This academic Program Study Guide has been developed to assist you in planning your course of study at Teachers College. Below you will find the Study Guide for the program to which you have been admitted.

We hope this Study Guide provides a helpful introduction and orientation to your program. Given the richness and complexity of graduate and professional programs at Teachers College, these Study Guides are intended to be illustrative, rather than definitive. The TC Catalog, for the year in which you were admitted, is available online (http://catalog.tc.columbia.edu/tc/) and remains the official reference document for College policies and program requirements and, if applicable, the appropriate doctoral requirements bulletin.

Congratulations, again, on your admission to graduate study at Teachers College, Columbia University!
Pre-Service Secondary Science Education M.A.

- Biology 7-12  Major Code: SCIB INIT
- Chemistry 7-12 Major Code: SCIC INIT
- Earth Science 7-12 Major Code: SCIE INIT
- Physics 7-12  Major Code: SCIP INIT

Brief Program Description

The M.A. Pre-Service program in Science Education provides students with opportunities to study science education theory, the discipline of science (including its histories, philosophies, and epistemologies), and professional education. It also provides students with opportunities to merge these studies with intensive field experiences through field-based assignments, courses, and student teaching experiences. The Pre-Service M.A. program in science education is a 36-point program. Upon its completion students earn both an M.A. degree and a New York State initial license to teach Chemistry or Biology or Physics or Earth Science in grades seven through twelve.

Science Education Program Faculty

Below are the faculty members, including their areas of expertise:

**Professor O. Roger Anderson:** MST Department Chair; Biology content and curriculum research including the application of cognitive theory to science teaching and learning. Prof. Anderson also holds a joint appointment at Columbia University as a Senior Research Scientist (Biology). E-mail: ora@LDEO.columbia.edu.

**Dr. Jessica Riccio:** Pre-service Science Education Coordinator and Student Teaching Coordinator; Biology content, and interests in literacy, and an emphasis on teacher education, teacher supervision across all content areas. E-mail: Riccio@tc.columbia.edu.

**Professor Felicia Moore Mensah:** Science Education Program Coordinator; Biology content, elementary science teaching, and the application of social constructivist theory and cognate theories to urban science education and science teacher education. E-mail: fm2140@tc.columbia.edu.

**Professor Ann Rivet:** Earth and physical science content, with an emphasis on the application of cognitive science and learning theory to curriculum development and implementation in urban schools. E-mail: rivet@tc.columbia.edu
Professor Chris Emdin: Physical Science and chemistry content and research on urban science education with a focus on the dynamics of the social, scientific, and group processes that enhance science teaching and learning. E-mail: Emdin@tc.columbia.edu

Minimum Point Requirement
The minimum point requirement for the Pre-Service M.A. in Science Education with NY State Initial Certification is 36 points. See Appendix II for Advising Checklist and Course Guidelines.

Prerequisite Requirements
1. A baccalaureate degree in one of the sciences. If students do not possess a baccalaureate degree in science, then students are required to have a bachelor’s degree plus at least a B+ average in courses within science. These courses must amount to a minimum of 30 credits in the science (Biology, Chemistry, Physics, and Earth Science), which they choose to seek NY State licensure in.
2. One course of college study of a spoken language other than English or the equivalent, or a passing score on a recognized language proficiency test (CLEP).
3. If students enter the program without having met the prerequisite requirement, they must fulfill them before graduation. If they are not fulfilled, students will still earn an M.A. degree, but they will not receive a New York State initial license. Students may meet these prerequisites while enrolled in the M.A. program; however, these courses cannot be applied to the M.A. degree.

Prerequisite Requirements
• Bachelors Degree
• 30 credits in the science area of certification
• One course in a foreign language¹ (see footnotes, last page)

M.A. Degree Course Requirements

1. Science Education Methods (9 points)
   Required Courses:
   MSTC 4000: Science in the secondary school
   Certification area specific courses:
   Methods courses in your area(s) of certification
   (Two courses, one for the middle school level, one for the high school level)
   • MSTC 4040: Science in childhood education methods (elementary emphasis)
   • MSTC 4041: Science in childhood education curriculum lab (elementary emphasis)
   • MSTC 4044: Biology methods and curriculum laboratory
   • MSTC 4045: Earth science methods and curriculum laboratory
   • MSTC 4046: Chemistry curriculum and methods laboratory
   • MSTC 4047: Physical science curriculum and methods laboratory
   • MSTC 4048: Structure of science knowledge and curriculum design
   • MSTC 4049: Middle school living environment methods laboratory
   • MSTC 5046: Advanced chemistry methods and curriculum laboratory
2. Field Experience (9 points)
   Required Courses:
   MSTC 4363: Introduction to science education practice
   MSTC 4761: Student teaching in science

3. Professional Education (9 points)
   Required Courses:
   Literacy, Special Education and an Elective
   Students must take at least 3 courses of professional education. You may not take
   more than one course in any given area for this requirement without explicit
   permission. These courses must be from three of the following areas:

   Literacy (3 points)
   HBSK 5099 Writing Interventions Theory and Practice Applications

   Special Education (3 points)
   Introduction to Special Education Course

   Elective (3 points)
   From the following areas:
   Philosophy, ethics or history of education
   Sociology, economics, or politics of education
   Curriculum and teaching
   Human cognition, adolescent or cognitive development
   Educational assessment
   Urban education

4. Science Disciplinary Courses (6 points)
   Students may select content courses from Teachers College, Columbia University,
   or Barnard College. Courses from Columbia University or Barnard College must
   be at the graduate level. Students may, in some cases, be allowed to enroll in a
   3000 (undergraduate) level course if they receive written assurance from the
   course professor that extra work will be performed to make the course equivalent
   to a graduate level course.

   Students should select courses in their area of licensure as well as other areas.
   The State of New York requires teachers to have an additional 18 credits of
   coursework in your minor area(s) of science if you desire a second area of
   certification. You may want to use your content requirement to obtain a second
   or third area of certification.

5. Equity in Science Education (3 points)
   MSTC 4007: Urban and multicultural science education
Breadth Requirement
These are courses which you are required to take out of the department. Please see “Professional Education,” Section 3, Appendix II.

Statement on Integrative Project, Comprehensive Exam or Formal Essay Requirement
In order to graduate from the program all students must complete a Master’s Portfolio as the graduation requirement. The portfolio project is assigned during your field experiences during the course MSTC 4761, Student Teaching in Science Education. In addition this must be highlighted on the Intend to Graduate form, which is due early in the semester that you plan to graduate. Please see the Academic Calendar for these deadlines.

Student Teaching/Fieldwork/Practicum/Internship Requirements and Information
Fieldwork for this degree is based on 2 student teaching placements you will complete. One will be for 100 hours in a middle school and one will be for 100 hours in a high school while you are enrolled in MSTC 4761. School placements are made at the end of the Fall Term when you take MSTC 4000.

Other Program Requirements (such as grade requirements and other special degree requirements)

1. **BEFORE student teaching:**
   ___ Download Student Teaching Packet from www.tc.edu/ote or pick up at Zankel, Room 411
   ___ Take Tuberculin Tine (TB/PPD) test before student teaching (valid for 1 calendar year)
   ___ Get fingerprinted
   ___ Register online with New York City at www.teachnyc.net as a student teacher
   ___ Obtain a “Clearance Letter” from the Office of Teacher Education (OTE) after completing all of the above

2. requirements in order to be allowed to start student teaching

3. **For BOTH placements:**
   ___ Track the number of hours at the school site on the time sheet
   ___ Submit “Record of Hours” and “Placement Diversity Report” form to OTE

4. Obtain Fingerprint Clearance (if not done so already) Please see “Fingerprint Info Sheet” for more details
   ___ Go to NYDOE in Brooklyn or to a MorphoTrust location (starting Aug. 3, 2015)
   ___ Send your fingerprints to the State level by filling out the OSPRA 104 form (only applicable to people who were fingerprinted in Brooklyn through NYDOE)

5. **Take 3 Workshops**
   ___ Child Abuse and Identification and Reporting Training (Unless you have taken HBSS 4116)
   ___ School Violence Intervention and Prevention Training (Unless you have taken HBSS 4116)
6. Meet Liberal Arts credit requirements in following subjects (if not done so already) ___ English, Mathematics, Science, Social Science, and Foreign Language

7. Take 4 New York State Exams for Initial Certification

8. Registration and preparation guides are available at: www.nystce.nesinc.com and at www.edtpa.com (for the edTPA)
   ___ edTPA (Teacher Performance Assessment) (Unless you already hold an initial certificate from New York State)

9. Special Note: A passing score on the ATS-W exam will be accepted toward certification if you did not obtain a passing score on the edTPA between 5/1/14-6/30/16. ___ Academic Literacy Skills Test (ALST)
   ___ Educating All Students Test (EAS)
   ___ Revised Content Specialty Test (CST) (Check NYSED website for which test)
   (The previous CST will be accepted)


11. Apply for a teaching certificate via the NYSED (State) TEACH system (Different from NYC TEACH) ___ Go to http://www.highered.nysed.gov/tecert/

12. Submit Institutional Recommendation Data Form (IRDF)
   ___ Fill out Institutional Recommendation Data Form and submit to Zankel, 411 along with:

13. ___ All official undergraduate and other non-TC transcripts sealed in original envelopes
   ___ Child Abuse workshop form and school violence prevention workshop certificates unless HBSS

14. 4116 was taken at TC (if not done so already) ___ Proof of Dignity Act (DASA) training

15. Completion of Science Safety Workshop included in MSTC 4761.
16. Completion of a Master’s Essay (Master’s Portfolio of Teaching).

Statement on Master’s Essay Requirement
If a student does not complete the master’s portfolio up to the minimum standards reflected in the rubric provided in MSTC 4761, graduation requirements will not be met.

Certification and/or Licensure Requirements and Information
Each student must complete and fill out a TEACH account in coordination with the Office of Teacher Education in order to fulfill NYS teaching certification before you graduate. As part of NY certification requirements you must pass the required certification tests. For more details contact the Office of Teacher Education (411 Zankel; 212-678-3502; http://www.tc.columbia.edu/ote/)² (see footnotes, last page).

Revised: AY15-16
Special Requirements for Professional Education Programs under NCATE Review

Completion of the following assignments is required.

a. Curriculum union plan I and II
b. Teacher as researcher project
c. Master’s portfolio
d. Safety workshop
e. Student Teaching Mentoring Logs
f. Science Experiment Experience Record

Transfer Credit Evaluation
By College policy, no transfer credit is permitted. (see footnotes, last page)

Statement on Satisfactory Progress and Academic Performance

Students are expected to make satisfactory progress toward the completion of degree requirements. Program faculty will annually review each student’s progress. Where there are concerns about satisfactory progress, students will be informed by the program faculty. If a student is performing below expectations he/she may be required to complete additional course work. The program will provide a plan and timeline for remediation so students know the expectation for them to continue in the program. If satisfactory progress is not maintained a student may be dismissed from the program. For additional information about Academic Performance, please refer to Degree Requirements in the TC Catalog.

An average grade of B or better is expected for satisfactory completion of the degree. According to College policy, no more than 3 points of C- may be credited toward any degree or diploma. Students completing requirements for more than one degree or diploma may count 3 points of C- toward only one such award. A student who accumulates 8 points or more in C- or lower grades will not be permitted to continue study at the College and will not be awarded a degree or diploma. Please see the statement on policy of grades at Teachers College. (URL: http://catalog.tc.columbia.edu/tc/catalogdetail/policiesproceduresdocuments/grades/)

Standard Policies and Practices of the College

Services for Students with Disabilities: The College will make reasonable accommodations for persons with documented disabilities. Students are encouraged to contact the Office of Access and Services for Individuals with Disabilities for information about registration (163 Thorndike Hall). Services are available only to students who are registered and submit appropriate documentation.

Statement on Academic Conduct: A Teachers College student is expected to refrain from any conduct, including cheating, plagiarizing, or purchasing documents submitted for academic evaluation, that calls into question his/her academic and/or professional probity. Decisions regarding academic evaluation in all aspects of students’ work at the college, including course work, certification examinations, clinical or field experiences, and preparation of dissertations, are within the sole jurisdiction of the faculty concerned, including as appropriate, the department or program staff members.
Disciplinary actions (e.g., reprimand, suspension, or dismissal) in cases of academic misconduct can be imposed by the Vice Provost or the Committee on Student Conduct.

Resolution of Student Academic Program Concerns: Any student who has a concern regarding an academic matter may seek assistance. The procedure for resolving academic program concerns (see note of grade correction process below) begins with either the faculty member (if the concern is related to a course) or the student’s advisor. If the student is not satisfied with the response or resolution achieved at this first level, or if speaking with the faculty member presents a conflict of interest for the student, the student should proceed to speak with the Program Coordinator in the area in which the academic concern resides. If the student is not satisfied with the response or resolution achieved through the Program Coordinator, the student should proceed to speak with the Chair of the academic department in which the academic concern resides. If the student is still not satisfied with the response or resolution achieved through the Department Chair, or if speaking with the Department Chair presents a conflict of interest for the student, the next step is to contact the Office of the Vice Provost. At any stage of the process, students are welcome to seek the advice and guidance of the Ombudsman, who is charged with attempting to informally resolve student dissatisfaction of an academic nature on a completely confidential basis.

Grade Correction Procedure: The instructor for a course has the responsibility for setting the requirements for a course and making an evaluation of students’ work. Once a grade has been given, the instructor is not free to change the grade unless the instructor indicates to the Registrar that an error was made in the original grade transmitted. If a student believes that an error has been made, he/she must take the initiative in bringing about the necessary correction prior to the conclusion of the semester immediately following the semester in which the course was taken. The normal procedure for effecting a correction would be through direct discussion between the student and the instructor. If redress cannot be attained through such discussions, the student may next appeal to the department chairperson of the department offering the course. If resolution cannot be attained through appeal, the student may next appeal to the Dean. In situations where the student feels that such an appeal process might not be in the student’s interest, counsel and assistance can be sought from the Office of the College Ombudsman and the Office of the Vice Provost.

Typical Program Plan – Total: 36 points

<table>
<thead>
<tr>
<th>Summer Semester (9 Points)</th>
<th>Fall Semester (12 Points)</th>
<th>Spring Semester (15 Points)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Ed Course (3 pts)</td>
<td>MSTC 4000 (3 pts)</td>
<td>MSTC 4761 (6 pts)</td>
</tr>
<tr>
<td>Professional Education Course (3 pts)</td>
<td>MSTC 4363 (3 pts)</td>
<td>HS Science Methods Course (3 pts)</td>
</tr>
<tr>
<td>MS Science Methods Course (3 pts)</td>
<td>Disciplinary course #1 (3 pts)</td>
<td>Urban Science Education Course (3 pts)</td>
</tr>
<tr>
<td></td>
<td>Literacy course (3 pts)</td>
<td>Disciplinary Course #2 (3 pts)</td>
</tr>
</tbody>
</table>
Degree Completion Time

The typical time required to complete the M.A. degree for initial certification is 11 months, including one academic year and 2 months during one summer session.

Keeping in Communication after Graduation

We are eager to remain in communication with our graduates upon completion of their degrees. Our graduates enter the profession at many different levels and at institutions around the world. Our Alumni Office will remain in communication with you at the College level, but we also would like to keep you informed about events and accomplishments of our students, graduates, and faculty of the Department by informal and formal means. Informally, we do hope that you will make an opportunity from time-to-time to keep us informed of your current address and any of your professional and academic activities and achievements by sending an e-mail message or other forms of communication to our Director of Academic Administration and/or the faculty. Formally, we will be pleased to send you the Newsletter published by the Department that contains newsworthy information about the College, our Department and our alumni. From time-to-time we also have events specifically for our alumni and we would be very pleased if you were able to attend. Please consult the website for the Department of Mathematics, Science and Technology for up-to-date information. (URL: http://www.tc.columbia.edu/mst/scienceed/)

(continued on next page)
Appendix I
Pre-Service Master of Arts Degree (M.A.) with NYS Certification Science Education (SCIB/SCIC/SCIE/SCIP-INIT)

Student Teaching Experience

Students enroll in MSTC 4363; Field Experiences in Science Education and the field experiences are organized and monitored through this course. Students are provided with a list of schools that contain approved cooperating teachers and they visit them, during the course of the semester. The instructor of MSTC 4363 coordinates, monitors, and records the clock hour visits. During the field visits the students participate in several planned activities; they observe a variety of different instructional practices (labs, lectures etc); they must record information about classroom setups, classroom management issues and complete a variety of observational activities as designated in MSTC 4363, such as teacher and student time and activity monitoring. Additionally, all must maintain a journal throughout the program.

Student teaching is taken in the spring semester after completion of MSTC 4363. All students must complete two student teacher placements, one in a middle school and the other in high school. Students who are attempting to become certified in more than one science are required to complete a third student teaching placement in their second science certification subject. Each student teacher placements is a minimum of 6 weeks in length, with one week devoted to observation at the school and the other weeks for student teaching. Students are required to be in their schools full-time.

All students complete MSTC 4761 Student Teaching in Science.

Student teaching is preceded by MSTC 4363 Field Experiences in Science Education and MSTC 4000, Science in Secondary Schools. These courses include the preparation of courses of study, unit plans, individual lesson planning, science safety workshops, classroom management, meet the teacher nights, and assessment and communications workshops. Prospective teachers conduct a child study project and prepare and teach micro lessons in science.

In addition to these general courses, all students must enroll in a subject specific methods class (e.g. MSTC 4046 Chemistry Curriculum and Methods Laboratory for prospective chemistry teachers), which requires extensive laboratory work. All students must also complete at least one Middle School science methods course, which deals with laboratory and classroom practices pertinent to middle school students and which is linked to the New York State Intermediate Science Core Curriculum. Students must also complete two pedagogical content knowledge classes in their science certification area (Earth Science, Physics, Chemistry and Biology). These classes address issues of how to effectively teach the content of the New York State Science core curricula and AP science classes.

The program has been in operation for many years and has extensive contacts with New York City schools. The majority of the placement sites are in New York City, though additionally several suburban schools are used, especially for science shortage areas e.g. physics and earth science. All of the placement sites have been extensively visited by program faculty. Placement sites include magnet science high schools,
alternative schools and Schools Under Regents Review. The main criteria for choosing a site are the qualifications, experience and willingness of the cooperating teacher.

The majority of cooperating teachers are alumni of our science education programs. Students completing our science education certification programs and who remain in New York City are encouraged to remain in contact with the program, through meet the teacher nights, classroom visitations of student teachers and through eventually becoming co-operating teachers. Additionally, the science education department has many highly qualified and experienced science teachers and assistant principals enrolled in our advanced Master of Arts and doctoral programs. The minimum qualification for co-operating teachers is that they hold permanent certification (or its equivalent) in the subject that they teach, (i.e. a minimum of three years of teaching experience in the subject). The co-operating teachers are provided with a list of co-operating teacher responsibilities and are expected to adhere to these. The list of cooperating teachers is continuously updated and co-operating teachers not meeting our requirements are removed from the list. The cooperating teachers attend introductory orientations and attend several workshops throughout the program.

Students have to complete the 100 clock hours of visitations, complete all assignments and studies in MSTC 4363 and MSTC 4000, including lesson and unit preparations. Students must have visited and spent one week observing in the school prior to student teaching. The students must also complete all necessary paperwork (health forms, Principal consent forms etc.) prior to student teaching.

The students are required to complete courses of study, unit plans, and lesson plans. They keep a journal throughout the program. They must complete all the workshops related to student teaching (classroom management, parent communication, laboratory safety). Additionally all are required to construct a portfolio related to their practice that contains, sample lesson plans, teaching philosophy, sample videos of their teaching, with critiques.

The evaluation is multi-modal, and includes a self-evaluation component, as well as evaluations by the cooperating teacher and supervising teacher. The student, co-operating teacher and supervisor complete the final evaluation collectively. The program coordinator, who makes the final decision about successful or unsuccessful completion of the student teaching, supervises students encountering difficulties during their student teaching. Effectiveness is determined by both formal and informal evaluations from the student, co-operating teachers, supervisor and program coordinator.

(continued on next page)
Pre-Service Master of Arts Degree (M.A.) with NYS Certification
Science Education (SCIB/SCIC/SCIE/SCIP-INIT)

Appendix II

Advising Checklist and Course Guidelines

Name:

Date of enrollment:

Advisor:

Science Content Area:

In the Pre-Service science education M.A. degree, we provide the required coursework for licensure to teach in New York State, in biology, chemistry, earth science and physics grades 7-12. Based on your baccalaureate transcript, an advisor will work with you to design a plan of study, which will provide you with the pedagogical and content area preparation necessary to teach science in your area of specialization in the middle school or high school context. If you have any questions regarding the following course guidelines, please contact us. [See advisor names and contact information, p. 2.]

Course Guidelines

Prerequisite Requirements
30 credits in the science area of certification
1 course of a foreign language or equivalent passing CLEP score

Course Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Points</th>
<th>Description/Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science Education Methods</td>
<td>9 points</td>
<td>Introductory class in the field of science education/place of science education in secondary schools</td>
</tr>
<tr>
<td>Field Experience</td>
<td>9 points</td>
<td>Class in how to teach HS specific to your specialty</td>
</tr>
<tr>
<td>Professional Education</td>
<td>9 points</td>
<td>Class in how to teach MS specific to your specialty</td>
</tr>
<tr>
<td>Science PCK Courses</td>
<td>6 points</td>
<td></td>
</tr>
<tr>
<td>Science Education/Equity</td>
<td>3 points</td>
<td></td>
</tr>
<tr>
<td>Total:</td>
<td>36 points</td>
<td></td>
</tr>
</tbody>
</table>

1. Science Education Methods (9 points)

<table>
<thead>
<tr>
<th>Course</th>
<th>Points</th>
<th>Description/Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSTC4000: Science in Secondary School</td>
<td>3</td>
<td>Introductory class in the field of science education/place of science education in secondary schools</td>
</tr>
<tr>
<td>[High School Subject specific methods course]</td>
<td>3</td>
<td>Class in how to teach HS specific to your specialty</td>
</tr>
<tr>
<td>[Middle school methods course]</td>
<td>3</td>
<td>Class in how to teach MS specific to your specialty</td>
</tr>
</tbody>
</table>
2. Field Experience (9 points)

<table>
<thead>
<tr>
<th>Course</th>
<th>Points</th>
<th>Description/Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSTC4363: Intro to Science Education Practice</td>
<td>3</td>
<td>Requires 100 hours of observation in various NYC classroom- arranged by Instructor –students placed into cohorts over 10 week period</td>
</tr>
<tr>
<td>MSTC4761: Student Teaching in Science Education</td>
<td>6</td>
<td>Requires 100 hours of student teaching in middle school over 6 weeks + 100 hours of student teaching in high school placements over 6 weeks Arranged with support from Student Teaching Coordinator and network of Cooperating Master Science Teachers</td>
</tr>
</tbody>
</table>

3. Professional Education (9 points)*
   Must take minimum 3 courses not listed as MSTC

<table>
<thead>
<tr>
<th>Course</th>
<th>Points</th>
<th>Description/Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>[HBSK5099: Literacy in Science (required)]</td>
<td>3</td>
<td>Course in content area literacy</td>
</tr>
<tr>
<td>[Special education (required)]</td>
<td>3</td>
<td>Introductory Special Ed class</td>
</tr>
<tr>
<td>[Elective ]</td>
<td>3</td>
<td>Remaining courses can be from the following areas: Philosophy, Ethics or History of Education, Sociology, Economics, or Politics of Education, Curriculum and Teaching; Human Cognition, Adolescent or Cognitive Development, Educational Assessment; Urban Education, Multicultural Education and Conflict Resolution.</td>
</tr>
</tbody>
</table>

* One-credit classes cannot be used to fulfill this requirement.

(continued on next page)
4. Disciplinary Courses (6 points)
Course work in the sciences usually determined in consultation with your advisor

<table>
<thead>
<tr>
<th>Course</th>
<th>Points (variable)</th>
<th>Description/Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Conceptual courses in your area of certification</td>
</tr>
<tr>
<td></td>
<td></td>
<td>i.e. Concepts in Physics, Biology, Earth Science, and Chemistry</td>
</tr>
</tbody>
</table>

5. Equity in Science Education Courses (3 points)

<table>
<thead>
<tr>
<th>Course</th>
<th>Points</th>
<th>Description/Rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSTC4007: Urban &amp; Multicultural Education in Science</td>
<td>3</td>
<td>Course specific to the teaching of science in urban environments</td>
</tr>
</tbody>
</table>

6. Master’s Project Portfolio
A collection of work and assignments produced during the Student Teaching Experience (MSTC 4761) to meet the Master's Essay Graduation Requirement.

Date Completed:

7. Other requirements that must be met before graduation:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>All OTE Required Certification Exams Described in Student Teaching Placement Section</td>
<td></td>
</tr>
</tbody>
</table>

Footnotes:

1The foreign language requirement can be met through one of three ways:
   - 1 course in a foreign language;
   - passing score on the CLEP examination; or
   - speak a language other than English at home.

2Certification requirements are subject to change. The Science Advisory Team will be happy to review these items with you in this case.

3No credits may be transferred to complete the M.A. degree, although prior class work may count towards certification requirements. Consult your advisor for further information.