Through the Transition to Adulthood |

VI. PRE-ADMISSION REQUIREMENTS

| Course Number | Course Name |
|---------------------------------------------------------------------------|---------------------------------------------------------|
| (May be taken during Phase 1 or Phase 2 with advisor's permission) | |
| 05:300:368 | Introduction to Teaching in Urban Schools & Communities |

VII. PROFESSIONAL EDUCATION REQUIREMENTS

| Course Number | Course Name | Credits |
|-------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| Phase 1 Summer (0 credits) | | |
| n/a | Working with Minors | 0 |
| n/a | School Law | 0 |
| Phase 1 Fall 1 (10 credits) | | |
| 05:300:498 | Clinical Experience Phase 1 | 1.0 |
| 15:253:512 | Teaching Emerging Bilinguals in PK-12 Classrooms | 3.0 |
| 05:300:442 or 15:254:550 | Mathematical Practices: Doing and Teaching Mathematics or Problem Solving Processes in Mathematics | 3.0 |
| 05:300:341 | High School Mathematics Content: Teaching and Assessment | 3.0 |
| Phase 2 Spring 1 (12 credits) | | |
| 05:300:499 | Clinical Practice Phase 2 | 3.0 |
| 15:293:534 | Classroom Organization for Inclusive and Special Classrooms | 3.0 |
| 15:254:548 | Technology in Mathematics Teaching | 3.0 |
| 05:300:443 | Methods of Teaching and Assessing in Secondary Mathematics | 3.0 |
| | Undergraduate Total: | 22.0 |
| Phase 3 Summer 2 (3 credits) | | |
| | Elective | 3.0 |
| Phase 3 Fall 2 (12 credits) | | |
| 15:255:535 | Clinical Practice Phase 3 | 9.0 |
| 15:255:532 | Clinical Practice Phase 3 Seminar | 3.0 |
| Phase 4 Spring 2 (15 credits) | | |
| 15:255:539 or 15:253:522 or 15:253:523 or 15:253:539 or 15:293:539 or 05:300:406 ^G | Students, Communities, and Social Justice or Bilingual-Bicultural Education or Language and Culture or Methods of Teaching and Assessing English Language Learners (TELL) or Students with Disabilities, Schools, and Social Justice or Community-Based Language Learning (CBLL) | 3.0 |
| 15:293:523 | Inclusive Teaching in Education | 3.0 |
| 15:254:540 or Elective | Understanding School-Aged Students Mathematical Learning or <i>Substitute with an elective course to be determined by program faculty</i> | 3.0 |
| 15:254:551 or Elective | Critical Thinking and Reasoning in Mathematics or <i>Substitute with an elective course to be determined by program faculty</i> | 3.0 |
| | Elective | 3.0 |
| | Graduate Total: | 30.0 |
| | TOTAL CREDITS: | 52.0 |

^G Course must be 300-level or above to count towards graduate credits. 300- and 400-level courses must be registered with a **G-prefix**.

Additional Program Completion Requirements

VIII. PRAXIS II TESTS: Students seeking certification in mathematics must achieve a passing score on the Mathematics: Content Knowledge Praxis II examination (code 5165). **Students must pass the Praxis II prior to the start of full-time Clinical Practice Phase 3.**

IX. PERFORMANCE-BASED ASSESSMENT (PBA): All candidates must pass a designated performance-based assessment during Clinical Practice Phase 3.

X. PHYSIOLOGY, HYGIENE, AND SUBSTANCE ABUSE ISSUES: The Office of Student and Academic Services administers this New Jersey Department of Education exam during the final semester of the program.

New Jersey Certification Options

| Bilingual/Bicultural Teacher | English as a Second Language | Bilingual/Bicultural & ESL | Teacher of Students with Disabilities |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12 credits - ONLINE | 15 credits - ONLINE | 18 credits - ONLINE | 21 credits - ONLINE |
| 15:253:522 Bilingual-Bicultural Ed | | 15:253:522 Bilingual-Bicultural Ed | 15:293:533 Assessment and Measurement for Special Education |
| 15:253:520 Principles of Language Learning: Second and World Language Acquisition | 15:253:520 Principles of Language Learning: Second and World Language Acquisition | 15:253:520 Principles of Language Learning: Second and World Language Acquisition | 15:293:523 Inclusive Teaching in Education OR 05:300:304 Art Across the Curriculum in Inclusive Classrooms (FALL 2025 & AFTER) |
| 15:253:530 (or 15:299:535) Foundations of Language | 15:253:530 (or 15:299:535) Foundations of Language | 15:253:530 (or 15:299:535) Foundations of Language | 15:251:558 Reading & Teaching in the Social Studies with Diverse Literature or 15:299:516 Language Across Content Areas: Upper Elementary and Middle School |
| 15:253:512 AND 15:253:513 Teaching Emerging Bilinguals | 15:253:512 AND 15:253:513 Teaching Emerging Bilinguals | 15:253:512 AND 15:253:513 Teaching Emerging Bilinguals | 15:293:580 Literacy for Students with Disabilities |
| | 15:253:539 Methods for Teaching and Assessing English Language Learners | 15:253:539 Methods for Teaching and Assessing English Language Learners | 15:293:522 Learning Disabilities OR 15:293:545 Characteristics & Methods for High Incidence Disabilities |
| | 15:253:523 Language and Culture | 15:253:523 Language and Culture | 15:293:534 Classroom Organization for Inclusive and Special Classrooms |
| Demonstrated proficiency in an additional language required | Demonstrated proficiency in English required | Demonstrated proficiency in English and an additional language required | 05:300:383/15:293:583 Introduction to Special Education OR 15:293:539 Students with Disabilities, Schools & Social Justice |

Rutgers Professional Certificate Options

| Educational Technology | Gifted Education | Maker Education | Consider starting an additional state licensure program and/or a Rutgers certificate program while working on your master's degree requirements. In consultation with your advisor, you may consider taking courses from these areas in place of your graduate-level elective(s). * |
|--------------------------------------------------------|----------------------------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 9 credits - ONLINE | 12 credits - ONLINE | 15 credits - ONLINE | |
| 15:255:503 Introduction to Teaching with Digital Tools | 15:294:531 (OR 05:300:320) The Gifted Child | 15:290:553 Developing a Maker Mindset | |
| 15:255:504 Web-Based Multimedia Design for Educators | 15:294:532 (or 05:300:322) The Social & Emotional Development of Gifted Children | 15:290:554 Designing/Facilitating Maker-Centered Learning Environments | |
| 15:255:506 Developing Digital e-Learning Environments | 15:294:533 Curriculum & Instruction for the Gifted | 15:290:556 Introduction to Design Thinking | |
| | 15:294:534 Gifted Program Development | 15:290:555 Makerspace Safety and Emergency Lab | |
| | | 15:290:559 Maker Education Capstone | |

You must complete an application form and obtain a signature from your faculty advisor prior to the final semester of the program. The application forms are available in the Office of Student and Academic Services or by emailing Colleen McDermott at: colleen.mcdermott@gse.rutgers.edu. Some programs require licensure exams for admission and/or certification recommendation.

These programs do not lead to a degree of any kind.

It is your responsibility to enroll in all of the required courses through Rutgers University. No program requirements may be met at any other institution. You are expected to maintain a "B" or better average in the non-degree coursework.

After completing all program requirements, students should contact Ken Tufo at: ken.tufo@gse.rutgers.edu. Students will be provided instructions on how to apply for their license(s). Please note that you cannot obtain an advanced certification until you complete the initial teacher certification. After completing all of the required courses in a GSE graduate certificate program, please contact Colleen McDermott to obtain your completion certificate.

*Not all courses are available to students enrolled in a 4+1 program during their senior year.

It may not be possible to complete these programs until after you earn your master's degree. Please email ken.tufo@gse.rutgers.edu for specifics.