

MASTERS OF SCIENCE-EDUCATION: PHYSICS ALTERNATIVE CERTIFICATION: TRANSITIONAL B CERTIFICATE

This program is designed to fulfill SED regulation 52.21(b)(3)(xvii). This is an alternative teacher certification program that will allow the participant to teach with a transitional B certificate in Physics 7-12 while finishing the requirements for initial certification in Physics 7-12 and General Science 7-12

Admissions Requirements:

1. Bachelor's degree in physics or related area from an accredited four-year institution.
2. Cumulative undergraduate GPA of 3.0 (on a 4 point scale) or approval of the department chair.
3. A minimum total of 18 credit hours in two sciences other than physics (may be completed during the program if not met at time of admission).
4. One year of college study or two years of high school study of a language other than English (may be completed during the program if not met at time of admission)
5. Passing scores on two New York State examinations: Liberal Arts and Science Test (LAST) and the Physics Content Specialty Test (CST).
6. An application packet including a personal statement and three letters of reference. Interview may be required.

(Note: these admission requirements are mandated in the Transitional B regulations)

Exceptional Education and Educational Foundations (6 cr)

EXE 633 Adapting Content Area Instruction for Children and Adolescents With Disabilities
EDF 529 Adolescent Psychology

Literacy (6 cr)

Choose one of the following two courses:

EDU 416 Teaching Literacy in Middle and Secondary Schools

EDU 609 Improving reading in the content areas

Required:

EDU 417 Adolescent Literacy

Physics Teaching Methods (6 cr)

PHY 510 (Revised) Process Skills in Physics Teaching (6 cr)
(with 40 hours field experience in physics classrooms grade 7-12)

Physics Content with Model Pedagogy (12 cr)

PHY 620 (new) Powerful Ideas And Quantitative Modeling: Force, Motion and Energy (6cr)

PHY 622 (new) Powerful Ideas And Quantitative Modeling: Electricity and Magnetism (6cr)

Electives (6 cr)

PHY 518 (revised) Wave Phenomena and Optics
PHY 520 (revised) Modern Physics
PHY 525 Nuclear and Particle Physics
PHY 616 Advanced Dynamics
PHY 618 Advanced Electricity and Magnetism I
SCI 527 Current Topics in Science
SCI 685 Evaluation in Science Education
SCI 632 Curricular Trends in Science Teaching in the Secondary School
SCI 664 Teaching Science with Media
Or other courses by advisement

Seminar (3 cr)

PHY 500 (revised) Physics Education Research Seminar

Mentored Physics Teaching

The alternative certification B students will be supervised by a college supervisor a minimum of once a month while they are teaching as required by NYSED regulation 52.21(b)(3)(xvii). This supervision will include observations, meetings with the school mentor and school supervisor, and planning.

Project (3 cr)

PHY 690 Research Project

Total required credits: 42 cr

This table specifies how the NY SED regulations for initial teacher certification

Specific Requirement from SED	Program Elements																				
Pedagogical Knowledge, understanding, and skills																					
	<table border="1"> <tr> <td data-bbox="266 338 829 369">Human Development</td> <td data-bbox="829 338 1360 369">EDF 529</td> </tr> <tr> <td data-bbox="266 369 829 459">Learning Processes Motivation, Communication, and Classroom management</td> <td data-bbox="829 369 1360 459">PHY 510 PHY 620 PHY 622</td> </tr> <tr> <td data-bbox="266 459 829 522">The nature of students within the full range of disabilities and special health</td> <td data-bbox="829 459 1360 522">EXE 633</td> </tr> <tr> <td data-bbox="266 522 829 585">Language acquisition and literacy development</td> <td data-bbox="829 522 1360 585">EDU 416 EDU 609</td> </tr> <tr> <td data-bbox="266 585 829 676">Instructional Strategies</td> <td data-bbox="829 585 1360 676">PHY 510 PHY 620 PHY 622</td> </tr> <tr> <td data-bbox="266 676 829 766">Technology</td> <td data-bbox="829 676 1360 766">PHY 510 PHY 620 PHY 622</td> </tr> <tr> <td data-bbox="266 766 829 863">Assessing students learning and ones own teaching</td> <td data-bbox="829 766 1360 863">PHY 510 PHY 500 PHY 690</td> </tr> <tr> <td data-bbox="266 863 829 953">History, Philosophy, role of Education</td> <td data-bbox="829 863 1360 953">PHY 510 PHY 500 EDF 529</td> </tr> <tr> <td data-bbox="266 953 829 1016">Means to update skills</td> <td data-bbox="829 953 1360 1016">PHY 500 PHY 690</td> </tr> <tr> <td data-bbox="266 1016 829 1052">Child abuse, Violence, SAFE, ...</td> <td data-bbox="829 1016 1360 1052">Seminars</td> </tr> </table>	Human Development	EDF 529	Learning Processes Motivation, Communication, and Classroom management	PHY 510 PHY 620 PHY 622	The nature of students within the full range of disabilities and special health	EXE 633	Language acquisition and literacy development	EDU 416 EDU 609	Instructional Strategies	PHY 510 PHY 620 PHY 622	Technology	PHY 510 PHY 620 PHY 622	Assessing students learning and ones own teaching	PHY 510 PHY 500 PHY 690	History, Philosophy, role of Education	PHY 510 PHY 500 EDF 529	Means to update skills	PHY 500 PHY 690	Child abuse, Violence, SAFE, ...	Seminars
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Field Experiences: Practica and student teaching	Supervised field placement																				