RUTGERS–NEW BRUNSWICK
Graduate School of Education

Advancing Excellence and Equity in Education

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ED.M. IN SCIENCE EDUCATION WITH INITIAL CERTIFICATION: PHYSICS AND/OR PHYSICAL SCIENCE K-12 TEACHING (TWO-YEAR MASTER'S)

Revised Summer, 2024

Students who complete this program successfully will receive an Ed.M. in Science 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 Physics (K-12)*** *and/or* ***Physical Science (K-12)***

I. PROGRAM DESCRIPTION: The Ed.M. in Science Education with Physics and/or Physical Science initial certification program is designed for individuals who have completed a bachelor's degree, 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 the 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 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 Physics and/or Physical Science (K-12).

The Ed.M. in Science Education with Physics and/or Physical Science initial certification program 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 students can be nominated for teacher certification, they 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: 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 - 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[1]	Introduction to Teaching in Urban Schools & Communities[1]	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	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	Teaching and Assessment in Physical Science	3.0

[1] Students who completed 05:300:368 as an undergraduate do not need to repeat the course, but a 300-level course is required to replace the required 3 graduate credits.

PROFESSIONAL EDUCATION REQUIREMENTS (continued)

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 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.