



ED.M. WITH INITIAL LICENSURE IN PHYSICS AND/OR PHYSICAL SCIENCE K-12 TEACHING (POST-BACCALAUREATE)

Revised Summer, 2024

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

I. PROGRAM DESCRIPTION: The Ed.M. with Initial Licensure in Physics/ Physical Science K-12 Teaching (Post-Bacc) is designed for individuals who have completed a bachelor's degree, or 30 credits in physics and/or physical science or a closely related discipline, and wish to become highly qualified physics and/or physical science teachers. Students in this program must complete required general education and science coursework. Once admitted to the program, students enter a professional education sequence to prepare them as teachers of physics and/or physical science

Upon completion of program requirements, students earn an Ed.M. in Science Education and the GSE will make a recommendation to the New Jersey State Department of Education on behalf of the student to receive a Certificate of Eligibility with Advanced Standing (CEAS) as a teacher of Physics and/or Physical Science K-12.

The Ed.M. with Initial Licensure in Physics and/or Physical Science K-12 Teaching (Post-Bacc) offers a range of foundational and specialized topics in physics and/or physical science education using a cohort model. These topics are designed to help students deepen their understanding of the learning and teaching of physics and physical science, with a focus on inquiry-based teaching that is aligned with the Next Generation Science Standards (NGSS).

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. SUBJECT MATTER SPECIALIZATION: Before teacher certification can be recommended, students must complete at least 30 credits in a physical science (either physics or chemistry). Every candidate for certification in Physical Science Education must complete a minimum of 30 credits in either chemistry or physics, and at least 15 credits in the other subject. Candidates for certification in Physics Education need only complete a minimum of 30 credits in physics. The courses should be distributed evenly among different fields within the

discipline. Physics coursework should include mechanics, electricity and magnetism, thermodynamics, optics, atomic and nuclear physics. Chemistry coursework should include organic and non-organic chemistry, physical chemistry, and quantum chemistry. At least 12 credits in one physical science must be taken at the 300 or 400 level. Students should consult with their advisor to determine if additional coursework in a physical science is required.

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:

<http://gradstudy.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 - Science - Certification (EDM) New Brunswick**
Program Details
11. For "First Preference Concentration", select **Physics/Physical Science Certification**. (2nd and 3rd preferences can be left blank.)
12. For "Term", select the summer semester after your May undergraduate graduation date.
13. Complete the rest of the application by providing the requested information.
14. Enter payment information for the non-refundable application fee.
15. 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.

Some of these requirements may be used as a graduate elective as noted below.

General Education Requirements	
1. Educational Technology	15:256:562 Demonstrations and Technology in Physics (take in Phase 4)
2. Human Development: one course	(Course may be used to fulfill one elective requirement)
	05:300:306 Educational Psychology: Principles of Classroom Learning or
	05:300:307 Human Development: Birth Through the Transition to Adulthood

VI. ADDITIONAL PROGRAM REQUIREMENTS (3 credits, take in Phase 1 or 2)

Course Number	Course Name	Credits
15:255:568 or 05:300:368 ^G	Introduction to Teaching in Urban Schools & Communities	3.0

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 (7 credits)		
15:255:530	Clinical Experience Phase 1	1.0
15:253:512	Teaching Emerging Bilinguals in PK-12 Classrooms	3.0
15:256:551	Physics/Physical Science: Development of Ideas in Physical Science	3.0
Phase 2 Spring 1 (9 credits)		
15:255:531	Clinical Practice Phase 2	3.0
15:293:534	Classroom Organization for Inclusive and Special Classrooms	3.0
15:256:552	Physics/Physical Science: Teaching and Assessment in Physical Science	3.0

Course Number	Course Name	Credits
Phase 3 Summer 2 (0 credits)		
	N/A	
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 (12 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
15:256:562	Demonstrations and Technology in Physics	3.0
	Elective	3.0
TOTAL CREDITS:		43.0

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

Additional Program Completion Requirements

VIII. PRAXIS II TESTS: Students seeking certification in physical sciences must achieve passing scores on the Chemistry: Content Knowledge (test code 0245/5245), Physics: Content Knowledge (test code 0265/5265), and General Science: Content Knowledge (test code 0435/5435) Praxis II examinations. Students seeking certification in physics alone must pass the Physics: Content Knowledge and General Science: Content Knowledge Praxis II examinations. **Students must pass all required tests 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	Preschool through Grade 3
12 credits - ONLINE	15 credits - ONLINE	18 credits - ONLINE	21 credits - ONLINE	24 credits
15:253:522 Bilingual-Bicultural Ed	15:253:523 Language and Culture	15:253:522 Bilingual-Bicultural Ed	05:300:383 Intro to Special Ed	05:300:304 Art Across the Curriculum
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	05:300:410 Learning and Development in a Social Context: Preschool and Primary Years
15:253:530 Foundations of Language	15:253:530 Foundations of Language	15:253:530 Foundations of Language	15:299:516 Literacy Development in the Elementary and Middle School	15:251:574 Integrated Curriculum with Young Children
05:300:452 and 05:300:453 Teaching Emerging Bilinguals in PK-12 Classrooms 1 and 2	05:300:452 and 05:300:453 Teaching Emerging Bilinguals in PK-12 Classrooms 1 and 2	05:300:452 and 05:300:453 Teaching Emerging Bilinguals in PK-12 Classrooms 1 and 2	05:300:480 Literacy for Students with Disabilities	15:251:581 Early Childhood Curriculum and Assessment
	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	15:253:540 or 15:255:539 Teaching English Language Learners or Students, Communities, and Social Justice
		15:253:523 Language and Culture	15:293:533 Assessment and Measurement for Special Education	15:295:521 Child, Family, and Community: Relationships in Development
			15:293:534 Classroom Organization for Inclusive and Special Classrooms	15:295:522 Cognition and Language Birth to Age 8: Normal Development and Implications for Risk and Disability
<i>Demonstrated proficiency in an additional language required</i>	<i>Demonstrated proficiency in English required</i>	<i>Demonstrated proficiency in English and an additional language required</i>	<i>Not available to students in ESL-only programs</i>	15:299:514 Literacy Development in the Early Years

Rutgers Professional Certificate Options

Educational Technology	Gifted Education	Maker Education
9 credits - ONLINE	15 credits - ONLINE	15 credits
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 Environment	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
	15:294:535 Clinical Placement and Practicum	15:290:559 Maker Education Capstone

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).*

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 Marie Pavelchak at: marie.pavelchak@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 of the required courses in a NJ certification program, you should contact Ken Tufo in the Office of Student and Academic Services for instructions on applying for the state endorsement. Please note that you cannot obtain an endorsement until you complete the initial teacher certification. After completing all of the required courses in a GSE certificate program, you contact Marie Pavelchak to obtain your completion certificate.

*Not all courses are available to five-year students during their senior year. You may not be able to complete these programs until after you earn your master's degree. Please email ken.tufo@gse.rutgers.edu for specifics.