LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF MIDDLE AND HIGH SCHOOL EDUCATION

CURRICULUM CHANGE

1. **Type of Change:** Title, description, prerequisite, credit and hour change

2. **From:**

Department(s	Middle and High School Education
Career	[ ] Undergraduate [X] Graduate
Academic Level	[X] Regular [ ] Compensatory [ ] Developmental [ ] Remedial
Subject Area	Middle and High School Education (ESC)
Course Prefix & Number	ESC 709
Course Title	~~Workshop in Pedagogy and~~ Classroom Management
Description	~~Evaluating and dealing with behavioral problems in educational settings~~; theoretical study, simulation, and application of theory to problems.
Pre/ Co Requisites	~~Provisional Certification and one year of full-time teaching experience.~~
Credits	3
Hours	~~45~~
Liberal Arts	[ ] Yes [X] No
Course Attribute (e.g. Writing Intensive, WAC, etc)	NA

General Education Component	X Not Applicable ____ Required ____ English Composition ____ Mathematics ____ Science ____ Flexible ____ World Cultures ____ US Experience in its Diversity ____ Creative Expression ____ Individual and Society ____ Scientific World

3. **To:**

Department(s)	Middle and High School Education
Career	[ ] Undergraduate [X] Graduate
Academic Level	[X] Regular [ ] Compensatory [ ] Developmental [ ] Remedial
Subject Area	Middle and High School Education (ESC)
Course Prefix & Number	ESC 709
Course Title	Methods in Adolescent Classroom Management
Description	Organizing and managing secondary classrooms; theoretical study, simulation, and application of theory to problems. Fieldwork hours required.
Pre/ Co Requisites	NA
Credits	1-3
Hours	1-3 hours
Liberal Arts	[ ] Yes [X] No
Course Attribute (e.g. Writing Intensive, WAC, etc)	NA
General Education Component	X Not Applicable ____ Required ____ English Composition

	____ Mathematics ____ Science ____ Flexible ____ World Cultures ____ US Experience in its Diversity ____ Creative Expression ____ Individual and Society ____ Scientific World

4. **Rationale:**

Teacher retention is a major problem in the school system. The most prevalent reason teachers quit is related to classroom management. To address this issue and better prepare our candidates, we updated this course making it more inclusive across the various content areas. Further, we also propose making the course more flexible with a variable credit/hour option. In this way, we can adapt it for traditional classroom instruction as well as offer secondary school-based rich clinical experiences in classroom management. Changing from 45 hours to 1-3 hours clarifies the actual credit hours required, which impacts the way students are billed. This does not change the actual fieldwork required per week.

5. **Date of departmental approval:** February 8, 2018

LEHMAN COLLEGE
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DEPARTMENT OF MIDDLE AND HIGH SCHOOL EDUCATION

CURRICULUM CHANGE

Name of Program and Degree Award: English Education M.S.Ed. Program, English Education Advanced Certificate Program, English Education Transitional B
Hegis #: 1501, 0899
Program codes: 25803, 25816, 25802
Effective Term: Fall 2018

1. Type of Change: Change in Degree Requirements and Change in Credits

2. FROM:
English Education M.S.Ed. Program

This program is designed for students seeking a master's degree in English Education, grades 7-12. Upon successful completion of additional certification requirements, including specified teacher examinations, candidates will also be eligible to receive both Initial and Professional Certification to teach English in New York State in Grades 7-12. Applicants will apply to one of the 4 following sequences based on their qualifications:

Sequence 1 (30-33 crs.): Candidates already certified in English Education 7-12.

Sequence 2 (3~~3~~-39 crs.): Candidates seeking initial certification in English Education 7-12 who have completed the undergraduate education minor but are not certified.

Sequence 3 (4~~2~~-45 crs): Candidates who seek initial New York State certification in English Education 7-12 but who lack any coursework in education.

Sequence 4 (3~~6~~ crs): Transitional B candidates who seek initial New York State certification in English Education 7-12.

English Education Admission Requirements

- Possess a bachelor's degree in English or its equivalent from an accredited college or university.
- Have earned a minimum cumulative index of 3.0 in the undergraduate record.
- If conditionally admitted, meet conditions, starting in the first semester and finishing in no more than three consecutive semesters.
- For Sequence 1, present evidence of NYS teacher certification in English Education 7-12.
- For Sequence 2, present evidence of meeting core requirements in educational psychology, educational foundations, literacy, technology, and special education, including supervised field experiences.

- For Sequence 4 only, possess Transitional B certificate in Teaching English grades 7-12.
- Evidence of having completed a course in Special Education (ESC 463 or the equivalent). Students who have not taken this course as an undergraduate must take ESC 506 as part of their graduate program.
- Submit a 500-word essay outlining career goals.
- Submit two to three letters of recommendation.
- Participate in an individual interview.
- English Education Degree Requirements
- Students must consult with an adviser in the M.S Ed program in English Education before starting their master's program. During their first semester, matriculated students are required to plan their program with a program adviser.
- All students will complete one of the following sequences: Sequence 1 (30-33 crs.), Sequence 2 (~~33~~-39 crs.); Sequence 3 (~~42~~-45 credits) or Sequence 4 (~~33~~ credits).

Sequence 1 (30-33 crs.):
Candidates who are already certified in English Education 7-12.

Methods of Teaching English in Middle and High School (15-18 crs):

		Credits
ESC 522	Teaching English in Middle and High School	3

(Except for those who completed ESC 422 or equivalent as undergraduates.)

ESC 721	Literature for Middle and High School Students	3
ESC 723	Teaching Reading in the Content Areas	3
ESC 724	Methods of Teaching Writing in Middle and High School	3
ESC 725	Teaching English Grammar	3
ESC 730	Methods of Teaching English in Middle and High School: Selected Topics	3

ESC 522 Except for those who completed ESC 422 or equivalent as undergraduates.

English Electives (9 credits):
Consult with an adviser in the English Education program for the appropriate course(s) to satisfy this requirement.

Seminar in Curriculum Theory and Development:

		Credits
ESC 788	Curriculum Theory and Design	3

Master's Project (3 credits):

		Credits
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3

ESC 708: Culminates in an approved curriculum project.

Sequence 2 (~~33~~-39 crs.):
Candidates seeking initial certification who have met core education requirements.

Methods of Teaching English in Middle and High School (15-18 crs):

		Credits
ESC 522	Teaching English in Middle and High School	3

(Except for those who completed ESC 422 or equivalent as undergraduates.)

ESC 721 Literature for Middle and High School Students 3
ESC 723 Teaching Reading in the Content Areas 3
ESC 724 Methods of Teaching Writing in Middle and High School 3
ESC 725 Teaching English Grammar 3
ESC 730 Methods of Teaching English in Middle and High School: Selected Topics 3
ESC 522: Except for those who completed ESC 422 or equivalent as undergraduates.

English Electives (9 credits):
Consult with an adviser in the English Education program for the appropriate course(s) to satisfy this requirement.

Seminar in Curriculum Theory and Development:
Credits
ESC 788 Curriculum Theory and Design 3

Master's Project (3 credits):
Credits
ESC 708 Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas 3
ESC 708: Culminates in an approved curriculum project.

Student Teaching or Teaching Internship (~~3~~-6 crs):
Teaching Internship
Credits
ESC 595 Internship in Classroom Teaching 1-3
Plus—
~~ESC 611 Teaching Internship Seminar in Secondary Education 1~~
or
Student Teaching
Credits
ESC 596 Student Teaching in the Middle and High School Grades 3
Plus
ESC 612 Seminar in Secondary Student Teaching 3

Sequence 3 (4~~2~~-45 credits):
Candidates with an undergraduate degree in English or the equivalent who lack education courses and who seek initial certification in English Education grades 7-12.

Core Education (15 credits):
Credits
ESC 501 Psychological Foundations of Education 3
ESC 502 Historical Foundations of Education: A Multicultural Perspective 3
ESC 529 Language and Literacies Acquisition in Secondary Education 3
ESC 506 Special Needs Education in TESOL and Secondary Settings 3
ESC 522 Teaching English in Middle and High School 3
ESC 506 Or the equivalent.

Methods of Teaching English in Middle and High School (9 credits):

Selected from:

		Credits
ESC 720	Reading and Reading Materials for Adolescents	3
ESC 721	Literature for Middle and High School Students	3
ESC 722	Teaching Communication Skills in the Content Areas	3
ESC 723	Teaching Reading in the Content Areas	3
ESC 724	Methods of Teaching Writing in Middle and High School	3
ESC 730	Methods of Teaching English in Middle and High School: Selected Topics	3
ESC 772	Evaluation and Assessment of Student Learning	3

English Electives (9-12 credits):
Consult with an adviser in the English Education program for the appropriate course(s) to satisfy this requirement.

Seminar in Curriculum Theory and Development:

		Credits
ESC 788	Curriculum Theory and Design	3

Master's Project (3 credits):

		Credits
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3

ESC 708: Culminates in an approved curriculum project.

Student Teaching or Teaching Internship (~~3~~-6 crs):
Teaching Internship

		Credits
ESC 595	Internship in Classroom Teaching	1-3

Plus—
~~ESC 611 Teaching Internship Seminar in Secondary Education 1~~
or
Student Teaching

		Credits
ESC 596	Student Teaching in the Middle and High School Grades	3

Plus

ESC 612	Seminar in Secondary Student Teaching	3

Sequence 4 (3~~6~~ credits):
Teachers who hold a valid Transitional B certificate in English Education grades 7-12 from New York State.

Core Education (12 credits):

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 529	Language and Literacies Acquisition in Secondary Education	3

ESC 506 Special Needs Education in TESOL and Secondary Settings 3
ESC 522 Teaching English in Middle and High School 3
ESC 506: Or the equivalent.

Methods of Teaching English in Middle and High School (9 credits):
Selected from:

		Credits
ESC 720	Reading and Reading Materials for Adolescents	3
ESC 721	Literature for Middle and High School Students	3
ESC 722	Teaching Communication Skills in the Content Areas	3
ESC 723	Teaching Reading in the Content Areas	3
ESC 724	Methods of Teaching Writing in Middle and High School	3
ESC 730	Methods of Teaching English in Middle and High School: Selected Topics	3
ESC 772	Evaluation and Assessment of Student Learning	3

English Electives (9 credits):
Consult with an adviser in the English Education program for the appropriate course(s) to satisfy this requirement.

Master's Project (3 credits):

		Credits
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3

ESC 708: Culminates in an approved curriculum project.

Teaching Internship (~~3~~ credits):

		Credits
ESC 595	Internship in Classroom Teaching	1-3
Plus		
~~ESC 611~~	~~Teaching Internship Seminar in Secondary Education~~	~~1~~

English Education Advanced Certificate Program (24-27 Credits)

This program is designed for candidates who already have a master's degree in English or a related field and who seek New York State certification.

Students must consult with an adviser in the English Education program before starting their certificate program. During their first semester, matriculated students are required to plan their program with an English Education adviser. All students must complete the ~~21-24~~ credit curriculum below. In order to be recommended for NYS certification at the completion of the Certificate Program, candidates must pass the LAST, the CST in English, and the Written Assessment of Teaching Skills (ATS-W), and meet all additional New York State foreign language, arts, and science requirements.

English Education Advanced Certificate Program Admission Requirements

- Possess an approved bachelor's degree (or its equivalent) from an accredited college or university that meets the State requirements for a general education core in liberal arts and sciences.
- Possess a master's degree in English or a related field.
- Demonstrate the ability to successfully pursue graduate study by having a master's Grade Point Average of 3.0 or better.
- Submit two (2) letters of recommendation and a 500-word essay on career goals. Participate in an interview.
- Meet additional Departmental, divisional, and New York State requirements, if any.
- If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
- Submit scores of the Graduate Record Examination (GRE) revised general test, i.e., verbal reasoning, quantitative reasoning, and analytical writing.

The 24-27 credit certificate curriculum consists of three instructional areas:

I. Foundations of Education (12 credits)
ESC 501 Psychological Foundations of Education 3
ESC 502 Historical Foundations of Education: A Multicultural Perspective 3
ESC 529 Language and Literacies Acquisition in Secondary Education 3
ESC 506 Special Needs Education in TESOL and Secondary Settings 3
ESC 506: Or the equivalent.

II. Methods, Curriculum, and Instruction (9 credits)
ESC 522 Teaching English in Middle and High School 3
6 additional credits to be selected in consultation with the program coordinator from the courses below:
ESC 720 Reading and Reading Materials for Adolescents 3
ESC 721 Literature for Middle and High School Students 3
ESC 724 Methods of Teaching Writing in Middle and High School 3

III. Practicum (~~3~~-6 credits)
ESC 595 Internship in Classroom Teaching 1-3
And
~~ESC 611 Teaching Internship Seminar in Secondary Education 1~~
Or
ESC 596 Student Teaching in the Middle and High School Grades 3
And
ESC 612 Seminar in Secondary Student Teaching. 3

3. <u>TO:</u>
English Education M.S.Ed. Program

This program is designed for students seeking a master's degree in English Education, grades 7-12. Upon successful completion of additional certification requirements, including specified teacher examinations, candidates will also be eligible to receive both Initial and Professional Certification to teach English in New York State in Grades 7-12. Applicants will

apply to one of the 4 following sequences based on their qualifications:

Sequence 1 (30-33 crs.): Candidates already certified in English Education 7-12.

Sequence 2 (35-39 crs.): Candidates seeking initial certification in English Education 7-12 who have completed the undergraduate education minor but are not certified.

Sequence 3 (44-45 crs): Candidates who seek initial New York State certification in English Education 7-12 but who lack any coursework in education.

Sequence 4 (38 crs): Transitional B candidates who seek initial New York State certification in English Education 7-12.

English Education Admission Requirements

- Possess a bachelor's degree in English or its equivalent from an accredited college or university.
- Have earned a minimum cumulative index of 3.0 in the undergraduate record.
- If conditionally admitted, meet conditions, starting in the first semester and finishing in no more than three consecutive semesters.
- For Sequence 1, present evidence of NYS teacher certification in English Education 7-12.
- For Sequence 2, present evidence of meeting core requirements in educational psychology, educational foundations, literacy, technology, and special education, including supervised field experiences.
- For Sequence 4 only, possess Transitional B certificate in Teaching English grades 7-12.
- Evidence of having completed a course in Special Education (ESC 463 or the equivalent). Students who have not taken this course as an undergraduate must take ESC 506 as part of their graduate program.
- Submit a 500-word essay outlining career goals.
- Submit two to three letters of recommendation.
- Participate in an individual interview.
- English Education Degree Requirements
- Students must consult with an adviser in the M.S Ed program in English Education before starting their master's program. During their first semester, matriculated students are required to plan their program with a program adviser.
- All students will complete one of the following sequences: Sequence 1 (30-33 crs.), Sequence 2 (35-39 crs.); Sequence 3 (44-45 credits) or Sequence 4 (38 credits).

Sequence 1 (30-33 crs.):
Candidates who are already certified in English Education 7-12.

Methods of Teaching English in Middle and High School (15-18 crs):

		Credits
ESC 522	Teaching English in Middle and High School	3
ESC 721	Literature for Middle and High School Students	3
ESC 723	Teaching Reading in the Content Areas	3
ESC 724	Methods of Teaching Writing in Middle and High School	3
ESC 725	Teaching English Grammar	3

ESC 730 Methods of Teaching English in Middle and High School: Selected Topics 3
ESC 522: Except for those who completed ESC 422 or equivalent as undergraduates.

English Electives (9 credits):
Consult with an adviser in the English Education program for the appropriate course(s) to satisfy this requirement.

Seminar in Curriculum Theory and Development:

		Credits
ESC 788	Curriculum Theory and Design	3

Master's Project (3 credits):

		Credits
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3

ESC 708: Culminates in an approved curriculum project.

Sequence 2 (34-39 crs.):
Candidates seeking initial certification who have met core education requirements.

Methods of Teaching English in Middle and High School (15-18 crs):

		Credits
ESC 522	Teaching English in Middle and High School	3
ESC 721	Literature for Middle and High School Students	3
ESC 723	Teaching Reading in the Content Areas	3
ESC 724	Methods of Teaching Writing in Middle and High School	3
ESC 725	Teaching English Grammar	3
ESC 730	Methods of Teaching English in Middle and High School: Selected Topics	3

ESC 522: Except for those who completed ESC 422 or equivalent as undergraduates.

English Electives (9 credits):
Consult with an adviser in the English Education program for the appropriate course(s) to satisfy this requirement.

Seminar in Curriculum Theory and Development:

		Credits
ESC 788	Curriculum Theory and Design	3

Master's Project (3 credits):

		Credits
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3

ESC 708: Culminates in an approved curriculum project.

Student Teaching or Teaching Internship (4-6 crs):
Teaching Internship

		Credits
ESC 595	Internship in Classroom Teaching	1-3

Plus

ESC 612	Seminar in Secondary Student Teaching	3

or
Student Teaching

		Credits
ESC 596	Student Teaching in the Middle and High School Grades	3

Plus

ESC 612	Seminar in Secondary Student Teaching	3

Sequence 3 (44-45 credits):
Candidates with an undergraduate degree in English or the equivalent who lack education courses and who seek initial certification in English Education grades 7-12.

Core Education (15 credits):

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 529	Language and Literacies Acquisition in Secondary Education	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 522	Teaching English in Middle and High School	3

ESC 506: Or the equivalent.

Methods of Teaching English in Middle and High School (9 credits):
Selected from:

		Credits
ESC 720	Reading and Reading Materials for Adolescents	3
ESC 721	Literature for Middle and High School Students	3
ESC 722	Teaching Communication Skills in the Content Areas	3
ESC 723	Teaching Reading in the Content Areas	3
ESC 724	Methods of Teaching Writing in Middle and High School	3
ESC 730	Methods of Teaching English in Middle and High School: Selected Topics	3
ESC 772	Evaluation and Assessment of Student Learning	3

English Electives (9-12 credits):
Consult with an adviser in the English Education program for the appropriate course(s) to satisfy this requirement.

Seminar in Curriculum Theory and Development:

		Credits
ESC 788	Curriculum Theory and Design	3

Master's Project (3 credits):

		Credits
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3

ESC 708: Culminates in an approved curriculum project.

Student Teaching or Teaching Internship (4-6 crs):
Teaching Internship

		Credits
ESC 595	Internship in Classroom Teaching	1-3

Plus
ESC 612 Seminar in Secondary Student Teaching 3
or
Student Teaching

		Credits
ESC 596	Student Teaching in the Middle and High School Grades	3
Plus		
ESC 612	Seminar in Secondary Student Teaching	3

Sequence 4 (38 credits):
Teachers who hold a valid Transitional B certificate in English Education grades 7-12 from New York State.

Core Education (12 credits):

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 529	Language and Literacies Acquisition in Secondary Education	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 522	Teaching English in Middle and High School	3

ESC 506: Or the equivalent.

Methods of Teaching English in Middle and High School (9 credits):
Selected from:

		Credits
ESC 720	Reading and Reading Materials for Adolescents	3
ESC 721	Literature for Middle and High School Students	3
ESC 722	Teaching Communication Skills in the Content Areas	3
ESC 723	Teaching Reading in the Content Areas	3
ESC 724	Methods of Teaching Writing in Middle and High School	3
ESC 730	Methods of Teaching English in Middle and High School: Selected Topics	3
ESC 772	Evaluation and Assessment of Student Learning	3

English Electives (9 credits):
Consult with an adviser in the English Education program for the appropriate course(s) to satisfy this requirement.

Master's Project (3 credits):

		Credits
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3

ESC 708: Culminates in an approved curriculum project.

Teaching Internship (5 credits):

		Credits
ESC 595	Internship in Classroom Teaching	1-3
Plus		
ESC 612	Seminar in Secondary Student Teaching	3

English Education Advanced Certificate Program (26-27 Credits)
This program is designed for candidates who already have a master's degree in English or a related field and who seek New York State certification.

Students must consult with an adviser in the English Education program before starting their certificate program. During their first semester, matriculated students are required to plan their program with an English Education adviser. All students must complete the 26-27 credit curriculum below. In order to be recommended for NYS certification at the completion of the Certificate Program, candidates must pass the LAST, the CST in English, and the Written Assessment of Teaching Skills (ATS-W), and meet all additional New York State foreign language, arts, and science requirements.

English Education Advanced Certificate Program Admission Requirements

- Possess an approved bachelor's degree (or its equivalent) from an accredited college or university that meets the State requirements for a general education core in liberal arts and sciences.
- Possess a master's degree in English or a related field.
- Demonstrate the ability to successfully pursue graduate study by having a master's Grade Point Average of 3.0 or better.
- Submit two (2) letters of recommendation and a 500-word essay on career goals. Participate in an interview.
- Meet additional Departmental, divisional, and New York State requirements, if any.
- If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
- Submit scores of the Graduate Record Examination (GRE) revised general test, i.e., verbal reasoning, quantitative reasoning, and analytical writing.

The 26-27 credit certificate curriculum consists of three instructional areas:

I. Foundations of Education (12 credits)
ESC 501 Psychological Foundations of Education 3
ESC 502 Historical Foundations of Education: A Multicultural Perspective 3
ESC 529 Language and Literacies Acquisition in Secondary Education 3
ESC 506 Special Needs Education in TESOL and Secondary Settings 3
ESC 506: Or the equivalent.

II. Methods, Curriculum, and Instruction (9 credits)
ESC 522 Teaching English in Middle and High School 3
6 additional credits to be selected in consultation with the program coordinator from the courses below:
ESC 720 Reading and Reading Materials for Adolescents 3
ESC 721 Literature for Middle and High School Students 3
ESC 724 Methods of Teaching Writing in Middle and High School 3

III. Practicum (5-6 credits)
ESC 595 Internship in Classroom Teaching 1-3

And
ESC 612 Seminar in Secondary Student Teaching 3
Or
ESC 596 Student Teaching in the Middle and High School Grades 3
And
ESC 612 Seminar in Secondary Student Teaching. 3

4. Rationale:
Due to the extra preparation and mentorship that is needed for the edTPA, all English, Math, and Social Studies education students in particular sequences will be required to take ESC 612 -Seminar in Secondary Student Teaching (3 credits) instead of ESC 611 Teaching Internship Seminar in Secondary Education (1 cr.). This curriculum change will allow students to have additional contact time and support from the instructor.

5. Date of departmental approval: March 1, 2018

LEHMAN COLLEGE
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DEPARTMENT OF MIDDLE AND HIGH SCHOOL EDUCATION

CURRICULUM CHANGE

Name of Program and Degree Award:
Mathematics Education, Middle Childhood Education (5-9) or Adolescent Education (7-12) M.S.Ed. Program, Mathematics Education Advanced Certificate,

Program Codes: 25827, 27817, 25826
Hegis #: 1701.01, 0899

Effective Term: Fall 2018

1. Type of Change: Change in Degree Requirements and Change in Credits

2. FROM:
Mathematics Education, Middle Childhood Education (5-9) or Adolescent Education (7-12) M.S.Ed. Program

The graduate program for middle and high school mathematics teachers leads to a Master of Science in Education degree. Registered with the State Education Department, this program leads to both initial and professional certification to teach mathematics in grades 5-9 or 7-12, provided all other requirements have been satisfied.

A. To be eligible for the Master's in Mathematics Education for Grades 5-9, candidates must fall into one of the following categories:

Sequence 1 (3~~6~~-42 credits). For liberal arts and sciences graduates who have completed 18 credits in mathematics, including Calculus I and Calculus II, but who lack professional education coursework.

Sequence 2 (3~~5~~-38 credits). For teachers who hold a Transitional B certificate in Mathematics from New York State through special CUNY and NYCDOE programs.

Admission Requirements
A bachelor's degree (or its equivalent) from an accredited college or university with an overall index of 2.7 or better.
Mathematics course work of at least 18 credits that include Calculus I and II, with an overall index of 2.7 or better in all mathematics courses taken.
For Sequence 2, must hold a valid Transitional B Certificate from NYSED.
Submission of scores on the New York State Content Specialty Test (CST) in Mathematics.
If conditionally admitted, make up requirements starting in the first semester and finishing in

no more than three consecutive semesters.
Two letters of recommendation, at least one of which is from a college or university instructor of mathematics.
A 500 word essay on career goals.
A personal interview.
Mathematics Education, Middle Childhood Education (5-9) or Adolescent Education (7-12)
Admission Requirements
A bachelor's degree (or its equivalent) from an accredited college or university with an overall index of 2.7 or better.
For Sequence 3: Mathematics course work to include Statistics; Calculus I; Calculus II; Linear Algebra; and History of Mathematics; with an overall index of 2.7 or better in all mathematics courses taken
For Sequence 4: Mathematics major
For Sequence 5: Mathematics major and NYS Transitional B Certificate
Submit scores on the New York State Content Specialty Test (CST) in Mathematics.
If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
Two letters of recommendation, at least one of which is from a college or university instructor of mathematics.
A 500-word essay on career goals.
A personal interview.
Middle Childhood Education Degree Requirements
Students must consult with a Mathematics Education adviser before starting their master's program and must plan their overall program with the adviser during their semester of attendance. Students must complete one of the two sequences outlined below.

Sequence 1. (1) 33 credits of prescribed course work; (2) 3-6 credits of supervised fieldwork; (3) A comprehensive examination OR research project (3); and (4) Maintain B average.

Sequence 2. (1) 33 credits of prescribed course work; (2) 2 credits of supervised fieldwork; (3) A comprehensive examination OR research project (3); and (4) Maintain B average.

Middle Childhood Education Overview of the Program
Sequence 1 students must successfully complete the following:

15-18 credits of Core Education courses, including 3-6 credits of supervised fieldwork and 3 credits of special education coursework.
9 credits in pedagogical content in mathematics education.
12 credits in mathematics.
A comprehensive written examination or research project after all course work has been completed. Students who elect to conduct a research project must enroll in 3 additional credits of research-related course work.
Sequence 2 (Transitional B-Grades 5-9) students must successfully complete the following:

14 credits of Core Education Courses, including 2 credits of supervised fieldwork and 3 credits of special education coursework.
9 credits in pedagogical content in mathematics education.
12 credits in mathematics.

A comprehensive written examination or research project after all course work has been completed. Students who elect to conduct a research project must enroll in 3 additional credits of research-related course work.

Curriculum

Sequence 1 (Grades 5-9) 3~~6~~-42 Credits

I. Core Education Courses: (1~~5~~-18 credits)

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 532	Teaching Mathematics in Middle and High School	3
ESC 595	Internship in Classroom Teaching	1-3
And		
~~ESC 611~~	~~Teaching Internship Seminar in Secondary Education~~	~~1~~
Or		
ESC 596	Student Teaching in the Middle and High School Grades	3
And		
ESC 612	Seminar in Secondary Student Teaching	3

II. Pedagogical Content in Mathematics Education (9 credits)

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3

III. Mathematics (12 credits)

		Credits
MAT 601	Secondary School Mathematics from an Advanced Standpoint	3
MAT 602	Introduction to Number Theory and Modern Algebra I	3
MAT 655	Exploring Mathematics Using Technology	2
MAT 661	History of Mathematics	4

IV. Culminating Experience (0-3 credits)

		Credits
ESC 706	Project Seminar I	1
ESC 707	Project Seminar II	2
Or		
Comprehensive Examination		0

Sequence 2 (Transitional B Sequence for Grades 5-9) 3~~5~~-38 credits

I. Core Education Courses: (14 credits)

		Credits
ESC 501	Psychological Foundations of Education	3

ESC 502 Historical Foundations of Education: A Multicultural Perspective 3
ESC 506 Special Needs Education in TESOL and Secondary Settings 3
ESC 532 Teaching Mathematics in Middle and High School 3
ESC 595 Internship in Classroom Teaching 1-3
~~ESC 611 Teaching Internship Seminar in Secondary Education 1~~

II. Pedagogical Content in Mathematics Education (9 credits)

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3

III. Mathematics (12 credits)

		Credits
MAT 601	Secondary School Mathematics from an Advanced Standpoint	3
MAT 602	Introduction to Number Theory and Modern Algebra I	3
MAT 655	Exploring Mathematics Using Technology	2
MAT 661	History of Mathematics	4

IV. Culminating Experience (0-3 credits)

		Credits
ESC 706	Project Seminar I	1
ESC 707	Project Seminar II	2

Or
Comprehensive Examination 0

Middle Childhood Education Continuation Requirements
Students must maintain a 3.0 Grade Point Average throughout the course of study.

B. To be eligible for the Master's in Mathematics Education for Grades 7-12, candidates must fall into one of the following categories:

Sequence 3 (~~42~~ 48 credits). For liberal arts and sciences graduates who do not hold a bachelor's degree in mathematics but who have completed 15 credits in mathematics, including Statistics, Calculus I, Calculus II, Linear Algebra, and History of Mathematics, but who lack professional education coursework.

Sequence 4 (~~36~~-42 credits). For candidates who hold a bachelor degree in mathematics only, but who lack professional education coursework.

Sequence 5 (~~35~~-38 credits). For teachers who hold a bachelor's degree in mathematics and a Transitional B Certificate in Mathematics from New York State through special CUNY and NYCDOE programs.

Middle Childhood Education Admission Requirements
A bachelor's degree (or its equivalent) from an accredited college or university with an overall index of 2.7 or better.
For Sequence 3: Mathematics course work to include Statistics; Calculus I; Calculus II; Linear

Algebra; and History of Mathematics; with an overall index of 2.7 or better in all mathematics courses taken;
For Sequence 4: Mathematics major;
For Sequence 5: Mathematics major AND NYS Transitional B Certificate.
Submit scores on the New York State Content Specialty Test (C.S.T.) in Mathematics.
If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
Two letters of recommendation, at least one of which is from a college or university instructor of mathematics.
A 500 word essay on career goals.
A personal interview.
Adolescent Education Degree Requirements (Grades 7-12)
Students must consult with a Mathematics Education adviser before starting their master's program and must plan their overall program with the adviser during their first semester of attendance. Students must complete one of the three sequences outlined below:

Sequence 3. (1) 39 credits of prescribed course work including 3 credits of special education coursework; (2) 3-6 credits of supervised fieldwork; (3) A comprehensive examination OR research project (3); and (4) Maintain B average.

Sequence 4. (1) 33 credits of prescribed course work including 3 credits of special education coursework; (2) 3-6 credits of supervised fieldwork; (3) A comprehensive examination OR research project (3); and (4) Maintain B average.

Sequence 5. (1) 33 credits of prescribed course work including 3 credits of special education coursework; (2) 2 credits of supervised fieldwork; (3) A comprehensive examination OR research project (3); and (4) Maintain B average.

Adolescent Education Program Overview
Sequence 3 (Grades 7-12)

Students must successfully complete the following:

1~~5~~-18 credits of Core Education Courses, including 3-6 credits of supervised fieldwork and 3 credits of special education coursework.
12 credits in pedagogical content in mathematics education.
15 credits in mathematics. Students who lack History of Mathematics as a prerequisite must register for MAT 661.
A comprehensive written examination or research project after all course work has been completed. Students who elect to conduct a research project must enroll in three additional credits of research-related course work.
Note: Students who lack full-time experience as a mathematics teacher in grades 7-12 prior to completion of the program must register for 6 credits of supervised student teaching in lieu of the 3 credits of supervised fieldwork.

Sequence 4 (Math majors who do NOT hold a NYS Transitional B Certificate, 7-12)

Students must successfully complete the following:

1~~5~~-18 credits of Core Education Courses, including 3-6 credits of supervised fieldwork and 3 credits of special education coursework;
12 credits in pedagogical content in mathematics education.
9 credits in mathematics electives to be chosen in consultation with a program adviser.
A comprehensive written examination or research project is required after all course work has been completed. Students who elect to conduct a research project must enroll in three additional credits of research-related course work.
Note: Students who lack full-time experience as a mathematics teacher in grades 7-12 prior to completion of the program must register for 6 credits of supervised student teaching in lieu of the 3 credits of supervised fieldwork.

Sequence 5 (Math Majors who hold a NYS Transitional B Certificate, 7-12)

Students must successfully complete the following:

~~15-18~~ credits of Core Education Courses, including 3-6 credits of supervised fieldwork and 3 credits of special education coursework;
12 credits in pedagogical content in mathematics education.
9 credits in mathematics electives to be chosen in consultation with a program adviser.
A comprehensive written examination or research project after all course work has been completed. Students who elect to conduct a research project must enroll in three additional credits of research-related course work.

Adolescent Education Curriculum

Sequence 3 (Grades 7-12)
4~~2~~- 48 credits

I. Core Education Courses (1~~5~~-18 credits):

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 532	Teaching Mathematics in Middle and High School	3
ESC 595	Internship in Classroom Teaching	1-3
And—		
~~ESC 611 Teaching Internship Seminar in Secondary Education~~		~~1~~
Or		
ESC 596	Student Teaching in the Middle and High School Grades	3
And		
ESC 612	Seminar in Secondary Student Teaching	3

II. Pedagogical Content in Mathematics Education (12 credits):

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3

ESC 748 Teaching Problem Solving in Mathematics in Middle and High School 3
ESC 749 Teaching Mathematics in Grades 11 and 12 3

III. Mathematics (15 credits):

		Credits
MAT 601	Secondary School Mathematics from an Advanced Standpoint	3
MAT 604	Application of the Real and Complex Number Systems	3
MAT 637	Topics in Discrete Mathematics	4
MAT 655	Exploring Mathematics Using Technology	2
MAT 615	Modern Algebra	4

IV. Culminating Experience (0-3 credits):
Research project or comprehensive examination. Students who elect to write a Master's thesis must concurrently enroll in:

		Credits
ESC 706	Project Seminar I	1
ESC 707	Project Seminar II	2

Sequence 4 (Grades 7-12)
3~~6~~-42 credits

I. Core Education Courses: (1~~5~~-18 credits):

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 532	Teaching Mathematics in Middle and High School	3
ESC 595	Internship in Classroom Teaching	1-3
And—		
~~ESC 611 Teaching Internship Seminar in Secondary Education 1~~		
Or		
ESC 596	Student Teaching in the Middle and High School Grades	3
And		
ESC 612	Seminar in Secondary Student Teaching	3

II. Pedagogical Content in Mathematics Education (12 credits):

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3
ESC 749	Teaching Mathematics in Grades 11 and 12	3

III. Mathematics (9 credits):
Three graduate electives in mathematics chosen in consultation with a program adviser;

IV. Culminating Experience (0-3 credits).

Research project or comprehensive examination. Students who elect to write a Master's thesis must concurrently enroll in:

		Credits
ESC 706	Project Seminar I	1
ESC 707	Project Seminar II	2

Sequence 5 (Math Majors who are eligible for a NYS Transitional B Certificate, 7-12)
3~~5~~-38 credits

I. Core Education Courses: (1~~4~~ credits):

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 532	Teaching Mathematics in Middle and High School	3
ESC 595	Internship in Classroom Teaching	1-3
~~ESC 611~~	~~Teaching Internship Seminar in Secondary Education~~	~~1~~

II. Pedagogical Content in Mathematics Education (12 credits):

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3
ESC 749	Teaching Mathematics in Grades 11 and 12	3

III. Mathematics (9 credits):
Three graduate electives in mathematics chosen in consultation with a program adviser;

IV. Culminating Experience (0-3 credits):
Research project or comprehensive examination. Students who elect to write a Master's thesis must concurrently enroll in:

		Credits
ESC 706	Project Seminar I	1
ESC 707	Project Seminar II	2

Sequence 6 (Non Math Majors who are eligible for a NYS Transitional B Certificate-Grades 7-12)
(38- 41 credits)

I. Core Education Courses (11 credits):

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 532	Teaching Mathematics in Middle and High School	3
ESC 595	Internship in Classroom Teaching	1-3

II. Pedagogical Content in Mathematics Education (12 credits):

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3
ESC 749	Teaching Mathematics in Grades 11 and 12	3

III. Mathematics (15 credits):

		Credits
MAT 601	Secondary School Mathematics from an Advanced Standpoint	3
MAT 604	Application of the Real and Complex Number Systems	3
MAT 637	Topics in Discrete Mathematics	4
MAT 655	Exploring Mathematics Using Technology	2
MAT 615	Modern Algebra	4

IV. Culminating Experience (0-3 credits):
Research project or comprehensive examination.

Students who elect to write a Master's thesis must concurrently enroll in:

		Credits
ESC 706	Project Seminar I	1
ESC 707	Project Seminar II	2

Extension to the New York State Initial Certificate to Teach Mathematics in Grades 5-9 (Middle Childhood Education)

Extension Program in Mathematics Education (17 credits)

This program is designed for candidates who hold New York State initial certification to teach Mathematics in grades 5-9 (Middle Childhood Education) and wish to extend their certification to include grades 7-12 (Adolescent Education).

Admission Requirements

Possess New York State initial certification to teach mathematics in grades 5-9.
Have at least two semesters of successful experience teaching mathematics in grades 7, 8, or 9; or one semester of supervised student teaching in mathematics in grades 7, 8, or 9 (with a grade of B or better).
Present coursework in Calculus I, Calculus II, Linear Algebra, Statistics, and History of Mathematics with a GPA of 3.0 or better.
Submit scores on the NYS Content Specialty (CST) Test in Mathematics.
Submit two (2) letters of recommendation, at least one of which is from a college or university instructor of mathematics.
Submit a 500-word essay on career goals.
Participate in an interview.
Meet additional departmental, divisional, and New York State requirements, if any.
If conditionally admitted, make up requirements starting in the first semester and finishing in

no more than three consecutive semesters.
Continuation Requirements

Students must maintain a 3.0 grade point average throughout the course of study.
Certificate Requirements

The Extension Program in Mathematics Education consists of 17 credits, as outlined below. A minimum of a B average must be maintained throughout the course of the Program. All students are to consult with an adviser in Mathematics Education before starting the Program.

Overview of the Program

Curriculum
Curriculum and Instruction (6 credits):

		Credits
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3
ESC 749	Teaching Mathematics in Grades 11 and 12	3

Mathematics Content (11 credits):

		Credits
MAT 604	Application of the Real and Complex Number Systems	3
MAT 615	Modern Algebra	4
MAT 637	Topics in Discrete Mathematics	4

Mathematics Education Advanced Certificate (~~24~~ 27 Credits)

This program is designed for candidates who hold a bachelor's degree in mathematics and a master's degree in mathematics or in an approved mathematics-related field, and who seek New York State Certification in mathematics, grades 7-12.

Advanced Certificate in Mathematics Education Admission Requirements
Candidates wishing to enter the Mathematics Education Certificate Program must meet the following conditions as determined by the program coordinator:

Possess a bachelor's degree (or its equivalent) from an accredited college or university which meets New York State requirements for a general education core in the liberal arts and sciences. This degree shall include a mathematics major, with a minimum of 36 credits in mathematics.
Possess a master's degree in mathematics or an approved mathematics-related field.
Demonstrate the ability to successfully pursue graduate study by having a master's grade point average (GPA) of 3.0 or better.
Satisfy the content requirements for New York State initial certification.
Submit scores on the NYS LAST Teacher Examination and the NYS Content Specialty Test in Mathematics (CST).

Submit two (2) letters of recommendation, at least one of which is from a college or university instructor of mathematics.
Submit a 500-word essay on career goals.
Participate in a personal interview.
Meet additional departmental, divisional, and New York State requirements, if any.
If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
Submit scores of the Graduate Record Examination (GRE) revised general test, i.e., verbal reasoning, quantitative reasoning, and analytical writing.
Advanced Certificate in Mathematics Education Requirements
The Certificate Program in Mathematics Education consists of 24-27 credits, as outlined below. Students must maintain a minimum B average throughout the course of the Program. All students are to consult with an adviser in Mathematics Education before starting the Program. In order to be recommended for NYS certification at the completion of the Program, candidates must have passed the LAST, the CST in Mathematics, and the NYS Written Assessment of Teaching Skills (ATS-W); they must also meet any additional requirements set by New York State.

Advanced Certificate in Mathematics Education Curriculum
I. Foundations of Education (9)
ESC 501 Psychological Foundations of Education 3
ESC 502 Historical Foundations of Education: A Multicultural Perspective 3
ESC 506 Special Needs Education in TESOL and Secondary Settings 3
II. Curriculum and Instruction (12)
ESC 532 Teaching Mathematics in Middle and High School 3
ESC 740 Teaching Mathematics in Grades 7-10 3
Plus
Mathematics Education 6
Mathematics Education: 6 additional credits in mathematics education to be selected in consultation with the program coordinator

III. Practicum (~~3~~-6)
ESC 595 Internship in Classroom Teaching 1-3
And
~~ESC 611 Teaching Internship Seminar in Secondary Education 1~~
Or
ESC 596 Student Teaching in the Middle and High School Grades 3
And
ESC 612 Seminar in Secondary Student Teaching 3

3. <u>TO:</u>

Mathematics Education, Middle Childhood Education (5-9) or Adolescent Education (7-12) M.S.Ed. Program

The graduate program for middle and high school mathematics teachers leads to a Master of Science in Education degree. Registered with the State Education Department, this program leads to both initial and professional certification to teach mathematics in grades 5-9 or 7-12, provided all other requirements have been satisfied.

A. To be eligible for the Master's in Mathematics Education for Grades 5-9, candidates must fall into one of the following categories:

Sequence 1 (38-42 credits). For liberal arts and sciences graduates who have completed 18 credits in mathematics, including Calculus I and Calculus II, but who lack professional education coursework.

Sequence 2 (37-38 credits). For teachers who hold a Transitional B certificate in Mathematics from New York State through special CUNY and NYCDOE programs.

Admission Requirements
A bachelor's degree (or its equivalent) from an accredited college or university with an overall index of 2.7 or better.
Mathematics course work of at least 18 credits that include Calculus I and II, with an overall index of 2.7 or better in all mathematics courses taken.
For Sequence 2, must hold a valid Transitional B Certificate from NYSED.
Submission of scores on the New York State Content Specialty Test (CST) in Mathematics.
If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
Two letters of recommendation, at least one of which is from a college or university instructor of mathematics.
A 500 word essay on career goals.
A personal interview.
Mathematics Education, Middle Childhood Education (5-9) or Adolescent Education (7-12)
Admission Requirements
A bachelor's degree (or its equivalent) from an accredited college or university with an overall index of 2.7 or better.
For Sequence 3: Mathematics course work to include Statistics; Calculus I; Calculus II; Linear Algebra; and History of Mathematics; with an overall index of 2.7 or better in all mathematics courses taken
For Sequence 4: Mathematics major
For Sequence 5: Mathematics major and NYS Transitional B Certificate
Submit scores on the New York State Content Specialty Test (CST) in Mathematics.
If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
Two letters of recommendation, at least one of which is from a college or university instructor of mathematics.
A 500-word essay on career goals.
A personal interview.
Middle Childhood Education Degree Requirements

Students must consult with a Mathematics Education adviser before starting their master's program and must plan their overall program with the adviser during their semester of attendance. Students must complete one of the two sequences outlined below.

Sequence 1. (1) 33 credits of prescribed course work; (2) 3-6 credits of supervised fieldwork; (3) A comprehensive examination OR research project (3); and (4) Maintain B average.

Sequence 2. (1) 33 credits of prescribed course work; (2) 2 credits of supervised fieldwork; (3) A comprehensive examination OR research project (3); and (4) Maintain B average.

Middle Childhood Education Overview of the Program

Sequence 1 students must successfully complete the following:

15-18 credits of Core Education courses, including 3-6 credits of supervised fieldwork and 3 credits of special education coursework.
9 credits in pedagogical content in mathematics education.
12 credits in mathematics.
A comprehensive written examination or research project after all course work has been completed. Students who elect to conduct a research project must enroll in 3 additional credits of research-related course work.
Sequence 2 (Transitional B-Grades 5-9) students must successfully complete the following:

14 credits of Core Education Courses, including 2 credits of supervised fieldwork and 3 credits of special education coursework.
9 credits in pedagogical content in mathematics education.
12 credits in mathematics.
A comprehensive written examination or research project after all course work has been completed. Students who elect to conduct a research project must enroll in 3 additional credits of research-related course work.

Curriculum

Sequence 1 (Grades 5-9) 3<u>8</u>-42 Credits

I. Core Education Courses: (1<u>7</u>-18 credits)

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 532	Teaching Mathematics in Middle and High School	3
ESC 595	Internship in Classroom Teaching	1-3
And		
ESC <u>612</u>	<u>Seminar in Secondary Student Teaching</u>	3
Or		
ESC 596	Student Teaching in the Middle and High School Grades	3
And		

ESC 612 Seminar in Secondary Student Teaching 3

II. Pedagogical Content in Mathematics Education (9 credits)

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3

III. Mathematics (12 credits)

		Credits
MAT 601	Secondary School Mathematics from an Advanced Standpoint	3
MAT 602	Introduction to Number Theory and Modern Algebra I	3
MAT 655	Exploring Mathematics Using Technology	2
MAT 661	History of Mathematics	4

IV. Culminating Experience (0-3 credits)

		Credits
ESC 706	Project Seminar I	1
ESC 707	Project Seminar II	2
Or		
Comprehensive Examination		0

Sequence 2 (Transitional B Sequence for Grades 5-9) 3<u>7</u>-38 credits

I. Core Education Courses: (1<u>6</u> credits)

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 532	Teaching Mathematics in Middle and High School	3
ESC 595	Internship in Classroom Teaching	1-3
<u>ESC 612</u>	<u>Seminar in Secondary Student Teaching</u>	<u>3</u>

II. Pedagogical Content in Mathematics Education (9 credits)

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3

III. Mathematics (12 credits)

Credits		
MAT 601	Secondary School Mathematics from an Advanced Standpoint	3
MAT 602	Introduction to Number Theory and Modern Algebra I	3
MAT 655	Exploring Mathematics Using Technology	2
MAT 661	History of Mathematics	4

IV. Culminating Experience (0-3 credits)

Credits

ESC 706 Project Seminar I 1
ESC 707 Project Seminar II 2
Or
Comprehensive Examination 0
Middle Childhood Education Continuation Requirements
Students must maintain a 3.0 Grade Point Average throughout the course of study.

B. To be eligible for the Master's in Mathematics Education for Grades 7-12, candidates must fall into one of the following categories:

Sequence 3 (44- 48 credits). For liberal arts and sciences graduates who do not hold a bachelor's degree in mathematics but who have completed 15 credits in mathematics, including Statistics, Calculus I, Calculus II, Linear Algebra, and History of Mathematics, but who lack professional education coursework.

Sequence 4 (38-42 credits). For candidates who hold a bachelor degree in mathematics only, but who lack professional education coursework.

Sequence 5 (37-38 credits). For teachers who hold a bachelor's degree in mathematics and a Transitional B Certificate in Mathematics from New York State through special CUNY and NYCDOE programs.

Middle Childhood Education Admission Requirements
A bachelor's degree (or its equivalent) from an accredited college or university with an overall index of 2.7 or better.
For Sequence 3: Mathematics course work to include Statistics; Calculus I; Calculus II; Linear Algebra; and History of Mathematics; with an overall index of 2.7 or better in all mathematics courses taken;
For Sequence 4: Mathematics major;
For Sequence 5: Mathematics major AND NYS Transitional B Certificate.
Submit scores on the New York State Content Specialty Test (C.S.T.) in Mathematics.
If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
Two letters of recommendation, at least one of which is from a college or university instructor of mathematics.
A 500 word essay on career goals.
A personal interview.
Adolescent Education Degree Requirements (Grades 7-12)
Students must consult with a Mathematics Education adviser before starting their master's program and must plan their overall program with the adviser during their first semester of attendance. Students must complete one of the three sequences outlined below:

Sequence 3. (1) 39 credits of prescribed course work including 3 credits of special education coursework; (2) 3-6 credits of supervised fieldwork; (3) A comprehensive examination OR research project (3); and (4) Maintain B average.

Sequence 4. (1) 33 credits of prescribed course work including 3 credits of special education coursework; (2) 3-6 credits of supervised fieldwork; (3) A comprehensive examination OR

research project (3); and (4) Maintain B average.

Sequence 5. (1) 33 credits of prescribed course work including 3 credits of special education coursework; (2) 2 credits of supervised fieldwork; (3) A comprehensive examination OR research project (3); and (4) Maintain B average.

Adolescent Education Program Overview
Sequence 3 (Grades 7-12)

Students must successfully complete the following:

17-18 credits of Core Education Courses, including 3-6 credits of supervised fieldwork and 3 credits of special education coursework.
12 credits in pedagogical content in mathematics education.
15 credits in mathematics. Students who lack History of Mathematics as a prerequisite must register for MAT 661.
A comprehensive written examination or research project after all course work has been completed. Students who elect to conduct a research project must enroll in three additional credits of research-related course work.
Note: Students who lack full-time experience as a mathematics teacher in grades 7-12 prior to completion of the program must register for 6 credits of supervised student teaching in lieu of the 3 credits of supervised fieldwork.

Sequence 4 (Math majors who do NOT hold a NYS Transitional B Certificate, 7-12)

Students must successfully complete the following:

17-18 credits of Core Education Courses, including 3-6 credits of supervised fieldwork and 3 credits of special education coursework;
12 credits in pedagogical content in mathematics education.
9 credits in mathematics electives to be chosen in consultation with a program adviser.
A comprehensive written examination or research project is required after all course work has been completed. Students who elect to conduct a research project must enroll in tjree additional credits of research-related course work.
Note: Students who lack full-time experience as a mathematics teacher in grades 7-12 prior to completion of the program must register for 6 credits of supervised student teaching in lieu of the 3 credits of supervised fieldwork.

Sequence 5 (Math Majors who hold a NYS Transitional B Certificate, 7-12)

Students must successfully complete the following:

16 credits of Core Education Courses, including 3-6 credits of supervised fieldwork and 3 credits of special education coursework;
12 credits in pedagogical content in mathematics education.
9 credits in mathematics electives to be chosen in consultation with a program adviser.
A comprehensive written examination or research project after all course work has been completed. Students who elect to conduct a research project must enroll in three additional

credits of research-related course work.
Adolescent Education Curriculum

Sequence 3 (Grades 7-12)
44- 48 credits

I. Core Education Courses (17-18 credits):

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 532	Teaching Mathematics in Middle and High School	3
ESC 595	Internship in Classroom Teaching	1-3
And		
ESC 612	Seminar in Secondary Student Teaching	3
Or		
ESC 596	Student Teaching in the Middle and High School Grades	3
And		
ESC 612	Seminar in Secondary Student Teaching	3

II. Pedagogical Content in Mathematics Education (12 credits):

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3
ESC 749	Teaching Mathematics in Grades 11 and 12	3

III. Mathematics (15 credits):

		Credits
MAT 601	Secondary School Mathematics from an Advanced Standpoint	3
MAT 604	Application of the Real and Complex Number Systems	3
MAT 637	Topics in Discrete Mathematics	4
MAT 655	Exploring Mathematics Using Technology	2
MAT 615	Modern Algebra	4

IV. Culminating Experience (0-3 credits):
Research project or comprehensive examination. Students who elect to write a Master's thesis must concurrently enroll in:

		Credits
ESC 706	Project Seminar I	1
ESC 707	Project Seminar II	2

Sequence 4 (Grades 7-12)
38-42 credits

I. Core Education Courses: (17-18 credits):

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 532	Teaching Mathematics in Middle and High School	3
ESC 595	Internship in Classroom Teaching	1-3
And		
ESC 612	Seminar in Secondary Student Teaching	3
Or		
ESC 596	Student Teaching in the Middle and High School Grades	3
And		
ESC 612	Seminar in Secondary Student Teaching	3

II. Pedagogical Content in Mathematics Education (12 credits):

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3
ESC 749	Teaching Mathematics in Grades 11 and 12	3

III. Mathematics (9 credits):
Three graduate electives in mathematics chosen in consultation with a program adviser;

IV. Culminating Experience (0-3 credits).
Research project or comprehensive examination. Students who elect to write a Master's thesis must concurrently enroll in:

		Credits
ESC 706	Project Seminar I	1
ESC 707	Project Seminar II	2

Sequence 5 (Math Majors who are eligible for a NYS Transitional B Certificate, 7-12)
3<u>7</u>-38 credits

I. Core Education Courses: (1<u>6</u> credits):

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 532	Teaching Mathematics in Middle and High School	3
ESC 595	Internship in Classroom Teaching	1-3
<u>ESC 612</u>	<u>Seminar in Secondary Student Teaching</u>	<u>3</u>

II. Pedagogical Content in Mathematics Education (12 credits):

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3

ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3
ESC 749	Teaching Mathematics in Grades 11 and 12	3

III. Mathematics (9 credits):
Three graduate electives in mathematics chosen in consultation with a program adviser;

IV. Culminating Experience (0-3 credits):
Research project or comprehensive examination. Students who elect to write a Master's thesis must concurrently enroll in:

		Credits
ESC 706	Project Seminar I	1
ESC 707	Project Seminar II	2

Sequence 6 (Non Math Majors who are eligible for a NYS Transitional B Certificate-Grades 7-12)
(38- 41 credits)

I. Core Education Courses (11 credits):

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 532	Teaching Mathematics in Middle and High School	3
ESC 595	Internship in Classroom Teaching	1-3

II. Pedagogical Content in Mathematics Education (12 credits):

		Credits
ESC 740	Teaching Mathematics in Grades 7-10	3
ESC 742	Research in Mathematics Education	3
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3
ESC 749	Teaching Mathematics in Grades 11 and 12	3

III. Mathematics (15 credits):

		Credits
MAT 601	Secondary School Mathematics from an Advanced Standpoint	3
MAT 604	Application of the Real and Complex Number Systems	3
MAT 637	Topics in Discrete Mathematics	4
MAT 655	Exploring Mathematics Using Technology	2
MAT 615	Modern Algebra	4

IV. Culminating Experience (0-3 credits):
Research project or comprehensive examination.

Students who elect to write a Master's thesis must concurrently enroll in:

		Credits
ESC 706	Project Seminar I	1
ESC 707	Project Seminar II	2

Extension to the New York State Initial Certificate to Teach Mathematics in Grades 5-9 (Middle Childhood Education)

Extension Program in Mathematics Education (17 credits)

This program is designed for candidates who hold New York State initial certification to teach Mathematics in grades 5-9 (Middle Childhood Education) and wish to extend their certification to include grades 7-12 (Adolescent Education).

Admission Requirements

Possess New York State initial certification to teach mathematics in grades 5-9.
Have at least two semesters of successful experience teaching mathematics in grades 7, 8, or 9; or one semester of supervised student teaching in mathematics in grades 7, 8, or 9 (with a grade of B or better).
Present coursework in Calculus I, Calculus II, Linear Algebra, Statistics, and History of Mathematics with a GPA of 3.0 or better.
Submit scores on the NYS Content Specialty (CST) Test in Mathematics.
Submit two (2) letters of recommendation, at least one of which is from a college or university instructor of mathematics.
Submit a 500-word essay on career goals.
Participate in an interview.
Meet additional departmental, divisional, and New York State requirements, if any.
If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
Continuation Requirements

Students must maintain a 3.0 grade point average throughout the course of study.
Certificate Requirements

The Extension Program in Mathematics Education consists of 17 credits, as outlined below. A minimum of a B average must be maintained throughout the course of the Program. All students are to consult with an adviser in Mathematics Education before starting the Program.

Overview of the Program

Curriculum
Curriculum and Instruction (6 credits):

		Credits
ESC 748	Teaching Problem Solving in Mathematics in Middle and High School	3
ESC 749	Teaching Mathematics in Grades 11 and 12	3

Mathematics Content (11 credits):

		Credits
MAT 604	Application of the Real and Complex Number Systems	3
MAT 615	Modern Algebra	4
MAT 637	Topics in Discrete Mathematics	4

Mathematics Education Advanced Certificate (25-27 Credits)
This program is designed for candidates who hold a bachelor's degree in mathematics and a master's degree in mathematics or in an approved mathematics-related field, and who seek New York State Certification in mathematics, grades 7-12.

Advanced Certificate in Mathematics Education Admission Requirements
Candidates wishing to enter the Mathematics Education Certificate Program must meet the following conditions as determined by the program coordinator:

Possess a bachelor's degree (or its equivalent) from an accredited college or university which meets New York State requirements for a general education core in the liberal arts and sciences. This degree shall include a mathematics major, with a minimum of 36 credits in mathematics.
Possess a master's degree in mathematics or an approved mathematics-related field.
Demonstrate the ability to successfully pursue graduate study by having a master's grade point average (GPA) of 3.0 or better.
Satisfy the content requirements for New York State initial certification.
Submit scores on the NYS LAST Teacher Examination and the NYS Content Specialty Test in Mathematics (CST).
Submit two (2) letters of recommendation, at least one of which is from a college or university instructor of mathematics.
Submit a 500-word essay on career goals.
Participate in a personal interview.
Meet additional departmental, divisional, and New York State requirements, if any.
If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
Submit scores of the Graduate Record Examination (GRE) revised general test, i.e., verbal reasoning, quantitative reasoning, and analytical writing.
Advanced Certificate in Mathematics Education Requirements
The Certificate Program in Mathematics Education consists of 24-27 credits, as outlined below. Students must maintain a minimum B average throughout the course of the Program. All students are to consult with an adviser in Mathematics Education before starting the Program. In order to be recommended for NYS certification at the completion of the Program, candidates must have passed the LAST, the CST in Mathematics, and the NYS Written Assessment of Teaching Skills (ATS-W); they must also meet any additional requirements set by New York State.

Advanced Certificate in Mathematics Education Curriculum
I. Foundations of Education (9)
ESC 501 Psychological Foundations of Education 3
ESC 502 Historical Foundations of Education: A Multicultural Perspective 3
ESC 506 Special Needs Education in TESOL and Secondary Settings 3

II. Curriculum and Instruction (12)
ESC 532 Teaching Mathematics in Middle and High School 3
ESC 740 Teaching Mathematics in Grades 7-10 3
Plus

Mathematics Education 6
Mathematics Education: 6 additional credits in mathematics education to be selected in consultation with the program coordinator

III. Practicum (5-6)
ESC 595 Internship in Classroom Teaching 1-3
And
ESC 612 Seminar in Secondary Student Teaching 3
Or
ESC 596 Student Teaching in the Middle and High School Grades 3
And
ESC 612 Seminar in Secondary Student Teaching 3

4. Rationale:
Due to the extra preparation and mentorship that is needed for the edTPA, all English, Math, and Social Studies education students in particular sequences will be required to take ESC 612 -Seminar in Secondary Student Teaching (3 credits) instead of ESC 611 Teaching Internship Seminar in Secondary Education (1 cr.). This curriculum change will allow students to have additional contact time and support from the instructor.

5. Date of departmental approval: March 1, 2018

LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF MIDDLE AND HIGH SCHOOL EDUCATION

CURRICULUM CHANGE

Name of Program and Degree Award:
Social Studies Education M.A. Program and Social Studies Education Advanced Certificate.
Hegis Number: 2201.01
Program Codes: 25794, 27819
Effective Term: Fall 2018

1. Type of Change: Change in Degree Requirements and Change in Credits

2. FROM:
Social Studies Education M.A. Program

This program offers three sequences and is designed for candidates seeking a Master's degree in Social Studies Education, grades 7-12. Sequences 1 and 2 lead to Initial Certification for candidates looking to begin or resume an education certification progression. Sequence 3 is for candidates who already earned Initial Certification and are seeking Professional Certification.

Social Studies Education Admission Requirements:
Social Studies Education Admission Requirements:
• Possess a bachelor's degree or equivalent from an accredited college or university. The bachelor's degree can be in history, any social science, or include an undergraduate record of 30 social studies credits with a minimum of 21 of the credits in history, and the remainder from the social sciences.
• A bachelor's degree with a minimum cumulative grade point average of 3.0 in the undergraduate work.
• If conditionally accepted, must earn minimum 3.0 in courses designated by the Program Coordinator.
• If conditionally accepted, meet conditions, starting in the first semester and finishing in no more than three consecutive semesters.
• For Sequence 2, present evidence of meeting core requirements in educational psychology, educational foundations, literacy, technology, and special education, including supervised field experiences.
• For Sequence 3, present evidence of NYS teacher certification in Social Studies Education 7-12.
• Evidence of having completed a course in Special Education (ESC 463 or the equivalent). Students who have not taken this course as an undergraduate must take ESC 506 as part of their graduate program.
• Candidates must schedule an interview with the Social Studies Program Coordinator that includes a transcript review.
• Two letters of recommendation.

• 500-word application essay on interest in the program as it relates to long-term career goals.

Degree Requirements
Prerequisite Content Core:
All candidates must satisfy the following prerequisite areas of study. These requirements may be met by either graduate courses or by undergraduate coursework taken prior to or after commencement of graduate study. Undergraduate transcripts will be evaluated on an individual basis as part of the admissions process. Lehman undergraduates can satisfy these requirements prior to admission in the master's program by choosing courses for their distribution requirements in the areas listed.

Anthropology
Sociology
Geography
Political science
Economics
Psychology
Two history survey courses, one in U.S. history and one in European or world history.

Sequence 1: (~~39~~-42 credits)
Candidates with an undergraduate degree in history, any of the social sciences or a 30 credit concentration in social studies who lack core education requirements and seek initial certification in Social Studies Education grades 7-12.
• Foundations Core (12 credits): ESC 501 (3), ESC 502 (3), ESC 529 (3) and ESC 506(3).
• Pedagogical Core (6 credits): ESC 533 (3) and ESC 534 (3).
• Content Core (15 credits): HIW 533 (3), HIU 534 (3), and three additional history or social science courses chosen in consultation with the adviser.
• Project Seminar (3 credits): ESC 708 (3)
• Student Teaching (6 credits): ESC 596 (3) and ESC 612 (3) or Teaching Internship for Current Teachers-of-Record (~~3~~ credits): ESC 595 (2) and ESC ~~611 (1)~~

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 529	Language and Literacies Acquisition in Secondary Education	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 533	Teaching World History in Middle and High School	3
ESC 534	Teaching U.S. History and Government	3
HIW 533	World History and Historiography	3
HIU 534	U.S. History and Historiography	3
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3
ESC 596	Student Teaching in the Middle and High School Grades	3
ESC 612	Seminar in Secondary Student Teaching	3
ESC 595	Internship in Classroom Teaching	1-3
~~ESC 611~~	~~Teaching Internship Seminar in Secondary Education~~	~~1~~

Sequence 2: (30 credits)
Candidates seeking initial certification who have met foundations core requirements.
• Pedagogical Core (6 credits): ESC 533 (3) and ESC 534 (3).
• Content Core (15 credits): HIW 533 (3), HIU 534 (3), and three additional history or social science courses chosen in consultation with the adviser.
• Project Seminar (3 credits): ESC 708 (3)
• Student Teaching (6 credits): ESC 596 (3) and ESC 612 (3)

		Credits
ESC 533	Teaching World History in Middle and High School	3
ESC 534	Teaching U.S. History and Government	3
HIW 533	World History and Historiography	3
HIU 534	U.S. History and Historiography	3
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3
ESC 596	Student Teaching in the Middle and High School Grades	3
ESC 612	Seminar in Secondary Student Teaching	3

Sequence 3: (30 credits)
Candidates who already hold initial certification in Social Studies Education grades 7-12 and are seeking professional certification with a humanities focus.
• Pedagogical Core (12 credits): four ESC teaching methods courses chosen in consultation with the adviser.
• Content Core (15 credits): HIW 533 (3), HIU 534 (3), and three additional history or social science courses chosen in consultation with the adviser.
• Project Seminar (3 credits): ESC 708 (3)

		Credits
HIW 533	World History and Historiography	3
HIU 534	U.S. History and Historiography	3
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3

Additional Certification Requirements

In order to be recommended for initial certification in Social Studies Education 7-12, students must: (a) complete the master's degree with a cumulative index of 3.0 or better; (b) present passing scores on the following New York State examinations: Educating All Students (EAS), Teacher Performance Assessment (edTPA), and Social Studies CST; (c) complete the mandatory training in child abuse identification and reporting, violence prevention, and DASA, and (d) demonstrate successful completion of a liberal arts and sciences core. Please see adviser for more information.

In order to qualify for Professional Certification in Social Studies Education 7-12, in addition to the Master's degree, teachers must complete one year of mentored, full-time teaching and two years of full-time teaching in a public or private school, which serves grades 7- 12, and must meet any additional New York State requirements.

Qualified Social Studies Education 7-12 candidates may also apply to one of the following Advanced Certificates:
(1) Teaching English to Speakers of Other Languages (TESOL P-12), and become ESOL-certified upon successful completion of that program of study or the Advanced Certificate;
(2) Advanced Certificate: Middle Childhood Extension, Grades 5-6, and extend their certification to the lower grades; or
(3) Advanced Certificate: Bilingual Extension, and become certified to teach social studies in the native language as well as English.

Social Studies Education Advanced Certificate (~~24~~-27 Credits)

Social Studies Education Advanced Certificate Requirements
Students must consult with an adviser in the Social Studies Education program before starting their certificate program. During their first semester, matriculated students are required to plan their program with a Social Studies Education adviser. All students must complete the 24-27-credit curriculum below. The CST examination must be passed in order to take the Social Studies teaching methods courses. In order to be recommended for certification, candidates must pass the remaining current certification examinations and complete the Social Studies Education Certificate with a 3.0 or better GPA, and meet any additional New York State requirements.

Social Studies Education Advanced Certificate Admission Requirements
Possess a bachelor's degree (or its equivalent) from an accredited college or university that meets New York State's requirements for a general education core in liberal arts and sciences.
Possess a master's degree in an approved social studies content area.
Have completed a minimum of 36 credits in history or in an approved social studies content area.
Submit scores on the NYS Content Specialty Test (CST) in Social Studies.
Demonstrate the ability to pursue graduate study successfully by having a master's Grade Point Average of 3.0 or better.
Submit two (2) letters of recommendation and a 500-word essay on career goals.
Participate in an interview.
Satisfy appropriate voice, speech, and health standards.
Meet additional departmental, divisional, and New York State requirements, if any.
If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
Submit scores of the Graduate Record Examination (GRE) revised general test, i.e., verbal reasoning, quantitative reasoning, and analytical writing.

Advanced Certificate in Social Studies Education (~~24~~-27 Credits)

The 2~~4~~-27 credit certificate curriculum consists of three instructional areas.

I.Foundations of Education (12):

ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3

ESC 529 Language and Literacies Acquisition in Secondary Education 3
ESC 506: Or the equivalent. Requires 15 hours of field work.

ESC 501, ESC 502, ESC 529: Require 25 hours of fieldwork each.

II. Methods, Curriculum, and Instruction (9):
ESC 534 Teaching U.S. History and Government 3
Additional Credits 6
Additional Credits: 6 additional credits to be selected in consultation with the Program Coordinator.

ESC 534: ESC 534 and all other Social Studies teaching methods courses include a combined total of 25 hours of fieldwork.

III. Practicum (~~3~~-6):
ESC 595 Internship in Classroom Teaching 1-3
Or
ESC 596 Student Teaching in the Middle and High School Grades 3
ESC 595: Teaching Internship for in-service teachers ~~and~~ will include a weekly seminar, ~~ESC 611.~~

ESC 596: Student Teaching will be taken by pre-service teachers and will include a weekly seminar, ESC 612.

3. TO:
Social Studies Education M.A. Program

This program offers three sequences and is designed for candidates seeking a Master's degree in Social Studies Education, grades 7-12. Sequences 1 and 2 lead to Initial Certification for candidates looking to begin or resume an education certification progression. Sequence 3 is for candidates who already earned Initial Certification and are seeking Professional Certification.

Social Studies Education Admission Requirements:
Social Studies Education Admission Requirements:
• Possess a bachelor's degree or equivalent from an accredited college or university. The bachelor's degree can be in history, any social science, or include an undergraduate record of 30 social studies credits with a minimum of 21 of the credits in history, and the remainder from the social sciences.
• A bachelor's degree with a minimum cumulative grade point average of 3.0 in the undergraduate work.
• If conditionally accepted, must earn minimum 3.0 in courses designated by the Program Coordinator.
• If conditionally accepted, meet conditions, starting in the first semester and finishing in no more than three consecutive semesters.
• For Sequence 2, present evidence of meeting core requirements in educational psychology, educational foundations, literacy, technology, and special education, including supervised field experiences.

• For Sequence 3, present evidence of NYS teacher certification in Social Studies Education 7-12.
• Evidence of having completed a course in Special Education (ESC 463 or the equivalent). Students who have not taken this course as an undergraduate must take ESC 506 as part of their graduate program.
• Candidates must schedule an interview with the Social Studies Program Coordinator that includes a transcript review.
• Two letters of recommendation.
• 500-word application essay on interest in the program as it relates to long-term career goals.

Degree Requirements
Prerequisite Content Core:
All candidates must satisfy the following prerequisite areas of study. These requirements may be met by either graduate courses or by undergraduate coursework taken prior to or after commencement of graduate study. Undergraduate transcripts will be evaluated on an individual basis as part of the admissions process. Lehman undergraduates can satisfy these requirements prior to admission in the master's program by choosing courses for their distribution requirements in the areas listed.

Anthropology
Sociology
Geography
Political science
Economics
Psychology
Two history survey courses, one in U.S. history and one in European or world history.

Sequence 1: (41-42 credits)
Candidates with an undergraduate degree in history, any of the social sciences or a 30 credit concentration in social studies who lack core education requirements and seek initial certification in Social Studies Education grades 7-12.
• Foundations Core (12 credits): ESC 501 (3), ESC 502 (3), ESC 529 (3) and ESC 506(3).
• Pedagogical Core (6 credits): ESC 533 (3) and ESC 534 (3).
• Content Core (15 credits): HIW 533 (3), HIU 534 (3), and three additional history or social science courses chosen in consultation with the adviser.
• Project Seminar (3 credits): ESC 708 (3)
• Student Teaching (6 credits): ESC 596 (3) and ESC 612 (3) or Teaching Internship for Current Teachers-of-Record (5 credits): ESC 595 (2) and ESC 612 (3)

		Credits
ESC 501	Psychological Foundations of Education	3
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3
ESC 529	Language and Literacies Acquisition in Secondary Education	3
ESC 506	Special Needs Education in TESOL and Secondary Settings	3
ESC 533	Teaching World History in Middle and High School	3
ESC 534	Teaching U.S. History and Government	3
HIW 533	World History and Historiography	3

HIU 534 U.S. History and Historiography 3
ESC 708 Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas 3
ESC 596 Student Teaching in the Middle and High School Grades 3
ESC 612 Seminar in Secondary Student Teaching 3
ESC 595 Internship in Classroom Teaching 1-3
ESC 612 Seminar in Secondary Student Teaching 3

Sequence 2: (30 credits)
Candidates seeking initial certification who have met foundations core requirements.
• Pedagogical Core (6 credits): ESC 533 (3) and ESC 534 (3).
• Content Core (15 credits): HIW 533 (3), HIU 534 (3), and three additional history or social science courses chosen in consultation with the adviser.
• Project Seminar (3 credits): ESC 708 (3)
• Student Teaching (6 credits): ESC 596 (3) and ESC 612 (3)

Credits
ESC 533 Teaching World History in Middle and High School 3
ESC 534 Teaching U.S. History and Government 3
HIW 533 World History and Historiography 3
HIU 534 U.S. History and Historiography 3
ESC 708 Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas 3
ESC 596 Student Teaching in the Middle and High School Grades 3
ESC 612 Seminar in Secondary Student Teaching 3

Sequence 3: (30 credits)
Candidates who already hold initial certification in Social Studies Education grades 7-12 and are seeking professional certification with a humanities focus.
• Pedagogical Core (12 credits): four ESC teaching methods courses chosen in consultation with the adviser.
• Content Core (15 credits): HIW 533 (3), HIU 534 (3), and three additional history or social science courses chosen in consultation with the adviser.
• Project Seminar (3 credits): ESC 708 (3)

Credits
HIW 533 World History and Historiography 3
HIU 534 U.S. History and Historiography 3
ESC 708 Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas 3

Additional Certification Requirements
In order to be recommended for initial certification in Social Studies Education 7-12, students must: (a) complete the master's degree with a cumulative index of 3.0 or better; (b) present passing scores on the following New York State examinations: Educating All Students (EAS), Teacher Performance Assessment (edTPA), and Social Studies CST; (c) complete the mandatory training in child abuse identification and reporting, violence prevention, and DASA, and (d) demonstrate successful completion of a liberal arts and sciences core. Please see

adviser for more information.

In order to qualify for Professional Certification in Social Studies Education 7-12, in addition to the Master's degree, teachers must complete one year of mentored, full-time teaching and two years of full-time teaching in a public or private school, which serves grades 7- 12, and must meet any additional New York State requirements.

Qualified Social Studies Education 7-12 candidates may also apply to one of the following Advanced Certificates:
(1) Teaching English to Speakers of Other Languages (TESOL P-12), and become ESOL-certified upon successful completion of that program of study or the Advanced Certificate;
(2) Advanced Certificate: Middle Childhood Extension, Grades 5-6, and extend their certification to the lower grades; or
(3) Advanced Certificate: Bilingual Extension, and become certified to teach social studies in the native language as well as English.

Social Studies Education Advanced Certificate (26-27 Credits)

Social Studies Education Advanced Certificate Requirements
Students must consult with an adviser in the Social Studies Education program before starting their certificate program. During their first semester, matriculated students are required to plan their program with a Social Studies Education adviser. All students must complete the 24-27-credit curriculum below. The CST examination must be passed in order to take the Social Studies teaching methods courses. In order to be recommended for certification, candidates must pass the remaining current certification examinations and complete the Social Studies Education Certificate with a 3.0 or better GPA, and meet any additional New York State requirements.

Social Studies Education Advanced Certificate Admission Requirements
Possess a bachelor's degree (or its equivalent) from an accredited college or university that meets New York State's requirements for a general education core in liberal arts and sciences.
Possess a master's degree in an approved social studies content area.
Have completed a minimum of 36 credits in history or in an approved social studies content area.
Submit scores on the NYS Content Specialty Test (CST) in Social Studies.
Demonstrate the ability to pursue graduate study successfully by having a master's Grade Point Average of 3.0 or better.
Submit two (2) letters of recommendation and a 500-word essay on career goals.
Participate in an interview.
Satisfy appropriate voice, speech, and health standards.
Meet additional departmental, divisional, and New York State requirements, if any.
If conditionally admitted, make up requirements starting in the first semester and finishing in no more than three consecutive semesters.
Submit scores of the Graduate Record Examination (GRE) revised general test, i.e., verbal reasoning, quantitative reasoning, and analytical writing.
Advanced Certificate in Social Studies Education (26-27 Credits)

The 26-27 credit certificate curriculum consists of three instructional areas.

I.Foundations of Education (12):
ESC 501 Psychological Foundations of Education 3
ESC 502 Historical Foundations of Education: A Multicultural Perspective 3
ESC 506 Special Needs Education in TESOL and Secondary Settings 3
ESC 529 Language and Literacies Acquisition in Secondary Education 3
ESC 506: Or the equivalent. Requires 15 hours of field work.

ESC 501, ESC 502, ESC 529: Require 25 hours of fieldwork each.

II. Methods, Curriculum, and Instruction (9):
ESC 534 Teaching U.S. History and Government 3
Additional Credits 6
Additional Credits: 6 additional credits to be selected in consultation with the Program Coordinator.

ESC 534: ESC 534 and all other Social Studies teaching methods courses include a combined total of 25 hours of fieldwork.

III. Practicum (5-6):
ESC 595 Internship in Classroom Teaching 1-3
Or
ESC 596 Student Teaching in the Middle and High School Grades 3

ESC 595: Teaching Internship for in-service teachers will include a weekly seminar, ESC 612: Seminar in Secondary Student Teaching 3

ESC 596: Student Teaching will be taken by pre-service teachers and will include a weekly seminar, ESC 612: Seminar in Secondary Student Teaching 3

4. Rationale:
Due to the extra preparation and mentorship that is needed for the edTPA, all English, Math, and Social Studies education students in particular sequences will be required to take ESC 612 -Seminar in Secondary Student Teaching (3 credits) instead of ESC 611 Teaching Internship Seminar in Secondary Education (1 cr.). This curriculum change will allow students to have additional contact time and support from the instructor.

5. Date of departmental approval: March 1, 2018

LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF MIDDLE AND HIGH SCHOOL EDUCATION

CURRICULUM CHANGE

Name of Program and Degree Award: Masters of Science in Secondary Science Education, Science Education Sequence 2
Hegis Number: 0834.00
Program Code: 25791
Effective Term: Fall 2018

1. Type of Change: Change in Degree Requirements and Change in Credits

2. From:
Science Education M.S.Ed. Program

This program leads to a master's degree in Science Education. Upon completion of additional requirements, candidates will be eligible to receive New York State Initial Certification to teach one or more of the following sciences at the level of adolescent education (Grades 7-12): biology, chemistry, earth science, general science, and physics.

To be eligible for the Science Education Master's Program, potential students must fall into one of the following categories:

Sequence 1: For candidates who have, or are eligible for, Initial Certification in subjects other than science and who seek certification as science teachers.

Sequence 2: For candidates who have completed at least 36 credits in biology, chemistry, geology, or physics, but who lack professional education coursework and who seek Initial Certification.

Sequence 3: For candidates who hold a valid Transitional B certificate in biology, chemistry, earth science, general science, or physics, Grades 7-12, from New York State.

Science Education Admission Requirements

1. Possess a bachelor's degree (or its equivalent) from an accredited college or university with an overall index of 3.0 or better.
2. Demonstrate the ability to successfully pursue graduate study. (Above-average achievement in academic work and in the teaching specialization is required).
3. Submission of scores on the Content Specialty Test (CST).
4. For Sequence 1 admission: An undergraduate science major or the equivalent and a minor in middle and high school education or the equivalent.
5. For Sequence 2 and 3 admission: At least 36 credits in biology, chemistry, geology, or physics. Matriculants may be asked to complete undergraduate and/or graduate

prerequisite coursework in addition to degree requirements, based on the evaluation of their credentials by an adviser in the Science Education Program.
6. Satisfy appropriate voice, speech, and health standards.
7. Submit two letters of recommendation, at least one of which is from a college or university science instructor.
8. Personal interview.

Science Education Degree Requirements

Students must consult with an adviser in the Science Education Program before starting their master's program. During their first semester, matriculated students are required to plan their graduate program with an adviser in the Science Education Program. Students must complete one of the three sequences outlined below.

Curriculum

The curriculum for each sequence is distributed in four instructional modules as follows:

Sequence 2 ~~(39~~-48 credits~~)~~

Core Education Sequence ~~(15~~-18 credits~~)~~:

ESC 501	Psychological Foundations of Education	3cr.
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3cr.
ESC 519	Teaching Science in Middle and High School	3cr.
ESC 529	Language and Literacies Acquisition in Secondary Education	3cr.
	~~And~~	
~~ESC 595~~	~~Internship in Classroom Teaching~~	~~1-3cr.~~
	~~And~~	
~~ESC 611~~	~~Teaching Internship Seminar in Secondary Education~~	~~3cr.~~
	~~Or~~	
ESC 596	Student Teaching in the Middle and High School Grades	3cr.
	~~And~~	
ESC 612	Seminar in Secondary Student Teaching.	3cr.

Curriculum and Instruction (12 credits):

ESC 506	Special Needs Education in TESOL and Secondary Settings	3cr.
ESC 755	Teaching the Historical Development of Science	3cr.

ESC 767	The Museum as a Resource for Teaching Science	3cr.
ESC 770	Methods of Teaching Science in Secondary Schools: Selected Topics	1cr.

ESC 767 or Equivalent

Research and Culmination Projects (6 credits):

ESC 705	Method of Educational Research	3cr.
ESC 706	Project Seminar I	1cr.
ESC 707	Project Seminar II	2cr.
	or	
ESC 705	Method of Educational Research	3cr.
	And	
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3cr.

Graduate Science Content (6-12 credits):
Science content course requirements must align with undergraduate science preparation and with intended certification subject area. Consult with an adviser in the Science Education Program for the appropriate course(s) to satisfy this requirement. Such courses may include but are not limited to:

Biology

BIO 501	Topics in Genetics.	4cr.
BIO 502	Topics in Economic Botany	4cr.
BIO 618	Problems in Ecology	4cr.

Chemistry

CHE 545	Advanced Inorganic Chemistry	3cr.
CHE 544	Biochemistry	3cr.
CHE 548	Special Topics in Modern Organic Chemistry	3cr.

Geology:

GEO 501	Earth Processes	3cr.
GEO 502	Earth History	3cr.
GEO 503	Geologic Field Methods	3cr.
AST 601	Astronomy of Solar Systems	4cr.

Physics:

PHY 601	Advanced General Physics	3cr.
PHY 605	Physics for Teachers	4cr.
AST 601	Astronomy of Solar Systems	4cr.
AST 602	Stellar Astronomy	4cr.

3**. To:**
Science Education M.S.Ed. Program

This program leads to a master's degree in Science Education. Upon completion of additional requirements, candidates will be eligible to receive New York State Initial Certification to teach one or more of the following sciences at the level of adolescent education (Grades 7-12): biology, chemistry, earth science, general science, and physics.

To be eligible for the Science Education Master's Program, potential students must fall into one of the following categories:

Sequence 1: For candidates who have, or are eligible for, Initial Certification in subjects other than science and who seek certification as science teachers.

Sequence 2: For candidates who have completed at least 36 credits in biology, chemistry, geology, or physics, but who lack professional education coursework and who seek Initial Certification.

Sequence 3: For candidates who hold a valid Transitional B certificate in biology, chemistry, earth science, general science, or physics, Grades 7-12, from New York State.

Science Education Admission Requirements

1. Possess a bachelor's degree (or its equivalent) from an accredited college or university with an overall index of 3.0 or better.
2. Demonstrate the ability to successfully pursue graduate study. (Above-average achievement in academic work and in the teaching specialization is required).
3. Submission of scores on the Content Specialty Test (CST).
4. For Sequence 1 admission: An undergraduate science major or the equivalent and a minor in middle and high school education or the equivalent.
5. For Sequence 2 and 3 admission: At least 36 credits in biology, chemistry, geology, or physics. Matriculants may be asked to complete undergraduate and/or graduate prerequisite coursework in addition to degree requirements, based on the evaluation of their credentials by an adviser in the Science Education Program.
6. Satisfy appropriate voice, speech, and health standards.
7. Submit two letters of recommendation, at least one of which is from a college or university science instructor.
8. Personal interview.

Science Education Degree Requirements

Students must consult with an adviser in the Science Education Program before starting their master's program. During their first semester, matriculated students are required to plan their graduate program with an adviser in the Science Education Program. Students must complete one of the three sequences outlined below.

Curriculum

The curriculum for each sequence is distributed in four instructional modules as follows:

Sequence 2 (42-48 credits)

Core Education Sequence (18 credits):

ESC 501	Psychological Foundations of Education	3cr.
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3cr.
ESC 519	Teaching Science in Middle and High School	3cr.
ESC 529	Language and Literacies Acquisition in Secondary Education	3cr.
ESC 596	Student Teaching in the Middle and High School Grades	3cr.
ESC 612	Seminar in Secondary Student Teaching	3cr.

Curriculum and Instruction (12 credits):

ESC 506	Special Needs Education in TESOL and Secondary Settings	3cr.
ESC 755	Teaching the Historical Development of Science	3cr.
ESC 767	The Museum as a Resource for Teaching Science	3cr.
ESC 770	Methods of Teaching Science in Secondary Schools: Selected Topics	1cr.

Research and Culmination Projects (6 credits):

ESC 705	Method of Educational Research	3cr.
ESC 706	Project Seminar I	1cr.
ESC 707	Project Seminar II	2cr.
	or	
ESC 705	Method of Educational Research	3cr.
	And	
ESC 708	Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas	3cr.

Graduate Science Content (6-12 credits):
Science content course requirements must align with undergraduate science preparation and with intended certification subject area. Consult with an adviser in the Science Education Program for the appropriate course(s) to satisfy this requirement. Such courses may include but are not limited to:

Biology

BIO 501	Topics in Genetics.	4cr.
BIO 502	Topics in Economic Botany	4cr.
BIO 618	Problems in Ecology	4cr.

Chemistry

CHE 545	Advanced Inorganic Chemistry	3cr.
CHE 544	Biochemistry	3cr.
CHE 548	Special Topics in Modern Organic Chemistry	3cr.

Geology:

GEO 501	Earth Processes	3cr.
GEO 502	Earth History	3cr.
GEO 503	Geologic Field Methods	3cr.
AST 601	Astronomy of Solar Systems	4cr.

Physics:

PHY 601	Advanced General Physics	3cr.
PHY 605	Physics for Teachers	4cr.
AST 601	Astronomy of Solar Systems	4cr.
AST 602	Stellar Astronomy	4cr.

4. Rationale:
Due to the extra preparation and mentorship that is needed for the edTPA, all science education students in sequence 2 will be required to take ESC 596 - Student Teaching in Middle and High School Grades (3 credits), and ESC 612 -Seminar in Secondary Student Teaching (3 credits) instead of ESC 595 - Internship in Student Teaching, and ESC 611 - Teaching Internship Seminar in Secondary Education (1 credit). This curriculum change will allow students to have additional contact time and support from the instructor.

5. Date of departmental approval: March 1, 2018

LEHMAN COLLEGE
OF THE
CITY UNIVERSITY OF NEW YORK

DEPARTMENT OF MIDDLE & HIGH SCHOOL EDUCATION

CURRICULUM CHANGE

Name of Program and Degree Award: Masters of Science in Secondary Science Education, Science Education Sequence 3 (Trans B Sequence)
Hegis Number: 0899.50
Program Code: 25790
Effective Term: Fall 2018

1. Type of Change: Change in Degree Requirements and Change in Credits

2. From:
Science Education M.S.Ed. Program

This program leads to a master's degree in Science Education. Upon completion of additional requirements, candidates will be eligible to receive New York State Initial Certification to teach one or more of the following sciences at the level of adolescent education (Grades 7-12): biology, chemistry, earth science, general science, and physics.

To be eligible for the Science Education Master's Program, potential students must fall into one of the following categories:

Sequence 1: For candidates who have, or are eligible for, Initial Certification in subjects other than science and who seek certification as science teachers.

Sequence 2: For candidates who have completed at least 36 credits in biology, chemistry, geology, or physics, but who lack professional education coursework and who seek Initial Certification.

Sequence 3: For candidates who hold a valid Transitional B certificate in biology, chemistry, earth science, general science, or physics, Grades 7-12, from New York State.

Science Education Admission Requirements

- Possess a bachelor's degree (or its equivalent) from an accredited college or university with an overall index of 3.0 or better.
- Demonstrate the ability to successfully pursue graduate study. (Above-average achievement in academic work and in the teaching specialization is required).
- Submission of scores on the Content Specialty Test (CST).
- For Sequence 1 admission: An undergraduate science major or the equivalent and a minor in middle and high school education or the equivalent.

- For Sequence 2 and 3 admission: At least 36 credits in biology, chemistry, geology, or physics. Matriculants may be asked to complete undergraduate and/or graduate prerequisite coursework in addition to degree requirements, based on the evaluation of their credentials by an adviser in the Science Education Program.
- Satisfy appropriate voice, speech, and health standards.
- Submit two letters of recommendation, at least one of which is from a college or university science instructor.
- Personal interview.

Science Education Degree Requirements

Students must consult with an adviser in the Science Education Program before starting their master's program. During their first semester, matriculated students are required to plan their graduate program with an adviser in the Science Education Program. Students must complete one of the three sequences outlined below.

Curriculum

The curriculum for each sequence is distributed in four instructional modules as follows:

Sequence 3 (34-36 credits)

Core Education Sequence ~~(10 credits):~~

ESC 501	Psychological Foundations of Education	3 cr.
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3 cr.
ESC 519	Teaching Science in Middle and High School	3 cr.
ESC 789	Independent Study in Curriculum Development	1 cr.

Curriculum and Instruction (12 credits):

ESC 506	Special Needs Education in TESOL and Secondary Settings	3 cr.
ESC 536	Teaching Technology Subjects in Middle and High School	3 cr.
ESC 767	The Museum as a Resource for Teaching Science	3 cr.
ESC 770	Methods of Teaching Science in Secondary Schools: Selected Topics	1 cr.

ESC 767 or Equivalent

Research and Culmination Projects (~~6 credits):~~

ESC 705	Method of Educational Research	3 cr.
~~ESC 708~~	~~Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas~~	~~3 cr.~~

Graduate Science Content (6-8 credits):

Science content course requirements must align with undergraduate science preparation and with intended certification subject area. Consult with an adviser in the Science Education Program for the appropriate course(s) to satisfy this requirement. Such courses may include but are not limited to:

Biology

BIO 618	Problems in Ecology	4 cr.
BIO 611	Problems in Microbiology	3 cr.
BIO 612	Plant Growth and Development	4 cr.

Chemistry

CHE 545	Advanced Inorganic Chemistry	3 cr.
CHE 544	Biochemistry	3 cr.
CHE 548	Special Topics in Modern Organic Chemistry	3 cr.

Geology:

GEO 501	Earth Processes	3 cr.
GEO 502	Earth History	3 cr.
GEO 503	Geologic Field Methods	3 cr.

Physics:

PHY 601	Advanced General Physics	3 cr.
AST 601	Astronomy of Solar Systems	4 cr.
AST 602	Stellar Astronomy	4 cr.

General Science:

BIO 618	Problems in Ecology	4 cr.
CHE 542	Advanced Inorganic Chemistry	3 cr.
GEO 501	Earth Processes	3 cr.
PHY 601	Advanced General Physics	3 cr.

3**. To:**
Science Education M.S.Ed. Program

This program leads to a master's degree in Science Education. Upon completion of additional requirements, candidates will be eligible to receive New York State Initial Certification to teach one or more of the following sciences at the level of adolescent education (Grades 7-12): biology, chemistry, earth science, general science, and physics.

To be eligible for the Science Education Master's Program, potential students must fall into one of the following categories:

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Sequence 3: For candidates who hold a valid Transitional B certificate in biology, chemistry, earth science, general science, or physics, Grades 7-12, from New York State.

Science Education Admission Requirements

9. Possess a bachelor's degree (or its equivalent) from an accredited college or university with an overall index of 3.0 or better.
10. Demonstrate the ability to successfully pursue graduate study. (Above-average achievement in academic work and in the teaching specialization is required).
11. Submission of scores on the Content Specialty Test (CST).
12. For Sequence 1 admission: An undergraduate science major or the equivalent and a minor in middle and high school education or the equivalent.
13. For Sequence 2 and 3 admission: At least 36 credits in biology, chemistry, geology, or physics. Matriculants may be asked to complete undergraduate and/or graduate prerequisite coursework in addition to degree requirements, based on the evaluation of their credentials by an adviser in the Science Education Program.
14. Satisfy appropriate voice, speech, and health standards.
15. Submit two letters of recommendation, at least one of which is from a college or university science instructor.
16. Personal interview.

Science Education Degree Requirements

Students must consult with an adviser in the Science Education Program before starting their master's program. During their first semester, matriculated students are required to plan their graduate program with an adviser in the Science Education Program. Students must complete one of the three sequences outlined below.

Curriculum

The curriculum for each sequence is distributed in four instructional modules as follows:

Sequence 3 (34-36 credits)

Core Education Sequence (13 credits):

ESC 501	Psychological Foundations of Education	3 cr.
ESC 502	Historical Foundations of Education: A Multicultural Perspective	3 cr.
ESC 519	Teaching Science in Middle and High School	3 cr.
ESC 789	Independent Study in Curriculum Development	1 cr.
ESC 612	Seminar in Secondary Student Teaching	3 cr.

Curriculum and Instruction (12 credits):

ESC 506	Special Needs Education in TESOL and Secondary Settings	3 cr.
ESC 536	Teaching Technology Subjects in Middle and High School	3 cr.
ESC 767	The Museum as a Resource for Teaching Science	3 cr.
ESC 770	Methods of Teaching Science in Secondary Schools: Selected Topics	1 cr.

ESC 767 or Equivalent

Research and Culmination Projects (3 credits):

ESC 705	Method of Educational Research	3 cr.

Graduate Science Content (6-8 credits):

Science content course requirements must align with undergraduate science preparation and with intended certification subject area. Consult with an adviser in the Science Education Program for the appropriate course(s) to satisfy this requirement. Such courses may include but are not limited to:

Biology

BIO 618	Problems in Ecology	4 cr.

BIO 611	Problems in Microbiology	3 cr.
BIO 612	Plant Growth and Development	4 cr.

Chemistry

CHE 545	Advanced Inorganic Chemistry	3 cr.
CHE 544	Biochemistry	3 cr.
CHE 548	Special Topics in Modern Organic Chemistry	3 cr.

Geology:

GEO 501	Earth Processes	3 cr.
GEO 502	Earth History	3 cr.
GEO 503	Geologic Field Methods	3 cr.

Physics:

PHY 601	Advanced General Physics	3 cr.
AST 601	Astronomy of Solar Systems	4 cr.
AST 602	Stellar Astronomy	4 cr.

General Science:

BIO 618	Problems in Ecology	4 cr.
CHE 542	Advanced Inorganic Chemistry	3 cr.
GEO 501	Earth Processes	3 cr.
PHY 601	Advanced General Physics	3 cr.

4. Rationale:
Due to the extra preparation and mentorship that is needed for the edTPA, all science education students in sequence 3 will be required to take ESC 612 -Seminar in Secondary Student Teaching (3 credits) instead of ESC 708 Project Seminar in Curriculum, Materials, and Assessment in Specialized Areas. This curriculum change will allow students to have additional contact time and support from the instructor.

5. Date of departmental approval: March 1, 2018