Master of Arts in Teaching Physics

For an admission application to the Master of Arts in Teaching degree program, contact the School of Professional Development at (631) 632-7055, or download an application from www.sunysb.edu/spd.

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 all undergraduate physics teacher preparation program requirements. 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, our entering students 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 the following courses listed below. In addition there are 29 other graduate courses in physics among which an MAT student could also choose if they have the appropriate quantitative background. The graduate course descriptions can be viewed at the physics website: http://www.physics.sunysb.edu/physics.

A. Physics Courses

Required courses:
- PHY 515 Methods of Experimental Research I
- PHY 570 Introductory Physics Revisited for Teachers

Recommended Courses:
- 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 501 Classical Mechanics
- PHY 505/506 Classical Electrodynamics
- PHY 511/512 Quantum Mechanics
- PHY 514 Current Research Instruments
- PHY 516 Methods of Experimental Research II
- PHY 521 Stars
- PHY 522 Interstellar Medium
- PHY 523 Galaxies
- PHY 524 Cosmology
- PHY 580 Special Research Projects
- PHY 582 Optics Rotation
- PHY 585 Special Study
Professional Education Requirements

B. Interdisciplinary Seminar Series:
The Nature of Science and the Human Endeavor (4 sessions, 0 credits).
See advisor for each semester’s schedule.

C. Required Professional Studies in Education Courses:
CEE 505 Education: Theory and Practice
CEE 565 Human Development
LIN 544 Language Acquisition and Literacy Development
SCI 510 Pedagogy and Methods in Science Education I
SCI 549 Field Experience I (co-requisite SCI 510)
SCI 520 Pedagogy and Methods in Science Education II
SCI 550 Field Experience II (co-requisite SCI 520)
SCI 551 Supervised Student Teaching 7 – 9**
SCI 552 Supervised Student Teaching 10 – 12**
SCI 554 Student Teaching Seminar

** Note: 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.

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. Students 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 student is unable to satisfy the interview component, the student will not advance to student teaching until this requirement is satisfied.

D. 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 partnership schools prior to student teaching

E. State Tests, Mandated Seminars and Fingerprinting:
All students must earn a passing grade on the Liberal Arts and Sciences Test (LAST) component of the New York State Teacher Certification Exams (NYSTCE) prior to student teaching. Before completing the program, students must not only pass the Content Specialty Test (CST) in physics, they must score at least 220 on all sections of the exam. Students with scores lower than 220 on any section of the CST must pass an alternate exam on the concepts of that section administered by the content Physics Education Advisor. The Assessment of Teaching Skills, Written (ATS-W) is also required prior to certification. For further information about the NYSTCE program, contact the School of Professional Development at 631-632-7055 or visit their website at www.sunysb.edu/spd.

All students must be fingerprinted and complete three mandated seminars, Training in Child Abuse Recognition, Substance Abuse Education, and School Violence and Intervention, prior to student teaching. (See http://www.sunysb.edu/spd/career/tworkshops.html for details.)
F. Language Requirement:
New York State certification requires at least one year of college level study of a foreign language.

G. 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 and a Master’s essay.