NEW PROGRAM PROPOSAL FORM

Name of Institution: Coastal Carolina University

Name of Program (include degree designation and all concentrations, options, or tracks):

Bachelor of Arts in Chemistry, Chemistry Education, Grades 9-12 Track

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.)

Consider the program for supplemental Palmetto Fellows and LIFE Scholarship awards?

☒ Yes

☐ No

Proposed Date of Implementation: Fall 2024

CIP Code: 40.0501

Delivery Site(s): 51001

Delivery Mode:

☒ Traditional/face-to-face   ☐ Distance Education
*select if less than 25% online

                                              ☐ 100% online

                                              ☐ Blended/hybrid (50% or more online)

                                              ☐ Blended/hybrid (25-49% online)

                                              ☐ Other distance education (explain if selected)

REACH Act Compliance: As part of their graduation requirements, all students must complete either *HIST* or *POLI 201*, which are both REACH Act compliant. Sample syllabi are available upon request.

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

Dr. Brett K. Simpson
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Department of Chemistry
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Institutional Approvals and Dates of Approval (include department through Provost/Chief Academic Officer, President, and Board of Trustees approval):

Internal Institutional Unit	Approval Date	Internal Institutional Unit	Approval Date
Department of Chemistry:	09/07/2022	Faculty Senate:	12/7/2022
Board of Trustees:	10/14/2022	Provost:	12/16/2022
Gupta College of Science College Curriculum:	09/12/2022	President:	12/19/2022
Academic Affairs:	11/9/2022		

Background Information

State the nature and purpose of the proposed program, including target audience, centrality to institutional mission, and relation to the strategic plan.

The Bachelor of Arts in Chemistry seeks to provide Coastal Carolina University students with a four-year undergraduate degree in Chemistry with a Chemistry Education, Grades 9-12 track. Students in the program will obtain solid foundations in both Chemistry and Education that will allow them to be Chemistry educators in secondary level schools.

The program is designed for students seeking to learn fundamental laboratory skills and specialized chemical concepts and then teach Chemistry at the secondary level. Students must take courses in Chemistry, Biology, Physics and Education to meet the South Carolina requirements to teach science at the secondary level. The program is designed to provide a broad foundation in science and science education with a deeper specialization and understanding of chemistry. Students will be qualified to seek secondary science certification in chemistry and general science.

Assessment of Need
Provide an assessment of the need for the program for the institution, the state, the region, and beyond, if applicable.

The B.A. in Chemistry with a Chemistry Education, Grades 9-12 track will increase enrollment in the Department of Chemistry and provide an alternative path to the B.S. in Chemistry degree for students interested in a non-traditional Chemistry graduation opportunity. Also, this program will allow students to be certified without the extra 14 months of cost and time required of a graduate program.

There are several key indicators of demand for this program at Coastal Carolina University. In the past several years, four graduates from the Department of Chemistry pursued secondary education careers by completing the MAT program or through alternative licensure methods. Indeed, we have had 28 graduates of the MAT program licensed in science in the last 5 years. We anticipate that this number will increase as a more direct 4-year path into the field is provided. In addition, the ever-increasing demand for highly qualified chemistry teachers coupled with the limited number of programs should increase enrollment.

The South Carolina Department of Education (SCDE) has identified that 39.22% of full-time science teaching positions in the 2020-2021 academic year were vacant or filled by educators not fully certified.[1] The Center for Educator Recruitment, Retention, and Advancement (CERRA) South Carolina Annual

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[1] 2021-22 Critical Need Subject Areas South Carolina Teacher Loan Program. https://ed.sc.gov/educators/recruitment-and-recognition/critical-need-areas/2021-22-subject/

Educator Supply and Demand Report from November 2022 indicated 113.5 vacancies for middle level (64.5) and secondary (49) science classrooms.[2] SCDE also identified Chemistry as a critical need subject area for the 2022-23 academic year.[3] In looking at the local Coastal Carolina University partner districts, currently Horry County has indicated positions for 3 middle school science educators, 1 secondary biology and 8 secondary general science educators. The Williamsburg area has indicated a need for 2 secondary science educators. In addition, the CERRA showed South Carolina has 71 science educator positions (middle-level and high school) needing to be filled as of July 12, 2022. Within the Florence and Georgetown areas, there are currently no positions open.

In response to the <u>CAAL's request to demonstrate the viability and necessity</u> of the program considering the pandemic's impact, this is clearly demonstrated by this program. In the budget section of the proposal, the financial support table shows the program's financial viability. Additionally, graduates of this degree program are prepared to contribute to the teaching in secondary schools. Teacher shortages have been exacerbated by the pandemic, and there is greater need than ever to produce the kind of high-quality teachers that will be prepared to take on both the technological and learning challenges that have been presented by the pandemic.

Transfer and Articulation

Identify any special articulation agreements for the proposed program. Provide the articulation agreement or Memorandum of Agreement/Understanding.

Students who complete an Associate of Science degree at a community or technical college will be tracked to complete the BA in Chemistry with Chemistry Education, Grades 9-12 Track program in four years based on current state-level transfer articulations with the South Carolina Technical College System.

Employment Opportunities

Occupation	State		National		Data Type and Source
	Expected Number of Jobs	Employment Projection	Expected Number of Jobs	Employment Projection	
Secondary or High School science teacher	13,900	3.72% (2018-2028)	48,700	5% (2021-2031)	SC Works Online[4] US Bureau of Labor Statistics[5]

Supporting Evidence of Anticipated Employment Opportunities
Provide supporting evidence of anticipated employment opportunities for graduates.

The U.S. Bureau of Labor Statistics projects the addition of 48,700 secondary teacher openings each year between 2021 and 2031 with a current 2021 median salary of $61,820.[6] Within Coastal Carolina University's partner districts, there is an indicated need of 3 middle school science educators and 11

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[2] CERRA SOUTH CAROLINA ANNUAL EDUCATOR SUPPLY & DEMAND REPORT, November 2022. https://www.cerra.org/uploads/1/7/6/8/17684955/supply___demand_data_tables_2022-23.pdf
[3] SC Teacher Loan Critical Need Subject Areas for the 2022-23 School Year. https://ed.sc.gov/educators/recruitment-and-recognition/critical-need-areas/22-23-sub/
[4] https://jobs.scworks.org/vosnet/Default.aspx
[5] https://www.bls.gov
[6] Bureau of Labor Statistics, U.S. Department of Labor, *Occupational Outlook Handbook*, High School Teachers, at https://www.bls.gov/ooh/education-training-and-library/high-school-teachers.htm

secondary science educators. Additionally, there is an indicated need in SC of 49 science educator positions at the public secondary levels.

Description of the Program

The Department of Chemistry within the Gupta College of Science currently offers undergraduate B.S. degrees in chemistry and biochemistry. Currently there are 115 students pursuing one of the two major programs offered by the department with 20 Chemistry and 95 Biochemistry majors. The department also has 11 students in the Chemistry minor. The B.A. in Chemistry will provide additional flexibility for student exploration of other areas of interest that work synergistically with chemistry to provide unique career opportunities. The Chemistry Education, Grades 9-12 track will allow students to develop a strong foundation in chemistry as well as secondary education pedagogy that can result in secondary education licensure in one or more science subject areas through the partnership with Spadoni College of Education and Social Sciences.

Projected Program Enrollment

Projected Enrollment			
Year	Fall Headcount	Spring Headcount	Summer Headcount
2024-2025	2	2	0
2025-2026	3	3	0
2026-2027	4	4	0
2027-2028	5	5	0
2028-2029	5	5	0

Explain how the enrollment projections were calculated.

Expected enrollment as shown in the table is 2 new students each fall and 1 new student each spring. Years one through four total headcounts based on 90% returning fall to spring and 90% returning spring to fall. Note that in the case of small enrollment numbers, any attrition will decrease enrollment in whole-student increments so in this case the addition of one student in the spring is offset by the attrition of one student implied by a 90% return rate. Year five headcount additionally based on 40% graduation rate of returning students.

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

☒Yes
☐No

Students may be admitted to the university and begin their studies based solely on the institutional general admission requirements. However, candidates entering the undergraduate teacher preparation program must meet the following requirements, per state and EPP guidelines: minimum GPA of 2.75; 60 hours of coursework; grade of 'C' or better in ENGL 101 and ENGL 102 or ENGL 211, EDUC 111, EDUC 204, EDUC 215, and all 100-, 200-, and 300-level prerequisite BIO, CHEM, and PHYS courses; passing scores on all three areas of Praxis Core Academic Skills for Educators Test: Reading (156), Writing (158), and Math (142) or exemption based on SAT (1100) or ACT (22) scores; a signed criminal offense disclosure statement; South Carolina Law Enforcement Division (SLED) background check; professional reference for teacher candidate form; and approval of education faculty.

Curriculum

As part of their graduation requirements, all students at CCU must complete either *HIST 201 - History of the United States from Discovery to the Present: Discovery through Reconstruction*, or *POLI 201 - Introduction to American Government*, which are both REACH Act compliant. Sample syllabi are available upon request. These courses are highlighted in the curriculum plans presented below and a compliance statement is also highlighted at the end of the curriculum plans.

New Courses
List and provide course descriptions for new courses.

No new courses are currently planned for this program.

Total Credit Hours Required: 125 credits. The complete program catalog description, including the Core Curriculum, is found in Appendix A.

Course Name	Credit Hours	Course Name	Credit Hours	Course Name	Credit Hours
		Curriculum by Year			
		Year 1			
Fall		**Spring**		**Summer**	
CHEM 111/L	4	BIOL 121/L	4		
ENGL 101	4	CHEM 112/L	4		
MATH 160	4	Core Curriculum Course	3		
UNIV 110E	3	EDUC 111	3		
Core Curriculum Course	3	ENGL 102	4		
Total Semester Hours	18	Total Semester Hours	18	Total Semester Hours	
		Year 2			
Fall		**Spring**		**Summer**	
BIOL 122/L	4	Core Curriculum Course	3		
CHEM 311/L	4	EDSC 308	3		
CHEM 331/L	4	EDUC 204Q*	3		
Core Curriculum Course (Language)	5	PHYS 211/L	4		
		Upper CHEM Elective	4		
Total Semester Hours	17	Total Semester Hours	17	Total Semester Hours	

Course Name	Credit Hours	Course Name	Credit Hours	Course Name	Credit Hours
		Year 3			
Fall		**Spring**		**Summer**	
CHEM 321/L	4	Core Curriculum Course	3		
Core Curriculum Course	3	EDSC 400	3		
EDSC 446	3	EDSC 410	3		
PHYS 212/L	4	EDSP 200Q*	3		
HIST 201 or POLI 201 (REACH Act)*	3	Upper CHEM Elective	4		
Total Semester Hours	17	Total Semester Hours	16	Total Semester Hours	
		Year 4			
Fall		**Spring**		**Summer**	
Core Curriculum Course	3	EDUC 480	3		
EDSC 415	3	EDUC 490	9		
EDSC 418	3				
EDML 491	3				
Upper CHEM Elective	4				
Total Semester Hours	16	Total Semester Hours	12	Total Semester Hours	

*REACH Act Compliance: As a graduation requirement, all students at CCU must complete either *HIST 201 - History of the United States from Discovery to the Present: Discovery through Reconstruction*, or *POLI 201 - Introduction to American Government* for REACH Act compliance. Sample syllabi are available upon request. See Appendix A.

Similar Programs in South Carolina offered by Public and Independent Institutions

Identify similar programs offered and describe the similarities and differences for each program.

Program Name and Designation	Total Credit Hours	Institution	Similarities	Differences
B.A. in Chemistry	124	Clemson University	B.A. program, fewer science related coursework than B.S.	Clemson degree requires minor and additional Math courses, CCU degree requires track focus
B.A. Science Teaching – Chemistry Teaching Area	129	Clemson University	Prepares for secondary science education licensure. B.A. program	CCU Degree is B.A. in Chemistry with track focus
B.A. in Chemistry	Minimum 122	College of Charleston	B.A. program, fewer science related coursework than B.S.	College of Charleston degree requires additional Math courses, CCU degree requires track focus
B.S. in Secondary Education Cognate with Biology, Chemistry, or Physics content major	Minimum 122	College of Charleston	Prepares for secondary science education licensure in biology, chemistry, or physics. Chemistry-Teacher Education Program is B.A.	CCU Degree is B.A. in Chemistry with track focus
B.A/B.S. Secondary education - Biology	125-127	Francis Marion University	Prepares for secondary science education licensure.	Francis Marion degree is focused only on Biology.
Science education minor	20+ discipline specific degree	Furman University	Prepares for secondary science education licensure.	Minor instead of B.A., Does not have a focus on chemistry
Education licensure for teaching in other subject areas	27+ discipline specific degree	Furman University	Prepares for secondary education licensure within biology, chemistry, or physics.	Licensure instead of B.S., Does not have a focus on chemistry.
B.S. in Chemistry, Secondary Education Certification	120	Lander University	Prepares for secondary science education licensure in chemistry.	CCU Degree is B.A. in Chemistry with track focus, CCU degree has more chemistry and education course requirements
B.S. in Chemistry, Secondary Education Concentration	105	Newberry College	Prepares for secondary science education licensure in chemistry.	CCU Degree is B.A. in Chemistry with track focus
B.S. In Chemistry Education	134-136	South Carolina State University	Prepares for secondary science education licensure in chemistry	CCU Degree is B.A. in Chemistry with track focus,

B.A. in Chemistry	52+ general education credits	The Citadel	B.A. program, fewer science related coursework than B.S.	CCU Degree requires inorganic but less math and research
B.S. in Secondary Education Biology	126-129	The Citadel	Prepares for secondary science education licensure.	CCU Degree is B.A. in Chemistry with track focus, The Citadel degree focus on Biology
B.S. in Secondary Education in Chemistry	131-135	The Citadel	Prepares for secondary science education licensure.	CCU Degree is B.A. in Chemistry with track focus
B.A. in Chemistry	120	University of South Carolina – Aiken	B.A. program, fewer science related coursework than B.S.	CCU Degree is B.A. in Chemistry with track focus, USC Aiken Degree has more math and more general elective credit hours
B.S. in Secondary Education, Chemistry Concentration	140-143	Univ. of South Carolina, Aiken	Prepares for secondary science education licensure.	CCU degree is B.A. in Chemistry with track focus, USC Aiken degree has more required total credit hours but fewer education course requirements
B.A./B.S. plus M.T.	120+33	Univ. of South Carolina, Columbia	Prepares for secondary science education licensure in biology, chemistry, physics, geology, or marine science.	5-year B.S. + MT program vs. 4-year B.S. program, requires 57-59 credits of education vs 42.
B.A. in Chemistry	120-125	Univ. of South Carolina, Upstate	B.A. program, fewer science related coursework than B.S.	CCU Degree is B.A. in Chemistry with track focus and requires inorganic, USC Upstate Degree requires physical and has more general elective credit hours
B.S. in Secondary Education - Chemistry	122	Univ. of South Carolina, Upstate	Prepares for secondary science education licensure.	CCU degree is B.A. in Chemistry with track focus and requires inorganic, USC Upstate degree has slightly more education credit hours and requires physical, biochemistry and additional math

Chemistry Faculty

Rank and Full- or Part-time	Courses Taught for the Program	Academic Degrees and Coursework Relevant to Courses Taught, Including Institution and Major	Other Qualifications and Relevant Professional Experience (e.g., licensures, certifications, years in industry, etc.)
Professor (Full Time)	CHEM 351L – Biochemistry I Lab CHEM 352L – Biochemistry II Lab CHEM 399 – Independent Study CHEM 499 – Directed Undergraduate Research	**Doctorate:** Ph.D. Biochem & Mclee Gen (University of Alabama - Birmingham, 2005) **Master's:** M.S. APP Immunology & Molecular Bio (University of Southern Maine, 1999)	
Associate Professor (Full Time)	CHEM 111 – General Chemistry I CHEM 111L – General Chemistry I Lab CHEM 361 – Chemical Reaction Kinetics CHEM 371 – Nuclear Chemistry CHEM 399 – Independent Study CHEM 441 – Physical Chemistry I CHEM 441L – Physical Chemistry I Lab CHEM 442 – Physical Chemistry II CHEM 442L – Physical Chemistry II Lab CHEM 499 – Directed Undergraduate Research	**Doctorate**: Ph.D. Chemical Physics (University of Nevada - Reno, 2007)	
Associate Professor (Full Time)	CHEM 111 – General Chemistry I CHEM 112 – General Chemistry II CHEM 150 – Communication in Physical Science CHEM 311 – Inorganic Chemistry CHEM 311L – Inorganic Chemistry Lab CHEM 372 – Organometallics CHEM 372L – Organometallics Laboratory CHEM 399 – Independent Study CHEM 411 – Advanced Inorganic Chemistry CHEM 411L – Advanced Inorganic Chemistry Lab CHEM 499 – Directed Undergraduate Research	**Doctorate**: Ph.D. Inorganic Chemistry (Iowa State University, 2007)	
Associate Professor (Full Time)	CHEM 111 – General Chemistry I CHEM 111L – General Chemistry I Lab CHEM 112 – General Chemistry II CHEM 112L – General Chemistry II Lab CHEM 321 – Quantitative Analysis CHEM 321L – Quantitative Analysis Lab CHEM 399 – Independent Study CHEM 422 – Instrumental Analysis CHEM 422L – Instrumental Analysis Lab CHEM 425 – Electrochemistry CHEM 499 – Directed Undergraduate Research	**Doctorate:** Ph.D. Analytical Chemistry (Iowa State University, 2002)	
Associate Professor (Full Time)	CHEM 111 – General Chemistry I CHEM 111L – General Chemistry I Lab CHEM 112 – General Chemistry II CHEM 112L – General Chemistry II Lab CHEM 321 – Quantitative Analysis CHEM 321L – Quantitative Analysis Lab	**Doctorate**: Ph.D. Chemistry (South Dakota State University, 2006)	

	CHEM 399 – Independent Study CHEM 422 – Instrumental Analysis CHEM 422L – Instrumental Analysis Lab CHEM 499 – Directed Undergraduate Research		
Associate Professor (Full Time)	CHEM 331 – Organic Chemistry I CHEM 331L – Organic Chemistry I Lab CHEM 332 – Organic Chemistry II CHEM 332L – Organic Chemistry II Lab CHEM 399 – Independent Study CHEM 433 – Advanced Organic Chemistry CHEM 433L – Advanced Organic Chemistry Lab CHEM 499 – Directed Undergraduate Research	**Doctorate:** Ph.D. Chemistry (University of Pittsburgh, 2008)	
Assistant Professor (Full Time)	CHEM 351 – Biochemistry I CHEM 352 – Biochemistry II CHEM 353 – Physical Biochemistry CHEM 353L – Physical Biochemistry Lab CHEM 354 – Techniques in Biotechnology and Biochemistry CHEM 399 – Independent Study CHEM 499 – Directed Undergraduate Research	**Doctorate:** Ph.D. Biochemistry (University of Maryland Graduate School, Baltimore, 1997)	
Assistant Professor (Full Time)	CHEM 331 – Organic Chemistry I CHEM 331L – Organic Chemistry I Lab CHEM 332 – Organic Chemistry II CHEM 332L – Organic Chemistry II Lab CHEM 399 – Independent Study CHEM 499 – Directed Undergraduate Research	**Doctorate:** Ph.D. in Organic Chemistry (Emory, 2022)	
Senior Lecturer (Full Time)	CHEM 111 – General Chemistry I CHEM 111L – General Chemistry I Lab CHEM 112 – General Chemistry II CHEM 112L – General Chemistry II Lab	**Master's**: M.S. Inorganic Chemistry (Iowa State University, 2004)	
Senior Lecturer (Full Time)	CHEM 101 – Introductory Chemistry CHEM 101L – Introductory Chemistry Lab	**Master's**: M.S. Chemistry (University of South Carolina. 201 O)	
Lecturer (Full Time)	CHEM 111 – General Chemistry I CHEM 111L – General Chemistry I Lab CHEM 112 – General Chemistry II CHEM 112L – General Chemistry II Lab	**Doctorate**: Ph.D. Chemistry (University of North Dakota,1993)	
Lecturer (Full Time)	CHEM 111 – General Chemistry I CHEM 111L – General Chemistry I Lab CHEM 112 – General Chemistry II CHEM 112L – General Chemistry II Lab	**Doctorate:** Ph.D. Biochemistry (University of Maryland Graduate School in Baltimore, MD, 1995)	
Lecturer (Full Time)	CHEM 331L – Organic Chemistry I Lab CHEM 332L – Organic Chemistry II Lab CHEM 111L – General Chemistry I Lab CHEM 112L – General Chemistry II Lab	**Doctorate:** Ph.D. in Organic Chemistry (University of Tennessee Knoxville, 2022)	
Lecturer (Full Time)	CHEM 111 – General Chemistry I CHEM 111L – General Chemistry I Lab CHEM 112 – General Chemistry II CHEM 112L – General Chemistry II Lab	**Masters:** Master's Degree in Chemistry (Analytical) (Clemson University, 2000)	

Chemistry Education, Grades 9-12 Track Faculty

Rank and Full- or Part-time	Courses Taught for the Program	Academic Degrees and Coursework Relevant to Courses Taught, Including Institution and Major	Other Qualifications and Relevant Professional Experience (e.g., licensures, certifications, years in industry, etc.)
Professor (Full Time)	Foundations of Secondary Education, Assessment & Action Research, Principles & Methods of Teaching Science	Ph.D. (Curriculum and Instruction, Science Education, Indiana University, Bloomington, IN, College of Education); Ed.M. (Secondary Science Education, University of West Florida); M.S. (Department of Zoology and Wildlife Science, Auburn University)	Research and teaching experience, scholarly publications, and presentations
Professor (Full Time)	Principles and Methods of Teaching Social Studies, Teaching in Diverse Classroom Settings	Ph.D. (Curriculum & Instruction from Indiana University, Bloomington with a specialization in Social Studies Education); M.A. (Secondary Education from University of North Florida with a specialization in Curriculum and Instruction)	Former Florida social studies teacher, FL teacher certification
Associate Professor (Full Time)	Literacy, English Methods, and Diversity.	Ph.D. (Teacher Education and Development [with an additional certification in supervision], The University of North Carolina Greensboro)	Reading, with the certification of Reading Specialist "G" K-12 licensure. The University of North Carolina Greensboro (1997 – 1999). English with certificate in Education grades 9 - 12, The University of North Carolina Greensboro Received an "A" licensure in teaching English at the secondary level (1994 –1996) SC License in English, Reading. NC license in the same areas. 23 years in education.

Total FTE needed to support the proposed program: 0.37
Faculty: 0.10
Staff: 0.13
Administration: 0.14

Faculty, Staff, and Administrative Personnel
Discuss the Faculty, Staff, and Administrative Personnel needs of the program.

Based upon current predicted growth of this new program, no additional faculty, staff, or administrative personnel will be needed beyond current staffing including replacement positions. The growth will compliment current offerings and provide a slight increase in enrollments within the department but is not expected to exceed any current enrollment availability in the necessary courses.

<div align="center">**Resources**</div>

Library and Learning Resources
Explain how current library/learning collections, databases, resources, and services specific to the discipline, including those provided by PASCAL, can support the proposed program. Identify additional library resources needed.

Kimbel Library holds about 1.1 million items in all formats, including over 375,000 eBooks provided by PASCAL, a statewide consortium. The library subscribes to about 230,000 periodicals, including magazines, newspapers, scholarly journals, and proceedings in print and online formats. The library provides access to its print holdings, 175 online citation, full-text, and reference resources, via the library website at www.coastal.edu/library. All electronic resources, including books, articles, and videos, are available to Coastal students, faculty, and staff from off campus.

Course-integrated library instruction sessions are available to all academic departments; the library also offers one-credit information literacy courses. Librarians offer appointments for in-depth research help. Kimbel Library is open 98 hours per week during the fall and spring semesters; during that time, library staff members are available to assist students via phone, chat, or in-person at the help desk. Teaching faculty provide input regarding selection of library resources, including both print and electronic resources. The chemistry and education departments have a designated library liaison who takes order requests and communicates with faculty when new resources are available.

Library holdings are as follows:
Monographs
Subject areas for chemistry and education were identified for this program. Kimbel Library has access to over 50 eBook or print titles with chemistry-education as a subject and over 8000 relevant titles with chemistry as a primary subject.
Audiovisual
The library provides access to streaming videos in support of the chemistry education curriculum, and currently has access to more than 600 chemistry education films.

Serials and Subscriptions
Kimbel Library currently provides access to over 500 journals pertaining to chemistry (some of which have occasional features on educational topics), and the following specific to chemistry and science education:
- *Chemistry Education Research and Practice*
- *Education for Chemical Engineers*
- *International Journal of Science and Mathematics Education*
- *International Journal of STEM Education*
- *Journal of Chemistry Education, Grades 9-12*
- *Journal of Research in Science Teaching*
- *Science Education*

Current access points for Chemistry Education, Grades 9-12 journals include, but are not limited to:
- Academic Search Complete
- ACS Publications
- Brill Online Journals
- Education Full Text
- Education Source
- ERIC

- IEEE Xplore
- JSTOR
- Professional Development Collection
- ScienceDirect
- SciFinder Scholar
- SpringerLink
- Web of Science

Student Support Services
Explain how current academic support services will support the proposed program. Identify new services needed and provide any estimated costs associated with these services.

All CCU students have access to university sponsored student support services including Accessibility and Disability Services, Student Computing Services, Kimbel Library, Student Health Services, and the Coastal Student Success Center including the Tutoring and Learning Center.

Majors in this program will receive academic advising from the Gupta College of Science first year advisors for their freshman year. The Department of Chemistry faculty will assume academic advising responsibilities at the start of the sophomore year.

Physical Resources/Facilities
Identify the physical facilities needed to support the program and the institution's plan for meeting the requirements.

The program will not require any additional physical resources/facilities beyond the classrooms and offices currently provided by CCU, at least initially.

Equipment
Identify new instructional equipment needed for the proposed program.

The program will not require any equipment beyond what is currently provided by CCU within the Department of Chemistry except for any necessary repairs and updates to current instrumentation as needed.

Impact on Existing Programs
Will the proposed program impact existing degree programs or services at the institution (e.g., course offerings or enrollment)? If yes, explain.

☒Yes

☐No

Students completing the B.A in Chemistry degree will be taking some of the same classes offered for the B.S. in Chemistry degree. The required 100 and 200 level chemistry courses are taken by students in multiple STEM programs and here are sufficient seats available in these each semester to accommodate the projected 5 students, so this program will not have any impact on these courses or other STEM programs. The majority of the 300 and 400 level chemistry courses in this program are primarily taken by chemistry majors. Typically, there are approximately 20 chemistry majors across all levels with typical course enrollments of 3-5 students, with a typical course capacity of 12 students. The addition of this

program will have a positive impact on the B.S. degree program as it will provide increased enrollment in these courses, allowing for more efficient use of current resources.

Financial Support

Sources of Financing for the Program by Year

Category	1st New	1st Total	2nd New	2nd Total	3rd New	3rd Total	4th New	4th Total	5th New	5th Total	Grand Total New	Grand Total Total
Tuition Funding	$39,034	$39,034	$59,722	$59,722	$81,222	$81,222	$103,558	$103,558	$105,629	$105,629	$389,165	$389,165
Program-Specific Fees											$0	$0
Special State Appropriation											$0	$0
Reallocation of Existing Funds											$0	$0
Federal, Grant, or Other Funding											$0	$0
Total											**$389,165**	**$389,165**

Estimated Costs Associated with Implementing the Program by Year

Category	1st New	1st Total	2nd New	2nd Total	3rd New	3rd Total	4th New	4th Total	5th New	5th Total	Grand Total New	Grand Total Total
Program Administration and Faculty/Staff Salaries	$29,952	$29,952	$30,551	$30,551	$31,162	$31,162	$31,785	$31,785	$32,421	$32,421	$155,871	$155,871
Facilities, Equipment, Supplies, and Materials		$0		$0		$0		$0		$0	$0	$0
Library Resources		$0		$0		$0		$0		$0	$0	$0
Other (specify)												
Total	**$29,952**	**$29,952**	**$30,551**	**$30,551**	**$31,162**	**$31,162**	**$31,785**	**$31,785**	**$32,421**	**$32,421**	**$155,871**	**$155,871**
Net Total (Sources of Financing Minus Estimated Costs)	**$9,082**	**$9,082**	**$29,171**	**$29,171**	**$50,060**	**$50,060**	**$71,773**	**$71,773**	**$73,208**	**$73,208**	**$233,294**	**$233,294**

Note: New costs - costs incurred solely because of implementing this program. Total costs - new costs; program's share of costs of existing resources used to support the program; and any other costs redirected to the program.

Budget Justification

Explain all costs and sources of financing identified in the Financial Support table. Include an analysis of cost-effectiveness and return on investment and address any impacts to tuition, other programs, services, facilities, and the institution overall.

Program cost-effectiveness and return-on-investment are evaluated institutionally using an induced revenue/expense model. As shown in the Financial Support table, tuition revenues are based on a 15-credit course load for each student projected to enroll in the program. These revenues represent course revenues derived from all courses taken by the student, including both departmental-fielded courses and cross-department electives. The expenses shown in the Financial Support table represent only direct expenses necessary for delivering program courses and administration. The university uses a 50% gross academic margin assessment to ensure that new undergraduate and certificate programs will provide sufficient revenues to support their expense impact on institutional operations.

To derive gross academic margin, total induced revenue ($389,165 for the period) is calculated minus total direct expenses ($155,871 for the period) divided by total induced revenue ($389,165 for the period). [(Revenue-Expenses)/Revenue]

For a program to be considered cost-effective, the University looks for undergraduate and certificate programs to produce a gross academic margin of 50% or better. This program's gross academic margin is 59.95% for the period, which indicates that this program has a high likelihood of producing sustainable revenues.

Evaluation and Assessment

Program Objectives	Student Learning Outcomes Aligned to Program Objectives	Methods of Assessment
Goal 1. Chemistry Foundation Knowledge	1.1 Demonstrate knowledge of the fundamental concepts in the areas of Analytical, Inorganic and Organic Chemistry	Student knowledge will be assessed using course specific problem-based assignments (i.e., exams, homework sets, in-class written activities, advanced multi-step word problems, etc.) throughout the semester in each CHEM course offered that meets degree requirements and cover one of the 3 areas
	1.2 Demonstrate knowledge of the fundamental concepts in select advanced chemistry concepts	Student knowledge will be assessed in each upper-level elective CHEM course offered that meets degree requirements. Assessments will be course-specific problem-based assignments throughout the semester.
Goal 2. Fundamental Laboratory Skills	2.1 Design experiments to draw meaningful conclusions related to chemical phenomena questions.	Student ability to design experiments will be assessed using an experimental design rubric for their final laboratory project.
	2.2 Conduct experiments to draw meaningful conclusions related to chemical phenomena questions.	Laboratory techniques will be assessed through direct observations of techniques in the

		laboratory portion of each CHEM course being offered that meets degree requirements.
Goal 3. Critical Thinking Skills	3.1 Analyze and evaluate various scientific media pertaining to chemistry.	Student ability to analyze and evaluate relevant scientific media will be assessed through course-specific assessments like literature annotated bibliographies, summary collection of pertinent scientific information or formal laboratory reports.
Goal 4. Written communication	4.1 Communicate complex chemical information and/or experimental results effectively through written media.	Student communication will be assessed through various course-specific writing assignments (i.e., essays, literature reviews, laboratory reports).
Goal 5. Track specific outcomes	Varies based upon track	Varies based upon track
Chemistry Education, Grades 9-12 Track (CET)		
CET Goal 1. Content knowledge	CET 1.1 Candidates will earn a passing score, as determined by the South Carolina Department of Education (SCDOE), on the PRAXIS II examination in their content area.	PRAXIS II Exam
	CET 1.2 Candidates will pass with a minimum grade of 'C' courses covering their content disciplines during their undergraduate program.	Transcript Analysis: The transcript will be analyzed by a faculty expert in that content area to make sure that all needed coursework is present with a grade of C or above
	CET 1.3 Candidates will create a discipline-specific lesson plan during their methods class.	SCESS Lesson Plan Rubric: The lesson plan is graded by a normed rubric common across the College of Education and Social Sciences. The rubric will include addendum items related to the SC Department of Education/NSTA SPA Content Requirements.
	CET 1.4 Candidates will demonstrate an understanding of the nature of science.	Nature of Science Assessment: Candidates must earn a score of proficient or higher on this assessment, completed during the internship semester.

CET Goal 2. Pedagogical Knowledge	CET 2.1 Candidates will earn a score of proficient or higher on all components of the summative internship evaluation, including the discipline-specific evaluation, the Conceptual Framework Rubric, and the South Carolina ADEPT 4.0 rubric.	Internship Summative Evaluations: Through clinical experiences and through student teaching, candidates are observed using the rubric. Candidates must earn a score of Proficient or higher on all three components of the summative internship evaluation.
	CET 2.2 Candidates will earn a score of proficient or higher on the Teacher Work Sample.	Teacher Work Sample: The Teacher Work Sample requires candidates to demonstrate their abilities to plan for, implement, and assess instruction.
	CET 2.3 Candidates will earn a score of proficient or higher on the Bioethics and Safe Science Teaching Assessment (BEASST) and the Knowledge of Skills and Teaching Assessment (KOST).	The BEASST utilizes a rubric to evaluate a portfolio of submissions related to science safety and ethics. The KOST utilizes a rubric to evaluate a portfolio documenting participation in local, regional, state, and national science activities and conferences.
CET Goal 3. Obtain the related secondary science education licensure to teach grades 9-12.	CET3.1 Candidates will pass all required assessments to obtain the related general science education licensure to teach grades 9-12.	Candidates must earn a GPA of 2.75 or higher. Candidates must earn a score of Proficient or higher required key assessments for their program (Conceptual Framework Rubric, SCOE Lesson Plan, SCTS 4.0 Rubric, SPA-Specific Rubrics, Teacher Work Sample) Candidates must pass the content-specific Praxis II Exam and Principles of Learning and Teaching Exam to gain licensure. Candidates must successfully complete internship requirements.

Explain how the proposed program, including all program objectives, will be evaluated, along with plans to track employment. Describe how assessment data will be used.

The Goal 1 objectives will be assessed each time the course is offered. Chemistry 111, 112, 311 and 331 will look at the overall exam average for each individual student in the major. Chemistry 321 will look at the average score for each individual student in the major across multiple problem-based assignments (such as homework sets, in-class written activities, advanced multi-step word problems, exams). Assessment will be conducted in upper-level elective Chemistry courses too, but there is variation each year as to which course will be offered. Due to this variation, course specific assessment will be determined yearly but all will involve average results for content knowledge on problem-based assignments during a semester. For all assessments, average results within each SLO will be calculated for each student completing the course. Within a course, less than 70% will be considered unsatisfactory, 70% or greater will be considered satisfactory and 85% or greater will be considered exceptional.

The Goal 2 objectives will be assessed each time the course is offered. Chemistry 111L, 112L, 311L, 321L and 331L will look at the assessments for each individual student in the major. Assessments will be conducted in upper-level elective Chemistry courses too, but there is variation each year as to which courses will be offered. For all assessments, there will be multiple periodic instructor observations of course specific laboratory techniques during experimentation using the same 4-point scale rubric across all courses. The average of all observations in the semester for each individual student in the major will be looked at. Chemistry 321L will also use course specific experimental design activities and formal laboratory reports of experimental findings using a common summative multiple part 4-point scale rubric modified for course specific components. Within a course, less than 70% will be considered unsatisfactory, 70% or greater will be considered satisfactory and 85% or greater will be considered exceptional.

The Goal 3 objectives will be assessed each time the course is offered. The searching of chemical literature and the subsequent use of these materials in the support of either proposed work or experimental findings is assessed. Chemistry 311L and 331L will look at the average score on pre-experimental written summary statements of pertinent chemical information necessary to perform laboratory experiments. Chemistry 321L will use the average summative score on specific sections of formal laboratory reports that deal with literature search summary and citation. Within a course, less than 70% will be considered unsatisfactory, 70% or greater will be considered satisfactory and 85% or greater will be considered exceptional.

Goal 4 objectives will be assessed each time the course is offered. Student writing will be assessed in both foundational chemistry courses such as Chemistry 112, 311, 321, and 331 but also in advanced chemistry courses. The assessment will be through various writing assignments both short and long in all courses. Assessment of student writing will be done by review of student writing including essays, longer literature review assignments, or formal laboratory reports. For each course, the assessment will be a summative score of all activities using a common summative multiple part 4-point scale rubric modified for course specific components. Within a course, less than 70% will be considered unsatisfactory, 70% or greater will be considered satisfactory and 85% or greater will be considered exceptional.

Goal 5 objectives will vary based upon the chosen track with each track having a defined set of student learning outcomes and assessments. Currently the only track available will be the Chemistry Education, Grades 9-12 Track (CET).

Chemistry Education, Grades 9-12 Track (CET)

CET Goal 1 objectives will be assessed during the semester prior to internship and the internship semester. Successful completion of each CET Goal 1 assessment is required for program completion and recommendation for licensure to the South Carolina Department of Education. Data from the assessments is used annually by faculty to evaluate program methods and goals and adjust instruction as appropriate.

CET Goal 2 objectives are assessed during the final internship semester, prior to graduation. Successful completion of each of the CET Goal 2 assessments is required for program completion and recommendation for licensure to the South Carolina Department of Education. Data from the assessments is used annually by faculty to evaluate program methods and goals and adjust instruction as appropriate.

Candidates in all initial licensure programs are monitored throughout their progression in the professional teacher education program. Prior to professional teacher education program entrance, candidates are expected to meet a set of criteria that meet or exceed state guidelines; candidates must have at least a 2.75 GPA, pass or be exempted from the Praxis I exam, completed 60 hours of coursework, have a professional recommendation, and a clear background check. Once in the program, candidates are monitored through the administration of the key assessments addressed above, along with two evaluations of their professional dispositions and performance in field experiences. Before internship, candidates must provide evidence of their attempt to pass the applicable Praxis II content exams. Once in internship, their performance is monitored through the completion of their final key assessments and successful completion of internship, as documented by observations and completion of the summative internship evaluation rubrics.

The Educator Preparation Program (EPP) monitors completer performance in several ways. First, candidates complete an exit survey for the College of Education and Social Sciences, indicating where they have been employed for the coming academic year. The EPP also receives hiring information from the five partnering districts, which post hiring approvals on their websites from monthly board meetings. After one year of teaching, the principals of program completers are asked to complete an Employer Satisfaction Survey, to indicate their perceptions of the graduate's performance.

Accreditation and Licensure/Certification

Will the institution seek program-specific accreditation (e.g., CAEP, ABET, NASM, etc.)? If yes, describe the institution's plans to seek accreditation, including the expected timeline.

☒Yes
☐No

The program will seek program-specific accreditation through CAEP. The Educator Preparation Program's (EPP) current programs are recognized by CAEP. The next site visit for the EPP will occur in Fall 2026; data from this program will be shared as a part of the on-site visit. Additionally, the program will seek state approval using the National Science Teaching Association's standards. The EPP will seek state-approval for the program because the National Science Teaching Association discontinued SPA Program Review through CAEP in August 2019. There are currently no plans to seek Chemistry specific accreditations.

Will the proposed program lead to licensure or certification? If yes, identify the licensure or certification.

☒Yes
☐No

The Chemistry Education, Grades 9-12 track of the program will result in Candidates licensed for chemistry education (9-12). Candidates may also choose to earn the General Science licensure.

Explain how the program will prepare students for this licensure or certification.

Candidates are admitted to the teacher training program following the guidelines set forth by the South Carolina Department of Education. Prior to teacher training program admission, candidates must earn at least a 2.75 GPA, have completed 45 hours of coursework, completed a background check, and meet or be exempted from entrance exam requirements. Candidates are prepared for licensure through coursework focused on instructional methods, classroom management practices, assessment, and two state-approved Read to Succeed courses. Courses in the sciences and mathematics support candidates' content knowledge. In addition, participate in a variety of field experiences and courses focused on implementing technology and learning about diverse student needs. They participate in over 100 hours of field experience and a semester of student teaching. Candidates are required to create lesson plans, plan for, and implement instruction throughout their program. Their time in the classroom ends with a culminating 60-day internship, where they teach full-time for a minimum of 35 consecutive days.

If the program is an Educator Preparation Program, does the proposed certification area require national recognition from a Specialized Professional Association (SPA)? If yes, describe the institution's plans to seek national recognition, including the expected timeline.

☐Yes
☒No

The Educator Preparation Program (EPP) will seek state-approval for the program, as the National Science Teaching Association discontinued SPA Program Review through CAEP in August 2019. The institution will submit plans to the South Carolina Department of Education (SCDE) with the CHE proposal. Once approved by CHE, the complete, approved proposal is sent to the SCDE. Then, it will go through SCDE internal review, external peer review, Professional Review Committee consideration, and SBE consideration. The process is expected to take approximately 24 months from state submission to program implementation.

Appendix A: Catalog Description

Chemistry, B.A.

Mission Statement
The mission of the Bachelor of Arts in Chemistry program is to develop strong competencies in chemistry while providing flexibility for student exploration of other areas of interest that work synergistically with chemistry to provide unique career opportunities. The program will focus on specific fundamental areas of analytical, inorganic, and organic chemistry and the development of strong critical reasoning skills. Students completing the program will be well prepared for a career in chemistry or a related discipline. Chemistry is the science of all matter and its changes and is therefore intimately linked to a variety of both science as well as non-science areas requiring specialization. Chemists work in diverse scientific, medical, and engineering fields along with areas typically not viewed as scientific in nature but benefit from specialized knowledge in chemistry. The curriculum of the Bachelor of Arts degree in Chemistry includes opportunities to take coursework in analytical, inorganic, and organic chemistry as well as the flexibility to choose from advanced courses in those areas as well as biochemistry and physical chemistry. Students also have opportunities to take coursework related to other areas of interest pertinent to career choices related to the field of chemistry. Students with career objectives should choose an appropriate track and advanced coursework in consultation with their advisers.

Student Learning Outcomes
Students who graduate with a B.A. in chemistry are expected to be able to:
1. Demonstrate knowledge of the fundamental principles of analytical, inorganic and organic chemistry as well as specialized content in advanced chemistry areas.
2. Design and conduct experiments to draw meaningful conclusions related to chemical phenomena questions.
3. Analyze and evaluate various scientific media pertaining to chemistry.
4. Communicate complex chemical information and/or experimental results effectively through written media.
5. Track Specific Outcomes:

    Chemistry Education, Grades 9-12 Track (CET):
    Candidates will:
    1. Demonstrate proficiency in education pedagogy and apply it to effectively deliver chemistry content to high school students,
    2. Integrate knowledge of chemistry and education pedagogy and practices to effectively communicate content to secondary students, and
    3. Obtain the related secondary science education licensure to teach grades 9-12.

Students must earn a grade of 'C' or better in all foundation and major requirement courses

Degree Requirements (125 – 132 Credits)

Core Curriculum Requirements (36 – 40 Credits):

Core Curriculum (36-40 Total Credit Hours)
> The purpose of the Core Curriculum is to provide an educational experience in the liberal arts tradition that promotes inquiry, creativity, and critical thinking. The Core Curriculum provides opportunities for students to develop skills in the following: critical thinking and reasoning, written and oral communication, and quantitative and information literacy. The Core Curriculum provides opportunities for students to apply the

above-mentioned skills in the practice of the natural sciences, the social sciences, the humanities, and the arts in the context of global and diverse cultural perspectives.

Students are required to complete courses in the follow areas:
   A. Critical Thinking and Reasoning (3 credit hours)
   B. Critical Reading, Writing, and Information Literacy (8 credit hours)
   C. Communication Across Cultures (3-6 credit hours)
   D. Quantitative Literacy (3-4 credit hours)
   E. Scientific Concepts (4 credit hours)
   F. Human and Social Behavior (6 credit hours)
   G. Humanistic Thought (6 credit hours)

More information can be found here:
https://catalog.coastal.edu/preview_program.php?catoid=22&poid=3976

Graduation Requirements (3 – 6+ Credits):
Graduation Requirements (3-6+ Credits) *
   UNIV 110 The First-Year Experience (0-3 credits)
   Choose one of the following: (3 credits)
          HIST 201 History of the United States from Discovery to the Present: Discovery through Reconstruction† (3 credits)
          POLI 201 Introduction to American Government (3 credits)

REACH Act Compliance: As part of their graduation requirements, all students at CCU must complete one of the above courses. Sample syllabi are available upon request.

More information can be found here:
https://catalog.coastal.edu/preview_program.php?catoid=22&poid=4140

Foundation Requirements (20 Credits) *
Complete the following courses; a minimum grade of 'C' is required for all foundation courses:

   • CHEM 111 General Chemistry I - 3 credits * AND
   • CHEM 111L General Chemistry Laboratory I - 1 credit *
   • CHEM 112 General Chemistry II - 3 credits AND
   • CHEM 112L General Chemistry Laboratory II - 1 credit
   • MATH 160 Calculus I - 4 credits *
   • PHYS 211 Essentials of Physics I - 3 credits AND
   • PHYS 211L Essentials of Physics I Laboratory - 1 credit
   • PHYS 212 Essentials of Physics II - 3 credits AND
   • PHYS 212L Essentials of Physics II Laboratory - 1 credit

Note:
* Course credit hours only count once toward the total university graduation credit hour requirements. Click on **Credit Sharing** for more information.

Major Requirements (74 Credits)
Complete the following courses; a minimum grade of 'C' is required for all major requirement courses:

- CHEM 311 Inorganic Chemistry - 3 credits AND
- CHEM 311L Inorganic Chemistry Laboratory - 1 credit
- CHEM 321 Quantitative Analysis - 3 credits AND
- CHEM 321L Quantitative Analysis Laboratory - 1 credit
- CHEM 331 General Organic Chemistry I - 3 credits AND
- CHEM 331L General Organic Chemistry Laboratory I - 1 credit

Completion of one of the following tracks:
Chemistry Education, Grades 9-12 Track:
- BIOL 121 - Biological Science I - 3 credits AND
- BIOL 121L - Biological Science I Laboratory - 1 credit
- BIOL 122 - Biological Science II - 3 credits AND
- BIOL 122L - Biological Science II Laboratory - 1 credit

Additional 12 credit hours from the following list:
- CHEM 332 General Organic Chemistry II - 3 credits AND
- CHEM 332L General Organic Chemistry Laboratory II - 1 credit
- CHEM 351 Biochemistry I - 3 credits AND
- CHEM 351L Biochemistry Laboratory I - 1 credit
- CHEM 422 Instrumental Analysis - 3 credits AND
- CHEM 422L Instrumental Analysis Laboratory - 1 credit
- CHEM 441 Physical Chemistry I - 3 credits AND
- CHEM 441L Physical Chemistry I Laboratory - 1 credit
- CHEM 442 Physical Chemistry II - 3 credits AND
- CHEM 442L Physical Chemistry II Laboratory - 1 credit
- CHEM 3XX or CHEM 4XX preapproved by department

Education Courses:
- EDUC 111 Exploring Teaching as a Profession – 3 credits
- EDUC 204Q* Computer Technology & Instructional Media – 3 credits
- EDSP 200Q* Foundations of Special Education – 3 credits
- EDSC 308 Foundations in Literacy – 3 credits
- EDSC 400 Assessment and Action Research – 3 credits
- EDSC 410 Secondary Adolescent Development and Management in the Classroom – 3 credits
- EDSC 415 Teaching in Diverse Classroom Settings– 3 credits
- EDSC 418 Reading and Writing in the Content Areas – 3 credits
- EDSC 446 Foundations of Secondary Education – 3 credits
- EDSC 480 Internship Seminar – 3 credits
- EDSC 490 Internship (for students passing all required portals) – 9 credits
- EDML 491 Methods for Teaching Science at the Middle and Secondary Levels – 3 credits

Electives (0 Credits)

Total Credits Required: 125+ credits

Appendix B: Required South Carolina Department of Education Documentation

South Carolina Department of Education
New or Modified Program Proposal Requirements

III. SCDE Requirements

This section includes a description of the ways in which the program will meet all state requirements as outlined in the South Carolina Educator Preparation Guidelines: Standards Policies, and Procedures, South Carolina Provider Requirements, as applicable. These will include:

A. Requirements Related to State Statutes and Regulations

1.1. National provider standards

The chemistry education program will undergo state review using the NSTA standards, as the National Science Teaching Association discontinued SPA Program Review through CAEP in August 2019.

1.2. Criminal records check and fingerprinting requirements

To fulfill South Carolina legislative requirements and related public-school policies, all candidates who participate in any type of field-based experience associated with schools must undergo a SLED background check. Candidates must show a clear record on this check. If a criminal record is revealed, results are considered individually to determine if the candidates can be placed in a field experience. These decisions are made with the school district and the state. Typically, candidates will not be placed in a field experience unless court records indicate that the matter was legally resolved or expunged from the individual's criminal record history. Coastal Carolina University will not place candidates in field experiences who have been convicted of or plead guilty to violent crimes or crimes of sexual nature. Additionally, candidates will not be placed in a field experience if they have been convicted of a felony that would make the candidate ineligible for a Professional Teaching Certificate.

To meet state certification requirements, an additional and more extensive FBI check is required at the beginning of the final internship semester for candidates. Candidates must show a clear record and no offenses that would make them ineligible for professional certification to be placed into an internship.

1.3 Read to Succeed

Candidates will take two courses to meet Read to Succeed standards, EDSC 308 Foundations in Literacy and EDSC 418 Reading and Writing in the Content Areas. These courses will be submitted to the state for approval for the Read to Succeed standards as required by the South Carolina Department of Education. The courses' multiple assignments that address the standards over two semesters. These include classroom design projects, text set projects, and reading theorist reports.

Read to Succeed Requirements

Course Title	Course Number	Credit Hours	Catalog Description	SC Literacy Standards, Elements, and Competencies Addressed
EDSC	308	3	An introductory course on literacy and its role in secondary schools and society. Candidates will research literacy by defining it and relating it to their field. An overview of literacy education topics including assessment, testing, equity, and multiple literacies will also be surveyed.	1.1, 2.3, 4.1, 4.3, 5.1, 5.2, 5.3, 5.4, 6.1, 6.2
EDSC	418	3	A literacy methods course designed for candidates to learn general literacy instructional techniques and assessment strategies. Candidates will use these techniques and strategies to design a content-area instructional unit complete with an accompanying text set and assessments. Attention is given to addressing reading difficulties and enhancing reading skills necessary for effective teaching of content area materials.	1.2, 2.1, 2.2, 2.3, 3.1, 3.2, 3.3, 3.4, 4.1, 4.2, 4.3, 6.2

1.4 Assisting, developing, and evaluating professional teaching–ADEPT

Assessment of professional teaching is assessed and evaluated based upon competencies in planning, instruction, environment, and professionalism as defined by the South Carolina Expanded ADEPT Rubric. All candidates receive extensive training related to the current South Carolina Teaching Standards integrated into the Expanded ADEPT Support and Evaluation System. Prior to beginning the clinical experience, all candidates receive a comprehensive orientation that includes written and oral explanations of
- Assistance and evaluation processes;
- Expectations related to the *Expanded ADEPT* System; and
- Requirements, including the SCTS performance criteria, for successfully completing the clinical practice.

The secondary chemistry education program will implement a plan that integrates ADEPT standards throughout the field experiences and internship. The program has infused the SCTS 4.0 rubric and teaching standards in courses and field experiences prior to internship to build familiarity and for both reflection and formative feedback. Teacher candidates are introduced to SCTS 4.0 in each content method course. The standards are first addressed in the Foundations of Education Course and each of the respective content methods courses in the semester prior to the teaching internship.

Teacher candidates are evaluated on the ADEPT standards during internship by university supervisors that have completed the required Expanded ADEPT training to serve as an evaluator. Each teacher candidate must be supervised by one or more EPP faculty supervisors and one or more school-based supervisors (i.e., cooperating teachers) throughout the clinical practice. Candidates are observed using the instrument during field experiences and internship. Each teacher candidate receives at least four formative observations (two by their university supervisor and two by the cooperating teacher) and four summative observations (two by their university supervisor and two by the cooperating teacher), written and oral feedback, and assistance regarding all SCTS Indicators from both the EPP and their school-based cooperating/supervising teachers throughout the clinical practice.

After each observation, the candidate and cooperating teacher discuss their progress and set goals for the next observation. University Supervisors, Cooperating Teachers, and Teacher Candidates review the instrument at a formative and summative conference. Evaluation decisions about candidate performance are based on the consensus judgments of the university supervisor and cooperating teacher. Evaluations are based on teaching performance in the four domains of Instruction, Planning, Environment, and Professionalism and their accompanying indicators in the SCTS rubric. Candidates must receive a mean competency score of 2.5 or higher to successfully complete an internship.

1.5 Program for assisting, developing, and evaluating principal performance–PADEPP (Leadership programs only)

Not applicable

1.6 Family, school, and community engagement

The Spadoni College of Education and Social Sciences emphasizes the importance of involvement of families and communities in the school community and the classroom. To address the standards in this area, we meet the standards in the following ways:

(a) practices that are responsive to racial, ethnic, and socio-economic diversity, and are appropriate to various grade-level needs;

In the EDSC 415 Diversity course, candidates read and discuss current literature that prepares them to respond to racial, ethnic, socio-economic, gender, exceptionality status, language proficiency, and other aspects of student diversity. Topics include Culturally Responsive Teaching focusing on developing positive relationships with students, asset-based teaching practices, and community-centered education. Candidates complete a curriculum audit that prompts them to consider the standards in their field in terms of how best to teach them to the specific students in their field placement classrooms. Candidates learn and practice

universal design practices such as incorporating student choice and voice and ensuring the content is accessible to a diverse student population.

In EDSC 418 candidates are asked to create a differentiated lesson plan that asks candidates to address student interests and student proficiency in their field experience classroom. When we address why students do not know information, we delve into what can cause holes in information. This instruction of this topic starts in EDSC 308 where candidates examine early childhood experiences and how socio-economic status can influence vocabulary acquisition and reading level, and we continue to work on those topics in EDSC 418 when candidates examine how to create a lesson plan for 9-12 students who have a deficit in knowledge about a specific topic (Differentiated Lesson Plan).

Finally, beginning in the second field experience and continuing throughout the program, candidates are evaluated using the Environment Domain on the SCTS 4.0 rubric, which focuses on their abilities to create a safe and welcoming classroom for all students.

(b) establishment and maintenance of parent-friendly school settings;

In the EDSC 415 Diversity course, candidates read and discuss current literature that prepares them to work with diverse parents and families. Candidates are introduced to issues related to meeting the needs of diverse parents and are prompted in class assignments to locate and use best practices for parent communication.

(c) awareness of community resources that strengthen families and assist students to succeed; and

In the EDSC 415 Diversity course, candidates read and discuss current literature that prepares them to understand the need for understanding the community in which students live. The candidates' final exam in the course is a community mapping project that requires them to go out into a local community, locate a variety of community assets, write a lesson plan that incorporates community assets, and reflect on what they learned through their journeys into the communities about connecting with students. Beginning in the second field experience and continuing throughout the program, candidates are also evaluated using the Environment Domain on the SCTS 4.0 rubric, which focuses on their abilities to create a safe and welcoming classroom for all students through drawing on community resources and developing a rapport with students and their families.

1.7 Safe School Climate Act

Before a recommendation for state licensure is made, evidence is provided that each candidate for program completion has passed the EPP's Safe Schools Climate Act Assessment, the EEDA Assessment, and the Professional Conduct Assessment. In the Adolescent Development and Classroom Management course the candidates complete a classroom management project. The project's intent is to have the candidates devise classroom routines and interventions to minimize off-task behaviors like harassment, bullying and intimidation. The candidates must base the plan on best management practices in the research literature. Also, the candidates are required to make field observations and keep an observation journal when they are out in schools. One focus of the observations is potential bullying behaviors, actions, and effective methods for curtailing them. In EDSC 415, the diversity course, the candidates review and discuss literature on gender spectrum issues. One specific focus of the research and discussions is the connection between gender

issues in connection with the phenomena of sexual harassment and bullying. Finally, The Standards of Conduct for South Carolina Educators (Code of Conduct) is presented to all interns during the Internship semester prior to attending their internship semester. This information is followed by working in schools full-time and conducting classes in the high school setting. In addition, EEDA core values are evaluated in the Spadoni College Dispositions Form. The dispositions form is completed by faculty in the fall and spring semesters during the methods course and the internship semester. Candidates are trained and assessed on the Safe Schools Climate Act during internship. Finally, beginning in the second field experience and continuing throughout the program, candidates are evaluated using the Environment Domain on the SCTS 4.0 rubric, which focuses on their abilities to create a safe and welcoming classroom for all students.

1.8 Education and Economic Development Act (EEDA)

Before a recommendation for state licensure is made, evidence is provided that each candidate for program completion has passed the EPP's Safe Schools Climate Act Assessment, the EEDA Assessment, and the Professional Conduct Assessment. The Standards of Conduct for South Carolina Educators (Code of Conduct) is presented to all interns during the Internship. In the Foundations of Education course and the content-specific methods course, candidates prepare individual lesson plans and unit plans that address the connections between the lesson content and prospective careers and career readiness. In addition, as stated above, the Professional Dispositions Form focuses on a future teacher's ability to comply and enact EEDA by striving to promote EEDA performance standards, establish a supportive environment, establish, and maintain non-discriminatory and inclusive practices and interrupting or re-directing discriminatory discourse. The dispositions form is completed three times; twice prior to internship, and again during internship. Additionally, candidates are trained and assessed on EEDA during internship.

1.9 Student Health and Fitness Act (Early Childhood Education and Elementary Education programs only)

Not applicable

1.10 Admission to undergraduate teacher preparation programs (Basic Skills Requirement)

Candidates entering the undergraduate teacher preparation program must meet the following requirements, per state and EPP guidelines:
The following evidence is required and reviewed before admission to the Professional Program in Teacher Education:

- Minimum GPA of 2.75
- 60 hours of coursework; grade of 'C' or better in ENGL 101 and ENGL 102 or ENGL 211
- Grade of 'C' or better in EDUC 111
- Grade of 'C' or better in EDUC 204
- Grade of 'C' or better in EDUC 215
- Grade of 'C' or better in all required foundational education courses completed
- **Passing scores on all three areas of Praxis Core Academic Skills for Educators Test: Reading (156), Writing (158), and Math (142) or exemption based on SAT or ACT scores**
- A signed Criminal Offense Disclosure statement
- South Carolina Law Enforcement Division (SLED) background check
- Professional Reference for Teacher Candidate Form

- Approval of Portal I Faculty Committee

1.11 PK–12 academic standards

Candidates in the secondary education programs are required to submit content specific lesson plans utilizing the South Carolina academic standards (in EDML 491); in addition, they are evaluated on their delivery of instruction utilizing these standards with the SCTS 4.0 Rubric. Candidates also complete Teacher Work Sample (TWS), which demonstrates long range planning, during their internship semester.

1.12 Tuberculosis screening and evaluations

Teacher candidates must provide documentation of a negative TB test prior to beginning the internship.

B. Requirements Related to SBE Guidelines and SCDE Policy

2.1 Field experiences

Candidates in the program must complete at least 100 hours of field experience prior to internship (CCU internship) at the initial undergraduate level. The internship experience must provide for intensive and continuous involvement in a public-school setting. Our five partnering districts work closely with the college to help provide relevant and productive sites for field placements of education majors. These schools collaborate with the college to provide the personnel, curriculum, and environments necessary to offer effective instruction for prospective teachers and administrators. Throughout the field experiences, candidates are observed regularly by university supervisors and cooperating teachers using the SCTS 4.0 rubric domains. The field experiences provide actual settings in which to develop and demonstrate the knowledge, skills, and dispositions necessary to help all students learn. The field experiences are diverse and provide interaction with students in a variety of settings. Finally, in the final semester, candidates use knowledge and skills in a semester-long internship (450+ hours) in a local public high school, which supports a successful transition from teacher candidate to professional educator. The final clinical field-based experience (the internship) is the capstone of the program. At the internship level, interns meld the theoretical and practical knowledge of classroom instruction with professional behaviors. Interns can explore, investigate, grow, and develop through the internship. Interns must apply their knowledge of learners and learning in the classroom by working with students as full participating members of a professional school community.

Expectations for interns include the ability to:
- design sequential objectives and strategies based on state and local standards,
- analyze their own teaching methods in comparison with student achievement to ensure that standards are met,
- plan and deliver instruction, within the school setting, with consideration given to individual background and learning style of the individual student, and
- assume the role of a professional educator, working productively with their mentors.

Additionally, interns are expected to prepare lesson/unit plans, demonstrate how to effectively manage the learning environment, demonstrate how to plan for assessment of student learning, and how to analyze and

reflect on student learning data to determine curriculum and instruction. Interns are expected to participate in school-wide initiatives, attend professional development, attend to administrative tasks, and support school functions. All candidates receive formative and summative feedback during the internship regarding their growth and performance. Finally, the internship represents an all-important exit point in the program. The internship serves as the final check of both candidate quality and program effectiveness. When the initial licensure program is successfully completed, candidates will have met requirements toward receiving a South Carolina teaching license.

2.2 Professional ethics and decision-making

The Spadoni College emphasizes professional ethics and responsibilities in all programs. The program addresses the following principles: Principle I: Responsibility to the Profession; Principle II: Responsibility for Professional Competence; Principal III: Responsibility to Students; Principle IV: Responsibility to the School Community; and Principal V: Ethics of the Use of Technology. The program faculty teach these standards throughout the coursework and internship. Professionalism and professional behavior are reviewed and tracked through the instruments described below.

The Assessment of Candidate Dispositions used in the methods coursework and internship. It defines professional expectations of a teacher and monitors if candidates are behaving professionally, making sound decisions in ethical behavior that could impact themselves or the school community. It evaluates their ability to maintain culturally responsive methods and avoid exclusionary methods. It examines how the candidates interact with students, fellow teachers, parents, and community. It requires candidates to critically analyze their content and accept constructive criticism. In addition, it explores how to maintain confidentiality about students and communicate with and about students to colleagues and families. If at any time a behavior is seen that does not align with the disposition form, a Candidate Success Plan is created by faculty, and they monitor and coach the candidate so that they demonstrate professional behavior in the future.

The SCTS 4.0 has evaluation lines expressly addressing professionalism and how to grow as a professional. The last page of the instrument asks candidates to reflect on their professionalism and how they would like to grow in the future. It also asks faculty and cooperating teachers to evaluate the candidate's growth and development in their learning and learning goals, their ability to reflect on their practice, their community involvement, and their school responsibilities. In addition, rubric lines evaluate technology use in activities and assignments, asking faculty and cooperating teachers to evaluate its effective and appropriate use. Lastly, the rubric allows faculty and cooperating teachers to evaluate the professional content knowledge and implementation of lessons. This instrument is used in the methods class to evaluate candidates in field experience placement and during the internship.

The Teacher Work Sample (TWS) which is used in the methods course and in the candidate internship semester has candidates conduct long term planning, evaluate student growth, and reflect on their own performance as a teacher and what they think can be improved in their own instruction. The instrument allows faculty to evaluate and measure candidate growth across two semesters. The TWS is first used in the methods courses and then in the internship semester. It asks candidates to create a unit with pre and post assessment and an evaluation of student learning. This requires the candidates to share learning goals, planning, and use of technology. By implementing the TWS twice, program faculty can monitor growth across semesters. The focus of this instrument examines the responsibility to the profession by asking candidates to show what they plan to teach and how they plan to teach it. The responsibility to students is

demonstrated through the requirement to measure student success in the unit, analyze individual, small group, and whole group data. The candidates are required to reflect and explain student success, lack of success, and changes to the instruction, curriculum, and/or environment to help all students succeed.

2.3 Initial program approval

The new program will gain State Board of Education approval prior to implementation, recruitment, and admission of candidates.

2.4 Continuing program recognition (modified/continuing programs only)

Not applicable

2.5 Verification of candidate program completion for educator certification

The EPP completes the verification of program completion for educator certification form for all candidates once they meet program completion requirements; this includes meeting state GPA guidelines, completion of all coursework, successful completion of all key assessments, successful completion of internship requirements, application for student teaching/teaching, and completion of state-required Praxis II and Principles of Learning and Teaching exams.

2.6 Annual reporting

The EPP completes both the CAEP Annual Report and the Title II report in accordance with accreditation and federal requirements; in addition, the EPP submits the Educator Preparation Provider Annual Report, the ADEPT Report, and SCDE Assurances form each year to the South Carolina Department of Education. Finally, each program submits an annual university report documenting candidate performance as it aligns to each program's student learning outcomes. All programs submit either state- or Specialized Professional Association (SPA) reports according to the deadlines set by CAEP.

2.7 Technology for the enhancement of PK–12 student learning

All candidates will complete a course in instructional technology: EDUC 204 Computer Technology and Instructional Media. EDUC 204 is a standards-based investigation of instructional technologies and their potential to improve teaching practice, professional productivity, and candidate performance. Coursework focuses on the practical utilization and analysis of technology for teaching and learning. Course topics include instructional design, technology integration (apps, web tools, extensions, and hardware), digital citizenship, screen capture tutorial design, video production, assistive technologies, among others.

In addition to completing EDUC 204, the candidates' proficiency with technology will be assessed throughout the program. In the respective content methods courses the candidates prepare lesson plans and unit plans that incorporate technology. During the internship, the candidates must teach lessons that utilize a variety of instructional technologies. The candidates' ability to use technology during instruction is assessed using Specialized Professional Association (SPA) teaching evaluations specific to the content area, the SCTS 4.0 Rubric, and the Teacher Work Sample (TWS).

IV. National accreditor and SPA Standards, and assessments

A. A current accreditation approval letter from the Specialized Professional Association (e.g., NASM, NASAD, etc.):

CEAP Accreditation
Letter FA 19

B. Program report
B1. Context

The Dean of the Spadoni College of Education and Social Sciences is responsible for all institutional policies for the College. The Dean works with the faculty and other academic administrators within the College to ensure the quality of the academic program and the alignment with NSTA/State standards. The College's organization and governance structure assures the integrity and quality of academic programming.

South Carolina State Laws and Regulations include the following: (1) Educator preparation units offering initial licensure programs must develop and implement a plan that integrates the South Carolina Teaching Standards (SCTS) 4.0 performance standards throughout candidates' coursework, field experiences, and clinical practice. The unit must provide evidence that all candidates recommended for certification meet their respective SCTS 4.0 competencies, (2) Educator preparation units must provide assessment evidence to indicate that all candidates enrolled in educator preparation, school guidance counseling, and education administration programs possess the knowledge, skills, and dispositions to integrate the following into the PK-12 curriculum: career guidance; cluster study; curriculum frameworks; individual graduation plans; the instruction of students with diverse learning styles; the elements of the Career Guidance Model; contextual teaching; cooperative teaching; and character education. Institutions must also prepare and assess all candidates in the use of applied methodologies in PK-12 academic courses, (3) Educator preparation units must provide candidates with specific written information regarding the state Standards of Conduct (SC Code Ann. §§ 59-25-160, 59-25-530, 63-17-1060) required of South Carolina educators for initial certification, (4) Educator preparation units must provide evidence that candidates in all certification programs possess the knowledge, skills, and dispositions to identify and prevent bullying, harassment, and intimidation in schools, (5) Educator preparation units must provide evidence that candidates in all certification programs know, understand, and can apply South Carolina PK-12 Academic Curriculum Standards in the area in which they seek to be certified, (6) Educator preparation programs must ensure that candidates meet minimum admission requirements at the initial and advanced levels.

At the initial undergraduate level, candidates must present acceptable scores on Praxis Core exams, 60 hours of college-level work, a minimum cumulative grade point average (GPA) of 2.75 or higher to be admitted to candidacy, and a statement of disclosure concerning all prior convictions to include felonies and misdemeanors, (7) Educator preparation programs and other school personnel preparation programs must provide field experiences (also known as the practicum) that provide candidates with a variety of

progressive experiences in multiple and diverse settings. All candidates must complete a minimum of 100 hours of field experience prior to clinical practice (internship) at the initial undergraduate level. (8) Teacher candidates in the secondary education programs complete a 6-credit hour course sequence in literacy to fulfill the state's Read to Succeed requirements. This includes a school-based practicum experience which may be included in the program's total practicum hours.

The chemistry education program at Coastal Carolina University will provide a sequence of field-based experiences in which candidates develop and demonstrate the knowledge, skills, and dispositions necessary to help all students learn. Teacher candidates advance through three field experiences, each requiring them to assume greater responsibility in the classroom before the internship semester. Field experiences are designed to engage candidates in a variety of school settings, including those with high and low levels of diversity, those with high and low levels of SES, and more rural and urban settings.

Course	Placement	Minimum Required Hours
EDUC 110/111	Public school classroom	12 hours
EDSC 410	Public school classroom	50 hours
EDML 491	Public school classroom	50 hours
EDSC 490	Public secondary science classroom	60 days with 35 days full time teaching responsibility

Field Experience I - EDUC 110/111 (12 hours)
Candidates spend twelve hours in a secondary science classroom in a county serving a high majority of low socioeconomic students. The candidates observe and may work with an individual child or small group at the request of the teacher. Candidates then write a reflection paper responding to the following guiding questions.
- What group/program are you most interested in teaching (certification level, specialization)?
- What characteristics do you, as an effective teacher, need to possess? Why?
- Identify a philosophy that would align with what should be the role of the classroom teacher.
- How do students in the age range that you want to teach learn best? What theory did you base this on?

Field Experience II – EDSC 410 (50 hours)
Teacher candidates have opportunities to apply knowledge and skills in authentic situations. The major emphasis is developing observational skills, appropriate interactions with adolescents, and working with individual or small groups of adolescents.

In the Field Experience II, candidates are observed a minimum of once by the university supervisor, and once by the cooperating teacher, using the SCTS 4.0 Environment Domain indicators. Additionally, candidates are assessed using the Assessment of Candidate Dispositions. Finally, candidates complete the Unit Plan (Key Assessment 6) during this course.

Field Experience III – EDML 491 (50 hours)
Teacher candidates have opportunities to apply knowledge and skills in authentic situations. Candidates are expected to assume a greater responsibility as the classroom's instructional leader through the development and implementation of a week-long standards-based unit during which they assume control of the classroom for that subject area. Candidates demonstrate their ability to design instruction and assessment based on

knowledge of contextual factors, assess, and analyze student achievement, and reflect on their teaching to improve instruction for students and their own professional growth. Also, candidates may engage in individual and small group instruction and develop classroom management skills.

In the Field Experience III, candidates are observed a minimum of once by the university supervisor, and twice by the cooperating teacher using the SCTS 4.0 Environment, Instruction, and Planning Domain indicators. Additionally, candidates are assessed using the Assessment of Candidate Dispositions. Candidates also complete the SCOE Lesson Plan Key Assessment.

Internship – EDSC 490 (60 days, 450+ hours)
Supervised teaching experience in a public secondary science classroom. The final clinical field-based experience (the internship) is the capstone of our Professional Program in Teacher Education. At the internship level, interns meld the theoretical and practical knowledge of classroom instruction with professional behaviors. Interns can explore, investigate, grow, and develop through the internship.

Interns are expected to demonstrate proficiency in selected Performance Dimensions in addition to all the Professional Behaviors and Dispositions. Interns must apply their knowledge of learners and learning in the classroom by working with students as full participating members of a professional school community.

Expectations for interns include the ability to:
- design sequential objectives and strategies based on state and local standards,
- analyze their own teaching methods in comparison with student achievement to ensure that standards are met,
- plan and deliver instruction, within the school setting, with consideration given to individual background and learning style of the individual student, and
- assume the role of a professional educator, working productively with their mentors.

In the internship semester, the candidate has at least four formative observations (two by the University Supervisor and two by the cooperating teacher) and four summative observations (two by the University Supervisor and two by the cooperating teacher) using the SCTS 4.0 Rubric. They are also scored on the Assessment of Candidate Dispositions. The candidate completes the Teacher Work Sample (Key Assessments 3 and 5, attached) during the internship semester and discipline-specific key assessments (attached as Key Assessment 4).

Finally, the internship represents an all-important exit point in the program. Interns may not finish the internship, or complete their programs of study, without demonstrating competence as defined in this document; therefore, the internship serves as the final check of both candidate quality and program effectiveness.

Assurances of High-Quality Field Experience:
The secondary education faculty work from a well-planned, collaborative research agenda that builds on and extends themes related to high quality field experiences. The faculty work closely with the Clinical Experiences Placement Coordinator to place the candidates with high quality classroom teachers that will work closely and collaboratively with our teacher candidates. We use a strict vetting process when hiring University Supervisors, who are trained as ADEPT evaluators, to evaluate our teacher candidates. Our

faculty have also worked closely to create a clear consensus about what high-quality field experiences look like and how that plays into a high-quality program.

B2, 4. LIST OF ASSESSMENTS

In this section, list the 6-8 assessments that are being submitted as evidence for meeting the Science Education standards (NSTA, 2020). All programs must provide all six assessments. If a state licensure test in the content area is not required, you must substitute an assessment that documents candidate attainment of content knowledge in #1 below. For each assessment, indicate the type or form of the assessment and when it is administered in the program.

All assessment documents (rubrics, descriptions, standard alignments are hyperlinked below).

Type and Number of Assessment	Name of Assessment (10)	Type of Form of Assessment (11)	When the Assessment if Administered (12)
Assessment #1: Content Knowledge – Licensure Tests (13) (required)	Praxis #5246 Chemistry (required)	State Licensure test	Prior to graduation
Assessment #2: Content Knowledge – an assessment of general content knowledge in discipline to be taught, GPA and Content Analysis Form (required)	Content Analysis	Grade Analysis	By Internship semester
Assessment #3: Pedagogical and Professional Knowledge and Skills– Planning instruction and assessment (required)	Teacher Work Sample Parts 1-3, 5	Semester long project	Internship semester
Assessment #4: Pedagogical and Professional Knowledge and Skills– Student Teaching Assessment with Legal/Safety/Ethical Issues (required)	Internship Assessment Portfolio	Portfolio	Internship semester
Assessment #5: Effects on Student Learning (required	Teacher Work Sample Section 4: Analysis of Student Learning	Semester long project	Internship semester
Assessment #6: Pedagogical and Professional Knowledge and Skills (required)	5-Day Unit Plan	Semester long project	Senior 1 Semester (semester prior to internship)

B3 - RELATIONSHIP OF ASSESSMENTS TO STANDARDS

For each South Carolina Science Education standard (NSTA, 2020) on the chart below, identify the assessment(s) in Section II that address the standard by placing one "X" in the corresponding box. One assessment may apply to multiple standards.

South Carolina Science Education Standards (National Science Teaching Association, 2020)	Assessments							
	#1	#2	#3	#4	#5	#6	#7	#8
Standard 1: Content Knowledge Effective teachers of science understand and articulate the knowledge and practices of contemporary science and engineering. They connect important disciplinary core ideas, crosscutting concepts, and science and engineering practices for their fields of licensure. **Elements of the Standard:** Preservice teachers will: 1a) Use and apply the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields. Explain the nature of science and the cultural norms and values inherent to the current and historical development of scientific knowledge. 1b) Demonstrate knowledge of crosscutting concepts, disciplinary core ideas, practices of science and engineering, the supporting role of science-specific technologies, and contributions of diverse populations to science. 1c) Demonstrate knowledge of how to implement science standards, learning progressions, and sequencing of science content for teaching their licensure level PK-12 students. **Assessment:** This Standard is usually met using Assessments 1- state licensure exam and Assessment 2 - comprehensive content exams or science courses' GPA and content analysis form.	X	X	X	X		X		
Standard 2: Content Pedagogy Effective teachers of science plan learning units of study and equitable, culturally-responsive opportunities for *all* students based upon their understandings of how students learn and develop science knowledge, skills, and habits of mind. Effective teachers also include appropriate connections to science and engineering practices and crosscutting concepts in their instructional planning. **Elements of the Standard:** Preservice teachers will:			X	X		X		

2a) Using science standards and a variety of appropriate, student-centered, and culturally-relevant science disciplinary-based instructional approaches that follow safety procedures and incorporate science and engineering practices, disciplinary core ideas, and crosscutting concepts. 2b) Incorporating appropriate differentiation strategies, wherein *all* students develop conceptual knowledge and an understanding of the nature of science. Lessons should engage students in applying science practices, clarifying relationships, and identifying natural patterns from empirical experiences. 2c) Using engineering practices in support of science learning wherein all students design, construct, test and optimize possible solutions to a problem. 2d) Aligning instruction and assessment strategies to support instructional decision making that identifies and addresses student misunderstandings, prior knowledge, and naïve conceptions. 2e) Integrating science-specific technologies to support *all* students' conceptual understanding of science and engineering. **Assessment:** This Standard is usually met using Assessment 3 - Unit Plan.								
Standard 3: Learning Environments Effective teachers of science are able to plan for engaging *all* students in science learning by identifying appropriate learning goals that are consistent with knowledge of how students learn science and are aligned with standards. Plans reflect the selection of phenomena appropriate to the social context of the classroom and community, and safety considerations, to engage students in the nature of science and science and engineering practices. Effective teachers create an anti-bias, multicultural, and social justice learning environment to achieve these goals. **Elements of the Standard:** 3a) Plan a variety of lesson plans based on science standards that employ strategies that demonstrate their knowledge and understanding of how to select appropriate teaching and motivating learning activities that foster an inclusive, equitable, and anti-bias environment. 3b) Plan learning experiences for *all* students in a variety of environments (e.g., the laboratory, field, and community) within their fields of licensure. 3c) Plan lessons in which *all* students have a variety of opportunities to investigate, collaborate, communicate, evaluate, learn from mistakes, and defend their own explanations of: scientific phenomena, observations, and data. **Assessment:** This Standard is usually met using Assessment 3 - Unit Plan.		X	X		X			
Standard 4: Safety Effective teachers of science demonstrate biological, chemical, and physical safety protocols in their classrooms and workspace. They also implement ethical treatment of living organisms and maintain equipment and chemicals as relevant to their fields of licensure. **Elements of the Standard:**		X	X		X			

4a) Implement activities appropriate for the abilities of *all* students that demonstrate safe techniques for the procurement, preparation, use, storage, dispensing, supervision, and disposal of all chemicals/materials/equipment used within their fields of licensure. 4b) Demonstrate an ability to: recognize hazardous situations including overcrowding; implement emergency procedures; maintain safety equipment; provide adequate student instruction and supervision; and follow policies and procedures that comply with established state and national guidelines, appropriate legal state and national safety standards (e.g., OSHA, NFPA, EPA), and best professional practices (e.g., NSTA, NSELA). 4c) Demonstrate ethical decision-making with respect to safe and humane treatment of all living organisms in and out of the classroom, and comply with the legal restrictions and best professional practices on the collection, care, and use of living organisms as relevant to their fields of licensure. **Assessment:** This Standard is usually met using Assessments 3 - Unit Plan and Assessment 4- Student Teaching Observation Form.								
Standard 5: Impact on Student Learning Effective teachers of science provide evidence that students have learned and can apply disciplinary core ideas, crosscutting concepts, and science and engineering practices as a result of instruction. Effective teachers analyze learning gains for individual students, the class as a whole, and subgroups of students disaggregated by demographic categories, and use these to inform planning and teaching. **Elements of the Standard:** Preservice teachers will: 5a) Implement assessments that show *all* students have learned and can apply disciplinary knowledge, nature of science, science and engineering practices, and crosscutting concepts in practical, authentic, and real-world situations. 5b) Collect, organize, analyze, and reflect on formative and summative evidence and use those data to inform future planning and teaching. 5c) Analyze science-specific assessment data based upon student demographics, categorizing the levels of learner knowledge, and reflect on results for subsequent lesson plans. **Assessment:** This Standard is usually met using Assessment 5 – Evidence of P-12 student learning.		X	X	X	X			
Standard 6: Professional Knowledge and Skills Effective teachers of science strive to continuously improve their knowledge of both science content and 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. **Elements of the Standard:** 6a) Engage in critical reflection on their own science teaching to continually improve their instructional effectiveness.		X	X		X			

6b) Participate in professional development opportunities to deepen their science content knowledge and practices. 6c) Participate in professional development opportunities to expand their science-specific pedagogical knowledge. **Assessment:** This Standard is usually met using Assessment 6 – Evidence of Professional Knowledge and Skills.								

B5. Planned use of assessment results to improve candidate and program performance

The chemistry education program will analyze data each semester to assess candidate performance and needed changes for coursework. Data from the Praxis I exam (Assessment 1) and the content analysis (Assessment 2) allow faculty to identify areas of content strength and weakness in candidates' content knowledge; this information allows faculty to determine which areas to focus on in the methods course and to watch while observing candidates during their teaching. Areas on the Praxis II with lower sub-scores and content areas with lower GPAs indicate to faculty that the candidates may need more support in these areas.

Data from Assessments 3 and Assessment 5 (Teacher Work Sample) and Assessment 6 (Unit Plan) will provide the faculty with opportunities to review candidates' performance as it relates to pedagogical practices, assessment, and planning, as well as content knowledge. Because many of these assessments occur in the semester prior to internship or during internship, they allow faculty to assess candidates' development as professionals and their readiness to enter the classroom. If a candidate is not performing at the expected levels on these key assessments, faculty can intervene and work with them to provide additional support, so they may improve their practices. Additionally, examining the data enables faculty to identify areas of strength and weakness across each program, so that they can adjust their instruction to better meet candidate needs.

Finally, Assessment 4 (Internship Assessment Portfolio) provides a final look at candidate performance. At the beginning of the final internship, candidates are formatively assessed using these tools. The summative instruments allow both the candidate and faculty to see their growth as an educator after completing 35 days of full-time instruction. Additionally, the data allow the faculty to determine areas where further support must be provided to all candidates in the future.

Because some of the key assessments are used across the EPP (e.g., Praxis II scores, Teacher Work Sample), faculty can look at trends in data and to disaggregate data not only by content area of focus, but also by candidate demographics (specifically, gender, race/ethnicity, and Pell status, sample size permitting). Looking at these data allows faculty to assess their own practices and ensure they are using equal scoring approaches across diverse student populations. This work is further supported by the faculty's yearly interrater reliability training on EPP-wide key assessments, such as the Teacher Work Sample. Analyzing subgroup data and engaging in yearly training to reflect on their own practices, enables opportunities to ensure that faculty are scoring work appropriately for all candidates.

Appendix C: Statement of Intent Form for New Programs: CCU Chemistry Education

Statement of Intent
Form for New Progra