SCIENCE/PHYSICS EDUCATION: PREPARATION (7-12), MS

Contact

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Faculty

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Description

A master's degree program in science/physics education is available for those with no education background seeking New York State teacher certification for grades 7-12 (preparation program). Our certification programs combine multiple clinically rich field experiences with campus-based coursework emphasizing theoretical and practical knowledge in research-based science teaching and learning. For decades, science education at Syracuse University has been a national leader in promoting science literacy by advancing the knowledge base for effective science teaching and learning at all levels of education. We are well known for our commitment to both components of a seamless tradition: student-centered science teaching and cutting-edge research in pursuit of effective educational practices. We subscribe to the guiding principles that underlie the Next Generation Science Standards::

1. children are born investigators;
2. teaching science means students use core scientific ideas and practices;
3. students' understanding develops over time;
4. science requires both knowledge and practice;
5. science education should connect students' interest and experiences;
6. all students should be provided with equitable opportunities to learn science and become engaged in science practices.

The program prepares students to become science educators in 21st century classrooms, who are proficient in five areas:

- Critical reflection and explanations of practice.
- Content knowledge.
- Inclusive and culturally relevant pedagogy.
- Assessment of student learning and development of scientific literacy.
- Professional conduct and collaboration.

The 35-credit M.S. in Science/Physics Education, in combination with the science credits described below, meets the academic requirements for New York State initial teacher certification in Physics 7-12. Graduates of the program may receive institutional recommendation as completing an approved program for this certificate. There are also application, tests, and other requirements.

Student Learning Outcomes

1. Acquire knowledge of each student, and demonstrate knowledge of student development and learning to promote achievement for all students.
2. Know the content they are responsible for teaching, and plan instruction that ensures growth and achievement for all students.
3. Implement instruction that engages and challenges all students to meet or exceed the learning standards.
4. Work with all students to create a dynamic learning environment that supports achievement and growth.
5. Use multiple measures to assess and document student growth, evaluate instructional effectiveness, and modify instruction.
6. Demonstrate professional responsibility and engage relevant stakeholders to maximize student growth, development, and learning
7. Set informed goals and strive for continuous professional growth

Master's Degree Course Requirements

This full-time program begins in May (summer session) only, and may be completed in 13-15 months. Thirty-five credits are required. However, students who enter with education study equivalent to one of the courses below may have their syllabi reviewed for waiver of courses. In no case will fewer than 30 graduate credits be required.

(courses with * include field experience)

Entering Summer		**Credits**
EDU 606	Understanding Learning and Teaching (*)	4
RED 625	Literacy Across the Curriculum (*)	4
Select one of the following:		3
SCE 718	Curriculum Problems in Science	
Science Education Course		
	Credits	**11**
Fall - Candidacy Semester		
SCE 613	Methods and Curriculum in Teaching Science	3
SPE 612	Adapting Instruction for Diverse Student Needs	3
EDU 508	Student Teaching	3
Safe and Healthy Learning Environments (0 credit), which includes the following topics: Identifying/reporting child abuse, violence prevention, child abduction prevention, highway/general safety, alcohol/drug/tobacco prevention, fire and arson prevention, and training related to the Dignity for All Students (DASA) Act.		
	Credits	**9**
Spring - Standard Student Teaching Semester		
EDU 508	Student Teaching (*)	6
	Credits	**6**
Summer 2		
SCE 614		3
ELL 645	Issues in Educating English Language Learners	3
	Credits	**6**
	Total Credits	**32**

Intensive Examination

A master's degree intensive examination is also required.

Physics Content Requirements

In addition to the graduate courses listed above, this program requires either an undergraduate degree in Physics or a degree in another area with 30 hours of Physics content. Typically, a 3.0 average in these courses is required.

It is expected that students will enter the program with most of these requirements completed. Students who do not complete all of the requirements cannot be recommended for certification.

Also Required

Workshops in violence prevention, child abuse and abduction, substance abuse, the Dignity for All Students Act (DASA), and school and fire safety.

As a culminating experience, students complete a portfolio demonstrating evidence of professional competence.