

ED.M. PROGRAM IN SCIENCE EDUCATION

- I. PROGRAM DESCRIPTION:** The master's degree program in Science Education is designed for individuals who possess a baccalaureate degree from an accredited institution of higher education and who wish to pursue a master's degree in education.

The overall goal of this 30-credit program is to help students identify and characterize their aims for the degree, as well as their future plans in using the knowledge and practices gained from the degree. The program will thus be individually crafted to suit each student's personal goals for the degree. We anticipate the following four overarching categories of goals:

1. To expand and deepen understanding of the science knowledge and science learning.
2. To improve professional practice in formal or informal settings.
3. To develop knowledge of current research and theory related to science instruction in formal or informal settings through analysis and synthesis of seminal work in the field.
4. To develop a plan for future learning and professional development.

II. APPLICATION DEADLINES:

Fall admission - February 1 deadline

Spring admission - November 1 deadline

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

1. Personal statement
2. Three letters of recommendation
3. Current Graduate Record Exam (GRE) scores
(Any test scores submitted must be less than 5 years old as of the application deadline. Scores must be official, not self-reported.)
4. Undergraduate and graduate transcripts

Only complete applications will be reviewed.

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

<http://gradstudy.rutgers.edu/>

1. Click on "Apply Now" and follow the instructions given.
2. Choose "Degree Application", for Application Type.
3. For Program Name choose "Education: Science" from the drop down menu.
4. Across from "Education: Science 15256", click the link for the semester you want to apply for.
5. Complete the application by providing the requested information.
6. Supporting materials must be submitted online or mailed to the Graduate Admissions office at Office of Graduate and Professional Admissions (New Brunswick), Rutgers, The State University of New Jersey, 56 College Avenue, New Brunswick, NJ 08901-8530.
7. Enter payment information for the non-refundable application fee.
8. Submit your application and authorize payment for the non-refundable application fee.

V. PROFESSIONAL EDUCATION REQUIREMENTS:

	Course Number	Course Name	Credits	
			Grad	Total
Science Education				
Select 5 courses from this group	05:300:462 ^G	Demonstration and Technology in Science Teaching	3	15
	15:256:550	Biology and Society	3	
	15:256:551	Development of Ideas in Physical Science	3	
	15:256:552	Teaching and Assessment in Physical Science	3	
	15:256:553	Teaching and Assessment in Life Science	3	
	15:256:555	Research Internship in Science Education	3	
	15:256:556	Understanding Evolution: A Classroom Perspective	3	
	15:256:557	Multiple Representations in Physical Science	3	
	15:256:591	Topics in Science Education (Learning in Informal Contexts)	3	
	15:256:654	Science Education Practicum	3	
	15:262:603	Design of Learning Environments	3	
	15:262:612	Inquiry and the Design of Learning Environments	3	
15:295:518	Motivation in the Classroom	3		
Cognitive and Instructional Psychology				
Select 2 courses from this group	15:295:502	Cognition and Memory	3	6
	15:295:510	Cooperative and Collaborative Learning	3	
	15:295:550	Learning through Problem Solving	3	
	15:295:611	Memory Systems and Processes	3	
	16:300:695	Topics in Educational Psychology: Validity and Assessment	3	
Electives	Grad Level	Course selection must be approved by advisor	9	9
Total Credits				30

^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**.

VI. PORTFOLIO: To provide evidence of the achievement of the goals the student and faculty jointly set for the degree the student will create a portfolio with the following components:

- a. Section #1 is the introductory section that reiterates the goals of the author in pursuing the degree.
- b. Section #2 discusses how each course and other relevant experiences (such as internships) have promoted the goal/s set, and what the author has learned and taken away from these experiences.
- c. Section #3 provides relevant artifacts that demonstrate changes in knowledge, beliefs, and practice related to the set goals. These artifacts can come from course work or other activities.
- d. Section # 4 describes a “future directions” plan that identifies areas for improvement, knowledge of professional development opportunities in the science education relevant to the set goals, and concrete steps that you plan to take.

The portfolio should demonstrate deep knowledge of core topics (as related to the goals), and ability to synthesize and analyze research in science education.

Tentative schedule for completing portfolio requirements and suggestions for successful completion:

1. A draft of Section 1 should be completed by the end of the first semester, approved by the advisor and then continuously revised as the student progresses through the program.
2. As the student progresses through the program she/he should keep a journal that addresses Sections 2 and 3 of the portfolio. The student should collect relevant artifacts and meet with the advisor at least once each semester to discuss artifacts and reflect on the connection of the courses work to the portfolio requirements.
3. When the student is completing the last semester in the program she/he needs to develop professional development plan to address section 4 of the portfolio and schedule a meeting with the advisor for portfolio hearing and evaluation.

Portfolio creation is an ongoing iterative process in which both the student and the advisor are expected to take active roles. The portfolio sections will be stored electronically both on the hard drive of the students and the advisor. In addition, completed portfolios will be stored for a period of 5 years on the departmental server.

The following rubrics should help students create and maintain the portfolio.

Section of the Portfolio	Emerging	Needs Improvement	Satisfactory
Section #1	The goals are generic	The goals are defined and personalized but not justified	The goals are clearly defined, personalized and justified
Section #2	The relationship between the courses and goals is not articulated	Some courses are missing or the discussion of the relation between course and goals is incomplete	All goals are discussed with respect to the goals and the evidence of attainment is provided
Section #3	Insufficient artifacts are provided and there is a lack of connection to the goals	Artifacts are provided but not explained or linked to the goals	Artifacts are provided, explained and linked to the goals
Section #4	The plan is vague	The plan is in place but lacks clear justification	The plan for improvement and growth is clearly articulated and well justified

Every two years program faculty will meet to discuss the ways in which the current program meets or falls short of meeting the program goals. Based on the discussion the program will be revised.

VII. PROGRAM FACULTY:

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