

Master of Arts in Teaching Physics

For an admission application to the Master of Arts in Teaching degree program and details about admission requirements (<https://www.stonybrook.edu/commcms/spd/graduate/matscience>) or contact the School of Professional Development at (631) 632-7055.

Please note that all Masters students seeking physics teacher certification must earn the equivalent of the Stony Brook B.S. in physics degree and meet additional science competency requirements by taking the equivalents of the following courses: BIO201/204, CHE131/133 and either GEO102/112 or AST101/112. For details, see the Physics Education Advisor.

The MAT in physics requires 15 credits in appropriate physics courses, chosen in consultation with the Physics Education Advisor, including PHY515 and PHY570. Since a major in physics is required for entry into the program, entering students will already have some knowledge of all areas of physics. MAT students can therefore pursue their interests in selecting specialized courses that extend their content knowledge. MAT students most frequently select from the courses listed below. In addition there are many other graduate courses in physics from which an MAT student could also choose if they have the appropriate quantitative background. The graduate course descriptions can be viewed at the physics department website: www.physics.sunysb.edu/physics

A. Physics Courses:

Required courses:

- PHY 515 Methods of Experimental Research
- PHY 570 Introductory Physics Revisited for Teachers

Recommended Courses:

- PHY 514 Current Research Instruments
- PHY 571 Electromagnetic Theory for Teachers
- PHY 573 Mechanics for Teachers
- PHY 576 Thermodynamics and Statistical Mechanics for Teachers
- PHY 578 Quantum Physics for Teachers
- PHY 579 Special Topics for Teachers
- PHY 580 Special Research Projects
- PHY 582 Optics Rotation
- PHY 585 Special Study
- PHY 600 Practicum in Teaching

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B. Required Professional Studies in Education Courses (29 credits):

- CEE 505 Education: Theory and Practice
- CEE 565 Human Development
- CEE 594 Language Acquisition and Literacy Development
- CEF 547 Principles and Practices of Special Education
- SCI 510 Introduction to Science Teaching (Methods of Teaching 1)
- SCI 549 Science Field Experience I (co-requisite SCI 510)
- SCI 520 Science Instructional Strategies & Techniques (Methods of Teaching 2)
- SCI 550 Science Field Experience II (co-requisite SCI 520)
- SCI 551 Supervised Student Teaching 10 – 12**
- SCI 552 Supervised Student Teaching 7 – 9**
- SCI 554 Student Teaching Seminar**

**** Note:** Prior to admission to student teaching, candidates will be interviewed by a committee to assess their ability to speak extemporaneously about both physics concepts and pedagogical issues. Candidates who are not successful in this interview will be counseled in order to remedy deficiencies. Upon completion of the remediation another interview will be held. In the event that a candidate is unable to satisfy the interview component, the candidate will not advance to student teaching.

75 days of student teaching are required. Dependent on the semester and public school vacation schedules, student teaching may extend beyond the university semester calendar. Student teaching is divided into two placements of approximately equal duration, one in a middle school/junior high school and the other in a high school.

C. Field Experience:

Field Experience sites for all teacher candidates are arranged through SCI 549 and SCI 550. Assignments and details are distributed in SCI 510 and SCI 520. New York State requires 100 hours of field experience in secondary schools prior to student teaching. Each teacher candidate is required to obtain 15 hours of field experience that includes a focus on understanding the needs of students with disabilities. These hours will be noted on the Field Experience Time Sheets from SCI 549, SCI 550, or a combination of both. In earning these field experience hours, teacher candidates will be encouraged to observe inclusion (integrated co-teaching) classes in their certification area and other special education classroom situations as available

D. State Tests, Mandated Seminars and Fingerprinting:

- All teacher candidates must be fingerprinted during SCI 510.
- Prior to student teaching, candidates must complete five mandated seminars, *Training in Child Abuse Recognition, Substance Abuse Education, School Violence and Intervention*, and *Dignity for All Students* (DASA). For details and to register for the seminars on campus, see <http://www.sunysb.edu/spd/career/tworkshops.html>.

New York State examinations required for teacher certification are:

- Educating All Students Test (EAS)
- Content Specialty Test (CST) in physics [Note: It is a program requirement that candidates with a score lower than 220 on any sub-section of the CST must pass an alternate exam on the concepts of that section which will be administered by departmental faculty.]
- Teacher Performance Assessment (edTPA) - This is a portfolio assessment that is prepared during student teaching.

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- For further information about the NYSTCE testing program, visit their website at <http://www.nystce.nesinc.com/>.

It is recommended that candidates take the EAS upon completion of CEF 547 and CEE 594, and take the CST during SCI 510. The edTPA will be completed during the SCI 554 semester.

E. Language Requirement:

New York State certification requires at least one year (6 credits) of college level study of a foreign language (or completion of SBU's SBC LANG foreign language graduation requirement).

F. Professional Portfolio:

The Professional Portfolio is presented and defended at the conclusion of student teaching. It includes many performance indicators of standards-based teaching competencies.

G. General Science Certification:

In order to qualify for the General Science (grade 7 – 12) certification, candidates must complete a minimum of 18 semester hours (undergrad or grad) in two or more sciences other than physics.

H. Middle Level Extension

Candidates who wish to qualify to teach grades 5 and 6 in a middle school setting may obtain an extension to their grades 7-12 certification by completing two additional courses prior to graduation. The courses are: CEE 601 Early Adolescent Development and CEE 602 Middle Child Education-Instruction. More information about these courses can be found on the SPD website (www.stonybrook.edu/spd).