

## **BIOLOGICAL SCIENCE EDUCATION (K-12)**

### **Five-Year Teacher Education Program**

Revised August, 2016 -- For students earning a bachelor's degree in May, 2018 or later

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 **Teacher of Biological Science (K-12) Certificate of Eligibility with Advanced Standing (CEAS)**.

- I. PROGRAM DESCRIPTION:** The five-year teacher education program in biological science education (K-12) leads to a bachelor's degree, a master's degree, and initial teacher certification in science education. Rutgers undergraduates do preliminary coursework and field placements as assigned during the sophomore and junior years, are admitted to the program during the spring semester of the junior year, and enter the professional education sequence in the summer between junior and senior years. Students then qualify to have their bachelor's degree awarded by the undergraduate liberal arts college.

Students continue with the professional sequence the summer after graduation. They return in the fall to complete a student-teaching internship with related coursework and continue with full-time graduate study, including a field-based research project, in the spring. The Ed.M. degree is conferred upon the completion of all five-year program requirements.

After the master's degree is awarded, the GSE will make a recommendation to the New Jersey State Department of Education on behalf of the student to receive a CEAS as a teacher.

The program has four major goals:

1. To help students develop a view of science as a knowledge building enterprise and understand the scientific practices associated with scientific inquiry.
2. To help students learn pedagogical content knowledge of biological sciences, i.e., content specific teaching methods in these disciplines.
3. To familiarize students with current state and national standards in life science education.
4. To provide students with the knowledge and skills of integrating technology into biological science instruction.

- II. MAJOR:** Every candidate for certification in Biological Science Education must complete a full major in a life science (animal science, biotechnology, biological science, cell biology and neuroscience, ecology and natural resources, environmental science [life science option], food science, genetics and microbiology, marine science [life science option], molecular biology, nutritional sciences, plant science, physiology). Regardless of the major chosen, at least 30 credits of coursework in the life sciences must be included.

- III. APPLICATION REQUIREMENTS:** To be considered for admission to the program, applicants must provide the following before the February 1<sup>st</sup> deadline:

1. Personal statement
2. Three letters of recommendation
3. Passing Praxis Core test scores
  - a. **or**, minimum SAT scores of: 610 Reading & Writing or 30 Reading, 570 Math
  - b. **or**, minimum ACT scores of: 23 English, 23 Math
  - c. **or**, minimum GRE scores of: 155 Verbal, 156 Quantitative(Any test scores submitted must be less than five years old at the time of the application deadline. Scores must be official, not self-reported.)

Praxis Core – see [ets.org/praxis/about/core](https://ets.org/praxis/about/core)  
Combined test code: 5752  
Reading: 5713, minimum score 156/200  
Writing: 5723, minimum score 162/200  
Math: 5733, minimum score 150/200

- 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: 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/>

- Click on "Create Account or Login" and follow the instructions given.
- Under "Start an application today!", click **Apply Now**  
Application Selection
- For "Level of Application", select **Graduate**
- For "Applicant Type", select **Degree**
- Continue filling out the application, following the on-screen instructions.  
Program of Study
- Under "Program Information", make sure **Degree** is selected for "Applicant Type"
- For "Degree Type", select **Master's (e.g. MA, MS, EdM, MFA)**
- For "Area of Study", select **Education**
- For "Location/Instructional Method", select **New Brunswick**
- For "Program Selection", select **Education - Science - 5 Year (EDM) New Brunswick**  
Program Details
- For "First Preference Concentration", select **Biological Science Certification**. (2nd and 3rd preferences can be left blank.)
- For "Term", select the summer semester after your May undergraduate graduation date.
- Complete the rest of the application by providing the requested information.
- Enter payment information for the non-refundable application fee.
- 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.

<u>General Education Requirements</u>	<u>Course Number—Course Title—Term/Year—Grade</u>
<b>1. Math: two courses</b> Follow SAS Core Quantitative and Formal Reasoning requirement (QQ, QR)	<b>1a.</b> _____ <b>1b.</b> _____
<b>2. Science: two courses</b> Follow SAS Core Natural Science requirement	<b>2a.</b> _____ <b>2b.</b> _____
<b>3. Educational Technology: one course</b> 05:300:462 Demonstrations and Technology in Science Teaching (see professional sequence Phase 4 below)	<b>3.</b> _____
<b>4. Human Development: one course</b> 05:300:307 Human Development: Birth through the Transition to Adulthood	<b>4.</b> _____

**VI. LIBERAL ARTS:** Students must complete a minimum of **60 credits** in liberal arts to earn the master's degree. Neither Education courses, nor any other performance-based or vocationally-oriented coursework (accounting, engineering, human resource management, public health, social work, etc.) may be counted toward the 60 liberal arts credits; no School 05, School 15, or E-credit courses may be included.

**VII. PROFESSIONAL EDUCATION REQUIREMENTS: Biological Science Education Five Year Teacher Education Program**

Phase/ Semester	Course Number	Course Name	Credits		
			Under- grad	Grad	Total
Pre- Admission Sophomore or Junior Year	05:300:200	Introduction to Education	3		6.5
	05:300:201	Introduction to Education Field Based Lab - Clinical Experience	.5		
	05:300:306	Educational Psychology: Principles of Classroom Learning	3		
Phase 1 Summer before Senior Year	n/a	Working with Minors Online Training	NC		0
	n/a	School Law Module	NC		
Phase 1 Senior Fall	05:300:498	Clinical Experience Phase 1	.5		6.5
	05:300:450	Urban Education 1	1.5		
	05:300:452	Teaching Emerging Bilinguals in PK-12 Classrooms 1	1.5		
	11:300:450	Biology and Society	3		
Phase 2 Senior Spring	05:300:499	Clinical Practice Phase 2	4		10
	05:300:451	Urban Education 2	1.5		
	05:300:453	Teaching Emerging Bilinguals in PK-12 Classrooms 2	1.5		
	11:300:453	Teaching Life Science <b>or</b>	3		
	15:256:553	Teaching and Assessment in Life Science			
Phase 3 Fifth Year Summer	15:293:534	Classroom Organization for Inclusive and Special Classrooms		3	6
	Grad level <sup>G</sup>	Elective		3	
Phase 3 Fifth Year Fall	15:255:535	Clinical Practice Phase 3		9	15
	15:255:532	Clinical Practice Phase 3 Seminar		6	
Phase 4 Fifth Year Spring	05:300:406 <sup>G</sup>	Community-Based Language Learning; <b>or</b> Teaching English Language Learners; <b>or</b> Students, Communities, and Social Justice		3	12
	15:253:540				
	15:255:539				
	05:300:462 <sup>G</sup>	Demonstrations and Technology in Science Teaching (Biology)		3	
	15:293:523	Inclusive Teaching in Education		3	
	Grad level <sup>G</sup>	Elective		3	
<b>Total Credits</b>			20	36	56

<sup>G</sup> 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**.

**VIII. PORTFOLIO:** Students will archive artifacts from various GSE courses via an online instructional and evaluation system as directed by faculty. Details of this portfolio are specified in the *Student Policy and Procedures Handbook*.

**IX. GSE COMMUNITY-SCHOOL PARTNERSHIP NETWORK (GSE-CSPN):** All field experiences will take place in a GSE-CSPN school.

**X. HIB TRAINING:** All candidates for teacher certification must complete pre-service training in the prevention of harassment, intimidation, and bullying (HIB) prior to Clinical Practice II.

**XI. PRAXIS II TESTS:** Students seeking certification in biological sciences must achieve passing scores on the Biology: Content Knowledge (test code 0235/5235) and General Science: Content Knowledge (test code 0435/5435) Praxis II examinations. **Students must pass both tests prior to the start of full-time Clinical Practice Phase 3.**

- XII. edTPA PERFORMANCE BASED ASSESSMENT:** Students must pass a performance based assessment of their teaching practice during the full-time Clinical Practice II semester. Details of this assessment are specified in the *Student Policy and Procedures Handbook*.
- XIII. 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.