

Name of Institution

Clemson University

Name of Program (include concentrations, options, and tracks)

Teacher Residency in Secondary Education, Master of Arts in Teaching (MAT)

Emphasis Areas: English, History, Mathematics, and Science

Program Designation

- Associate's Degree Master's Degree
 Bachelor's Degree: 4 Year Specialist
 Bachelor's Degree: 5 Year Doctoral Degree: Research/Scholarship (e.g., Ph.D. and DMA)
 Doctoral Degree: Professional Practice (e.g., Ed.D., D.N.P., J.D., Pharm.D., and M.D.)

Does the program qualify for supplemental Palmetto Fellows and LIFE Scholarship awards?

- Yes
 No

Proposed Date of Implementation
Fall 2018

CIP Code
13.1205

Delivery Site(s)

Online and Hybrid, Off-Campus

Delivery Mode

- Traditional/face-to-face*
*select if less than 50% online
- Distance Education
 100% online
 Blended (more than 50% online)
 Other distance education

Program Contact Information (name, title, telephone number, and email address)

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Institutional Approvals and Dates of Approval

Department Curriculum Committee: July 27, 2017
College Curriculum Committee: August 17, 2017
University Graduate Curriculum Committee: September 1, 2017
Provost: September 30, 2017
President: September 30, 2017
Board of Trustees: October 6, 2017

Background Information

State the nature and purpose of the proposed program, including target audience and centrality to institutional mission. (1500 characters)

The Clemson University College of Education (CoE) is developing a Teacher Residency master's program, the first of its kind program in South Carolina. The purpose of this program is to create fundamental systemic change, build the teaching profession in South Carolina's most high-needs fields and locations, and develop leaders in schools and communities by attracting, developing, retaining, and supporting high-quality educators.

A study by the Center for Educator Recruitment Retention and Advancement found that in the fall of 2016, 481 teaching positions went unfilled in South Carolina. In 2015, 449 vacancies were reported with nearly two-thirds in three particular geographic areas where the poverty index for the school districts averages 90%. Twenty percent of all vacancies represented teaching positions that require early childhood or elementary certification. This teacher shortfall is most problematic in rural schools and schools with high rates of poverty. The study predicts that the state's chronic teacher shortage in these critical subjects will grow worse over the next 10 years.

The focus of the Teacher Residency program will be on developing teacher leaders who can accelerate growth and achievement in partner school districts throughout the state. Teacher Residency is an evidence-based practice providing both pre-service teachers and current classroom teachers with unique learning experiences, opportunities for mentorship, and pathways for career development. Faculty in the Clemson University College of Education are well positioned to deliver this program through revision of existing coursework, programming, and clinical experience. Current undergraduate students who are studying P-12 educational fields such as early childhood, elementary, secondary, science or mathematics teacher preparation programs will be the target participants for the Teacher Residency Program. The faculty have developed external grant funding for the implementation of the project under the title: CU's Teacher Residency: Immersion, Inquiry and Innovation (CU-TRI³). Teacher Residents will have rich, immersive experiences with trained master teachers. The curriculum plan is based on the BA/BS-MAT combined program philosophy, in such, that qualified students will take twelve hours of graduate course work their senior year in place of a traditional student teaching experience. The following fall, students will enroll in a two-semester Teacher Residency course and complete the remaining hours toward their MAT degree. This pairing for a full-year classroom apprenticeship within master-level education is a critical component. It allows students to integrate coursework and clinical experience prior to employment as a teacher-of-record.

Alignment with the ClemsonForward Plan

The proposed teacher residency program is directly linked to the College of Education's vision and mission. Being a transformative leader in improving education; serving underperforming schools and underserved communities; engaging in active service throughout the state and nation to improve life outcomes for the greater benefit of society; and addressing the current and future challenges of access, inclusivity, poverty, equity, diversity, and innovative teaching throughout our state and nation are all central to our work and this program. This program will adhere to CAEP policy and be directly tied to CAEP standards for accreditation. Additionally, this program will adhere to South Carolina EPP policies and standards and will exceed South Carolina requirements related to clinical experiences.

List the program objectives. (2000 characters)

The primary program goals of the Eugene T. Moore School of Teacher Residency are to:

- Strengthen the selection criteria for teachers in areas of content knowledge and pedagogical expertise
- Enhance professional development of in-service teachers
- Increase student achievement, teacher performance, and teacher effectiveness
- Decrease teacher turnover in South Carolina school districts
- Reduce financial barriers to high-quality preparation
- Develop data systems to support continuous improvement, accountability, and information exchange among partners.

Assessment of Need

Provide an assessment of the need for the program for the institution, the state, the region, and beyond, if applicable. (1500 characters)

1. **Current:** Thirty juniors met with advisors last spring and filled out the GS6-Bachelor-to-Master form expressing their intent to participate in the program (this was achieved with very little communication about the program).
2. **Projected:** A survey of all education majors (40% return rate) showed that 60% of students were very interested in pursuing this option.
3. **Recruitment:** Finally, as this option has been discussed informally during orientation sessions with students and parents there seems to be very strong interest in this option. In fact, multiple students have selected Clemson in the fall because they will be able to pursue this option. Thus, we are expecting (though have not included it in the numbers) that Teacher Residency will be able to enhance current recruitment efforts and expand undergraduate enrollment.

Employment Opportunities

Is specific employment/workforce data available to support the proposed program?

Yes

No

Employment Opportunities				
Occupation	Expected Number of Jobs Nationally	Employment Projection	Expected Number of Jobs in SC	Data Source
High School Teachers	961,600	6% growth	14,470	US Bureau of Labor Statistics, 9-7-17 (https://www.bls.gov/ooh/education-training-and-library/print/high-school-teachers.htm)
English/ Language Arts			2,038.71	2016 SC CERRA Report on High School Teaching Positions in SC (http://www.cerra.org/uploads/1/7/6/8/17684955/2016_supply_demand_report.pdf)
Mathematics			1,986.16	2016 SC CERRA Report on High School Teaching Positions in SC (http://www.cerra.org/uploads/1/7/6/8/17684955/2016_supply_demand_report.pdf)
Science			1,641.57	2016 SC CERRA Report on High School Teaching Positions in SC (http://www.cerra.org/uploads/1/7/6/8/17684955/2016_supply_demand_report.pdf)
Social Studies			1,632.75	2016 SC CERRA Report on High School Teaching Positions in SC (http://www.cerra.org/uploads/1/7/6/8/17684955/2016_supply_demand_report.pdf)

Provide additional information regarding anticipated employment opportunities for graduates.
 (1000 characters)

Mathematics vacancies accounted for 11% of all vacant positions in 2016-17, compared to less than 9% in 2015-16. Vacancies in sciences, English/language arts, and speech language therapy represented another 17% of all vacant teaching positions in the state.

Vacant positions in Secondary Education in the Fall of 2016:

- English/Language Arts: 17
- Mathematics: 32.5
- Sciences: 17.5
- Social Studies: 6.0

It should be important to note that the SC CERRA 2016 reported that the number of Teachers who did not return to their teaching positions increased by 21%. “Of the teachers who did not return for the 2016-17 school year, one-quarter took a teaching position in another SC district or special school. A departure like this may not be considered statewide turnover, but the negative impact can be extreme for districts that consistently lose teachers to more preferred districts.” The report identified 38% of teachers not returning had five or fewer years in the classroom and 12% occurred during or after the first year in the classroom. A rationale for the year-long Teacher Residency is to address retention of teachers.
 (http://www.cerra.org/uploads/1/7/6/8/17684955/2016_supply_demand_report.pdf)

Will the proposed program impact any existing degree programs and services at the institution (e.g., course offerings or enrollment)?

Yes

No

If yes, explain. (500 characters)

Staff Question: Clemson currently has a MAT in secondary education. On Page 5 of the proposal for secondary education, it is indicated that this proposed program will not impact the current MAT. How will a second MAT not impact a current MAT in the same field of study?

The existing MAT serves students with degrees in content areas who often have not taken any courses in education when they enter the program. This proposed Teacher Residency MAT serves students who majored in education as undergraduates (but are not certified) or have taken a significant amount of coursework in education as an undergraduate student.

It should also be noted that Clemson suspended the admission process for accepting new student applications for Fall 2018 for the current MAT in Secondary Education. If this program proposal is approved, the current MAT will be terminated and a teach-out plan developed according to University, CHE, and SACSCOC policies.

**List of Similar Programs in South Carolina
 MAT Programs in SC using CIP Code 131205**

Program Name	Institution	Similarities	Differences
Secondary Education and Teaching, Mathematics	Bob Jones University	While CHE's Inventory of Program identifies three MAT programs, two in Secondary Education and a third in English, The Bob Jones University website does not list a MAT degree as available. The University does have a M.Ed. in Teaching and Learning but it does not provide initial certification.	N/A .
Secondary Education and Teaching, Arts			
Secondary Teacher Education, English	Coastal Carolina University	Both programs prepare students for teacher certification in secondary education, grades 9-12, both programs include professional education courses, teaching area content, and internships and seminars. Both programs have designed the teaching experiences to be supportive with increasing amount of autonomy. In addition, both programs allow students to enroll in graduate course work that can apply toward the master's degree during their senior undergraduate year. The programs require content area of teaching specialization to be earned in the undergraduate degree program.	CCU's programs are 45 to 47 credits, and the student can graduate in 14 calendar months. Clemson's 30 credit hour degree program includes an academic year-long teaching residency. Students entering Clemson's MAT program will have focused on one of four content areas (English, History, Math, Science) in which students earned double undergraduate degrees (BA in both the subject area and teacher preparation) prior to enrolling in the MAT for TR. CCU's secondary education MAT programs are separate programs for each area rather than an emphasis area under one degree.
Secondary Teacher Education, Science			
Secondary Teacher Education, Mathematics			
Secondary Teacher Education, Social Studies			
Secondary Teacher Education: Biology	Converse College	Both programs prepare students for teacher certification in secondary education, grades 9-12, both programs include professional education courses, teaching area content, and internships and seminars. Both programs	The Converse programs are 48 to 51 credit hours and does require a student to have an undergraduate degree in the content area. In addition, they earn another 18 graduate hours in the teaching area. The program is designed for

Secondary Teacher Education: Chemistry		have designed the teaching experiences to be supportive with increasing amount of autonomy.	flexibility and classes are in the evening. Clemson's 30 credit hour degree program recognizes the content and educational coursework from the student's undergraduate program and focuses on graduate level course work including a year-long teaching residency. Students entering Clemson's MAT program will have focused on one of four content areas (English, History, Math, Science) in which students earned double undergraduate degrees (BA in both the subject area and teacher preparation) prior to enrolling in the MAT for TR. The science content areas include: biology, chemistry, physics, and physical sciences.
Secondary Teacher Education: English			
Secondary Teacher Education: Mathematics			
Secondary Teacher Education: Social Studies			
Math (CIP 13.1311)	North Greenville University	While CHE's Inventory of Program identifies three MAT programs, the North Greenville University website does not list a MAT degree as available. The University does have a Master of Education but it does not provide initial certification.	N/A
Science (CIP 13.1316)			
Social Studies (CIP 13.1328)			
English Education	SC State University	Course work prepares teachers for secondary education in English, mathematics and science. Both programs combine instructional methodologies and experiential work meeting state and national standards. Both programs have significant hours in a content area.	SCSU programs are 51 hours in length and divide content between 24 credits in professional education and the remaining hours in the teaching content option. Clemson's 30 credit hour degree program recognizes the content and educational coursework from the student's undergraduate program and focuses on graduate level course work including a year-long teaching residency. Students entering Clemson's MAT program will have focused on one of four content areas (English, History, Math, Science) in which students earned double undergraduate degrees (BA in both the subject area and teacher preparation) prior to enrolling in the MAT for TR. The science content areas include: biology, chemistry, physics, and physical sciences.
Mathematics Education			
Biology Education			

<p>Secondary Teacher Education, M.A.T. Biology</p>			
<p>Secondary Teacher Education, M.A.T. English</p>	<p>The Citadel</p>	<p>Both programs prepare students for teaching certification in secondary education in similar areas of content. The programs include professional education courses, internships, and seminars. There is an expectation that the content preparation is the focus of the undergraduate degree. Students completing the programs are eligible for recommendation for initial teaching certification in South Carolina.</p>	<p>The Citadel's program requires graduate content in the teaching discipline, the number of courses varies by discipline. Clemson's 30 credit hour degree program recognizes the content and educational coursework from the student's undergraduate program and focuses on graduate level course work including a year-long teaching residency. Students entering Clemson's MAT program will have focused on one of four content areas (English, History, Math, Science) in which students earned double undergraduate degrees (BA in both the subject area and teacher preparation) prior to enrolling in the MAT for TR. The science content areas include: biology, chemistry, and physics. Students in the Science BS degree may have focused on physical sciences.</p>
<p>Secondary Teacher Education, M.A.T. Mathematics</p>			
<p>Secondary Teacher Education, M.A.T. Social Studies</p>			
<p>Secondary Teacher Education, Biology</p>			
<p>Secondary Teacher Education, Business/Marketing</p>	<p>Winthrop University</p>	<p>Both programs prepare students for teacher certification in secondary education; preparation includes professional education courses, teaching area content, and internships and seminars. Both programs have designed the teaching experiences to be supportive with increasing amount of autonomy. Both programs build on the student's undergraduate and graduate content areas.</p>	<p>Winthrop's MAT program is from 33-45 hours in length, varying with student preparation on admission. Winthrop has a much more varied program, offering options for secondary education in 10 different areas, including several that are K-12 preparation. Clemson's 30 credit hour degree program recognizes the content and educational coursework from the student's undergraduate program and focuses on graduate level course work including a year-long teaching residency. Students entering Clemson's MAT program will have focused on one of four content areas (English, History, Math, Science) in which students earned double undergraduate degrees (BA in both the subject area and teacher preparation) prior to enrolling in the MAT for TR. The science content areas include: biology, chemistry, and physics. Students in the Science</p>
<p>Secondary Teacher Education, Chemistry</p>			
<p>Secondary Teacher Education, English</p>			
<p>Secondary Teacher Education, French</p>			
<p>Secondary Teacher Education, Mathematics</p>			

<p>Secondary Teacher Education, Social Studies</p> <p>Secondary Teacher Education, Spanish</p> <p>Art (K-12)</p> <p>Physical Education (K-12)</p> <p>Teaching (CIP 13.0101)</p>	<p>Anderson University</p>	<p>While CHE's Inventory of Program identifies a MAT program, the Anderson University website does not list a MAT degree as available. The University does have a Master of Education degree but it does not provide initial certification.</p>	<p>BS degree may have focused on physical sciences.</p> <p>N/A</p>
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Description of the Program

Projected Enrollment						
Year	Fall		Spring		Summer	
	Headcount	Credit Hours	Headcount	Credit Hours	Headcount	Credit Hours
Spring 2018			8	96		
2018-19	8	72	24	264		
2019-20	16	144	34	360		
2020-21	18	162	38	402		
2021-22	20	180	40	420		
2022-23	20	180	40	420		

The numbers on the projected enrollment table are cumulative, with a new class of students being added each spring semester. The projected enrollment and credit hour production in the Enrollment table shows the Senior Second Semester students in the Spring semester, followed by their enrollment in the following fall and spring.

In this table, in the Spring of 2018 we anticipated 8 second semester senior students in secondary education enrolling in 12 credits of graduate coursework, these 8 students will enroll in 9 credits in the fall semester of 2018. In the Spring of 2019, the 8 students will enroll in 9 credits, plus we will begin our second class of second semester senior students with 16 new students projected. The total enrollment in the Spring of 2019 is therefore 24 students.

Besides the general institutional admission requirements, are there any separate or additional admission requirements for the proposed program?

Yes

No

If yes, explain. (1000 characters)

The MAT Teacher Residency program information will be provided to all enrolled pre-service undergraduate education majors students in early childhood, elementary, and secondary education programs through a variety of avenues including, but not limited to advising sessions, focus groups, and printed materials. The Undergraduate and Graduate catalogs provide detailed information on the overarching Combined Bachelors to Master's program of study policies and procedures at Clemson University. The MAT Teacher Residency meets the standards and requirements under the policy as a combined program. Students must complete a standard request form (GS6-Bachelor to Graduate Request for Combined Education Plan). Students who are interested in Teacher Residency will complete an application form in the Spring of their Junior year. Students who have followed the published plan of study in the University catalog should have 90 hours at the conclusion of their junior year.

All pre-service undergraduate education majors in secondary education (English, Math, History), science teaching (Chemistry, Biological Sciences, Physical Sciences, Physics), and mathematics teaching are eligible for the teacher residency program. Those opting for teacher residency will complete an application and necessary forms to apply and enroll in the combined BA/BS to the master's TR program fall of their senior year.

1. Students with at least a 3.4 GPA and 90 hours are eligible for the TR program.
2. Applicant screening with formal interviews will occur early fall of their senior year. During this interview, district officials and Clemson faculty will work together to evaluate TR candidates using

a rubric that assesses: evidence of instructional effectiveness (pre-service teaching samples), recommendations from faculty and preceptors regarding classroom interactions, an applicant essay, and dispositional scores.

3. Passing scores on PRAXIS II (PLT and subject assessment) are required before enrolling in the Teaching Residency and Seminar sequence.
4. Once selected for the program, TRs will begin graduate courses toward the Masters in Teacher Residency spring term senior year.

Students who are accepted into the Teacher Residency program through the completion and approval of the GS6 Form GS6-Bachelor to Graduate Request for Combined Education Plan remain an undergraduate student until they completed their undergraduate degree. They will have 12 graduate hours of coursework at the time of graduation. After their undergraduate graduation, they are formally admitted as graduate students in the MAT degree program.

Clemson students have a high success rate on the Praxis II (PLT and subject assessment tests).

Secondary (2016-2017)				
Test	Total N	# Pass	% Pass	Cut Scores
5624 Principles of Learning and Teaching	66	65	98.48	157
5039 English Language Arts	12	12	100	168
5086 Social Studies	13	12	92.31	153
5161 Mathematics	18	17	94.4	150
5235 Biology	14	13	92.86	148
5245 Chemistry	2	*	*	152
5265 Physics	0	*	*	130

The following is the approved Plan of Study for an undergraduate degree in secondary education (English, Math, History), science teaching (Chemistry, Biological Sciences, Physical Sciences, Physics), and mathematics teaching. All coursework is required through seven semesters, and as noted in the plan of studies in the second semester of the Senior Year, students would enroll in the following four courses as part of the Non-Certification emphasis area:

- ED 6900 Classroom Learning Environments (3 credits)
- ED 8650 Curriculum Theory (3 credits)
- EDF 8080 Contemporary Issues in Assessment (3 credits)
- ED 8250 Cultural Diversity in Education (3 credits)

SECONDARY EDUCATION Bachelor of Arts

The Bachelor of Arts degree in Secondary Education is available to students preparing to teach English, mathematics, or social studies on the secondary school level (grades 9–12). The teaching field should be selected as early as possible, so appropriate freshman and sophomore courses may be taken. Each curriculum may lead to a double major composed of the major concentration in the teaching field and the corresponding content major. To receive a double major in Secondary Education and the selected content area, a Change of Academic Program form must be completed to declare both majors. To achieve a double major, the appropriate plan of study under Secondary Education must be followed and all major requirements from both programs must be satisfied. Specific courses and sequences have been designated to meet requirements for those planning to teach. The professional education courses should be completed in sequence.

TEACHING AREA: ENGLISH
Bachelor of Arts

The Bachelor of Arts Degree in Secondary Education—English offers a double major in Secondary Education—English and English. To be recommended for licensure, students must earn a C or higher in all required English content and education courses.

Freshman Year

First Semester

- 3 - COMM 1500 Intro. to Human Comm. *or*
 - 3 - COMM 2500 Public Speaking
 - 2 - ED 1050 Orientation to Education
 - 3 - ENGL 1030 Composition and Rhetoric
 - 3 - Modern Language Requirement¹
 - 3 - Mathematics Requirement²
- 14

Second Semester

- 3 - BIOL 2000 Biology in the News³
 - 3 - ENGL 2120 World Literature
 - 3 - HIST 1730 The West and the World II
 - 3 - Modern Language Requirement¹
 - 4 - Natural Science Requirement²
- 16

Sophomore Year

First Semester

- 3 - EDF 3010 Principles of American Education
 - 3 - EDF 3020 Educational Psychology
 - 3 - ENGL 3100 Critical Writing About Literature
 - 3 - HIST 3160 American Social History *or*
 - 3 - HIST 3610 History of England to 1688 *or*
 - 3 - HIST 3630 Britain Since 1688 *or*
 - 3 - HIST 3650 British Cultural History
 - 3 - Arts and Humanities (Non-Lit) Req.⁴
 - 3 - English Literature Survey Requirement⁵
- 18

Second Semester

- 3 - EDF 3350 Adolescent Growth and Development
 - 3 - ENGL 3860 Adolescent Literature⁶
 - 3 - ENGL 4110 Shakespeare
 - 3 - HIST 1720 The West and the World I
 - 3 - English Literature Survey Requirement⁵
 - 3 - Fine Arts Requirement⁷
- 18

Junior Year

First Semester

- 3 - EDLT 4800 Found. in Adolescent Literacy
 - 3 - EDSC 3240 Prac. in Teaching Secondary Engl.⁸
 - 3 - EDSP 3700 Introduction to Special Education
 - 3 - English Literature Survey Requirement⁵
 - 3 - Literature Emphasis Area Requirement I⁹
- 15

Second Semester

- 3 - ENGL 4850 Composition for Teachers

- 3 - English Literature Requirement¹⁰
 - 3 - Literary Theory Requirement¹¹
 - 3 - Literature Emphasis Area Requirement II¹²
 - 3 - Social Science Requirement²
- 15

Senior Year

First Semester

- 3 - EDLT 4980 Secondary Content Area Reading¹³
 - 3 - EDSC 4240 Teaching Secondary English¹³
 - 3 - ENGL 4960 English Senior Seminar
 - 3 - Literature Emphasis Area Diversity Req.¹⁴
 - 3 - Literature Emphasis Area Requirement III¹⁵
- 15

Second Semester

- 12 – Emphasis Area Requirement¹⁶
- 12

123 Total Semester Hours

¹Students must complete through 2020 in a modern language. See Modern Languages Requirement at Clemson University statement on page 27.

²See General Education Requirements.

³Any other Mathematics or Natural Science General Education course that satisfies the General Education Science and Technology in Society requirement may be substituted.

⁴Select from PHIL 1010, 1020, or 1030.

⁵Select from ENGL 3960, 3970, 3980, or 3990. One course each of British and American Survey are required. The additional course satisfies the upper level ENGL requirement.

⁶This course qualifies as a Literature Emphasis Area Requirement for a BA in English.

⁷Select from AAH 1010 or ART 2100; ENGL 3570; HUM 3010, 3020, or 3060; MUSC 2100, 3110, 4150, or 4160; or THEA 2100.

⁸Students must complete 45 hours of field experience in a public school.

⁹Select from ENGL 4030, 4070, 4080, 4100, 4140, 4200, (THEA) 4290, 4440, or 4630.

¹⁰Select from ENGL 4030, 4070, 4100, 4140, 4150, 4160, 4170, 4180, 4190, 4200, 4210, 4250, 4260, 4280, 4290, 4300, 4310, 4320, 4330, 4340, 4350, 4360, 4420, 4430, 4440, 4500, 4510/4511, 4520, 4550, 4560, 4590, 4630, 4640, 4650, 4820, 4830, 4910, 4920

¹¹Select from ENGL 4350, 4360, 4400, or 4420, or other course approved by the department.

¹²Select from ENGL 4150, 4160, 4170, 4180, 4210, 4250, 4260, or 4640.

¹³ EDLT 4980, EDSC 4240, and ENGL (EDSC) 4850 must be taken concurrently during fall semester of senior year. Students must also enroll in the laboratory sections of EDSC 4240 and EDLT 4980.

¹⁴Select from ENGL 3530, 3800, 4190, (HUM) 4560, 4820, or 4830.

¹⁵Select from ENGL 4280, (THEA) 4300, 4310, 4320, 4330, 4340, 4550, or 4650.

¹⁶Completion of one of the following emphasis areas is required.

- Teacher Certification Emphasis Area
 - 9 - EDEC 4840 Directed Teaching in Secondary Education
 - 3 - EDEC 4850 Secondary Capstone

- Non-Certification Emphasis Area
 - The non-certification option allows 12 credit hours of elective coursework to be substituted in lieu of the 9-credit hours of student teaching/internship and 3-credit capstone course.

Teacher Residency Combine Bachelor-Master Program:

- ED 6900 Classroom Learning Environments (3 credits)
- ED 8650 Curriculum Theory (3 credits)

EDF 8080 Contemporary Issues in Assessment (3 credits)
ED 8250 Cultural Diversity in Education (3 credits)

TEACHING AREA: MATHEMATICS
Bachelor of Arts

The Bachelor of Arts degree in Secondary Education—Mathematics offers a double major in Secondary Education—Mathematics and Mathematical Sciences. To be recommended for licensure, students must earn a C or higher in all required mathematics content and education courses.

Freshman Year

First Semester

2 - ED 1050 Orientation to Education
3 - ENGL 1030 Composition and Rhetoric
4 - MATH 1060 Calculus of One Variable I
3 - Modern Language Requirement¹
4 - Natural Science Requirement²
16

Second Semester

4 - MATH 1080 Calculus of One Variable II
3 - PHIL 1020 Introduction to Logic
3 - PHYS 1220 Physics with Calculus I
1 - PHYS 1240 Physics Laboratory I
3 - History Requirement³
3 - Modern Language Requirement¹
17

Sophomore Year

First Semester

3 - EDSC 2260 A Prof. Approach to Sec. Algebra
4 - MATH 2060 Calculus of Several Variables
1 - MATH 2500 Intro. to Mathematical Sciences
3 - Arts and Humanities (Literature) Requirement⁴
3 - Computer Science Requirement⁵
3 - Economics Requirement⁶
17

Second Semester

3 - EDF 3020 Educational Psychology
4 - MATH 2080 Intro. to Ordinary Diff. Equations
3 - MATH 3110 Linear Algebra
3 - MATH 3190 Introduction to Proof
3 - Cross-Cultural Awareness Requirement²
16

Junior Year

First Semester

3 - EDF 3010 Principles of American Education
3 - EDLT 4800 Foundations of Adolescent Literacy
3 - EDSC 3260 Practicum in Secondary Math.
3 - MATH 3020 Statistics for Science and Engr.
3 - MATH 4000 Theory of Probability
15

Second Semester

3 - EDF 3350 Adolescent Growth and Development
3 - EDSP 3700 Introduction to Special Education
3 - EDSC 4370 Technology in Secondary Math.

3 - MATH 3080 College Geometry
3 - MATH 4120 Algebra I
15

Senior Year

First Semester

3 - COMM 1500 Intro to Human Comm or
3 - COMM 2500 Public Speaking
3 - EDLT 4980 Secondary Content Area Reading⁷
3 - EDSC 4260 Teaching Secondary Mathematics⁷
3 - MATH 4080 Topics in Geometry
3 - MATH 4530 Advanced Calculus I
15

Second Semester

12- Emphasis Area Requirement⁸
12

123 Total Semester Hours

¹Students must complete through 2020 in a modern language. See Modern Languages Requirement at Clemson University statement on page 27.

²See General Education Requirements. Natural Science with Lab requirement selection must also meet the Science and Technology in Society requirement. Cross-Cultural Awareness requirement must be selected from non-history courses.

³Select from HIST 1010, 1020, 1720, 1730, or 1930

⁴ENGL 2120, 2130, 2140, or 2150

⁵CPSC 1010, 1110, 1150, 1610, or 2200

⁶Select from ECON 2000, 2110, or 2120

⁷EDSC 4260 and EDLT 4980 must be taken concurrently prior to the teaching internship. Offered fall semester only.

⁸Completion of one of the following emphasis areas is required.

- Teacher Certification Emphasis Area
 - 9 - EDEC 4840 Directed Teaching in Secondary Education
 - 3 - EDEC 4850 Secondary Capstone

- Non-Certification Emphasis Area
 - The non-certification option allows 12 credit hours of elective coursework to be substituted in lieu of the 9-credit hours of student teaching/internship and 3-credit capstone course.

Teacher Residency Combine Bachelor-Master Program:

ED 6900 Classroom Learning Environments (3 credits)
ED 8650 Curriculum Theory (3 credits)
EDF 8080 Contemporary Issues in Assessment (3 credits)
ED 8250 Cultural Diversity in Education (3 credits)

TEACHING AREA: SOCIAL STUDIES (HISTORY)
Bachelor of Arts

The Bachelor of Arts Degree in Secondary Education—Social Studies (History) offers a double major in Secondary Education—Social Studies (History) and History. To be recommended for licensure, students must earn a C or higher in all required history content and education courses.

Freshman Year
First Semester

ACAP
11/30/17
Agenda Item 2c

2 - ED 1050 Orientation to Education
3 - ENGL 1030 Composition and Rhetoric
3 - Mathematics Requirement¹
3 - Modern Language Requirement²
4 - Natural Science Requirement¹
15

Second Semester

3 - ANTH 2010 Introduction to Anthropology
3 - BIOL 2000 Biology in the News³
3 - ENGL 2140 American Literature
3 - GEOG 1010 Introduction to Geography *or*
3 - GEOG 1030 World Regional Geography
3 - PSYC 2010 Introduction to Psychology
3 - Modern Language Requirement²
18

Sophomore Year

First Semester

3 - ECON 2000 Economic Concepts
3 - EDF 3020 Educational Psychology
3 - HIST 1010 History of the United States
3 - HIST 1720 The West and the World I
3 - POSC 1010 American National Government
15

Second Semester

3 - HIST 1020 History of the United States
3 - HIST 1730 The West and the World II
3 - HIST 2990 Seminar: The Historian's Craft
3 - Advanced Humanities Requirement⁴
3 - Arts and Humanities (Non-Lit.) Requirement⁵
15

Junior Year

First Semester

3 - EDF (HIST) 3200 History of U.S. Public Educ.
3 - EDLT 4800 Found of Adolescent Literacy
3 - EDSC 3280 Practicum in Secondary Social Studies
9 - Teaching Major⁶
18

Second Semester

3 - SOC 2010 Introduction to Sociology
3 - Advanced Humanities Requirement⁴
3 - Arts and Humanities (Literature) Requirement¹
9 - Teaching Major⁶
18

Senior Year

First Semester

3 - EDF 3350 Adolescent Growth & Devel
3 - EDLT 4980 Secondary Content Area Reading⁷
3 - EDSP 3700 Introduction to Special Education
3 - EDSC 4280 Teaching Secondary Social Studies⁷
3 - HIST 4900 Senior Seminar⁷
3 - Advanced Humanities Requirement⁴
18

Second Semester

12- Emphasis Area Requirement⁸

12

129 Total Semester Hours

¹See General Education Requirements.

²Students must complete through 2020 in a modern language. See Modern Languages Requirement at Clemson University statement on page 27.

³Any other Mathematics or Natural Sciences General Education course that satisfies the General Education Science and Technology in Society requirement may be substituted.

⁴Select from ART 2100, MUSC 2100, THEA 2100, or any AAH, COMM (except 3640, 3680), ENGL (except 3040, 3120, 3140, 3330, 4850, 4900, 4950), HUM, MUSC, PHIL, REL, THEA (except 3770, 4870, 4970), WS, or modern language course numbered 3000 or higher.

⁵See General Education Requirements. This course may not fulfill both the General Education Arts and Humanities (Non-Literature) and the Advanced Humanities requirement.

⁶Students must complete a minimum of 18 credits of history coursework: A minimum of three credits of United States history at the 3000 or 4000 level; a minimum of three credits of European history at the 3000 or 4000 level; a minimum of six credits of non-Western history coursework at the 3000 or 4000 level; one three-credit HIST course at the 4000 level; and one additional HIST course at the 1000-4000 level (except HIST 1980 or 2000)

U.S. history—Three credits selected from HIST 3000, 3010, 3020, 3030, 3040, 3050, 3060, 3080, 3110, 3120, 3130, 3140, 3160, 3170, 3180, 3190, 3230, 3250, 3260, 3270, 3280, 3290, 3900, 3920, 4000

European history—Three credits selected from HIST 3210, 3220, 3530, 3540, 3550, 3610, 3630, 3670, 3700, 3720, 3730, 3740, 3750, 3770, 3780, 3800, 3810, 3840, 3850, 3860, 3870, 4500, 4510, 4600, 4700, 4710

Non-Western history—Six credits selected from HIST 3300, 3330, 3340, 3370, 3380, 3390, 3400, 3410, 3420, 3510, 3520, 3910, 3940, 3960, 3970, 4360, 4380, 4400

⁷EDSC 4280, HIST 4900, and EDLT 4980 must be taken concurrently in the fall semester of the senior year.

⁸Completion of one of the following emphasis areas is required.

- Teacher Certification Emphasis Area
 - 9 - EDEC 4840 Directed Teaching in Secondary Education
 - 3 - EDEC 4850 Secondary Capstone

- Non-Certification Emphasis Area

The non-certification option allows 12 credit hours of elective coursework to be substituted in lieu of the 9-credit hours of student teaching/internship and 3-credit capstone course.

Teacher Residency Combine Bachelor-Master Program:

- ED 6900 Classroom Learning Environments (3 credits)
- ED 8650 Curriculum Theory (3 credits)
- EDF 8080 Contemporary Issues in Assessment (3 credits)
- ED 8250 Cultural Diversity in Education (3 credits)

MATHEMATICS TEACHING

Bachelor of Science

The program leading to a Bachelor of Science degree in Mathematics Teaching is designed for students planning to teach mathematics on the secondary school level (grades 9–12). (Note: The program leading to a Bachelor of Arts degree in Secondary Education with a Teaching Area of Mathematics is also designed for students planning to teach mathematics on the secondary school level.) To be recommended for licensure, students must earn a grade of C or higher in all required mathematics content and education courses.

Freshman Year

First Semester

- 4 - CH 1050 Chemistry in Context I *or*
 - 4 - CH 1060 Chemistry in Context II
 - 2 - ED 1050 Orientation to Education
 - 4 - MATH 1060 Calculus of One Variable I
 - 3 - PHIL 1020 Introduction to Logic
 - 3 - Cross-Cultural Awareness Requirement¹
- 16

Second Semester

- 3 - ENGL 1030 Composition and Rhetoric
 - 4 - MATH 1080 Calculus of One Variable II
 - 3 - PHYS 1220 Physics with Calculus I
 - 1 - PHYS 1240 Physics Lab I
 - 3 - Science Requirement²
- 14

Sophomore Year

First Semester

- 3 - COMM 1500 Intro. to Human Comm. *or* 3 - COMM 2500 Public Speaking
 - 3 - EDSC 2260 A Prof. Approach to Sec. Algebra
 - 4 - MATH 2060 Calculus of Several Variables
 - 3 - PHYS 2210 Physics with Calculus II
 - 1 - PHYS 2230 Physics Lab. II
 - 3 - Arts and Humanities (Literature) Requirement³
- 17

Second Semester

- 3 - EDF 3020 Educational Psychology
 - 4 - MATH 2080 Intro. to Ordinary Diff. Equations
 - 3 - MATH 3110 Linear Algebra
 - 3 - MATH 3190 Introduction to Proofs
 - 3 - Economics Requirement⁴
- 16

Junior Year

First Semester

- 3 - EDF 3010 Principles of American Education
 - 3 - EDLT 4800 Foundations of Adolescent Literacy
 - 3 - EDSC 3260 Practicum in Secondary Math.
 - 3 - MATH 3020 Statistics for Science and Engr.
 - 3 - History Requirement⁵
 - 3 - Science Requirement²
- 18

Second Semester

- 3 - EDF 3350 Adolescent Growth and Development
 - 3 - EDSC 4370 Technology in Secondary Math.
 - 3 - EDSP 3700 Introduction to Special Education
 - 3 - MATH 3080 College Geometry
 - 3 - MATH 4120 Algebra I
- 15

Senior Year

First Semester

- 3 - EDSC 4260 Teaching Secondary Mathematics⁶
- 3 - EDLT 4980 Secondary Content Area Reading⁶
- 3 - MATH 4000 Theory of Probability *or*
- 3 - MATH 4020 Statics for Science and Eng. II

ACAP
11/30/17
Agenda Item 2c

3 - MATH 4080 Topics in Geometry
3 - MATH 4530 Advanced Calculus I
15

Second Semester

12 – Emphasis Area Requirement⁷
12

123 Total Semester Hours

¹See General Education Requirements. Cross-Cultural Awareness Requirement must be in an area other than history.

²Select from courses in ASTR, BIOL, CH, GEOL, PHYS

³ENGL 2120, 2130, 2140, 2150

⁴Select from ECON 2000, 2110, or 2120

⁵Select from HIST 1010, 1020, 1720, 1730, or 1930

⁶EDSC 4260 and EDLT 4980 must be taken concurrently prior to the teaching internship. Offered fall semester only.

⁷Completion of one of the following emphasis areas is required.

- Teacher Certification Emphasis Area
 - 9 - EDEC 4840 Directed Teaching in Math Teaching
 - 3 - EDEC 4850 Math Teaching Capstone
- Non-Certification Emphasis Area
 - The non-certification option allows 12 credit hours of elective coursework to be substituted in lieu of the 9-credit hours of student teaching/internship and 3-credit capstone course.

Teacher Residency Combine Bachelor-Master Program:

ED 6900 Classroom Learning Environments (3 credits)

ED 8650 Curriculum Theory (3 credits)

EDF 8080 Contemporary Issues in Assessment (3 credits)

ED 8250 Cultural Diversity in Education (3 credits)

SCIENCE TEACHING Bachelor of Science

The programs leading to a Bachelor of Arts or Bachelor of Science degree in Science Teaching are designed for students planning to teach biological sciences, chemistry, or physical sciences on the secondary school level (grades 9–12). To be recommended for licensure, students must earn a grade of C or higher in all required science content and education courses.

TEACHING AREA: BIOLOGICAL SCIENCES Bachelor of Science

Freshman Year

First Semester

3 - BIOL 1030 General Biology I *and*

1 - BIOL 1050 General Biology Lab. I *or* 5 - BIOL 1100 Principles of Biology I

4 - CH 1010 General Chemistry

4 - MATH 1060 Calculus of One Variable I

3 - Oral Communication Requirement¹

15-16

Second Semester

- 3 - BIOL 1040 General Biology II *and*
- 1 - BIOL 1060 General Biology Lab. II *or*
- 5 - BIOL 1110 Principles of Biology II
- 4 - CH 1020 General Chemistry
- 2 - ED 1050 Orientation to Education
- 3 - ENGL 1030 Composition and Rhetoric
- 3 - Statistics Requirement²

16-17

Sophomore Year

First Semester

- 3 - CH 2010 Survey of Organic Chemistry
- 1 - CH 2020 Survey of Organic Chemistry Lab.
- 3 - EDF 3020 Educational Psychology
- 3 - HIST 1220 History, Technology, and Society *or*
- 3 - HIST 1240 Environmental History Survey
- 3 - PHYS 2070 General Physics I
- 1 - PHYS 2090 General Physics I Lab.
- 3 - Genetics Requirement³

17

Second Semester

- 3 - BIOL 3350 Evolutionary Biology
- 3 - EDF 3010 Principles of American Education
- 3 - PHYS 2080 General Physics II
- 1 - PHYS 2100 General Physics II Lab.
- 3 - Biochemistry Requirement³
- 3 - Ecology Requirement⁴

16

Junior Year

First Semester

- 3 - BIOL 4610 Cell Biology
- 2 - BIOL 4620 Cell Biology Laboratory
- 3 - EDLT 4800 Foundations of Adolescent Literacy
- 3 - EDSC 3270 Practicum in Secondary Science
- 4 - Organismal Diversity Requirement⁵

15

Second Semester

- 3 - ANTH 2010 Introduction to Anthropology *or*
- 3 - GEOG 1030 World Regional Geography
- 3 - BIOL (EDSC) 4820 Laboratory Techniques for Teaching Science
- 3 - EDF 3350 Adolescent Growth and Development
- 3 - Arts and Humanities (Literature) Requirement¹
- 4 - Functional Biology Requirement⁶

16

Senior Year

First Semester

- 3 - EDSP 3700 Introduction to Special Education
- 3 - EDSC 4270 Teaching Secondary Science⁷
- 3 - EDLT 4980 Secondary Content Area Reading⁷
- 3 - Art and Humanities (Non-Lit.) Requirement¹
- 1 - Elective

13

Second Semester

- 12 – Emphasis Area Requirement⁸

12

120–122 Total Semester Hours

¹See General Education Requirements.

²STAT 2300 or 3090

³One lecture course must be completed for both biochemistry (BCHM 3010 or 3050) and for genetics (GEN 3000 or 3020).

⁴At least one course selected from BIOL 4410, 4420, 4430, 4460, or 4700

⁵One lecture and associated laboratory must be selected from BIOL 3010, 3020/3060, 3030/3070, 3040/3080, 3200, 4060/4070, or 4250/4260.

⁶At least one course selected from BIOL 3160, 4010, 4080, 4590, 4750, or 4800. If a three-credit hour course is selected, the remaining one-credit hour must be satisfied with an elective credit.

⁷To be taken the semester prior to EDSC 4470 and 4570. EDSC 4270 and EDLT 4980 must be taken concurrently. Offered fall semester only.

⁸Completion of one of the following emphasis areas is required.

- Teacher Certification Emphasis Area
 - 9 - EDEC 4840 Directed Teaching in Science Teaching
 - 3 - EDEC 4850 Science Teaching Capstone

- Non-Certification Emphasis Area
 - The non-certification option allows 12 credit hours of elective coursework to be substituted in lieu of the 9-credit hours of student teaching/internship and 3-credit capstone course.

Teacher Residency Combine Bachelor-Master Program:

ED 6900 Classroom Learning Environments (3 credits)

ED 8650 Curriculum Theory (3 credits)

EDF 8080 Contemporary Issues in Assessment (3 credits)

ED 8250 Cultural Diversity in Education (3 credits)

TEACHING AREA: PHYSICAL SCIENCES

Bachelor of Science: Non-Certification Option

Freshman Year

First Semester

4 - CH 1010 General Chemistry

3 - COMM 1500 Introduction Human Comm. *or* 3 - COMM 2500 Public Speaking

2 - ED 1050 Orientation to Education

3 - HIST 1220 History, Technology, and Society *or* 3 - HIST 1240 Environmental History Survey

4 - MATH 1060 Calculus of One Variable I

16

Second Semester

4 - CH 1020 General Chemistry

3 - ENGL 1030 Composition and Rhetoric

4 - MATH 1080 Calculus of One Variable II

3 - PHYS 1220 Physics with Calculus I

1 - PHYS 1240 Physics Lab. I

15

Sophomore Year

First Semester

3 - BIOL 1030 General Biology I *and*

1 - BIOL 1050 General Biology Lab. I *or*

5 - BIOL 1100 Principles of Biology I

ACAP
11/30/17
Agenda Item 2c

3 - CH 2010 Survey of Organic Chemistry
1 - CH 2020 Survey of Organic Chemistry Lab.
4 - MATH 2060 Calculus of Several Variables
3 - PHYS 2210 Physics with Calculus II
1 - PHYS 2230 Physics Lab. II
16-17

Second Semester

3 - BIOL 1040 General Biology II *and*
1 - BIOL 1060 General Biology Lab. II *or*
5 - BIOL 1110 Principles of Biology II
3 - CH 2050 Intro. to Inorganic Chemistry
3 - EDF 3010 Principles of American Education
3 - PHYS 2220 Physics with Calculus III
1 - PHYS 2240 Physics Lab. III
3 - Arts and Humanities (Literature) Requirement¹
17-18

Junior Year

First Semester

3 - ASTR 1050 Physics of the Universe *or* 3 - ASTR 1020 Stellar Astronomy *and* 1 - ASTR 1040 Stellar Astronomy Lab.
3 - CH 3130 Quantitative Analysis
1 - CH 3170 Quantitative Analysis Lab.
3 - CH 3300 Introduction to Physical Chemistry
3 - EDLT 4800 Foundations of Adolescent Literacy
3 - EDSC 3270 Practicum in Secondary Science
16-17

Second Semester

3 - BIOL (EDSC) 4820 Laboratory Techniques for Teaching Science
3 - EDF 3020 Educational Psychology
3 - EDF 3350 Adolescent Growth and Development
3 - Social Science Requirement²
3 - Statistics Requirement³
15

Senior Year

First Semester

3 - EDSP 3700 Introduction to Special Education
3 - EDLT 4980 Secondary Content Area Reading⁴
3 - EDSC 4270 Teaching Secondary Science⁴
3 - PHIL 3240 Philosophy of Technology *or* 3 - PHIL 3250 Philosophy of Science *or* 3 - PHIL 3260 Science and Values
3 - PHYS 3110 Intro. to Meth. of Theoretical Phys.
15

Second Semester

12 – Emphasis Area Requirement⁵
12

122–125 Total Semester Hours

¹ENGL 2120, 2130, 2140, or 2150

²ANTH 2010, GEOG 1030, POSC 1020, or 1040

³STAT 2300 or 3090

⁴To be taken the semester prior to EDSC 4470 and 4570. EDF 4250, EDSC 4270 and EDLT 4980 must be taken concurrently. Offered fall semester only.

⁵Completion of one of the following emphasis areas is required.

- **Teacher Certification Emphasis Area**
 - 9 - EDEC 4840 Directed Teaching in Science Teaching
 - 3 - EDEC 4850 Science Teaching Capstone
- **Non-Certification Emphasis Area**

The non-certification option allows 12 credit hours of elective coursework to be substituted in lieu of the 9-credit hours of student teaching/internship and 3-credit capstone course.

Teacher Residency Combine Bachelor-Master Program:
ED 6900 Classroom Learning Environments (3 credits)
ED 8650 Curriculum Theory (3 credits)
EDF 8080 Contemporary Issues in Assessment (3 credits)
ED 8250 Cultural Diversity in Education (3 credits)

SCIENCE TEACHING Bachelor of Arts

The programs leading to a Bachelor of Arts or Bachelor of Science degree in Science Teaching are designed for students planning to teach biological sciences, chemistry, or physical sciences on the secondary school level (grades 9–12). To be recommended for licensure, students must earn a grade of C or higher in all required science content and education courses.

Double Majors in Science Teaching and Content Area

The Bachelor of Arts Degree in Science Teaching could result in a double major in Science Teaching and the select content area (Biological Sciences, Chemistry, or Physics). To receive a double major in Science Teaching and the selected content area, a Change of Academic Program form must be completed to declare both majors. To achieve a double major, the appropriate plan of study listed under Science Teaching must be followed and all major requirements from both programs must be satisfied. The double major prepares students for teaching science on the secondary level and graduate work in the respective content field.

TEACHING AREA: BIOLOGICAL SCIENCES Bachelor of Arts

Freshman Year

First Semester

3 - BIOL 1030 General Biology I *and*
1 - BIOL 1050 General Biology Lab. I *or*
5 - BIOL 1100 Principles of Biology
4 - CH 1010 General Chemistry
2 - ED 1050 Orientation to Education
4 - MATH 1060 Calculus of One Variable I
3 - Modern Language Requirement¹
17-18

Second Semester

3 - BIOL 1040 General Biology I *and*
1 - BIOL 1060 General Biology Lab. II *or*
5 - BIOL 1110 Principles of Biology II
4 - CH 1020 General Chemistry
3 - ENGL 1030 Composition and Rhetoric
3 - Modern Language Requirement¹
3 - Statistics Requirement²

17-18

Sophomore Year

First Semester

- 3 - CH 2010 Survey of Organic Chemistry
- 1 - CH 2020 Survey of Organic Chemistry Lab.
- 3 - HIST 1220 History, Technology and Society *or*
- 3 - HIST 1240 Environmental History Survey
- 3 - PHYS 2070 General Physics I
- 1 - PHYS 2090 General Physics I Lab.
- 3 - Arts and Humanities (Literature) Requirement³
- 3 - Biochemistry or Genetics Requirement⁴

17

Second Semester

- 3 - EDF 3010 Principles of American Education
- 3 - EDF 3020 Educational Psychology
- 3 - PHYS 2080 General Physics II
- 1 - PHYS 2100 General Physics II Lab.
- 3 - Biochemistry or Genetics Requirement⁴
- 4 - Organismal Diversity Requirement⁵

17

Junior Year

First Semester

- 3 - ANTH 2010 Introduction to Anthropology *or*
- 3 - GEOG 1030 World Regional Geography
- 3 - BIOL 4610 Cell Biology
- 2 - BIOL 4620 Cell Biology Laboratory
- 3 - EDLT 4800 Foundations of Adolescent Literacy
- 3 - EDSC 3270 Practicum in Secondary Science
- 3 - Ecology Requirement⁶

17

Second Semester

- 3 - BIOL 3350 Evolutionary Biology
- 3 - BIOL (EDSC) 4820 Laboratory Techniques for Teaching Science
- 3 - EDF 3350 Adolescent Growth and Development
- 3 - ENGL 3150 Scientific Writing and Comm.
- 3 - Functional Biology Requirement⁷

15

Senior Year

First Semester

- 3 - COMM 1500 Intro. to Human Comm. *or*
- 3 - COMM 2500 Public Speaking
- 3 - EDSP 3700 Introduction to Special Education
- 3 - EDSC 4270 Teaching Secondary Science⁸
- 3 - EDLT 4980 Secondary Content Area Reading⁸
- 3 - Arts and Humanities (Non-Lit.) Requirement³

15

Second Semester

12 – Emphasis Area Requirement⁹

12

127–129 Total Semester Hours

¹Students must complete through 2020 in a modern language. See Modern Languages Requirement at Clemson University statement on page 27.

²STAT 2300 or 3090

³See General Education Requirements

⁴One lecture course must be completed for both biochemistry (BCHM 3010 or BCHM 3050) and for genetics (GEN 3000 or GEN 3020).

⁵One lecture and associated laboratory must be selected from BIOL 3010; BIOL 3020/3060; BIOL 3030/3070; BIOL 3040/3080; BIOL 3200; BIOL 4060/4070; or BIOL 4250/4260.

⁶At least one selected from BIOL 4410, 4420, 4430, 4460, 4700, or MICR 4010.

⁷At least one selected from BIOL 3160, 4010, 4080, 4590, 4750, or 4800.

⁸To be taken the semester prior to EDSC 4470 and 4570. EDSC 4270 and EDLT 4980 must be taken concurrently.

⁹Completion of one of the following emphasis areas is required.

- Teacher Certification Emphasis Area
 - 9 - EDEC 4840 Directed Teaching in Science Teaching
 - 3 - EDEC 4850 Science Teaching Capstone
- Non-Certification Emphasis Area
 - The non-certification option allows 12 credit hours of elective coursework to be substituted in lieu of the 9-credit hours of student teaching/internship and 3-credit capstone course.

Teacher Residency Combine Bachelor-Master Program:

ED 6900 Classroom Learning Environments (3 credits)

ED 8650 Curriculum Theory (3 credits)

EDF 8080 Contemporary Issues in Assessment (3 credits)

ED 8250 Cultural Diversity in Education (3 credits)

TEACHING AREA: CHEMISTRY

Bachelor of Arts

Freshman Year

First Semester

4 - CH 1010 General Chemistry
1 - CH 1410 Chemistry Orientation
3 - ENGL 1030 Composition and Rhetoric
4 - MATH 1060 Calculus of One Variable I
3 - Modern Language Requirement¹
15

Second Semester

4 - CH 1020 General Chemistry
3 - CH 1520 Chemistry Communication
4 - MATH 1080 Calculus of One Variable II
3 - PHYS 1220 Physics with Calculus I
1 - PHYS 1240 Physics Laboratory I
3 - Modern Language Requirement¹
18

Sophomore Year

First Semester

3 - CH 2230 Organic Chemistry
1 - CH 2270 Organic Chemistry Laboratory
2 - ED 1050 Orientation to Education
4 - MATH 2060 Calculus of Several Variables
3 - PHYS 2210 Physics with Calculus II
1 - PHYS 2230 Physics Laboratory II
3 - Arts and Humanities (Non-Lit.) Requirement²

17

Second Semester

3 - CH 2050 Intro. to Inorganic Chemistry
3 - CH 2240 Organic Chemistry
1 - CH 2280 Organic Chemistry Laboratory
3 - CH 3130 Quantitative Analysis
1 - CH 3170 Quantitative Analysis Laboratory
3 - EDF 3010 Principles of American Education
3 - HIST 1220 History, Technology and Society *or*
3 - HIST 1240 Environmental History Survey
17

Junior Year

First Semester

3 - BIOL 1030 General Biology I *and*
1 - BIOL 1050 General Biology Laboratory I *or*
5 - BIOL 1100 Principles of Biology I
3 - CH 3310 Physical Chemistry
3 - EDLT 4800 Foundations of Adolescent Literacy
3 - EDSC 3270 Practicum in Secondary Science
13-14

Second Semester

3 - BIOL 1040 General Biology II *and*
1 - BIOL 1060 General Biology Laboratory II *or*
5 - BIOL 1110 Principles of Biology II
3 - BIOL (EDSC) 4820 Lab. Techniq. for Teach. Sci.
3 - CH 3320 Physical Chemistry
1 - CH 4520 Chemistry Communication II
3 - EDF 3020 Educational Psychology
3 - EDF 3350 Adolescent Growth and Develop.
17-18

Senior Year

First Semester

3 - ANTH 2010 Introduction to Anthropology *or*
3 - GEOG 1030 World Regional Geography
3 - EDSP 3700 Introduction to Special Education
3 - EDSC 4270 Teaching Secondary Science³
3 - EDLT 4980 Secondary Content Area Reading³
3 - Arts and Humanities (Literature) Requirement²
15

Second Semester

3 - CH 4500 Chemistry Capstone
12 - Emphasis Area Requirement⁴
15

127–129 Total Semester Hours

¹Students must complete through 2020 in a modern language. See Modern Languages Requirement at Clemson University statement on page 27.

²See General Education Requirements.

³To be taken the semester prior to EDSC 4470 and 4570. EDSC 4270 and EDLT 4980 must be taken concurrently. Offered fall semester only.

⁴Completion of one of the following emphasis areas is required.

- Teacher Certification Emphasis Area
 - 9 - EDEC 4840 Directed Teaching in Science Teaching
 - 3 - EDEC 4850 Science Teaching Capstone

- Non-Certification Emphasis Area

The non-certification option allows 12 credit hours of elective coursework to be substituted in lieu of the 9-credit hours of student teaching/internship and 3-credit capstone course.

Teacher Residency Combine Bachelor-Master Program:

- ED 6900 Classroom Learning Environments (3 credits)
- ED 8650 Curriculum Theory (3 credits)
- EDF 8080 Contemporary Issues in Assessment (3 credits)
- ED 8250 Cultural Diversity in Education (3 credits)

TEACHING AREA: PHYSICS

Bachelor of Arts:

Freshman Year

First Semester

- 4 - CH 1010 General Chemistry
 - 2 - ED 1050 Orientation to Education
 - 3 - ENGL 1030 Composition and Rhetoric
 - 4 - MATH 1060 Calculus of One Variable I
 - 3 - PHYS 1220 Physics with Calculus I
 - 1 - PHYS 1240 Physics Laboratory I
- 17

Second Semester

- 4 - CH 1020 General Chemistry
 - 4 - MATH 1080 Calculus of One Variable II
 - 3 - PHYS 2210 Physics with Calculus II
 - 1 - PHYS 2230 Physics Laboratory II
 - 3 - Arts and Humanities (Non-Lit.) Requirement¹
 - 3 - Oral Communication Requirement¹
- 18

Sophomore Year

First Semester

- 5 - BIOL 1100 Principles of Biology I *or*
 - 3 - BIOL 1030 General Biology I *and*
 - 1 - BIOL 1050 General Biology I Lab.
 - 4 - MATH 2060 Calculus of Several Variables
 - 3 - PHYS 2220 Physics with Calculus III
 - 3 - PHYS 3250 Experimental Physics I
- 14-15

Second Semester

- 3 - ASTR 1010 Solar System Astronomy
 - 5 - BIOL 1110 Principles of Biology II *or*
 - 3 - BIOL 1040 General Biology II *and*
 - 1 - BIOL 1060 General Biology II Lab.
 - 3 - EDF 3010 Principles of American Education
 - 4 - MATH 2080 Intro. to Ordinary Diff. Equations
 - 3 - Social Science Requirement¹
- 17-18

Junior Year

First Semester

- 3 - CH 3300 Intro. to Physical Chemistry *or*
- 3 - CH 3310 Physical Chemistry

ACAP
11/30/17
Agenda Item 2c

3 - EDLT 4800 Foundations of Adolescent Literacy
3 - EDSC 3270 Practicum in Secondary Science
3 - MATH 3600 Intermed. Math. Computing *or*
3 - PHYS 3150 Intro to Computational Physics
3 - PHYS 3210 Mechanics I
3 - Modern Language Requirement²
18

Second Semester

3 - BIOL (EDSC) 4820 Laboratory Techniques for Teaching Science
3 - EDF 3020 Educational Psychology
3 - EDF 3350 Adolescent Growth and Develop.
3 - MATH 4340 Advanced Engineering Math. *or*
3 - PHYS 3110 Intro. to the Methods of Theoretical Physics
3 - Modern Language Requirement²
3 - Social Science Requirement¹
18

Senior Year

First Semester

3 - EDSC 4270 Teaching Secondary Science³
3 - EDLT 4980 Secondary Content Area Reading³
3 - PHYS 4410 Electromagnetics I
3 - PHYS 4550 Quantum Physics I
3 - Arts and Humanities (Literature) Requirement¹
15

Second Semester

3 - EDSP 3700 Introduction to Special Education
12- Emphasis Area Requirement⁴
15

132-134 Total Semester Hours

¹See General Education Requirements. Six of these credit hours must also satisfy the Cross-Cultural Awareness and Science and Technology in Society General Education Requirements.

²Students must complete through 2020 in a modern language. See Modern Languages Requirement at Clemson University statement on page 27.

³To be taken the semester prior to EDSC 4470 and 4570. EDSC 4270 and EDLT 4980 must be taken concurrently.

⁴Completion of one of the following emphasis areas is required.

- Teacher Certification Emphasis Area
 - 9 - EDEC 4840 Directed Teaching in Science Teaching
 - 3 - EDEC 4850 Science Teaching Capstone
- Non-Certification Emphasis Area
 - The non-certification option allows 12 credit hours of elective coursework to be substituted in lieu of the 9-credit hours of student teaching/internship and 3-credit capstone course.

Teacher Residency Combine Bachelor-Master Program:

ED 6900 Classroom Learning Environments (3 credits)
ED 8650 Curriculum Theory (3 credits)
EDF 8080 Contemporary Issues in Assessment (3 credits)
ED 8250 Cultural Diversity in Education (3 credits)

Non-Clemson University Students interested in the program of study should contact the Program Coordinator. The admission process would require a student to have completed a minimum of 90 specific undergraduate credit hours or hold an undergraduate degree. Students without an undergraduate degree would need to apply to Clemson as a transfer student and meet all requirements for admission to the University. Transfer admission to Clemson’s teacher preparation programs are highly competitive.

The transfer admission process would require a student to have completed a minimum of 90 specific undergraduate credit hours or hold an undergraduate degree. An audit of the applicant’s transcript would be required to ensure that all pre-requisite pedagogical and content coursework was completed, including PRAXIS II passing scores. In addition, the same screening process used for ongoing Clemson undergraduate students would be required. Interested applicants who do not meet the pre-requisites can be advised with a list of missing coursework or redirected to an existing non-teacher residency MAT program. The coursework is critical, because an applicant would need to meet the requirement for an undergraduate degree to be awarded by Clemson University in secondary education (English, Math, History), science teaching (Chemistry, Biological Sciences, Physical Sciences, Physics), and mathematics teaching. This includes meeting the residency requirement (37 of the last 43 hours are taken at Clemson University).

Non-Clemson University students interested in the program of study should contact the Program Coordinator. Students without an undergraduate degree would need to apply to Clemson as a transfer student and meet all requirements for admission to the University. Transcripts and courses are reviewed and an advisor assists potential students before admission to determine course transferability, requirements for particular degree, and anticipated time to completion. Transfer admission to Clemson’s teacher preparation programs are highly competitive.

Before Clemson education students begin their professional level requirements, a formal review is conducted, and students must have completed 60 semester hours of education program work, have passing scores on all areas of the Praxis CORE and have a minimum cumulative grade-point average of 2.75. A candidate may exempt the CORE by meeting minimum ACT or SAT requirements as determined by the South Carolina Department of Education. Therefore, any education major with 90 hours, including upper level educational coursework, will have already met the Praxis CORE requirement by test or ACT/SAT waiver.

Most of Clemson University students waive the Praxis CORE by meeting minimum ACT or SAT standards. Transfer students also provide ACT and SAT scores, and if they do not meet the minimum standards would take the Praxis CORE. Any student applying to the MAT Teacher Residency program would have meet the Praxis CORE and Praxis II (PLT and subject assessment) requirements before admission into the program. For example, in 2016 students in Secondary Education, Mathematics and Science Teaching programs were admitted with following ACT and SAT scores.

	Student Count	ACT Average	SAT Verbal	SAT Math
Secondary Education	27	28.47	655.00	627.50
Mathematics Teaching	3	25	610	570
Science Teaching	3	30	550	650

Are there any special articulation agreements for the proposed program?

Yes

No

If yes, identify. (1000 characters)

Curriculum

Select one of the following charts to complete: Curriculum by Year **or** Curriculum by Category

Curriculum by Year					
Course Name	Credit Hours	Course Name	Credit Hours	Course Name	Credit Hours
Year 1					
Spring I		Fall		Spring II	
ED 6900 Classroom Learning Environments	3	Ed 8600 Classroom-based Research	3	ED 8990 Capstone Project	3
ED 8650 Curriculum Theory	3	ED 8090—Teacher Residency Internship	3	ED 8090—Teacher Residency Internship	3
EDF 8080 Contemporary Issues in Assessment	3	ED 8480—Teacher Residency Seminar	3	ED 8480—Teacher Residency Seminar	3
ED 8250 Cultural Diversity in Education	3				
Total Semester Hours	12	Total Semester Hours	9	Total Semester Hours	9

Total Credit Hours Required **30**

Course Descriptions for New Courses

[All courses are approved and ready for implementation.]

Course Name	Description
ED 8090 Teacher Residency Internship	This course is a supervised, clinical field experience in which teacher residents apply newly acquired knowledge in a school setting. The purpose of this twice-repeatable residency internship is to expand the typical clinical teaching semester into a year-long teacher residency.
ED 8480 Teacher Residency Seminar	Seminar course accompanying a supervised teacher residency internship. Students reflect upon and solve problems related to the teacher residency internship, share effective teaching practices, and devise ways to document dimensions of effective teaching. The purpose of this twice-repeatable residency seminary is to provide a course for students in residency internships to reflect on what is occurring in their classrooms and schools, to use feedback from their course instructor and peers to solve problems, and to explore issues related to classroom teaching.

**Faculty
Faculty and Administrative Personnel**

Rank	Full- or Part-time	Courses Taught or To be Taught, Including Term, Course Number & Title, Credit Hours	Academic Degrees and Coursework Relevant to Courses Taught, Including Institution and Major	Other Qualifications and Comments (i.e., explain role and/or changes in assignment)
Professor #1 and Department Chair	F	ED 7350 Bring Learning Alive w/STEAM, 3 Sp ED 7350 Google Apps for Education, 3 Sp/Su ED 7350 Integrating Lit. in the Class, 3 Sp ED 7350 Spanish for Educators, 3 Sp EDSC 3270 Practicum Sec Sci, 2 Fa EDSC 3271 Prac Sec Sci Lab, 3 Fa	BS, Science Education, University of Central Oklahoma 1991. MS, Curriculum and Instruction, Indiana University 2002. PhD, Curriculum and Instruction, Indiana University 2004.	
Professor # 2	F	ED 8380 Ancient Civilizations, 3 Sp EDML 8120 Mid Grds Soc Studies Meth/Prac, 2 Fa EDML 8221 Md Gr Soc Stud Meth/St Tch Lab, 4 Sp EDML 8320 S.C. History for Teachers, 3 Fa EDSC 8440 Adv Study Sec Soc St, 3 Fa EDSC 8490 Lit in Soc St Teach, 3 Sp	BA, English, Longwood College 1978. MA, Theology, Bethany Theological Seminary 1981. EdD, Curriculum and Instruction, Virginia Tech 1987.	
Professor #3	F	ED 3220 Responding to Emerg, 2 Sp ED 3221 Respond to Emerg Lab, 1 Sp EDEL 3210 Pe for the Elem Tchr, 3 Fa/Sp	BS, Health and Physical Education, Madison College 1977. MS, Physical Education, University of Tennessee 1985. EdD, Physical Education, University of Tennessee 1989.	
Associate Professor #1	F	ED 4380 Sel Topics in Educ, 3 Su ED 4390 Independent Study, 3 Su	BA, Media Arts, University of South Carolina 1991. MAT, Early Childhood Education, University of South Carolina 1993. PhD, Language and Literary Education, Georgia State University 2003.	
Associate Professor #2	F	ED 9010 Persp. of Schooling in US, 3 Sp ED 9910 Doctoral Dissertation Research, Var. Fa/Sp ED 9940 Directed Research, 1 Su EDML 8230 Mid Grds Math Meth/Stud Teach, 2 Sp EDSC 2260 Pr Apprch to Sec Alg, 3 Fa	BS, Meteorology, University of Oklahoma 1995. MS, Mathematics, Colorado State University 1997. PhD, Instructional Leadership and Academic Curriculum, University of Oklahoma 2005.	

		EDSC 3260 Practicum Sec Math, 2 Fa EDSC 3261 Prac Sec Math Lab, 3 Fa EDSC 4560 Sec Mth Capstone, 2 Sp EDSC 4561 Sec Mth Capstone Lab, 3 Sp		
Associate Professor #3	F	ED 4390 Independent Study, 1 Fa ED 8380 Engin. Design for Teachers, 3 Su ED 8380 Engineering Design for Teacher, 3 Su ED 9800 Intern Curr & Instr, Var. Fa ED 9910 Doctoral Dissertation Research, Var. Fa/Sp ED 9940 Directed Research, Var. Fa EDML 8240 Mid Grds Science Meth/St Teach, 2 Sp EDML 8340 Envir Sci for Mid Sch Teachers, 2 Fa EDML 8341 Envir Sci for MS Teachers Lab, 6 Fa EDSC 4270 Tchng Sec Science, 2 Fa EDSC 8920 Capstone Seminar, 3 Sp	BS, Biology, University of North Carolina 1997. MAT, Science Education, University of North Carolina 1998. PhD, Science Education, North Carolina State University 2006.	
Associate Professor #4	F	ED 9020 Independent Doctoral Study, 3 Su EDEL 4510 Elem Meth Sci Tchng (HON), 2 Fa EDEL 4510 Elem Methods in Science Tchng, 2 Fa/Sp EDEL 4511 Ele Meth Sci Tch Lab, 3 Fa/Sp	BS, Biology, Valdosta State University 1998. MEd, Science Education, Georgia Southern University 2001. PhD, Science Education, University of Georgia 2007.	
Associate Professor #5	F	ED 8710 STEAM Transdisc Teaching, 2 Sp ED 8711 STEAM Transdisc Teach Lab, 3 Sp ED 8720 STEAM Enacted and Evaluated, 2 Fa ED 8721 STEAM Enact and Eval Lab, 3 Fa ED 8730 STEAM Assessment, 3 Su	BS, Elementary Education, University of Wisconsin-Milwaukee 1989. MS, Administrative Leadership and Supervision, University of Wisconsin-Milwaukee 1997. PhD, Curriculum and Instruction, University of Wisconsin-Madison 2010.	
Associate Professor #6	F	ED 3970 CI- Play Based Intervention/EC, Var. Sp ED 3970 Creative Inquiry in Education, Var. Fa ED 4990 Educ Honors Capstone (HON), Var. Fa ED 4991 Education Honors Cap Lab (HON), 4 Fa ED 9910 Doctoral Dissertation Research, 9 Sp ED 9940 Directed Research, Var. Fa EDEC 4300 Early Childhd Math, 3 Fa	BFA, Dance, Montclair State University 2001. MEd, Elementary Education, Georgian Court University 2005. PhD, Curriculum and Instruction, Clemson University 2009.	
Associate Professor #7	F	ED 8700 STEAM Instructional Design, 3 Fa ED 8720 STEAM Enacted and Evaluated, 2 Fa	BS, Biology, Indiana University 2000.	

		ED 8721 STEAM Enact and Eval Lab, 3 Fa ED 8730 STEAM Assessment, 3 Su ED 9800 Intern Curr & Instr, Var. Sp ED 9940 Directed Research, Var. Sp EDML 8140 Mid Grds Science Meth/Prac, 2 Fa EDSC 8610 Mthds & Strt Secondary Science, 3 Fa	MS, Education, Indiana University Purdue University -Indianapolis 2002. PhD, Curriculum and Instruction, Indiana University 2010.	
Associate Professor #8	F	ED 8390 Intro to Linguistics, 3 Sp	BA, Spanish, Bob Jones University 1979. MEd, Spanish, University of Georgia 1985. PhD, Spanish Linguistics, University of Texas 2002.	
Associate Professor #9	F	ED 4990 Educ Honors Capstone (HON), Var. Fa ED 4990 Educ Honors Capstone, Var. Sp ED 4991 Education Honors Cap Lab (HON), 4 Fa ED 4991 Education Honors Cap Lab, 4 Sp ED 8650 Curriculum Theory, 3 Su ED 9020 Teacher Development, 3 Su ED 9040 Intro Doc Seminar II, 1 Sp ED 9540 Curriculum Theory, 3 Fa ED 9800 Intern Curr & Instr, Var. Sp ED 9910 Doctoral Dissertation Research, 9 Su ED 9910 Doctoral Dissertation Research, Var. Fa/Sp ED 9940 Directed Research, 3 Su ED 9940 Directed Research, Var. Fa/Sp EDEL 4870 Ele Meth Soc Studies, 2 Fa EDEL 4871 Ele Mth Soc Stud Lab, 3 Fa	BA, Classics and History, Trinity University 1997. MA, Classics, University of Texas 1999. PhD, Curriculum and Instruction, University of Texas 2006.	
Associate Professor #10	F	ED 4410 Middle School Curr, 3 Su ED 6410 Middle School Curr, 3 Su ED 8600 Action Research, 3 Fa ED 9910 Doctoral Dissertation Research, Var. Fa/Sp/Su ED 9940 Directed Research, 3 Fa EDEL 4520 Elem Methods Math Teach (HON), 2 Sp EDEL 4520 Elem Methods Math Teaching, 2 Sp EDEL 4521 Ele Mth Mth Tchg Lab, 3 Sp	BS, Elementary Education, State University of New York - Buffalo 1992. MEd, Mathematics Education, University of Georgia 2003. PhD, Mathematics Education, University of Georgia 2006.	
Assistant Professor #1	F	EDML 8020 Early Adolescent Psych & Phil, 3 Su	BS, Elementary Education, Shippensburg University of Pennsylvania 1990.	

			MEd, Technology in Education, Harvard University 2004. PhD, Educational Psychology, Michigan State University 2011.	
Assistant Professor #2	F	ED 9940 Directed Research, 1 Su EDSC 3240 Practicum Sec Engl, 2 Fa EDSC 3241 Prac Sec Engl Lab, 3 Fa EDSC 4540 Sec Eng Capstone Sem, 2 Sp EDSC 4541 Sec Eng Cap Sem Lab, 3 Sp	BA, English Literature, Rhodes College 2001. MAT, Secondary English Education, Johns Hopkins University 2003. PhD, Educational Studies - Literacy, Emory University 2010.	
Assistant Professor #3	F	ED 3970 Creative Inquiry in Education, Var. Fa	BA, Philosophy, Brigham Young University 2007. MA, Politics, Princeton University 2009. PhD, Politics, Princeton University 2013.	
Assistant Professor #4	F	EDML 8030 The Early Adolescent Learner, 3 Su EDSC 4260 Tchng Sec Math, 2 Fa EDSC 6370 Technology in Math, 3 Su	BS, Mathematics, University of Texas-El Paso 2007. MEd, Mathematics Education, University of Georgia 2010. PhD, Mathematics Education, University of Georgia 2016.	
Assistant Professor #5	F	ED 3970 Creative Inquiry in Education, Var. Fa ED 9020 Independent Doctoral Study, Var. Fa EDEC 4400 Early Childhood Engl Lang Art, 3 Fa EDEC 4500 EC Curric & Soc Stud Methods, 3 Sp EDEC 8100 Adv Ece Found & Meth, 3 Sp EDEC 8200 Adv Ece Curriculum, 3 Fa	BS, Early Childhood Education, Auburn University 1998. MEd, Early Childhood Education, Auburn University 1999. PhD, Early Childhood Education, University of Kentucky 2012.	
Assistant Professor #6	F	ED 9010 Education in African Diaspora, 3 Fa EDEL 4870 Ele Meth Soc Studies, 2 Fa EDEL 4871 Ele Mth Soc Stud Lab, 3 Fa EDSC 4580 Sec Soc Capstone, 2 Sp EDSC 4581 Sec Soc Capstone Lab, 3 Sp	BA, Sociology, Tufts University 2001. PhD, Educational Studies, Emory University 2013.	
Assistant Professor #7	F	ED 9940 Directed Research, Var. Sp EDEL 3100 Arts in Ele School, 2 Fa/Sp EDEL 3101 Arts in Ele Sch Lab, 3 Fa/Sp	BA, Performance Studies, University of Minnesota 2003. MA, Performance Studies, New York University 2006. PhD, Curriculum and Instruction, University of Wisconsin 2012.	
Assistant Professor #8	F	ED 8380 ELA/SS Primary Documents, 3 Su ED 8380 Selected Topics in Education, 3 Su ED 8540 Intl Perspec Poverty & Schools, 3 Su	BA, Speech Pathology/Audiology and Psychology (dbl major), Duquesne University 1979.	

		ED 9020 Critical Multiculturalism, Var. Fa ED 9800 Intern Curr & Instr, 3 Fa ED 9800 Intern Curr & Instr, Var. Sp ED 9910 Doctoral Dissertation Research, 9 Sp ED 9910 Doctoral Dissertation Research, Var. Fa ED 9940 Directed Research, 3 Sp/Su EDEL 4050 Soc Justice-21st Cen, 3 Sp EDEL 4880 Elem Meth La Tchng, 2 Fa EDEL 4881 Ele Mth La Tchng Lab, 3 Fa	MS, Speech/Language Pathology, West Virginia University 1980. PhD, Curriculum and Instruction, Clemson University 2008.	
Assistant Professor #9	F	ED 9910 Doctoral Dissertation Research, Var. Fa ED 9940 Directed Research, 1 Su EDML 8130 Mid Grds Math Meth/Practicum, 2 Fa EDSC 8620 Methods & Strat Secondary Math, 3 Fa	BS, Mathematics, College of Charleston 1999. MS, Mathematics, Clemson University 2001. PhD, Mathematics, University of Washington 2009.	
Instructor #1	P	EDSC 4271 Tchng Sec Sci Lab, 2 Fa EDSC 4470 Teach Intern Sec Sci, 27 Sp EDSC 8611 Mthds & Strt Secondary Sci Lab, 1 Fa EDSC 8910 Directed Internship, 27 Sp	BS, Science Teaching, Clemson University 1979. MS, Secondary Education, Clemson University 1985.	
Instructor #2	P	EDSC 7700 Sci Lab & Field Inst, 3 Su	BS, Secondary Education, Clemson University 1998. MA, Physics Education, University of Virginia 2006. PhD, Curriculum & Instruction, Clemson University 2015.	
Senior Lecturer #1	F	EDEL 4011 Elem Field Exp Lab, 6 Fa EDEL 4830 Directed Tech Elem, 27 Sp EDML 8111 Mid Grds Lang Art Methods Lab, 4 Fa EDML 8121 Mid Gr Soc Stud Methods Lab, 4 Fa EDML 8211 Md Gr Lang Art Meth/St Tch Lab, 4 Sp EDML 8221 Md Gr Soc Stud Meth/St Tch Lab, 4 Sp	BA, English Education, Rowan University 1966. MA, Special Education, College of New Jersey 1972. PhD, Educational Leadership, Clemson University 1996.	
Lecturer #1	F	EDEL 4820 Elem Ed Capston Sem, 2 Sp EDEL 4821 Elem Ed Capstone Sem Lab, 3 Sp EDML 8080 Mid Sch Assessmnt for Teachers, 3 Su	BS, Management, Clemson University 2003. MA, Middle Grades Education, Clemson University 2006. EdS, Educational Leadership, University of Central Florida 2008.	

			EdD, Educational Leadership, University of Central Florida 2009.	
University Field Supervisor #1	P	EDSC 4271 Tchng Sec Sci Lab, 2 Fa EDSC 4470 Teach Intern Sec Sci, 27 Sp EDSC 8611 Mthds & Strt Secondary Sci Lab, 1 Fa EDSC 8910 Directed Internship, 27 Sp	BS, Natural Science Education, University of South Carolina 1982. MEd, Educational Administration, University of South Carolina 1998.	Extensive experience as a public-school teacher and mentor of graduate and undergraduate students in science and mathematics lab settings.
University Field Supervisor #2	P	EDSC 4271 Tchng Sec Sci Lab, 2 Fa EDSC 4470 Teach Intern Sec Sci, 27 Sp EDSC 8611 Mthds & Strt Secondary Sci Lab, 1 Fa EDSC 8910 Directed Internship, 27 Sp	BA, Biology, Wittenberg University. MA, Secondary Education, University of Pittsburgh 1990.	Extensive experience as a public-school teacher and mentor of graduate and undergraduate students in science and mathematics lab settings.
University Field Supervisor #3	P	EDSC 8621 Mthds & Str Secondary Math Lab, 1 Fa EDSC 8910 Directed Internship, 27 Sp	BS, Education, North Georgia College 1970. MEd, Secondary Education/Math, Columbus College 1977.	Extensive experience as a public-school teacher and mentor of graduate and undergraduate students in mathematics lab settings.
University Field Supervisor #4	P	EDSC 4261 Tchng Sec Math Lab, 2 Fa EDSC 4460 Teach Intern Sec Mth, 27 Sp	BS, Mathematics, Mississippi University for Women 1972. MEd, Secondary Education, Mississippi State University 1981.	Extensive experience as a public-school teacher and mentor of graduate and undergraduate students in mathematics lab settings

Note: Individuals should be listed with program supervisor positions listed first. Identify any new faculty with an asterisk next to their rank.

Total FTE needed to support the proposed program (i.e., the total FTE devoted just to the new program for all faculty, staff, and program administrators):

Faculty	0.8	Staff		Administration	0.16
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Faculty /Administrative Personnel Changes

Provide a brief explanation of any additional institutional changes in faculty and/or administrative assignment that may result from implementing the proposed program. (1000 characters)

The allocation of FTE for the Secondary Education program is 0.8 FTE faculty and 0.16 FTE administration.

Overall, for the Teacher Residency programs, a new program director will be hired to manage all Teacher Residency MAT programs. The director's duties will be 50% administration and 50% teaching.

In total, 2.5 FTE faculty positions will be assigned to the delivery of the teacher residency programs. One new lecturer will be hired during the 2018-19 academic year. One new Professor of the Practice at 50% time will be hired to support contract courses for the program. The teaching assignments of current faculty will allow them to support the remaining coursework required for the program. Eighteen of the 30 credit hours for the MAT program is already being taught by current faculty. No additional support staff are required to implement the program.

Library and Learning Resources

Identify current library/learning collections, resources, and services necessary to support the proposed program and any additional library resources needed. (1000 characters)

The Clemson University library resources required for the proposed program are already in place; therefore, there is no need for additional library resources. All major journals in our files are available online or through open access. The Clemson University Libraries hold more than 1.8 million items including books, periodicals, electronic resources, digital media collections, government publications and patents, musical recordings, maps and microforms. Over 4,000 print journal titles, 49,000 e-journals, 170,000 e-books, and 480 online databases are available. Cooper Library is linked electronically to the On-line Computer Library Center Inc. and *WorldCat* database providing access to more 71,000 libraries worldwide for interlibrary loan services. PASCAL and Kudzu Consortium provide access to 12 million volumes held by academic libraries in SC and 30 million volumes by 17 SE universities.

Students request journal articles through interlibrary loan and are emailed in 2-3 days. Reference librarians assist students by telephone, text, instant message and in-person consultation 79 hours per week and the College of Education has a dedicated research librarian. In addition to annual expenditures, current Library policy allocates additional funds for the exclusive purchase of materials for newly approved doctoral programs, if needed. Prioritizing funds for electronic resources, CU demonstrates a commitment to online educational programs and no new funding is required to support the library and learning resources.

My Library Account

Students enrolled in off campus programs can log in to their My Library Account to search the Clemson Libraries catalog and request the delivery of print books. In addition to print books, Clemson affiliates have access to 458,239 electronic books via individual subscriptions, aggregator databases, and consortial agreements.

Books and Articles not owned by Clemson University Libraries

Students may use the PASCAL Delivers service to borrow books from any college or university in South Carolina. Requests are made through the Clemson University Libraries home page, and delivered to a participating Charleston library. Students can borrow up to 25 books for six weeks, with an additional three-week renewal period.

If a book is not owned by the Clemson University Library and is not available via PASCAL Delivers, students may directly request the item from the Reference Librarian. Approved books will be rush ordered/cataloged and sent to the requesting patron, who will be responsible for returning them to Cooper Library (via either mail or return to a PASCAL Delivers library.)

Articles owned by Clemson University Libraries: Students requiring articles from print journals owned by the Library may request a scanned copy via <http://www.clemson.edu/culib/forms/secure/ill/emp/dd-rp.php>.

Articles not available from Clemson University Libraries: Students also have free access to interlibrary loan to request copies of articles from journals not available at Clemson. Students must create an account prior to borrowing via the following website: <http://libguides.clemson.edu/ill>

Reference Assistance: Students encountering difficulties finding resource materials may contact the Reference Librarian, who will respond to requests often immediately or within 24 hours. Students also have access to the Ask a Librarian service to request immediate assistance via phone/chat /text/ or email during normal Reference Desk hours.

Student Support Services

Identify academic support services needed for the proposed program and any additional estimated costs associated with these services. (500 characters)

Student services are in place for the proposed program. Each student is assigned a faculty advisor (i.e., a "major professor") with whom they will collaborate to develop a degree plan until such time as the student forms his/her graduate committee. In addition, graduate students will be assigned to a master teacher who serves as a mentor for teacher residency experience. The graduate advisory committee will review both the student's course plan and teacher residency. University policy dictates the details and procedures that are required for graduate degrees at the University. The nature of graduate study is individualized and graduate students and their graduate committees develop and approve the Plan of Study (GS-2) for each student which includes any common core requirements, other courses that may be selected by the student with faculty approvals.

Physical Resources

Identify any new instructional equipment needed for the proposed program. (500 characters)

There are no additional major equipment items needed to support the proposed program.

Will any extraordinary physical facilities be needed to support the proposed program?

Yes

No

Identify the physical facilities needed to support the program and the institution's plan for meeting the requirements, including new facilities or modifications to existing facilities. (1000 characters)

ACAP
11/30/17
Agenda Item 2c

The College of Education is in Tillman Hall. The facility encompasses recently renovated space that includes housing department offices, graduate student offices, a technology center, digital media center, technology labs, and classrooms as well as space for research and general use. The existing facilities will be adequate for the proposed program.

Financial Support

Estimated New Costs by Year						
Category	1 st	2 nd	3 rd	4 th	5 th	Total
	Spring 2018	2018-19	2019-20	2020-21	2021-22	
Program Administration	13,600	27,948	29,372	30,733	29,152	\$130,805
Faculty and Staff Salaries	13,600	28,800	30,267	31,669	30,041	\$134,377
Graduate Assistants						
Fringe Benefits	10,118	19,740	21,161	22,584	21,852	\$95,455
Equipment						
Facilities						
Supplies and Materials	7,214	8,413	15,076	24,241	16,186	\$71,130
Library Resources						
Other* (Debt Service, Admin Overhead, etc.)	2,227	28,347	73,970	88,047	85,080	\$277,671
Total	\$46,759	\$ 113,248	\$169,846	\$197,274	\$182,311	\$709,438
Sources of Financing						
Category	1 st	2 nd	3 rd	4 th	5 th	Total
Tuition Funding		56,492	171,790	200,208	190,376	\$618,866
Program-Specific Fees		7,360	14,729	16,665	15,847	\$54,601
State Funding						
Reallocation of Existing Funds*	37,318	38,553				\$75,871
Endowment Funding		16,000	16,365	16,665	15,385	\$64,415
Other Funding*	12,800	19,200	13,092	13,732	12,677	\$71,501
Total	\$50,118	\$137,605	\$215,976	\$247,270	234,285	\$885, 254
Net Total	\$3,359	\$24,357	\$46,130	\$49,996	\$51,974	\$175,816

Budget Justification

Provide a brief explanation for the other new costs and any special sources of financing (state funding, reallocation of existing funds, federal funding, or other funding) identified in the Financial Support table. (1000 characters)

Note: Institutions need to complete this budget justification *only* if any other new costs, state funding, reallocation of existing funds, federal funding, or other funding are included in the Financial Support table.

The Budget Justification presented is for the Teacher Residency MAT programs. The Secondary Educator Teacher Residency MAT program will use 0.8 FTE of faculty time and 0.16 FTE of the administrator support of the program based on Teacher Residency total enrollment for Secondary Educator.

Expense Highlights:

- **Personnel Costs (Masters Programs):**
 - Salary and fringe to support a new program director, a new lecturer, and 50% of a new professor of practice are included. The three described personnel will administer the program and deliver additional sections as enrollment increases in the four master degrees.
 - The College of Education will maximize efficiency by leveraging capacity in existing courses to support the master's programs. Overall enrollment will be carefully managed to ensure maximum utilization of existing course sections. Senior faculty will also have teaching loads reallocated to support the launch of these programs.
- **Operational Costs:**
 - Support for supervision of the residency experiences, such as travel costs, are included.
 - Costs to ensure federal online course compliance are included, as well as administrative and programmatic expenses.
 - Because the target market for these master's programs is existing Clemson undergraduate student, no additional marketing expenses are required.
- **Other Costs:**
 - Administrative overhead, intended to represent general and administrative costs including debt service.

Revenue Highlights:

- **Tuition and Fees:** An online Tier 5 rate of \$426 per credit hour for in-state and out-of-state students for the master's programs, increasing to projected Tier 4 online rates of \$648 per credit hour in the third year of the program. Program length is three semesters. No waivers of tuition will be provided, unless grant funding is secured.
- **Teacher Residency Program Fee:** A \$500 per semester program fee will be charged to students during their second and third semesters to support administration, field placement, and teacher residency supervision.
- **Contract Courses:** Additional revenue will be recognized from district teachers in contract courses, projected at approximately \$40K per year starting in year one.
- **Endowed Funds:** \$50K in recurring resources from the Eugene T. Moore endowed fund will support the Teacher Residency program, including personnel and operational expenses.
- **Reallocated Resources:** The College of Education will reallocate \$237K in one-time funding over two years to support the launch of this initiative.

The first semester of the Teacher Residency program, the student is an undergraduate student and continues to pay their undergraduate student tuition and fees, and the student continues to receive any undergraduate scholarships they have been awarded.

After graduating with their bachelor's degree, the student pays graduate tuition.

The student will pay \$4334 per semester for two semesters (of a three-semester program of study). As stated above, the tuition is \$426/credit hour and a program fee \$500/semester. The total cost of earning the Teacher Residency master's degree is \$8,668.

Students will not be paid for their teacher residency.

A student who graduates with a baccalaureate degree who later decides to return to school for a master's degree would spend \$13,002 for a 30-credit hour master's degree, spending more money than if they completed a teacher residency.

Evaluation and Assessment

Programmatic Assessment: Provide an outline of how the proposed program will be evaluated, including any plans to track employment. Identify assessment tools or software used in the evaluation. Explain how assessment data will be used. (3000 characters)

The Master of Arts in Teaching in TR Secondary Education adheres to content specific professional and ethical principles and standards for professional practice. Coursework and practical experiences will address these, and candidates' knowledge, skills, and dispositions across the principles and standards will be assessed through course assignments, observation and evaluation of teaching in practicum experiences, and state and national teaching exams (PRAXIS). Candidates who complete the MAT in Secondary Education will demonstrate competence across content specific standards and meet requirements for recommendation for initial teaching certification in South Carolina.

Content Specific Areas and Professional Organizations

Content Specific Area	Professional Organization
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English Language Arts	
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National Council of Teachers of English (NCTE)	
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Math	
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National Council of Teachers of Mathematics (NCTM)	
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Science	
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National Science Teachers Association (NSTA)	
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History	
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National Council for the Social Studies (NCSS)	
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All assignments and key assessments related to candidate learning outcomes will be evaluated. The College of Education's new assessment and accreditation system, Chalk & Wire, will maintain candidate data, over time. This new system will allow faculty, the program coordinator, students and stakeholders to assess candidate performance, continuous improvement of the program and meet accreditation and reporting needs.

Entering academic credentials for program participants will be analyzed and evaluated to determine potential strengths or concerns related to background information or previous undergraduate majors.

The following program outcomes will be analyzed annually and across time:

- A. All participants who enroll in the program will graduate within the time allocated for the program.
- B. All program graduates will pass the state required PRAXIS exam in their area of concentration.
- C. All program graduates will report positive self-efficacy ratings across knowledge and skills addressed within the program (e.g. explicit instruction, assessment, curriculum-based measurement, IEP development, research-based academic and behavioral interventions).
- D. All program graduates will be employed in their field of study within one year of graduation.
- E. Employers will rate program graduates' teaching competency as effective.

Data will be collected annually and will be analyzed to facilitate program improvement. Data plan includes:

- Departmental tracking of students' incoming credentials (GRE, undergraduate degree, experience).
- Departmental tracking of program graduates.
- Departmental tracking of PRAXIS scores for all candidates.
- End-of-program survey of students' self-efficacy ratings related to program components.
- Follow-up survey of program graduates regarding employment position/location.
- Follow-up survey of graduates' employers related to graduates' teaching competency.

Student Learning Assessment

Expected Student Learning Outcomes	Methods of/Criteria for Assessment
Identify, implement and evaluate research-based instructional and assessment practices to improve classroom outcomes	ED 8090 and ED 8480: Evaluations of individual lesson plans overtime that indicate the student's use of assessment and evidence-based data that drive changes in classroom strategies. Project: Case Study Analysis, Student Learning Impact Assignment ED 8600: Research Proposal assignment
Implement a variety of intentional instructional practices in the classroom.	Ed 8090: Observations of students in classroom settings. Project: Video Analysis of Teaching ED 8990: Capstone Project assignment
Analyze student data to modify instruction appropriately.	ED 8090 and ED 8480: Evaluations of student work for critical thinking, analysis, and changes in lesson plans based on evidence. Projects: Video Analysis of Teaching, Critical Reflections, Case Study Analysis ED 8990: Capstone Project assignment
Demonstrate leadership skills in the classroom, in collaboration with school partners, in work with parents and family, and in professional organizations.	ED 8090 and ED 8480: Evaluations of long-range plan and professional goals. Observations of students in settings that provide opportunities for the students to work collaboratively with faculty and school administrators, parents/guardians/ family of students, as well as within professional organizations. Projects: Critical Reflections, School Equity Project, Resume, and Interviews ED 8250: cultural diversity class—school profile project (analysis of student data; collaboration with school partners; interactions with parents and families).
Critically examines how relationships between curriculum ideologies affect decisions of practice	ED 8650: Curriculum Ideology essay. Reflection upon how their own curriculum ideology has changed over time and how it affects practice in the present, grounded in major 20 th /21 st century curriculum theories.

Will the proposed program seek program-specific accreditation?

Yes

No

If yes, provide the institution's plans to seek accreditation, including the expected timeline for accreditation. (500 characters)

The College of Education (COE) will seek and maintain unit accreditation as an Educator Preparation Program under our state entered partnership accreditation organization, the Council for the Accreditation of Educator Preparation (CAEP). The COE is currently (AY 2017-2018) beginning a three-year data gathering cycle in order to prepare our CAEP Self Study to be submitted Spring of 2020. The COE will undergo site review by CAEP in Spring 2021. All of our programs seek program review and program recognition. The MAT in Secondary Education, will seek program recognition by the content specific accreditation organization. Data collection and program recognition will coincide with the initial cohort in the program.

Will the proposed program lead to licensure or certification?

Yes

No

If yes, explain how the program will prepare students for licensure or certification. (500 characters)

Candidates will have clinical experiences throughout their undergraduate and graduate studies, gradually increasing in scope and responsibility, with placements in classrooms, schools and districts that have longstanding commitments to high quality educational experiences for all children. Beginning with early tutoring experiences during their freshmen year, and continuing with a variety of early field observations throughout the sophomore, junior and senior years, students are prepared for the culminating practicum and yearlong clinical residency experience. By the end of teacher residency, candidates recommended for certification will have a strong base of disciplinary/content knowledge, classroom management skills, pedagogical and professional skills and a deep understanding of foundational issues related to academic success and educational equity.

The SCDE relies on the outcomes of national unit accreditation and national program recognition as well as outcomes related to standards adopted by the State Board of Education (SBE) specific to the state and CAEP. Specific to recommendations for licensure the following standards are met by our students:

1. ADEPT performance standards: these are addressed by program and by our office, specifically during students' practicum and teacher residency semesters
2. SC Teaching Standards Rubric: All candidates are evaluated during the fall and spring semesters of their senior year with this rubric. We also provide training for all Cooperating Teachers and in-depth training for all University Supervisors.
3. EEDA: these standards are incorporated in the lesson observation rubric used to gauge candidates' progress during their student teaching semester.
4. Standards of Conduct: this is shared with students and discussed with them in detail during the Student Teaching Orientation meeting. All candidates who are slated to teacher residency during are in attendance.
5. Safe Schools Climate Act: same as #4 above.
6. SC P-12 Academic Standards: all lesson plans that candidates write (during their practicum and student teaching semesters) require referencing the academic standards.
7. ISTE Standards for Technology in Education: These standards are referenced during the technology class students take (EDF 4800, Foundations of Digital Media and Learning)
8. Field Experience Requirements: we follow the State's current EPP guidelines. All field experience requirements are in-line with guidance outlined in this document.

<https://ed.sc.gov/educators/educator-preparation/educator-preparation-units/accreditation/policies-and-regulations/standards-policies-and-procedures-for-south-carolina-educator-preparation-units/>

Teacher or School Professional Preparation Programs

Is the proposed program a teacher or school professional preparation program?

Yes

No

If yes, complete the following components.

Area of Certification

Secondary Education 9-12 (content specific certification areas to include: English Language Arts, Mathematics, Science or History)

Please attach a document addressing the South Carolina Department of Education Requirements and SPA or Other National Specialized and/or Professional Association Standards.

South Carolina Department of Education/ Content Specific Standards

The MAT in Secondary Education is aligned with content specific standards (NCTE, NCTM, NSTA, NCSS) preparation standards and will be submitted for approval through the related program review process.

The SCDE relies on the outcomes of national unit accreditation and national program recognition as well as outcomes related to standards adopted by the State Board of Education (SBE) specific to the state and CAEP. Standards unique to the state are based on state law, state regulations, and State Board-approved policies and guidelines. Standards Related to state laws and regulations include: ADEPT performance standards, South Carolina Teaching Standards 4.0, EEDA standards, Standards of Conduct, standards associated with the Safe Schools Climate Act, and South Carolina PK–12 Academic Curriculum Standards. Standards Related to Board of Education Policies include: ISTE Standards for Technology in Education, meeting admission requirements, field and clinical experience requirements, and meeting eligibility for initial certification requirements. The assessment matrix below reflects the assessment of the SCDE standards.

NCTE Standards and Key Elements

Content Knowledge

I. Candidates demonstrate knowledge of English language arts subject matter content that specifically includes literature and multimedia texts as well as knowledge of the nature of adolescents as readers.
Element 1: Candidates are knowledgeable about texts—print and non-print texts, media texts, classic texts and contemporary texts, including young adult—that represent a range of world literatures, historical traditions, genres, and the experiences of different genders, ethnicities, and social classes; they are able to use literary theories to interpret and critique a range of texts.
Element 2: Candidates are knowledgeable about how adolescents read texts and make meaning through interaction with media environments.

II. Candidates demonstrate knowledge of English language arts subject matter content that specifically includes language and writing as well as knowledge of adolescents as language users.
Element 1: Candidates can compose a range of formal and informal texts taking into consideration the interrelationships among form, audience, context, and purpose; candidates understand that writing is a recursive process; candidates can use contemporary technologies and/or digital media to compose multimodal discourse.

Element 2: Candidates know the conventions of English language as they relate to various rhetorical situations (grammar, usage, and mechanics); they understand the concept of dialect and are familiar with relevant grammar systems (e.g., descriptive and prescriptive); they understand principles of language acquisition; they recognize the influence of English language history on ELA content; and they understand the impact of language on society.

Element 3: Candidates are knowledgeable about how adolescents compose texts and make meaning through interaction with media environments.

Content Pedagogy: Planning Literature and Reading Instruction in ELA

III. Candidates plan instruction and design assessments for reading and the study of literature to promote learning for all students.

Element 1: Candidates use their knowledge of theory, research, and practice in English Language Arts to plan standards-based, coherent and relevant learning experiences utilizing a range of different texts—across genres, periods, forms, authors, cultures, and various forms of media—and instructional strategies that are motivating and accessible to all students, including English language learners, students with special needs, students from diverse language and learning backgrounds, those designated as high achieving, and those at risk of failure.

Element 2: Candidates design a range of authentic assessments (e.g., formal and informal, formative and summative) of reading and literature that demonstrate an understanding of how learners develop and that address interpretive, critical, and evaluative abilities in reading, writing, speaking, listening, viewing, and presenting.

Element 3: Candidates plan standards-based, coherent and relevant learning experiences in reading that reflect knowledge of current theory and research about the teaching and learning of reading and that utilize individual and collaborative approaches and a variety of reading strategies.

Element 4: Candidates design or knowledgeably select appropriate reading assessments that inform instruction by providing data about student interests, reading proficiencies, and reading processes.

Element 5: Candidates plan instruction that incorporates knowledge of language—structure, history, and conventions—to facilitate students' comprehension and interpretation of print and non-print texts.

Element 6: Candidates plan instruction which, when appropriate, reflects curriculum integration and incorporates interdisciplinary teaching methods and materials.

Content Pedagogy: Planning Composition Instruction in ELA

IV. Candidates plan instruction and design assessments for composing texts (i.e., oral, written, and visual) to promote learning for all students.

Element 1: Candidates use their knowledge of theory, research, and practice in English Language Arts to plan standards-based, coherent and relevant composing experiences that utilize individual and collaborative approaches and contemporary technologies and reflect an understanding of writing processes and strategies in different genres for a variety of purposes and audiences.

Element 2: Candidates design a range of assessments for students that promote their development as writers, are appropriate to the writing task, and are consistent with current research and theory. Candidates are able to respond to student writing in process and to finished texts in ways that engage students' ideas and encourage their growth as writers over time.

Element 3: Candidates design instruction related to the strategic use of language conventions (grammar, usage, and mechanics) in the context of students' writing for different audiences, purposes, and modalities.

Element 4: Candidates design instruction that incorporates students' home and community languages to enable skillful control over their rhetorical choices and language practices for a variety of audiences and purposes.

Learners and Learning: Implementing English Language Arts Instruction

V. Candidates plan, implement, assess, and reflect on research-based instruction that increases motivation and active student engagement, builds sustained learning of English language arts, and responds to diverse students' context-based needs.

Element 1: Candidates plan and implement instruction based on ELA curricular requirements and standards, school and community contexts, and knowledge about students' linguistic and cultural backgrounds.

Element 2: Candidates use data about their students' individual differences, identities, and funds of knowledge for literacy learning to create inclusive learning environments that contextualize curriculum and instruction and help students participate actively in their own learning in ELA.

Element 3: Candidates differentiate instruction based on students' self-assessments and formal and informal assessments of learning in English language arts; candidates communicate with students about their performance in ways that actively involve them in their own learning.

Element 4: Candidates select, create, and use a variety of instructional strategies and teaching resources, including contemporary technologies and digital media, consistent with what is currently known about student learning in English Language Arts.

Professional Knowledge and Skills

VI. Candidates demonstrate knowledge of how theories and research about social justice, diversity, equity, student identities, and schools as institutions can enhance students' opportunities to learn in English Language Arts.

Element 1: Candidates plan and implement English language arts and literacy instruction that promotes social justice and critical engagement with complex issues related to maintaining a diverse, inclusive, equitable society.

Element 2: Candidates use knowledge of theories and research to plan instruction responsive to students' local, national and international histories, individual identities (e.g., race, ethnicity, gender expression, age, appearance, ability, spiritual belief, sexual orientation, socioeconomic status, and community environment), and languages/dialects as they affect students' opportunities to learn in ELA.

VII. Candidates are prepared to interact knowledgeably with students, families, and colleagues based on social needs and institutional roles, engage in leadership and/or collaborative roles in English Language Arts professional learning communities, and actively develop as professional educators.

Element 1: Candidates model literate and ethical practices in ELA teaching, and engage in/reflect on a variety of experiences related to ELA.

Element 2: Candidates engage in and reflect on a variety of experiences related to ELA that demonstrate understanding of and readiness for leadership, collaboration, ongoing professional development, and community engagement.

NCTM Standards and Key Elements

Standard 1: Content Knowledge

Effective teachers of secondary mathematics demonstrate and apply knowledge of major mathematics concepts, algorithms, procedures, connections, and applications within and among mathematical content domains.

Preservice teacher candidates:

1a) Demonstrate and apply knowledge of major mathematics concepts, algorithms, procedures, applications in varied contexts, and connections within and among mathematical domains (Number, Algebra, Geometry, Trigonometry, Statistics, Probability, Calculus, and Discrete Mathematics) as outlined in the NCTM CAEP Mathematics Content for Secondary.

Standard 2: Mathematical Practices

Effective teachers of secondary mathematics solve problems, represent mathematical ideas, reason, prove, use mathematical models, attend to precision, identify elements of structure, generalize, engage in mathematical communication, and make connections as essential mathematical practices. They understand that these practices intersect with mathematical content and that understanding relies on the ability to demonstrate these practices within and among mathematical domains and in their teaching.

Preservice teacher candidates:

- 2a) Use problem solving to develop conceptual understanding, make sense of a wide variety of problems and persevere in solving them, apply and adapt a variety of strategies in solving problems confronted within the field of mathematics and other contexts, and formulate and test conjectures in order to frame generalizations.
- 2b) Reason abstractly, reflectively, and quantitatively with attention to units, constructing viable arguments and proofs, and critiquing the reasoning of others; represent and model generalizations using mathematics; recognize structure and express regularity in patterns of mathematical reasoning; use multiple representations to model and describe mathematics; and utilize appropriate mathematical vocabulary and symbols to communicate mathematical ideas to others.
- 2c) Formulate, represent, analyze, and interpret mathematical models derived from real-world contexts or mathematical problems.
- 2d) Organize mathematical thinking and use the language of mathematics to express ideas precisely, both orally and in writing to multiple audiences.
- 2e) Demonstrate the interconnectedness of mathematical ideas and how they build on one another and recognize and apply mathematical connections among mathematical ideas and across various content areas and real-world contexts.
- 2f) Model how the development of mathematical understanding within and among mathematical domains intersects with the mathematical practices of problem solving, reasoning, communicating, connecting, and representing.

Standard 3: Content Pedagogy

Effective teachers of secondary mathematics apply knowledge of curriculum standards for mathematics and their relationship to student learning within and across mathematical domains. They incorporate research-based mathematical experiences and include multiple instructional strategies and mathematics-specific technological tools in their teaching to develop all students' mathematical understanding and proficiency. They provide students with opportunities to do mathematics – talking about it and connecting it to both theoretical and real-world contexts. They plan, select, implement, interpret, and use formative and summative assessments for monitoring student learning, measuring student mathematical understanding, and informing practice.

Preservice teacher candidates:

- 3a) Apply knowledge of curriculum standards for secondary mathematics and their relationship to student learning within and across mathematical domains.
- 3b) Analyze and consider research in planning for and leading students in rich mathematical learning experiences.
- 3c) Plan lessons and units that incorporate a variety of strategies, differentiated instruction for diverse populations, and mathematics-specific and instructional technologies in building all students' conceptual understanding and procedural proficiency.
- 3d) Provide students with opportunities to communicate about mathematics and make connections among mathematics, other content areas, everyday life, and the workplace.
- 3e) Implement techniques related to student engagement and communication including selecting high quality tasks, guiding mathematical discussions, identifying key mathematical ideas, identifying and addressing student misconceptions, and employing a range of questioning strategies.
- 3f) Plan, select, implement, interpret, and use formative and summative assessments to inform instruction by reflecting on mathematical proficiencies essential for all students.
- 3g) Monitor students' progress, make instructional decisions, and measure students' mathematical understanding and ability using formative and summative assessments.

Standard 4: Mathematical Learning Environment

Effective teachers of secondary mathematics exhibit knowledge of adolescent learning, development, and behavior. They use this knowledge to plan and create sequential learning opportunities grounded in mathematics education research where students are actively engaged in the mathematics they are learning and building from prior knowledge and skills. They demonstrate a positive disposition toward mathematical practices and learning, include culturally relevant perspectives in teaching, and demonstrate equitable and ethical treatment of and high expectations for all students. They use

instructional tools such as manipulatives, digital tools, and virtual resources to enhance learning while recognizing the possible limitations of such tools.

Preservice teacher candidates:

- 4a) Exhibit knowledge of adolescent learning, development, and behavior and demonstrate a positive disposition toward mathematical processes and learning.
- 4b) Plan and create developmentally appropriate, sequential, and challenging learning opportunities grounded in mathematics education research in which students are actively engaged in building new knowledge from prior knowledge and experiences.
- 4c) Incorporate knowledge of individual differences and the cultural and language diversity that exists within classrooms and include culturally relevant perspectives as a means to motivate and engage students.
- 4d) Demonstrate equitable and ethical treatment of and high expectations for all students.
- 4e) Apply mathematical content and pedagogical knowledge to select and use instructional tools such as manipulatives and physical models, drawings, virtual environments, spreadsheets, presentation tools, and mathematics-specific technologies (e.g., graphing tools, interactive geometry software, computer algebra systems, and statistical packages); and make sound decisions about when such tools enhance teaching and learning, recognizing both the insights to be gained and possible limitations of such tools.

Standard 5: Impact on Student Learning

Effective teachers of secondary mathematics provide evidence demonstrating that as a result of their instruction, secondary students' conceptual understanding, procedural fluency, strategic competence, adaptive reasoning, and application of major mathematics concepts in varied contexts have increased. These teachers support the continual development of a productive disposition toward mathematics. They show that new student mathematical knowledge has been created as a consequence of their ability to engage students in mathematical experiences that are developmentally appropriate, require active engagement, and include mathematics-specific technology in building new knowledge.

Preservice teacher candidates:

- 5a) Verify that secondary students demonstrate conceptual understanding; procedural fluency; the ability to formulate, represent, and solve problems; logical reasoning and continuous reflection on that reasoning; productive disposition toward mathematics; and the application of mathematics in a variety of contexts within major mathematical domains.
- 5b) Engage students in developmentally appropriate mathematical activities and investigations that require active engagement and include mathematics-specific technology in building new knowledge.
- 5c) Collect, organize, analyze, and reflect on diagnostic, formative, and summative assessment evidence and determine the extent to which students' mathematical proficiencies have increased as a result of their instruction.

Standard 6: Professional Knowledge and Skills

Effective teachers of secondary mathematics are lifelong learners and recognize that learning is often collaborative. They participate in professional development experiences specific to mathematics and mathematics education, draw upon mathematics education research to inform practice, continuously reflect on their practice, and utilize resources from professional mathematics organizations.

Preservice teacher candidates:

- 6a) Take an active role in their professional growth by participating in professional development experiences that directly relate to the learning and teaching of mathematics.
- 6b) Engage in continuous and collaborative learning that draws upon research in mathematics education to inform practice; enhance learning opportunities for all students' mathematical knowledge development; involve colleagues, other school professionals, families, and various stakeholders; and advance their development as a reflective practitioner.
- 6c) Utilize resources from professional mathematics education organizations such as print, digital, and virtual resources/collections.

Standard 7: Secondary Mathematics Field Experiences and Clinical Practice

Effective teachers of secondary mathematics engage in a planned sequence of field experiences and clinical practice under the supervision of experienced and highly qualified mathematics teachers. They develop a broad experiential base of knowledge, skills, effective approaches to mathematics teaching and learning, and professional behaviors across both middle and high school settings that involve a diverse range and varied groupings of students. Candidates experience a full-time student teaching/internship in secondary mathematics directed by university or college faculty with secondary mathematics teaching experience or equivalent knowledge base.

Preservice teacher candidates:

- 7a) Engage in a sequence of planned field experiences and clinical practice prior to a full-time student teaching/internship experience that include observing and participating in both middle and high school mathematics classrooms and working with a diverse range of students individually, in small groups, and in large class settings under the supervision of experienced and highly qualified mathematics teachers in varied settings that reflect cultural, ethnic, linguistic, gender, and learning differences.
- 7b) Experience full-time student teaching/internship in secondary mathematics that is supervised by a highly qualified mathematics teacher and a university or college supervisor with secondary mathematics teaching experience or equivalent knowledge base.
- 7c) Develop knowledge, skills, and professional behaviors across both middle and high school settings; examine the nature of mathematics, how mathematics should be taught, and how students learn mathematics; and observe and analyze a range of approaches to mathematics teaching and learning, focusing on tasks, discourse, environment, and assessment.

NSTA Standards and Key Elements

Standard 1: Content Knowledge

Effective teachers of science understand and articulate the knowledge and practices of contemporary science. They interrelate and interpret important concepts, ideas, and app Preservice teachers will:

- 1a) Understand the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields as recommended by the National Science Teachers Association.
- 1b) Understand the central concepts of the supporting disciplines and the supporting role of science-specific technology.
- 1c) Show an understanding of state and national curriculum standards and their impact on the content knowledge necessary for teaching P-12 students.
locations in their fields of licensure.

Standard 2: Content Pedagogy

Effective teachers of science understand how students learn and develop scientific knowledge.

Preservice teachers use scientific inquiry to develop this knowledge for all students.

Preservice teachers will:

- 2a) Plan multiple lessons using a variety of inquiry approaches that demonstrate their knowledge and understanding of how all students learn science.
- 2b) Include active inquiry lessons where students collect and interpret data in order to develop and communicate concepts and understand scientific processes, relationships and natural patterns from empirical experiences. Applications of science-specific technology are included in the lessons when appropriate.
- 2c) Design instruction and assessment strategies that confront and address naive concepts/preconceptions.

Standard 3: Learning Environments

Effective teachers of science are able to plan for engaging all students in science learning by setting appropriate goals that are consistent with knowledge of how students learn science and are aligned with state and national standards. The plans reflect the nature and social context of science, inquiry, and appropriate safety considerations. Candidates design and select learning activities, instructional settings,

and resources--including science-specific technology, to achieve those goals; and they plan fair and equitable assessment strategies to evaluate if the learning goals are met.

Preservice teachers will:

3a) Use a variety of strategies that demonstrate the candidates' knowledge and understanding of how to select the appropriate teaching and learning activities – including laboratory or field settings and applicable instruments and/or technology- to allow access so that all students learn. These strategies are inclusive and motivating for all students.

3b) Develop lesson plans that include active inquiry lessons where students collect and interpret data using applicable science-specific technology in order to develop concepts, understand scientific processes, relationships and natural patterns from empirical experiences. These plans provide for equitable achievement of science literacy for all students.

3c) Plan fair and equitable assessment strategies to analyze student learning and to evaluate if the learning goals are met. Assessment strategies are designed to continuously evaluate preconceptions and ideas that students hold and the understandings that students have formulated.

3d) Plan a learning environment and learning experiences for all students that demonstrate chemical safety, safety procedures, and the ethical treatment of living organisms within their licensure area.

Standard 4: Safety

Effective teachers of science can, in a P-12 classroom setting, demonstrate and maintain chemical safety, safety procedures, and the ethical treatment of living organisms needed in the P-12 science classroom appropriate to their area of licensure.

Preservice teachers will:

4a) Design activities in a P-12 classroom that demonstrate the safe and proper techniques for the preparation, storage, dispensing, supervision, and disposal of all materials used within their subject area science instruction.

4b) Design and demonstrate activities in a P-12 classroom that demonstrate an ability to implement emergency procedures and the maintenance of safety equipment, policies and procedures that comply with established state and/or national guidelines. Candidates ensure safe science activities appropriate for the abilities of all students.

4c) Design and demonstrate activities in a P-12 classroom that demonstrate ethical decision-making with respect to the treatment of all living organisms in and out of the classroom. They emphasize safe, humane, and ethical treatment of animals and comply with the legal restrictions on the collection, keeping, and use of living organisms.

Standard 5: Impact on Student Learning

Effective teachers of science provide evidence to show that P-12 students' understanding of major science concepts, principles, theories, and laws have changed as a result of instruction by the candidate and that student knowledge is at a level of understanding beyond memorization. Candidates provide evidence for the diversity of students they teach.

Preservice teachers will:

5a) Collect, organize, analyze, and reflect on diagnostic, formative and summative evidence of a change in mental functioning demonstrating that scientific knowledge is gained and/or corrected.

5b) Provide data to show that P-12 students are able to distinguish science from nonscience, understand the evolution and practice of science as a human endeavor, and critically analyze assertions made in the name of science.

5c) Engage students in developmentally appropriate inquiries that require them to develop concepts and relationships from their observations, data, and inferences in a scientific manner.

Standard 6: Professional Knowledge and Skills

Effective teachers of science strive continuously to improve their knowledge and understanding of the ever changing knowledge base of both content, and science pedagogy, including approaches for addressing inequities and inclusion for all students in science. They identify with and conduct themselves as part of the science education community.

Preservice teachers will:

- 6a) Engage in professional development opportunities in their content field such as talks, symposiums, research opportunities, or projects within their community.
- 6b) Engage in professional development opportunities such as conferences, research opportunities, or projects within their community.

NCSS Standards and Key Elements

Standard 1: Content Knowledge

Candidates demonstrate knowledge of social studies disciplines. Candidates are knowledgeable of disciplinary concepts, facts, and tools; structures of inquiry; and forms of representation.

Element 1a: Candidates are knowledgeable about the *concepts, facts, and tools* in civics, economics, geography, history, and the social/behavioral sciences.

Element 1b: Candidates are knowledgeable about *disciplinary inquiry* in civics, economics, geography, history, and the social/behavioral sciences.

Element 1c: Candidates are knowledgeable about *disciplinary forms of representation* in civics, economics, geography, history, and the social/behavioral sciences.

Standard 2: Application of Content Through Planning

Candidates plan learning sequences that leverage social studies knowledge and literacies, technology, and theory and research to support the civic competence of learners.

Element 2a: Candidates plan learning sequences that demonstrate social studies knowledge aligned with the C3 Framework, state-required content standards, and theory and research.

Element 2b: Candidates plan learning sequences that engage learners with *disciplinary concepts, facts, and tools* from the social studies disciplines to facilitate social studies literacies for civic life.

Element 2c: Candidates plan learning sequences that engage learners in *disciplinary inquiry* to develop social studies literacies for civic life.

Element 2d: Candidates plan learning sequences where learners create *disciplinary forms of representation* that conveys social studies knowledge and civic competence.

Element 2e: Candidates plan learning sequences that use technology to foster civic competence.

Standard 3: Design and Implementation of Instruction and Assessment

Candidates design and implement instruction and authentic assessments, informed by data literacy and learner self-assessment, that promote civic competence.

Element 3a: Candidates design and implement a range of authentic assessments that measure learners' mastery of *disciplinary knowledge, inquiry, and forms of representation* for civic competence and demonstrate alignment with state-required content standards.

Element 3b: Candidates design and implement learning experiences that engage learners in *disciplinary knowledge, inquiry, and forms of representation* for civic competence and demonstrate alignment with state-required content standards.

Element 3c: Candidates use theory and research to implement a variety of instructional practices and authentic assessments featuring *disciplinary knowledge, inquiry, and forms of representation* for civic competence.

Element 3d: Candidates exhibit data literacy by using assessment data to guide instructional decision-making and reflect on student learning outcomes related to *disciplinary knowledge, inquiry, and forms of representation* for civic competence.

Element 3e: Candidates engage learners in self-assessment practices that support individualized learning outcomes related to *disciplinary knowledge, inquiry, and forms of representation* for civic competence.

Standard 4: Social Studies Learners and Learning

Candidates use knowledge of learners to plan and implement relevant and responsive pedagogy, create collaborative and interdisciplinary learning environments, and prepare learners to be informed advocates for an inclusive and equitable society.

Element 4a: Candidates use knowledge of learners' socio-cultural assets, learning demands, and individual identities to plan and implement relevant and responsive pedagogy that ensures equitable learning opportunities in social studies.

Element 4b: Candidates facilitate collaborative, interdisciplinary learning environments in which learners use *disciplinary facts, concepts, and tools*, engage in *disciplinary inquiry*, and create *disciplinary forms of representation*.

Element 4c: Candidates engage learners in ethical reasoning to deliberate social, political, and economic issues, communicate conclusions, and take informed action toward achieving a more inclusive and equitable society.

Standard 5: Professional Responsibility and Informed Action

Candidates reflect and expand upon their social studies knowledge, inquiry skills, and civic dispositions to advance social justice and promote human rights through informed action in schools and/or communities.

Element 5a: Candidates use theory and research to continually improve their social studies knowledge, inquiry skills, and civic dispositions, and adapt practice to meet the needs of each learner.

Element 5b: Candidates explore, interrogate, and reflect upon their own cultural frames to attend to issues of equity, diversity, access, power, human rights, and social justice within their schools and/or communities.

Element 5c: Candidates take informed action in schools and/or communities and serve as advocates for learners, the teaching profession, and/or social studies.

Student Learning Assessment (NCTE)

Expected Student Learning Outcomes	Methods of/Criteria for Assessment
Content Knowledge: Literature and Reading	State licensure content exam (PRAXIS II) Content Knowledge (Content Course Grades) Reflective Observation Journal
Content Knowledge: Language and Writing	State licensure content exam (PRAXIS II) Content Knowledge (Content Course Grades) Holistic Assessment of NCTE Standards (Showing the Pros)
Content Pedagogy: Literature and Reading	Assessment of Instructional Planning Formal Observations Holistic Assessment of NCTE Standards (Showing the Pros)
Content Pedagogy: Writing and Composition	Assessment of Instructional Planning Formal Observations Holistic Assessment of NCTE Standards (Showing the Pros)
Learners and Learning: Implementing Instruction	Formal Observations Teacher Research Essay Holistic Assessment of NCTE Standards (Showing the Pros)
Professional Knowledge and Skills	Teacher Research Essay Reflective Observation Journal

Student Learning Assessment (NCTM)

Expected Student Learning Outcomes	Methods of/Criteria for Assessment
Standard 1: Content Knowledge	State licensure content exam (PRAXIS II) Content Knowledge (Content Course Grades) History Project (Teacher Residency Seminar)
Standard 2: Mathematical Practices	Methods/Instruction Unit Plan Final Observations/Formal Lesson Observations Impact on Student Learning Assignment History Project (Teacher Residency Seminar)
Standard 3: Content Pedagogy	Methods/Instruction Unit Plan Final Observations/Formal Lesson Observations Impact on Student Learning Assignment
Standard 4: Mathematical Learning Environment	Methods/Instruction Unit Plan Final Observations/Formal Lesson Observations Impact on Student Learning Assignment
Standard 5: Impact on Student Learning	Final Observations/Formal Lesson Observations Impact on Student Learning Assignment
Standard 6: Professional Knowledge and Skills	Methods/Instruction Unit Plan Final Observations/Formal Lesson Observations
Standard 7: Secondary Mathematics Field Experiences and Clinical Practice	Final Observations/Formal Lesson Observations

Student Learning Assessment (NSTA)

Expected Student Learning Outcomes	Methods of/Criteria for Assessment
Standard 1: Content Knowledge	State licensure content exam (PRAXIS II) Content Knowledge (Content Course Grades) Methods Unit Plan
Standard 2: Content Pedagogy	Methods/Instruction Unit Plan
Standard 3: Learning Environments	Methods/Instruction Unit Plan
Standard 4: Safety	Teacher Residency Observation Form
Standard 5: Impact on Student Learning	Student Learning Work Samples
Standard 6: Professional Knowledge and Skills	Professional Development Form

Student Learning Assessment (NCSS)

Expected Student Learning Outcomes	Methods of/Criteria for Assessment
Standard 1: Content Knowledge	State licensure content exam (PRAXIS II) Content Knowledge (Content Course Grades)
Standard 2: Application of Content Through Planning	Curriculum Unit Plan Final Observations/Formal Lesson Observations (ADEPT, SCTSR)
Standard 3: Design and Implementation of Instruction and Assessment	Curriculum Unit Plan Final Observations/Formal Lesson Observations (ADEPT, SCTSR) Microteaching Assignment
Standard 4: Social Studies Learners and Learning	Assessment Portfolio
Standard 5: Professional Responsibility and Informed Action	Final Observations/Formal Lesson Observations