NEW PROGRAM PROPOSAL EXECUTIVE SUMMARY

BS Science Teaching-Physics Concentration

Clemson University

WORKFORCE DEVELOPMENT:

Is this program recognized as a **PRIORITY OCCUPATION** according to the South Carolina Unified State Plan for Education and Workforce Development for 2024-2025? If so, please select the appropriate career cluster.

☒ Yes

☐ No

CAREER CLUSTER:

☐ Agriculture, Food, & Natural Resources	☐ Architecture & Construction
☐ Arts, Audio/Video Technology, & Communications	☐ Business Management &Administration
☒ Education & Training	☐ Finance
☐ Government & Public Administration	☐ Health Science
☐ Hospitality & Tourism	☐ Human Services
☐ Information Technology	☐ Law, Public Safety, Corrections,&Security
☐ Manufacturing	☐ Marketing
☐ Science, Technology, Engineering, & Mathematics	☐ Transportation, Distribution, & Logistics

A. SUMMARY

Clemson University proposes a new Physics concentration for the BS Science Teaching program. While adding a new concentration is typically a modification proposal, the BS Science Teaching program is an educator preparation program. Therefore, per CHE policy, we are submitting this modification as a New Program proposal. The program is formulated to certify students to teach secondary physics.

The program will require no new courses and the hiring of no new faculty. There are currently 2 similar programs within the state. Program requirements include a minimum of 123 credits. The program fulfills the REACH Act requirement and received all institutional approvals on April 23, 2025. The program will be delivered in a traditional face-to-face model and will begin Fall 2026.

B. UNIVERSITY ENROLLMENT

In-state 16,277 (56%)	**Out-of-State** 12,800 (44%)

Source: Clemson University Factbook (https://www.clemson.edu/institutional-effectiveness/oir/factbook/). The CU Factbook is fed by the validated CHEMIS files.

C. ENROLLMENT PROJECTIONS

Projected Enrollment			
Year	Fall Headcount	Spring Headcount	Summer Headcount
2026-2027	0	0	0
2027-2028	1	1	0
2028-2029	1	1	0
2029-2030	1	1	0
2030-2031	1	1	0

The enrollment projection is based on enrollment data from the past 5 years in the existing Biological Sciences concentration.

D. INDUSTRY-RELATED OCCUPATIONAL WAGES AND PROJECTIONS IN SOUTH CAROLINA

Occupation	State		National		Data Type and Source
	Expected Number of Jobs (2022)	**Employment Projection (2032)**	**Expected Number of Jobs (2023)**	**Employment Projection (2033)**	
High School Teachers (Secondary School Teachers, Except Special and Career/Technical Education) (25-2031)	15,540	9% increase	1,071,400	1% decrease	Career One Stop and BLS
Middle School Teachers (Middle School Teachers, Except Special and Career/Technical Education) (25-2022)	8,950	9% increase	640,000	1% decrease	Career One Stop and BLS

Additional Comments:

NEW PROGRAM PROPOSAL FORM

Name of Institution: **Clemson University**

Name of Program (include degree designation and all concentrations, options, or tracks):
BS Science Teaching (Existing Concentrations: Biological Science; Non-Certification Option)
New Concentration: Physics (Chemistry is also being proposed via a separate proposal)

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.)

*REACH Act: Reach Act: As required by South Carolina statute, all Clemson University undergraduate students must complete a 3 credit hour course (currently HIST 1010 or POSC 1010 or POSC 1030) covering major turning points in US history and requiring the reading of statutorily- required Founding Documents in order to graduate (unless statutorily exempted or alternatively fulfilled).

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

- ☒ Yes *[program already eligible]*
- ☐ No

Proposed Date of Implementation: **Fall 2026**

CIP Code: **13.1316** ***[no change]***

Delivery Site(s): **Clemson University Main Campus (50104)** ***[no change]***

Delivery Mode: ***[no change]***

- ☒ Traditional/face-to-face
  *select if less than 25% online
- ☐ Distance Education
  - ☐ 100% online
  - ☐ Blended/hybrid (50% or more online)
  - ☐ Blended/hybrid (25-49% online)
  - ☐ Other distance education (explain if selected)

Program Contact Information (name, title, telephone number, and email address):
Dr. Michelle Cook, Associate Dean, College of Education, mcook@clemson.edu, 864.656.5119
Dr. Jeremy King, Associate Provost for Institutional Effectiveness, jking2@clemson.edu, 864.934.3554

Institutional Approvals and Dates of Approval (include department through Provost/Chief Academic Officer, President, and Board of Trustees approval):
Undergraduate Curriculum Committee: 1 November 2024
Provost: 23 January 2025
Board of Trustees: 23 April 2025

Background Information

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

Background, Purpose, and Field of Application

Clemson University seeks approval to offer a new Physics concentration within its existing BS Science Teaching program. While adding a new concentration is typically a modification proposal, the BS Science Teaching program is an educator preparation program. Therefore, per CHE policy, we are submitting this modification as a New Program proposal; we are also proposing the addition of a new Physics concentration via a separate proposal.

With the proposed concentration to the BS program, we are enhancing our academic infrastructure to produce teachers prepared in physics to provide science education to students in the state. Currently, students who want to become certified in teaching secondary physics double major in the BA Science Teaching-Physics and BA Physics programs. Dual major BA programs require that students meet the requirements of both majors. This includes a total of 6-14 Modern Language credit hours (students may test out of the lower-level modern language courses) required of BA programs at Clemson. As such, the BA Science Teaching-Physics requires a total of 138-146 credit hours, which is 15-23 more credit hours to complete than the proposed BS program. Our goal is to offer a BS with a more streamlined curriculum that reduces students' required total number of credit hours. This could be a more attractive single-major pathway for students to become certified K-12 teachers in South Carolina.

Discussion of Program Structure

Upon approval, the BS Science Teaching program will be available to students preparing to teach Biological Sciences, Chemistry, or Physics (grades 9-12). Specific courses and sequences have been designated to meet state and national requirements for those planning to teach. The professional education courses should be completed in sequence. The program requires 123 credit hours.

The addition of the Physics concentration to the BS does not require the creation of any new courses, as almost all courses are already required as a part of the Physics concentration for the BA Science Teaching. As noted in the previous section, the primary difference is the BA's modern language requirement.

Target Audience

The target audience for this degree program is incoming first-time or transfer students who express an interest in majoring in Physics or Science Teaching Education.

Alignment with Institutional Mission and Strategic Plan

Creating this degree program concentration aligns with our Clemson Elevate strategic plan. By creating this degree pathway, we will increase the educational opportunities for SC with the aim of enhancing the SC teacher workforce. Providing another pathway for prospective teachers will help us to increase enrollment in the science teaching area. This supports Pillar 3 (Transform Lives) of Clemson Elevate—our schools need teachers prepared in these teaching areas to be able to provide science education to our students. With a single-degree option, we may be able to produce more physics teachers for the state than currently produced.

Assessment of Need

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

The Center for Educator Recruitment, Retention, and Advancement (CERRA) reported 1,043 vacant positions at the start of the 2024-2025 academic year[1]. Of those vacancies, 55 of them were in science education at the middle and high school levels. Nationwide, the data shows similar declining trends in

[1] 2024-25 South Carolina Annual Educator Supply and Demand Tables

teacher availability. The U.S. Bureau of Labor Statistics (BLS)[2] estimated nearly 1,071,400 jobs nationwide in 2023 for certified high school teachers. BLS[3] project 64,000 openings for high school teachers on average each year. Nationwide, the number of science teachers graduating is declining, confirming the potential for job placement and availability for Science Education in Physics[4] graduates.

Please find letters of support from Greenville County Schools and the School District of Pickens County at the end of the proposal.

Transfer and Articulation

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

None.

Employment Opportunities

Table 1. Employment Opportunities for Middle and High School Teachers

Occupation	State		National		Data Type and Source
	Expected Number of Jobs (2022)	Employment Projection (2032)	Expected Number of Jobs (2023)	Employment Projection (2033)	
High School Teachers (Secondary School Teachers, Except Special and Career/Technical Education) (25-2031)	15,540	9% increase	1,071,400	1% decrease	Career One Stop and BLS
Middle School Teachers (Middle School Teachers, Except Special and Career/Technical Education) (25-2022)	8,950	9% increase	640,000	1% decrease	Career One Stop and BLS

Supporting Evidence of Anticipated Employment Opportunities

Provide supporting evidence of anticipated employment opportunities for graduates.

The overall employment outlook for both high school teachers and middle school teachers in South Carolina is excellent. In South Carolina, the number of jobs is projected to grow by 9% from 2022 to 2032, compared to a 1% decrease nationally. This contrast between the projections for state employment and US employment can be attributed to South Carolina's rapid population growth, even as the national population of school-aged children is expected to decline over the next 10 years. South Carolina's

[2] https://www.bls.gov/ooh/education-training-and-library/high-school-teachers.htm
[3] https://www.bls.gov/ooh/education-training-and-library/high-school-teachers.htm#tab-6
[4] Hanover Research. (2023). 2023 Trends in K-12 Education.

population is projected to increase by nearly one million people by 2040, making it one of the fastest-growing states in the country[5].

South Carolina Annual Educator Supply and Demand Survey Data

The South Carolina Annual Educator Supply and Demand survey collects data from 76 public school districts across South Carolina. The survey reports vacant certified teaching positions as of the start of the school year in full-time equivalents (FTEs). As noted in the previous section, vacant positions in the sciences at the middle and high school level increased from 43 vacancies in 2019-2020[6] (Table 2) to 55 vacancies in 2024-25[7] (Table 3). This is a 28% increase in the number of vacancies for science teaching at the middle and high school levels over the last 5 years.

Table 2. Table 5 of the 2019-2020 CERRA South Carolina Annual Educator Supply & Demand Report

Table 5 includes the number of certified teaching positions (in FTEs) reported as vacant at the beginning of the 2019-20 school year.

Table 5	Number of Certified Vacant Teaching Positions, By School Level			
Subject Area Taught	**Primary/ Elementary**	**Middle**	**High**	**Total**
Agriculture		1.00	2.00	**3.00**
Art	11.50	7.00	5.00	**23.50**
Business/Marketing/Computer Technology	1.00	0.00	2.00	**3.00**
Career & Technology Education (CATE work-based certification)		4.00	15.00	**19.00**
Dance	1.00	1.00	2.00	**4.00**
Driver's Education			0.00	**0.00**
Early Childhood/Elementary (any or all core subjects)	76.50			**76.50**
English for Speakers of Other Languages (ESOL)	4.00	2.00	4.50	**10.50**
English/Language Arts		20.00	24.00	**44.00**
Family & Consumer Sciences		0.00	0.00	**0.00**
Gifted & Talented	1.00	0.00	0.00	**1.00**
Guidance	1.50	0.50	4.00	**6.00**
Health	0.00	0.00	0.00	**0.00**
Industrial Technology		0.00	0.00	**0.00**
Literacy	3.50	1.50	0.00	**5.00**
Mathematics		22.00	38.50	**60.50**
Media Specialist	15.00	1.50	4.50	**21.00**
Montessori	1.00	1.00		**2.00**
Music	10.00	8.00	7.00	**25.00**
Physical Education	3.00	5.00	8.00	**16.00**
Sciences		16.00	27.00	**43.00**
Social Studies		12.00	16.00	**28.00**
Special Education	52.50	19.00	35.50	**107.00**
Speech Language Therapist (includes contracted FTEs)	29.50	4.50	2.00	**36.00**
Theater	0.00	1.00	0.50	**1.50**
World Languages				
American Sign Language (ASL)	0.00	0.00	0.00	**0.00**
Chinese	2.00	0.00	0.00	**2.00**
French	0.00	0.00	2.00	**2.00**
German	0.00	0.00	1.00	**1.00**
Japanese	0.00	0.00	0.00	**0.00**
Latin	0.00	0.00	0.00	**0.00**
Russian	0.00	0.00	0.00	**0.00**
Spanish	2.00	3.00	10.00	**15.00**
Other	0.00	0.00	0.00	**0.00**
TOTAL	**215.00**	**130.00**	**210.50**	**555.50**

[5] South Carolina Revenue and Fiscal Affairs Office

[6] 2019-2020 CERRA South Carolina Annual Educator Supply & Demand Report (2019-20 School Year), Table 5 Includes the number of certified teaching positions (in FTEs) reported as vacant at the beginning of the 2029-2020 school year. (Middle School: 16, High School: 27, Total: 43)

[7] 2024-2025 CERRA South Carolina Annual Educator Supply and Demand Data Tables 2024-2025, Table 4A includes the number of vacant teaching positions in SC public school districts for 2024-25. (Middle School: 30, High School: 25, Total: 55)

Table 3. Table 4A of the 2024-2025 CERRA South Carolina Annual Educator Supply & Demand Report

Table 4A includes the number of vacant teaching positions in SC public school districts for 2024-25.

Table 4A	Number of Vacant Teaching Positions, By Grades Served			
Teaching Fields	**PK – 5**	**6 – 8**	**9 – 12**	**Total**
Agriculture	0.00	1.00	5.00	6.00
Art	17.00	10.50	7.00	34.50
Business & Marketing	0.00	7.00	10.00	17.00
Career & Technical Education (CTE work-based)	0.00	9.00	17.00	26.00
Computer Science	0.00	1.00	0.50	1.50
Dance	2.00	3.00	1.00	6.00
Driver Training	0.00	0.00	0.00	0.00
Early Childhood/Elementary (grades PK-2)	62.00	0.00	0.00	62.00
Early Childhood/Elementary (grades 3-5)	81.50	0.00	0.00	81.50
Early Childhood/Elementary (grade 6)	0.00	2.00	0.00	2.00
English/Language Arts	1.50	22.50	25.0	49.00
Family & Consumer Science	0.00	1.00	1.00	2.00
Gifted & Talented	7.00	0.25	0.25	7.50
Health	0.00	0.00	0.00	0.00
Industrial Technology	0.00	1.00	0.00	1.00
Literacy/Reading	5.50	4.00	1.00	10.50
Mathematics	4.00	39.50	49.00	92.50
Montessori	1.00	1.00	0.00	2.00
Multilingual Learner Program (previously ESOL)	6.90	11.75	12.75	31.40
Music	24.60	11.60	12.00	48.20
Physical Education	7.50	7.00	7.00	21.50
Science (biology, chemistry, physics, etc.)	1.00	30.00	25.00	56.00
Social Studies (economics, history, psychology, etc.)	0.50	27.50	12.50	40.50
Special Education	108.00	61.50	69.50	239.00
Theater	0.00	2.00	1.00	3.00
World Language	3.50	7.50	13.50	24.50
Other (reading/math interventionists)	6.00	0.00	1.00	7.00
Total	339.50	261.60	271.00	872.10

Teacher Shortage Areas

The U.S. Department of Education publishes Teacher Shortage Areas[8] data to highlight areas of employment opportunity for teachers at specific grade levels, disciplines and geographic areas of the country. South Carolina is a federally-designated shortage area in the General Science discipline for 2025-2026 (Table 4) and has been for the four preceding years.

Table 4. SC Area Shortage Table

Teacher Shortage Area Report

School Year: 2025_2026,2024_2025,2023_2024,2022_2023,2021_2022 State: South Carolina County:

School District: Geographic Region: Grades by Age: -

Subject Matter: Science Discipline: -

Grades: -

School Year	State	Country	School District	Geographic Region	Subject Matter	Discipline	Grades	Grades by Age
2025_2026	South Carolina	-	-	South Carolina	Science	General Science	9, 10, 11, 12	Age above 5
2024_2025	South Carolina	-	-	South Carolina	Science	General Science	9, 10, 11, 12	Age above 5
2023_2024	South Carolina	-	-	South Carolina	Science	General Science	9, 10, 11, 12	Age above 5
2022_2023	South Carolina	-	-	South Carolina	Science	General Science	9, 10, 11, 12	Age above 5
2021_2022	South Carolina	-	-	-	Science	-	5, 6, 7, 8, 9, 10, 11, 12	Age above 5

[8] U.S. Department of Education Teacher Shortage Areas

Award and Occupation Gaps

The award gaps analytic is a snapshot analysis that attempts to determine whether a region is producing enough graduates in the necessary areas of study to meet the labor market demands in those specific occupations for that same region. The analytic compares the number of post-secondary awards conferred to a target range of awards. The awards included in the analysis are those degree programs which are crosswalked to the occupation or group of occupations being examined. The target range is defined by two benchmarks: the total 1-year annual demand for the occupation in the region and an employment-prorated fraction of the US Awards Benchmark. The awards gap analytic does not distinguish between different degree levels; neither is it attuned to science teachers specifically inasmuch as federal SOCS codes are not that granular.

In South Carolina and the multi-state region comprising SC, NC, and GA, there is no award gap for the Middle School Teachers, Except Special and Career/Technical Education occupation. For Secondary School Teachers, Except Special and Career/Technical Education, there is a small surplus of 17 awards at the state-level and a surplus of 92 awards for the SC/NC/GA. There are 15,540 high school teachers at in South Carolina, so this level of surplus is equal to just 0.1% of total employment and is not significant.

Table 5. SC Science Teaching BS Awards

South Carolina, Science Teaching BS , Two-Year Degree or Higher Only

SOC	Occupation	Award Gap	Awards	Target Range	Annual Demand	US Awards Benchmark
25-2022	Middle School Teachers, Except Special and Career/Technical Education	0	493	471 – 620	620	471
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	17	1,928	1,134 – 1,911	1,134	1,911
	Science Teaching BS	39	2,421	1,754 – 2,382	1,754	2,382
00-0000	Total - All Occupations	(2,929)	39,466	42,395 – 59,731	59,731	42,395

Source: JobsEQ®
Data as of 2024Q3
Note: Figures may not sum due to rounding.
Data exclude awards from online schools

Likewise, a total award surplus of 92 awards for the region of South Carolina, North Carolina, and Georgia translates to just 0.01% of the over 71,000 high school teachers in the region

Table 6. SC-NC-GA Science Teaching BS Awards

SC-NC-GA, Science Teaching BS , Two-Year Degree or Higher Only

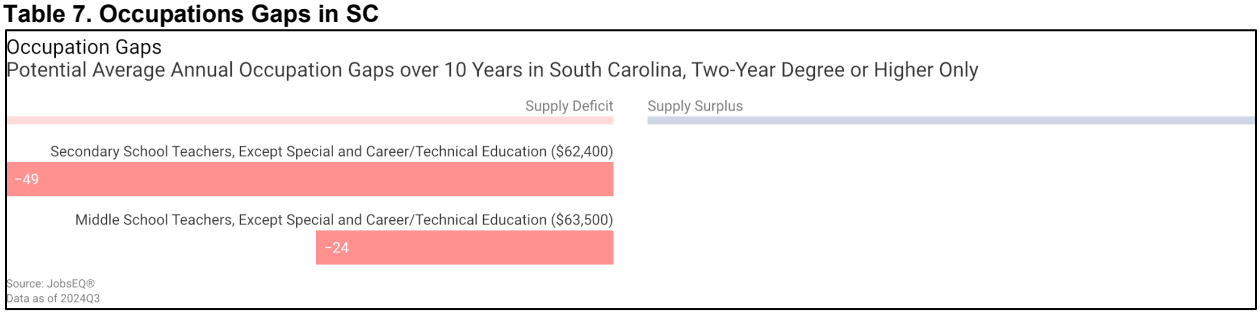
SOC	Occupation	Award Gap	Awards	Target Range	Annual Demand	US Awards Benchmark
25-2022	Middle School Teachers, Except Special and Career/Technical Education	0	3,186	2,775 – 3,505	3,505	2,775
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	92	8,418	4,775 – 8,326	4,775	8,326
	Science Teaching BS	503	11,604	8,280 – 11,101	8,280	11,101
00-0000	Total - All Occupations	(11,872)	233,821	245,693 – 346,402	346,402	245,693

Source: JobsEQ®
Data as of 2024Q3
Note: Figures may not sum due to rounding.
Data exclude awards from online schools

The occupation gap analytic is a forecast comparing occupation demand growth to the local population growth and the projected educational attainment of those residents. The analysis does not consider the number of awards for any specific programs of study; rather, it looks at the overall educational attainment of the region and the labor market demand for occupations requiring that level of educational attainment. The occupation gap is primarily designed to model the long-term demand potential of occupations.

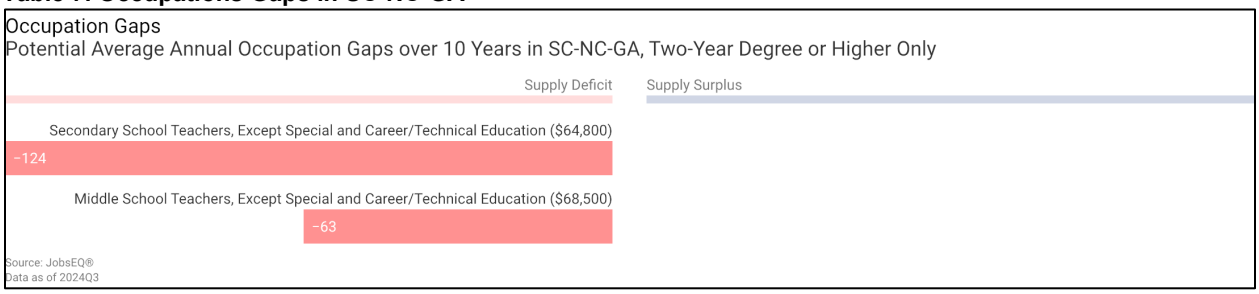
Over the next ten years, an occupation gap analysis projects an annual shortfall of 49 and 24 teachers in South Carolina at the high school and middle school levels.

Table 7. Occupations Gaps in SC



Annual shortfalls of 124 high school teachers and 63 middle school teachers are projected for the South Carolina-North Carolina-Georgia region.

Table 7. Occupations Gaps in SC-NC-GA



A scenario such as this where there is an occupation gap but no awards gap can signal that the region is graduating enough students in the relevant programs of study for these occupations, but not enough of the graduating students enter the workforce or remain in the region to meet the demands of the local labor market.

Description of the Program

Full BS Science Teaching Program

Projected Enrollment												
Year	***Fall Headcount***				***Spring Headcount***				***Summer Headcount***			
	New	***Continuing***	***Lost***	***Graduate***	***New***	***Continuing***	***Lost***	***Graduate***	***New***	***Continuing***	***Lost***	***Graduate***
2026-2027	2	3	0	0	1	5	0	1	0	0	0	0
2027-2028	1	5	0	0	0	6	1	0	0	0	0	0
2028-2029	2	5	0	1	0	6	0	1	0	0	0	0
2029-2030	1	5	0	0	1	6	0	2	0	0	0	0
2030-2031	3	5	1	1	0	6	0	1	0	0	0	0

Projected Enrollment			
Year	Fall Headcount	Spring Headcount	Summer Headcount
2026-2027	5	6	0
2027-2028	6	6	0
2028-2029	7	6	0
2029-2030	6	7	0
2030-2031	8	6	0

Physics Concentration

Projected Enrollment												
Year	***Fall Headcount***				***Spring Headcount***				***Summer Headcount***			
	New	***Continuing***	***Lost***	***Graduate***	***New***	***Continuing***	***Lost***	***Graduate***	***New***	***Continuing***	***Lost***	***Graduate***
2026-2027	0	0	0	0	0	0	0	0	0	0	0	0
2027-2028	1	0	0	0	0	1	0	0	0	0	0	0
2028-2029	0	1	0	0	0	1	0	0	0	0	0	0
2029-2030	0	1	0	0	0	1	0	0	0	0	0	0
2030-2031	0	1	0	0	0	1	0	1	0	0	0	0

Projected Enrollment			
Year	Fall Headcount	Spring Headcount	Summer Headcount
2026-2027	0	0	0
2027-2028	1	1	0
2028-2029	1	1	0
2029-2030	1	1	0
2030-2031	1	1	0

Explain how the enrollment projections were calculated.

Enrollment data from the past 5 years in the program's existing Biological Sciences concentration was used as a basis for this projection. It is anticipated that 60% of students will be enrolled in the existing biological science concentration, 30% of students will be enrolled in the Chemistry teaching concentration, and 10% will be enrolled in the Physics teaching concentration. The projection is based on anecdotal evidence at from other universities that have revised and rebuilt their science teaching programs.

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

☐Yes

☒No

Curriculum

New Courses

List and provide course descriptions for new courses.

No new courses have been created for this program.

Total Credit Hours Required: 123

Curriculum by Year					
Course Name	**Credit Hours**	**Course Name**	**Credit Hours**	**Course Name**	**Credit Hours**
Year 1					
Fall		**Spring**		**Summer**	
CH 1010 General Chemistry	4	CH 1020 General Chemistry	4		
ENGL 1030 Composition and Rhetoric	3	ED 1050 Orientation to Education	2		
MATH 1060 Calculus of One Variable I	4	MATH 1080 Calculus of One Variable II	4		
PHYS 1220 Physics with Calculus I and PHYS 1240 Physics Laboratory I	4	Social Science that Satisfies Reach Act[9]	3		
		PHYS 2210 Physics with Calculus II and PHYS 2230 Physics Laboratory II	4		
Total Semester Hours	15	Total Semester Hours	17	Total Semester Hours	
Year 2					
Fall		**Spring**		**Summer**	
BIOL 1030 General Biology I & BIOL 1050 General Biology Laboratory I OR BIOL 1100 Principles of Biology I	4	BIOL 1040 General Biology II and BIOL 1060 General Biology Laboratory II OR BIOL 1110 Principles of Biology II	4		
ED 3010 Principles of American Education	3	EDF 3020 Educational Psychology	3		
MATH 2060 Calculus of Several Variables	4	EDF 3350 Adolescent Growth and Development	3		
PHYS 2220 Physics with Calculus III and PHYS 2240 Physics Laboratory III	4	MATH 2080 Introduction to Ordinary Differential Equations	4		
		Oral Communications Requirement	3		
Total Semester Hours	15	Total Semester Hours	17	Total Semester Hours	

[9] Can be satisfied with HIST 1010 or POSC 1010 or POSC 1030.

Course Name	Credit Hours	Course Name	Credit Hours	Course Name	Credit Hours
Year 3					
Fall		**Spring**		**Summer**	
ASTR 1010 Solar System Astronomy and ASTR 1030 Solar System Astronomy Laboratory	4	BIOL 4820 Laboratory Techniques for Teaching Science	3		
EDLT 4800 Foundations in Adolescent Literacy	3	GEOL 1010 Physical Geology and GEOL 1030 Physical Geology Laboratory	4		
EDSC 3270 Practicum in Secondary Science	3	PHYS 3220 Mechanics I	3		
PHYS 3210 Mechanics I	3	Arts and Humanities Literature Requirement	3		
Social Science Requirement	3	Global Challenges Requirement	3		
Total Semester Hours	16	Total Semester Hours	16	Total Semester Hours	
Year 4					
Fall		**Spring**		**Summer**	
EDLT 4980 Content Area Reading and Writing for Middle and Secondary Teachers	3	Certification/Non-Certification Requirements	12		
EDSC 4270 Teaching Secondary Science	3				
EDSP 3700 Introduction to Special Education	3				
PHYS 4410 Electromagnetics I	3				
Arts and Humanities Non-Literature Requirement	3				
Total Semester Hours	15	Total Semester Hours	12	Total Semester Hours	

Teacher Certification (12 credits)

Students completing the coursework for the Teacher Certification Emphasis Area must complete the following coursework and meet all requirements for enrollment in professional courses, apply for directed teaching/teaching internship, and meet all requirements for recommendation for initial licensure as stated in the Undergraduate Catalog under Teacher Education Programs. The following courses must be taken the spring semester of the senior year.

EDSC 4470 - Teaching Internship in Secondary Science (9 Credits)

EDSC 4570 - Secondary Science Capstone Seminar (3 Credits)

Non-Certification (12 credits)
Individual students who have a minimum of 90 semester credit hours, have senior status in the degree program, and do not complete student teaching/internship and capstone requirements may be recommended by the faculty for the Non-Certification option. Students in the Non-Certification Emphasis Area will not meet the South Carolina Department of Education requirements for initial teacher certification. The Non-Certification option allows 12 credits of elective coursework to be substituted in lieu of the nine credits of student teaching/internship and three-credit capstone course. In consultation with and based on the recommendation of their faculty advisor, students may initiate the formal change for the Non-Certification Emphasis Area through the Change of Academic Program Form approved by the faculty advisor and department chair. It is recommended that students consult with their faculty advisor to select courses to meet the 12-credit elective requirement.

Similar Programs in South Carolina offered by Public and Independent Institutions

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

Program Name and Designation	Total Credit Hours	Institution	Similarities	Differences	2020-2024 Avg. Completions per IPEDS[10]
Secondary Education and Physics, BS	122+	College of Charleston	Both B.S. programs, similar science requirements	Only requires 1 general methods course	17.6
Physics Education, BA	120	Coastal Carolina University	Both B.S. programs, similar science requirements	Only requires 1 general methods course	0.0

[10] IPEDS does not report degree completions down to concentration level, so this reflects the average completions for each institutions bachelor's degrees assigned CIP Code 13.1205 (College of Charleston) and 13.1329 (Coastal Carolina University).

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.)
Clinical Professor, FT	ED 1050	PhD, Curriculum and Instruction. Clemson University. MA, Mathematics Education. The Citadel. BS, Mathematics Teaching. Clemson University.	
Senior Lecturer, FT	EDLT 4800	PhD, Curriculum and Instruction. Clemson University. MEd, Counseling and Guidance Services. Clemson University. BS, Environmental Science. College of William and Mary.	
Associate Professor, FT	EDLT 4980	PhD, Curriculum and Instruction. University of Illinois. MEd, Secondary Education. University of Illinois. BA, Teaching Social Studies. University of Illinois.	
Associate Professor, FT	EDF 3350	PhD, Educational Psychology & Educational Technology. Michigan State University. MA, English. Grand Valley State University. BA, English. Grand Valley State University.	
Associate Professor, FT	EDF 3020	PhD, Educational Psychology; Inquiry Methodology. Indiana University. MA, Educational and Developmental Psychology. Beijing Normal University. BA, Psychology. Qufu Normal University.	
Lecturer, FT	EDSP 3700	PhD, Special Education. Clemson University.	

		MA, English Language Learning. Western Governors University. MA, Education. Furman University. BA, Multi-Categorical Special Education, K-12. Clemson University.	
Associate Professor, FT	EDSC 3270, BIOL 4820, EDSC 4270, EDSC 4570, EDSC 4470	PhD, Science Education, University of Virginia MAEd, Secondary Education, Wake Forest University BA, Chemistry, William Jewell College	Licensed to teach Chemistry in NC
Lecturer, FT	ED 3010	PhD, Curriculum and Instruction, Clemson University MEd, Education, Southern Wesleyan University BA, English, Charleston Southern University	
Senior Lecturer, FT	GEOL 1010, GEOL 1030	PhD, Geosciences, University of South Carolina MS, Geosciences, Texas Tech University BS, Geology, Bowling Green State University	
Senior Lecturer, FT	GEOL 1010	PhD, Geological Sciences, University of California-Santa Barbara BS, Environmental Geoscience, University of Notre Dame	
Temporary Lecturer, PT	GEOL 1030	MS, Geology, University of California Santa Barbara BS, Geology, University of Maryland College Park BA, English, Colby College	
Senior Lecturer, FT	PHYS 1220, PHYS 1240	PhD, Astrophysics, University of Arizona MS, Physics, University of Arizona DrS, Physics, University of Indonesia (Indonesia) BS, Physics, University of Indonesia (Indonesia)	
Senior Lecturer, FT	PHYS 1220, PHYS 1240, PHYS 2210	PhD, Physics, Clemson University	

		MS, Physics, Clemson University BS, Physics, University or Illinois	
Associate Professor, FT	PHYS 1220, PHYS 1240	PhD, Physics, University of Houston MS, Physics, University of Houston BS, Physics Engineering, TEC de Monterrey	
Associate Professor, FT	PHYS 2210	PhD, Physics, University of California-San Diego BA, Physics, Wellesley College	
Principal Lecturer, FT	PHYS 2210	PhD, Physics, Clemson University MS, Physics, Indian Institute of Technology-Roorkee India BS, Physics, Chhatrapati Shahu Ji Maharaj University (India)	
Temporary Lecturer, PT	PHYS 2230	PhD, Physics, Clemson University BS, Physics and Mathematics, Wofford College	
Senior Lecturer, FT	ASTR 1010/1030	MS, Physics, Colorado State University BA, Physics and Mathematics, Colby College	
Senior Lecturer, FT	BIOL 1040/1060	PhD, Microbiology, Clemson University MS, Animal and Food Industries, Clemson University BS, Microbiology, Clemson University	
Lecturer, FT	BIOL 1040/1060	PhD, Biological Sciences, Clemson University MS, Costal Marine and Wetland Studies, Costal Carolina University BS, Marine Science, Costal Carolina University	
Lecturer, FT	BIOL 1040/1060	PhD, Biology and Anatomy, Medical College of Georgia	

		BS, Biology, Armstrong Atlantic State University	
Principal Lecturer, FT	CH 1010	DA, Chemistry, Middle Tennessee State University MS, Analytical and Environmental Chemistry, Oregon State University BS, Chemistry, South Dakota State University	
Principal Lecturer, FT	CH 1010, CH 1020	PhD, Chemistry, Virginia Tech BS, Chemistry, King College	
Lecturer, FT	CH 1010	PhD, Chemistry, Yale University BA, Chemistry, Swarthmore College	
Senior Lecturer, FT	CH 1020	PhD, Nanoscale Science, University of North Carolina-Charlotte BS, Professional Chemistry, Eastern Michigan University	
Senior Lecturer, FT	CH 1020	PhD, Chemistry, Clemson University BS, Chemistry, University of North Carolina-Asheville	
Senior Lecturer, FT	CH 1020	PhD, Chemistry, Clemson University PhD, Chemical Engineering, Polytechnic University of Bucharest (Romania) MS, Chemical Engineering, Clemson University BS, Chemical Technology, Polytechnic University of Bucharest (Romania)	
Principal Lecturer, FT	MATH 1080	PhD, Mathematical Science, Clemson University MBA, Business, Virginia Commonwealth University BS, Industrial Management, Clemson University	
Principal Lecturer, FT	MATH 1080	PhD, Mathematics, Tufts University MS, Mathematics, Tufts University	

		BS, Mathematics, Providence College	
Lecturer, FT	MATH 1080, MATH 2060	MS, Mathematics, Texas A&M University BS, Mathematical Sciences, Clemson University	
Lecturer, FT	MATH 1080, MATH 2060	PhD, Mathematical Sciences, Clemson University MS, Mathematical Sciences, Clemson University BS, Mathematics, Francis Marion University	
Lecturer, FT	MATH 2060	PhD, Mathematics, North Carolina State University MS, Mathematics, North Carolina State University BS, Mathematics, Harding University	
Senior Lecturer, FT	MATH 2060	PhD, Mathematical Sciences, Clemson University MS, Mathematical Sciences, Clemson University BA, Secondary Education, Clemson University	
Lecturer, FT	MATH 2080	PhD, Mathematical Sciences, Clemson University MS, Mathematics, University of North Carolina-Wilmington BS, Applied Mathematics, North Carolina State University	
Principal Lecturer, FT	MATH 2080	PhD, Mechanical Engineering, Institute of Machines Science of the Russian Academy of Sciences (Russia) MS, Engineering Mechanics, Moscow State University (Russia)	
Senior Lecturer, FT	MATH 2080	PhD, Technical Sciences (Mathematical Sciences), Institute of Machines Science of the Russian Academy of Sciences (Russia)	

		BS, Mathematical Science, Novosibirsk State University (Russia)	
Associate Professor, FT	MATH 2080	PhD, Operations Research, Georgia Institute of Technology BS, Mathematical Sciences, Clemson University	
Associate Professor, FT	MATH 2080	PhD, Mathematics, Korea Advanced Institute of Science and Technology (Korea) MS, Mathematics, Korea Advanced Institute of Science and Technology (Korea) BS, Mathematics, Seoul National University (Korea)	
Full Professor, FT	PHYS 2220/2240	PhD, Physics, University of Kentucky MS, Physics, University of Kentucky BS, Physics, University of Mumbai (India)	
Assistant Professor, FT	PHYS 3210,PHYS 3220	PhD, Astronomy and Astrophysics, University of Toronto (Canada) BS, Physics, University of Toronto (Canada)	
Assistant Professor, FT	PHYS 4410	PhD, Physics, New York University BS, Physics, Rutgers University	

Total FTE (full-time equivalent) needed to support the proposed program

Faculty: 6.25
Staff: .10
Administrators: .06

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

No new faculty, staff, or administrative personnel are needed. The supporting faculty FTE noted above was computed as follows. First, a Clemson faculty FTE has a 4 course "total" load. The faculty teaching load in the Department of Teaching and Learning is approximately 40% of each faculty member's total load (with 10% and 50% being dedicated to service and research, respectively). At 40%, this leads to an average of 1.6 courses per semester per FTE. With the equivalent of about 10 3-credit courses each academic year in the curriculum, this leads to the need for 6.25 FTE faculty to support the program.

The College of Education has a staff advisor and a registration scheduler who already work with the Science Teaching program. Adding 1-3 additional students will mean a negligible difference of workload. Similarly, the College of Science, which houses the Department of Physics, also has a staff advisor and registration scheduler for science content courses. Faculty in both Education and Science are already teaching the courses that the program comprises. Given the modest enrollment of the science teaching programs, this concentration addition will not result in additional sections of courses; thus, no new faculty, staff, administrative personnel, or sections of courses are needed.

Resources

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.

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

Students request journal articles through interlibrary loan and are emailed in 2-3 days. Reference librarians assist students by telephone, text, instant message and in-person consultation 79 hours per week. In addition to annual expenditures, current Library policy allocates additional funds for the exclusive purchase of materials for newly approved programs, if needed. No new funding is required to support the library and learning resources.

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

Books and Articles not owned by Clemson University Libraries: Students may use the PASCAL Delivers service to borrow books from any college or university in South Carolina. Requests are made through the Clemson University Libraries home page and delivered to a participating library. Students can borrow up to 25 books for six weeks, with an additional three-week renewal period.

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

Articles owned by Clemson University Libraries: Students requiring articles from print journals owned by the Library may request a scanned copy via http://www.clemson.edu/culib/forms/secure/ill/emp/dd-rp.php. Articles not available from Clemson University Libraries: Students also have free access to interlibrary loan to request copies of articles from journals not available at Clemson. Students must create an account prior to borrowing via the following website: http://libguides.clemson.edu/ill.

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

Student Support Services

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

In addition to library and learning resources, a number of academic and student support services are available to students at Clemson University:

- **Clemson Computing and Information Technology (CCIT) –** Provides a leading-edge integrated information environment integral to learning and research. Graduate students may (but are not limited to) take advantage of services such as Clemson email account, emergency text messages, mobile guidebooks, video conferencing, web development, and data storage. Help services are available via phone, email, or online chat.
- **Student Accessibility Services** – Graduate Students may register with Student Accessibility Services to use services such as academic access letters, assistive technology, communication services, test proctoring center and electronic textbooks.
- **Center for Career and Professional Development** – Clemson University is dedicated to engaging students in career development that will empower them to successfully pursue their educational and professional goals. Services provided by the career center include career workshops, resume writing, career development, job search assistance, and networking.
- **International Services** – The Office of Global Engagement's International Services area works with incoming international students to provide valuable information, service and advice to meet their unique needs. International Services is a valuable resource for international students' immigration, employment, and support needs, and works to create a welcoming, positive environment for Clemson's international student population to help them meet their academic and research goals while making sure their personal goals are taken into consideration.
- **Counseling and Psychological Services (CAPS)** – Counseling and Psychological Services (CAPS), the mental health department of Student Health Services, offers a wide array of services along a continuum of intensity for various psychological issues.
- **Clemson University Writing Center** – The goal of the writing center is to help all members of the Clemson community become more confident and effective writers.
- **Clemson Online** – Clemson Online staff are dedicated to ensuring that all online students have access to the same resources and support that a first-class Clemson education comprises for students enrolled in programs having in-person modalities. Clemson University is devoted to ensuring an innovative and substantive educational experience for all students.

There are no new services need to support the proposed program.

Physical Resources/Facilities

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

All physical facilities (e.g., offices, classrooms, computing/IT equipment) needed to support the program are already in existence and associated with the current degree programs in the Department of Teaching and Learning.

Equipment

Identify new instructional equipment needed for the proposed program.

All instructional equipment needed to support the program is already in existence and associated with the current degree programs in the Department of Teaching and Learning.

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

The BA in Science Teaching already offers a Physics concentration. The coursework in both education and physics are already offered regularly. The addition of a BS degree in Science Teaching with a concentration in Physics should not impact BA program enrollment, as they ultimately target two different audiences (The BA being for those students interested in pursuing two majors—BA Science Teaching and BA Physics). The BA will continue to target current students seeking to double major, while the BS will target incoming (new and transfer) students interested in a more streamlined single major. Our faculty colleagues in the College of Science, who provide the physics curricular components, support the addition of the BS in Science Teaching with a Physics concentration for students who choose not to double major.

Financial Support

Sources of Financing for the Program by Year												
	1st		2nd		3rd		4th		5th		Grand Total	
Category	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**
Tuition Funding	$0	$0	$16,555	$16,555	$16,886	$16,886	$17,223	$17,223	$17,568	$17,568	$68,232	$68,232
Program-Specific Fees	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Special State Appropriation	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Reallocation of Existing Funds	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Federal, Grant, or Other Funding	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$16,555**	**$16,555**	**$16,886**	**$16,886**	**$17,223**	**$17,223**	**$17,568**	**$17,568**	**$68,232**	**$68,232**
Estimated Costs Associated with Implementing the Program by Year												
	1st		2nd		3rd		4th		5th		Grand Total	
Category	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**	**New**	**Total**
Program Administration and Faculty/Staff Salaries	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Facilities, Equipment, Supplies, and Materials	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Library Resources	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Other (specify)	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Net Total (Sources of Financing Minus Estimated Costs)	**$0**	**$0**	**$16,555**	**$16,555**	**$16,886**	**$16,886**	**$17,223**	**$17,223**	**$17,568**	**$17,568**	**$68,232**	**$68,232**

Note: New costs - costs incurred solely as a result 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

Provide an explanation for 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.

The above table is in reference to the impact of the new Physics concentration. Tuition revenue is calculated using the Undergraduate Tuition Rate at $541 per credit hour, totaling $16.2K in Year 2 and $17.5K by Year 5. As noted in the enrollment projections, there is no anticipated enrollment in Year 1, therefore there is no corresponding tuition revenue. New students will be added to existing sections of courses already taught; therefore, no new faculty are required. Because there are no additional faculty, staff, or other operational costs, there are no expenses associated with the modification. There are no other impacts to other programs, services, or facilities.

Evaluation and Assessment

Program Objectives	Student Learning Outcomes Aligned to Program Objectives	Methods of Assessment
The Science Teaching BS will produce graduates who have a deep understanding of their content knowledge, of the students they will teach, of the profession , and of theory and practices to effectively teach and assess science to high school students.	Preservice teachers understand and articulate the knowledge and practices of science and engineering. They connect important core ideas, science and engineering practices, and crosscutting concepts in their field.	Praxis Subject Matter Assessments--either 5235, 5245, or 5265--according to their concentration. Students are prepared to earn broad field certification, even though they have specializations. Science courses required align with the content required by NSTA and their content analysis form.
	Effective teachers of science are capable of planning equitable and culturally-responsive units of study that include appropriate connections to science practices and crosscutting concepts. They are able create quality lesson plans by identifying appropriate goals consistent with the knowledge of how students learn and best practices in science education. Plans reflect the selection of phenomena that can be investigated and are appropriate to the social context of the classroom and community. Candidates have a positive impact on student learning and are able to develop and administer assessments and analyze assessment results to inform planning and teaching.	Students will demonstrate their ability to plan a unit in their science methods course (EDSC 4470). The components of the unit align with multiple NSTA indicators. Students will show they can plan for safety and implement science safely during instruction. Safety is measure in unit planning as well as in student teaching. This will be captured in the Student Teaching Observation Form as a part of EDSC 4470. Students must demonstrate their impact on K12 student learning in the following areas: conceptual change, inquiry, nature of science. They must collect student data, analyze the findings, and reflect on how instruction might be modified in the future. This is accomplished in EDSC 4570 via a Student Learning Work Sample.
	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	Students will demonstrate their ability to plan a unit in their science methods course (EDSC 4470). The components of the unit align with multiple NSTA indicators.

	maintain equipment and chemicals as relevant to their fields of licensure.	Students will show they can plan for safety and implement science safely during instruction. Safety is measure in unit planning as well as in student teaching. This will be captured in the Student Teaching Observation Form as a part of EDSC 4470. Students must demonstrate their impact on K12 student learning in the following areas: conceptual change, inquiry, nature of science. They must collect student data, analyze the findings, and reflect on how instruction might be modified in the future. This is accomplished in EDSC 4570 via a Student Learning Work Sample.
	Candidates engage in critical self-reflection and strive to continuously improve their instructional effectiveness. They participate in professional development opportunities to deepen their knowledge and practice. They identify with and conduct themselves as part of the science education community.	Students will show they can plan for safety and implement science safely during instruction. Safety is measure in unit planning as well as in student teaching. This will be captured in the Student Teaching Observation Form as a part of EDSC 4470. As reported in their Professional Development Form, students are required to attend and reflect on four professional development activities (outside of the normal curriculum). Two should be in their content discipline and two in science education.

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.

In accordance with Clemson University policy, all academic degree programs conduct annual self-assessments and performance reviews of program outcomes and student learning objectives. Findings are reviewed by the Department Chair and Graduate Program committee to ensure program quality. Findings are also shared through University assessment data collection mechanism so that appropriate assessment coordinators at the College and University levels are apprised of results. The assessment data will be used to ensure we are meeting the program objectives and student learning outcomes. While the Office of Institutional Effectiveness utilizes several forms of graduates' employment incomes past graduation, we will also be conducting a series of surveys (ie. Exit, alumni, employer, etc.) to track the employment of our students after their graduation.

All of Clemson College of Education initial licensure programs use the SC academic standards as the clear set of shared goals and expectations for the knowledge, skills, and practices K-12 students need in the various disciplines to be college and career ready. These standards are embedded in the coursework for all the programs.

Likewise, State academic standards are incorporated in all corresponding teacher preparation programs. Our education students focus specifically on the standards of their discipline (science, math, English/Language arts, modern language, social studies), but we also place a heavy emphasis on

integration of multiple disciplines. In our unit and lesson planning assignments, students are encouraged to make connections to other disciplines in their planning. Student Learning Outcomes and Expectations for the BA Modern Languages Education graduates are outlined in the table above.

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

All assignments and key assessments related to candidate learning outcomes will be evaluated. The College of Education's assessment and accreditation system, Anthology, will maintain longitudinal candidate data. This system allows faculty, the program coordinator, students, and stakeholders to assess candidate performance, effect continuous improvement of the program, and meet accreditation and reporting needs.

Entering academic credentials for program participants will be analyzed and evaluated to determine potential strengths or concerns related to background information or previous undergraduate majors. The following program outcomes will be analyzed annually and across time:

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

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

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

To that end, we will conduct formative and summative evaluations to provide timely information to our leadership team at Clemson, to partner districts, and to CHE and SCDE to identify successes and address challenges.

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 College of Education (COE) will seek and maintain unit accreditation as an Educator Preparation Provider (EPP) under our state entered partnership accreditation organization, the Council for the Accreditation of Educator Preparation (CAEP). CAEP provides unit-wide accreditation for initial and advanced licensure programs in the COE. Expenses associated with CAEP accreditation (annual fees, trainings, site visits, data management systems, etc.) are borne by the College's administrative budget, not by individual program budgets. The COE completed their last accreditation review in 2021 and is not

scheduled to complete the next one until 2028. All our EPP programs seek program review and program recognition as stated above.

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

☒Yes

☐No

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

Candidates will have clinical experiences throughout their undergraduate studies, gradually increasing in scope and responsibility, with placements in classrooms, schools and districts that have longstanding commitments to high quality educational experiences for all children. By the end of program of study, candidates recommended for certification will have a strong base of disciplinary/content knowledge, classroom management skills, pedagogical and professional skills and a deep understanding of foundational issues related to academic success and educational opportunities.

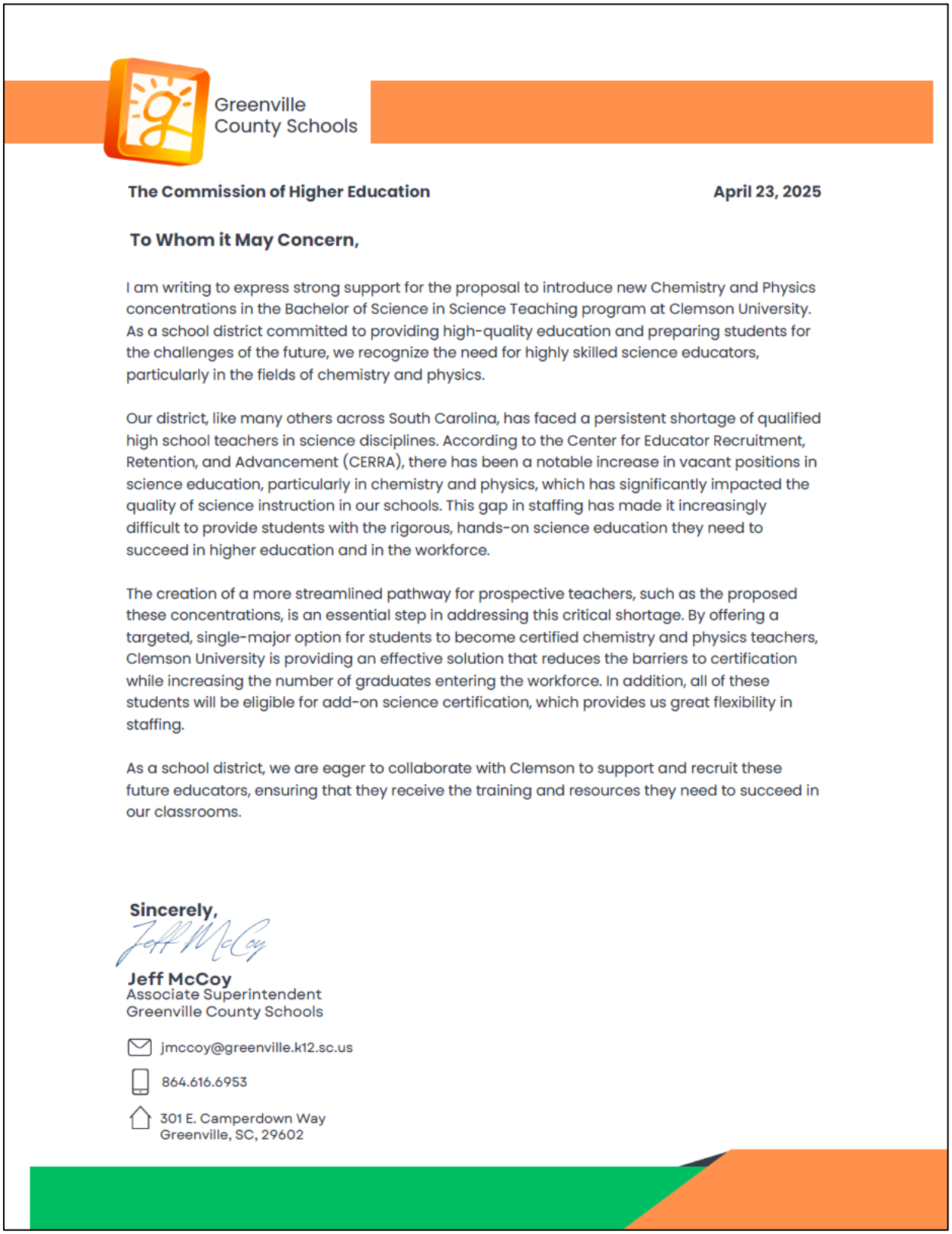
If the program is an Educator Preparation Program, does the proposed certification area require national recognition from a Specialized Professional Association (SPA)? If yes, describe the institution's plans to seek national recognition, including the expected timeline.

☒Yes

☐No

This program will seek state-level recognition from SCDE using 2020 national standards developed by the National Science Teacher Association and the Association for Science Teacher Education. Section IV will outline the standards and key assessments the program will use to meet those standards. The state does not charge a fee to review programs for the purposes of program recognition.

Appendix A. Letter of Support-Greenville County Schools



Greenville
County Schools

The Commission of Higher Education **April 23, 2025**

To Whom it May Concern,

I am writing to express strong support for the proposal to introduce new Chemistry and Physics concentrations in the Bachelor of Science in Science Teaching program at Clemson University. As a school district committed to providing high-quality education and preparing students for the challenges of the future, we recognize the need for highly skilled science educators, particularly in the fields of chemistry and physics.

Our district, like many others across South Carolina, has faced a persistent shortage of qualified high school teachers in science disciplines. According to the Center for Educator Recruitment, Retention, and Advancement (CERRA), there has been a notable increase in vacant positions in science education, particularly in chemistry and physics, which has significantly impacted the quality of science instruction in our schools. This gap in staffing has made it increasingly difficult to provide students with the rigorous, hands-on science education they need to succeed in higher education and in the workforce.

The creation of a more streamlined pathway for prospective teachers, such as the proposed these concentrations, is an essential step in addressing this critical shortage. By offering a targeted, single-major option for students to become certified chemistry and physics teachers, Clemson University is providing an effective solution that reduces the barriers to certification while increasing the number of graduates entering the workforce. In addition, all of these students will be eligible for add-on science certification, which provides us great flexibility in staffing.

As a school district, we are eager to collaborate with Clemson to support and recruit these future educators, ensuring that they receive the training and resources they need to succeed in our classrooms.

Sincerely,

Jeff McCoy
Associate Superintendent
Greenville County Schools

jmccoy@greenville.k12.sc.us

864.616.6953

301 E. Camperdown Way
Greenville, SC, 29602

Appendix B. Letter of Support-School District of Pickens County

School District of Pickens County

Engaging today. Empowering Tomorrow

April 24, 2025

To Whom It May Concern:

I am writing to express strong support for the proposal to introduce new Chemistry and Physics concentrations in the Bachelor of Science in Science Teaching program at Clemson University. As a school district committed to providing high-quality education and preparing students for the challenges of the future, we recognize the need for highly skilled science educators, particularly in the fields of chemistry and physics.

Our district, like many others across South Carolina, has faced a persistent shortage of qualified high school teachers in science disciplines. According to the Center for Educator Recruitment, Retention, and Advancement (CERRA), there has been a notable increase in vacant positions in science education, particularly in chemistry and physics, which has significantly impacted the quality of science instruction in our schools. This gap in staffing has made it increasingly difficult to provide students with the rigorous, hands-on science education they need to succeed in higher education and in the workforce.

The creation of a more streamlined pathway for prospective teachers, such as the proposed these concentrations, is an essential step in addressing this critical shortage. By offering a targeted, single-major option for students to become certified chemistry and physics teachers, Clemson University is providing an effective solution that reduces the barriers to certification while increasing the number of graduates entering the workforce. In addition, all of these students will be eligible for add-on science certification, which provides us great flexibility in staffing.

As a school district, we are eager to collaborate with Clemson to support and recruit these future educators, ensuring that they receive the training and resources they need to succeed in our classrooms.

Sincerely,

Danny Rogers

Danny Rogers
Executive Director of Human Resources

School District of Pickens County
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Section I: Coversheet

Name of Program

Science Teaching: Teaching Area - Chemistry, BS
Science Teaching: Teaching Area - Physics, BS

Name of College or University

Clemson University

Date of Submission

5/15/2025

Electronic or Hand-written Signature of CEO of College/University

Proposal Contact Person Name	Michelle Cook
Title	Senior Associate Dean, College of Education
Phone Number	864-656-5119
Email Address	mcook@clemson.edu

Section III: South Carolina Provider Requirements

South Carolina Provider Requirements Chart

Description of the ways in which the program will meet all applicable South Carolina Provider Requirements as outlined in the South Carolina Educator Preparation Guidelines: Standards, Policies, and Procedures, including the following:

State Statutes and Regulations	Description
1.1 National Provider Standards Pursuant to SBE Regulation 43-90, the EPP must ensure that it meets all national provider standards adopted by the SBE.	The College of Education (COE) will maintain unit accreditation as an Educator Preparation Provider under our state entered partnership accreditation organization, the Council for the Accreditation of Educator Preparation (CAEP). COE completed their last accreditation review in 2021 and is not scheduled to complete the next review until 2028. All our EPP programs (initial and advanced) seek program review aligned with CAEP standards.
1.2 Criminal Records Check and Fingerprinting Requirements Pursuant to S.C. Code Ann. § 59-25-115, the EPP must ensure that each educator candidate completes the fingerprint-based criminal history review process and is approved by the SCDE prior to beginning the clinical or student teaching experience. The provider must advise each candidate that prior arrests or convictions of a serious nature could affect the individual's opportunity to complete the clinical experience and qualify for teacher certification.	Pursuant to S.C. Code Ann. § 59-25-115, candidates' background will be screened and approved through a South Carolina Law Enforcement Division (SLED) check prior to entering the first field experience. Candidates' background will be screened by the Federal Bureau of Investigation and approved by the SCDE prior to entering the clinical experience. All candidates will be advised that prior arrests or convictions could affect the individual's ability to complete the clinical experience and qualify for certification in South Carolina.
1.3 Read to Succeed Pursuant to S.C. Code Ann. § 59-155-180, the EPP must ensure that all candidates enrolled in pre-service teacher education programs, including MAT degree programs, complete a sequence in literacy that must be approved prior to implementation and aligned with relevant literacy competencies and SCDE policies. The provider must verify on the recommendation for certification that each candidate has completed the appropriate Read to Succeed course sequence as part of the institution's approved program.	Candidates in Clemson's Secondary Science Teaching program must complete two approved literacy courses that align with South Carolina's Read to Succeed guidelines. The South Carolina Department of Education requires a minimum grade of C in all Read to Succeed courses. Candidates who do not earn at least a C in any of these required courses will not be eligible for licensure. Clemson has submitted the following courses (May 2025) to fulfill this requirement within the candidates' program of study. -EDLT 4800, Foundations of Adolescent Literacy (aligned with 1.1., 1.2, 1.3, 2.9, 4.2, 4.3, 4.4, 4.5, 4.6, 4.7, 5.1, 5.2, 5.3) -EDLT 4980, Content Area Reading and Writing for Middle and Secondary Teachers (aligned with 2.1, 2.2, 2.3, 2.4, 2.5, 2.6, 2.7, 2.8, 3.1, 3.2, 3.3, 3.4, 4.1, 6.1, 6.2, 6.3, 6.4)

State Statutes and Regulations	Description
1.4 Assisting, Developing, and Evaluating Professional Teaching (ADEPT) Pursuant to S.C. Code Ann. § 59-26-30(B), the EPP must ensure through coursework and field and clinical experiences that candidates know and apply the qualities of effective educators as articulated in the ADEPT performance standards for classroom teachers and service professionals. During field and clinical experiences, candidates must be evaluated relative to these standards and provided with formative and summative feedback. As supplemented by SBE Regulation 43-205.1, the provider must have an ADEPT implementation plan approved by the SCDE and submit annual assurances and candidate performance data according to published deadlines. The EPP must ensure that each candidate recommended for certification has successfully completed all requirements of the appropriate pre-service ADEPT evaluation process and maintain evidence of candidate performance during the pre-service evaluation process	Clemson's College of Education's assessment system for initial educator preparation programs effectively incorporates all components of the Expanded ADEPT competencies and the South Carolina Teaching Standards (SCTS) domains. The COE submits annual assurances to the SCDE based upon our ADEPT implementation plan and will ensure that candidates recommended for certification complete all requirements. **Instruction** is covered beginning with ED 1050 Orientation to Education, where students are introduced to the SCTS framework. In EDSC 4270 Teaching Secondary Science, instruction is further developed through activities such as the Evidence of Student Learning assessment, Formative Lesson Observations, and a Final Evaluation. The domain is emphasized even more extensively in EDSC 4470 Teaching Internship in Secondary Science, which includes the same assessments and observations, along with Mid-Term and Final Evaluations. In the EDSC 4570 Secondary Science Capstone Seminar, instruction is reinforced through the Evidence of Student Learning assessment. **Planning** is first addressed in ED 1050 Orientation to Education through the SCTS Orientation. This domain is then explored in EDSC 4270 Teaching Secondary Science and EDSC 4470 Teaching Internship in Secondary Science through similar assessments, lesson observations, and evaluations. The EDSC 4570 Secondary Science Capstone Seminar continues to support planning via the Evidence of Student Learning assessment. **Environment** is also introduced in ED 1050 Orientation to Education during the SCTS Orientation. It is built upon in EDSC 4270 Teaching Secondary Science, where students complete the Evidence of Student Learning assessment, undergo Formative Lesson Observations and a Final Evaluation, and develop a Classroom Plan. This focus continues in EDSC 4470 Teaching Internship in Secondary Science, with ongoing assessment and observation throughout the internship experience. **Professionalism** is an important focus starting in ED 1050 Orientation to Education, where it is introduced during the SCTS Orientation. In EDSC 4270 Teaching Secondary Science, professionalism is assessed through the Evidence of Student Learning assessment, Formative Lesson Observations, and the Final Evaluation. In the culminating experience, EDSC 4470 Teaching Internship in Secondary Science, professionalism is evaluated through a comprehensive process including the same assessments and observations, as well as a Dispositions assessment to gauge the intern's professional behavior and growth.

State Statutes and Regulations	Description
	The COE is effectively implementing the Expanded ADEPT system, including the South Carolina Teaching Standards (SCTS) rubric, in field and clinical experiences. SCTS Domains are integrated in field experiences for all initial programs using the following assessments: -Formative Lesson Observation Form (field and clinical experience) -Summative Lesson Observation Form (clinical experience) -Evidence of Student Learning assessment (clinical experience) -Unit Plan and Unit Plan Evaluation (clinical experience) -Mid-Term Evaluation (clinical experience) -Final Evaluation (field and clinical experience) **South Carolina Teaching Standards (SCTS) Domains** -Candidates submit an Evidence of Student Learning assessment to Anthology. The Evidence of Student Learning assessment is aligned to the following SCTS Domains: Planning, Instruction, Environment, and Professionalism. All data will be downloaded to Excel spreadsheets to aggregate and summarize. -Formative and Summative Lesson Observations are submitted to Anthology by the university supervisor and cooperating teacher. -Formative and summative lesson observations are aligned to the following SCTS Domains: Planning, Instruction, Environment, and Professionalism. All data will be downloaded to Excel spreadsheets to aggregate and summarize. -Candidates submit all lesson plans to Anthology. All lesson and unit plans are aligned with the South Carolina College-and-Career-Ready Standards and with the following SCTS Domains: Planning, Instruction, and Environment. -Mid-Term and Final Evaluations are submitted to Anthology by the university supervisor. Mid-Term and Final Evaluations are aligned to the following SCTS Domains: Planning, Instruction, Environment, and Professionalism. All data will be downloaded to Excel spreadsheets to aggregate and summarize. **Clinical Practice: Formal Assessments and Assistance** -University Supervisors: meet with candidates a minimum of seven times in accordance with state guidelines. The university supervisor is required to meet with the candidate and cooperating teacher within the first two weeks of the internship. -Formal Observations: University supervisors conduct a minimum of three formative observations and minimum of one summative observation (minimum of four formal

State Statutes and Regulations	Description
	observations). Cooperating teachers conduct a minimum of two formative observations and a minimum of one summative observation (minimum of three formal observations). -Seminars: Candidates' clinical experience is held in conjunction with a faculty led seminar. Expanded ADEPT and the South Carolina Teaching Standards (SCTS) domains and standards are discussed in context. -Self-reflection: Candidates reflect on the clinical experience and self-assess their understanding of each of the SCTS standards. In addition to their reflection and self-assessment, candidates provide artifacts that represent their understanding and learning. **Clinical Experiences include a minimum of the following:** **Candidate Orientation** -Review College of Education Field and Clinical Experience Handbook, required assignments and forms, review the SCTS standards and rubric, professionalism expectations, South Carolina Code of Conduct, Model Code of Ethics, Safe Schools Climate Act and Bullying. **Cooperating Teacher Orientation** -Review SCTS rubric, required assignments and forms, required technology (Anthology), and program-specific expectations **University Supervisor Orientation** -Review SCTS rubric (new supervisors undergo extensive training and must pass the required certification examination), required assignments and forms, required technology (Anthology), and program-specific expectations
1.5 Program for Assisting, Developing, and Evaluating Principal Performance (PADEPP) Pursuant to S.C. Code Ann. § 59-24-40 and Regulation 43-165.1 , the EPP offering preparation programs for school and district leaders must ensure through coursework and field and clinical experiences that candidates know and apply the qualities of effective leaders as articulated in the PADEPP performance standards. All leadership candidates must demonstrate a knowledge and understanding of the standards and the performance criteria and the translation of these into everyday practice. Candidates must also demonstrate the ability to	Not applicable

State Statutes and Regulations	Description
design a personal professional development plan on the basis of the state performance standards and the school strategic plan.	
1.6 Family, School, and Community Engagement Pursuant to SC Code Ann. § 59-28-140, the EPP must ensure that all candidates in teacher and principal preparation programs know, understand, and are able to apply best practices in family, school, and community engagement.	Candidates are asked in methods courses to determine how they will build relationships, engage, communicate with parents as part of long-range planning assignments. Candidates demonstrate that communication and collaboration with parents during their student teaching internships and are asked to reflect on the quality and success of that engagement during capstone seminars. The COE assesses candidates' engagement of family, school, and community during the midterm and final evaluation conferences (part of the Professionalism domain).
1.7 Safe Schools Climate Act Pursuant to S.C. Code Ann. § 59-63-110 et seq., the EPP must ensure that all certification programs, initial and advanced, include instruction as it relates to the Safe Schools Climate Act and the identification and prevention of harassment, intimidation, and bullying.	Candidates in all initial licensure programs have the knowledge, skills, and dispositions to identify and prevent bullying, harassment, and intimidation in schools. All initial licensure candidates attend a mandatory Orientation session in preparation for the internship. During the Orientation, students are introduced to and have opportunities to discuss in-depth bullying, harassment, and intimidation and the effects of those acts. Students are also introduced to the Safe Schools Climate Act. All initial licensure candidates demonstrate their knowledge and skills related to this act through completion of the Safe School Climate Act and Bullying Awareness Quiz during the Internship Orientation.
1.8 Education and Economic Development Act (EEDA) Pursuant to S.C. Code Ann. § 59-59-10 et seq., the EPP must provide candidates in programs preparing teachers, school counselors, and school leaders with training in career exploration as appropriate to their roles and professional responsibilities.	Candidates in the teacher education preparation programs have the knowledge, skills, and dispositions to achieve EEDA performance standards for teacher education programs. **Alignment of EEDA Performance Standards with Program Coursework and Assessments** Standard 1: Career Guidance Career guidance is introduced in ED 1050: Orientation to Education, where candidates are exposed to the foundational principles of supporting students' career development. This standard is reinforced during the Internship Orientation and further addressed in EDSC 4570: Secondary Science Capstone Seminar. In this capstone course, candidates' understanding and application of career guidance practices are evaluated through a Verification of Exposure to South Carolina Standards as well as a Professionalism and Career Rubric, which assess readiness to support students' academic and career planning. Standard 2: Career Clusters and Individual Graduation Plan (IGP) The concept of career clusters and the use of Individual Graduation Plans are introduced in ED 1050 and expanded upon in EDSC 4570. In both courses, candidates engage with the Verification of Exposure to South Carolina Standards. In the capstone course, their

State Statutes and Regulations	Description
	understanding is further measured through a Pre-Post Assessment, ensuring that they can effectively guide students in selecting career pathways aligned with their interests and educational goals. Standard 3: Career Guidance Model An overview of South Carolina's career guidance model is presented in ED 1050, with continued application in EDSC 4570. Candidates demonstrate familiarity with the model through the Verification of Exposure to South Carolina Standards and a Pre-Post Assessment, ensuring that teacher candidates understand how to integrate career guidance into instructional practice and student advisement. Standard 4: Character Education Character education is addressed through foundational discussions in ED 1050 and further developed in EDSC 4270: Teaching Secondary Science. In ED 4270, candidates are expected to design classroom environments that support character development. Assessment of this standard occurs through the Verification of Exposure to South Carolina Standards and the creation of a Classroom Plan, where candidates outline strategies for fostering integrity, respect, and responsibility in the classroom. Standard 5: Contextual Teaching The concept of contextual teaching is introduced in ED 1050 and fully realized in practice during EDSC 4470: Teaching Internship in Secondary Science. Candidates are assessed on their ability to connect instruction to real-world applications through the Verification of Exposure to South Carolina Standards, Summative Lesson Observations, and both the Mid-Term and Final Evaluations during their internship. Standard 6: Cooperative Learning Cooperative learning strategies are introduced in ED 1050 and further implemented in EDSC 4470. During the internship, candidates design and deliver instruction that includes cooperative learning techniques. Assessment tools include the Verification of Exposure to South Carolina Standards, as well as Summative Lesson Observations, and the Mid-Term and Final Evaluations, which evaluate candidates' ability to foster collaboration among students.

State Statutes and Regulations	Description
	Standard 7: Accommodating Diverse Learning Styles The importance of addressing diverse learning styles is emphasized in ED 1050 and further developed in EDSC 4270, EDSC 4470, and EDSC 4570. Candidates demonstrate this competency through differentiated instruction strategies and adaptive planning. Assessments include the Verification of Exposure to South Carolina Standards, a Lesson Plan Template and Rubric used in EDSC 4270 and 4570, and Summative Lesson Observations along with Mid-Term and Final Evaluations during the internship in EDSC 4470.
1.9 Student Health and Fitness Act Pursuant to SC Code Ann. § 59-10-10 et seq., the EPP must ensure that candidates in Early Childhood and Elementary Education programs receive instruction in the importance of physical activity for young children and the relationship of activity and good nutrition to academic performance and healthy lifestyles as part of the Student Health and Fitness Act of 2005.	Not applicable
1.10 Admission to Undergraduate Teacher Preparation Programs Pursuant to S.C. Code Ann. § 59-26-30, the EPP must ensure that candidates meet the basic skills assessment requirement or a qualifying exemption adopted by the SBE for full admission to an undergraduate teacher preparation program.	Candidates admitted to initial educator preparation programs demonstrate basic academic proficiencies by meeting the standards set by the State Board of Education on Praxis Core Academic Skills for Educators tests or on the SAT or ACT. All students seeking to complete the BS Secondary Science programs must meet all admission requirements and be formally admitted before they are allowed to enroll in restricted professional courses. Students must fulfill Clemson University admission requirements to enroll in general education or program specific courses. Transfer students are required to have a 2.75 cumulative GPA in all previous college-level work. They must also be in good standing and eligible to return to the institution last attended. Students are admitted to the professional level during their second year of enrollment in the university if they meet the following requirements: -at least 60 credit hours of coursework; - passing scores on all areas of the Praxis CORE; (Praxis CORE may be exempted if the student meets minimum ACT or SAT requirements as determined by the South Carolina State Department of Education); -minimum cumulative GPA of 2.75.

State Statutes and Regulations	Description
	Additional requirements after entering the professional level: -attendance at the Internship/Teacher Residency Orientation; -Criminal Background Check and Full Disclosure Statement from the State Law Enforcement Division (SLED); -meet with academic advisors at least twice per academic year to assure that they are in meeting the above requirements.
1.11 PK-12 Academic Standards In support of S.C. Code Ann. § 59-18-300, the EPP must ensure that candidates are prepared to plan and implement instruction aligned with South Carolina PK–12 academic standards for the subject area and grade span of their certification program.	Candidates in all certification programs know, understand, and can apply the South Carolina College-and-Career-Ready PK-12 Academic Standards in the area in which they seek certification. Candidates in all programs align their lesson plans and lessons with the South Carolina College-and-Career-Ready Academic Standards for their certification area. The Lesson Plan Template and the Evidence of Student learning assessment demonstrate this alignment.
1.12 Tuberculosis Screening and Evaluation Pursuant to S.C. Code Ann. § 44-29-150 and Department of Health and Environmental Control (DHEC) Regulation 61-22, the EPP must ensure that candidates, as defined in DHEC regulation, are screened prior to field placement and that prescribed documentation is maintained. Regulation 61-22 (II)(E) includes student teachers in the definition of "employee," and Section (III)(C)(2) addresses required documentation.	Candidates are required to undergo a Tuberculosis screening and evaluation prior to entering field and clinical experiences. The COE ensures that this screening is aligned with Department of Health and Environmental Control (DHEC) regulations. The COE maintains updated and accurate files of candidates' TB test results.

SBE Guidelines and SCDE Policy	Description
2.1 Field and Clinical Experiences The EPP must ensure that all field and clinical experiences meet the requirements established by the SBE. In this context, field experiences refer to school-based opportunities and activities prior to the full student-teaching or clinical experience. The	Field and clinical experiences are critical components of the College of Education Science Education teaching degree program. PK-12 candidates are prepared for teaching positions primarily high school science classrooms by engaging in diverse clinical experiences with diverse populations. Through clinical experiences, teacher candidates are provided opportunities to apply their knowledge, skills, and dispositions in a variety of settings. Candidates participate in numerous and diverse clinical experiences focusing on a variety of settings beginning as soon as they enroll in the program. South Carolina's minimum requirement for field hours prior to student teaching is 100 hours for undergraduate programs and 75 hours for graduate programs. All candidates are also required to complete a culminating,

SBE Guidelines and SCDE Policy	Description
clinical experience refers to the full-time, culminating experience of a program preparing candidates for certification in teaching, service, or leadership fields.	semester-long teaching internship in a public-school setting, which exceeds the state's certification requirements of 60 days. Altogether, Science Teaching candidates spend at least 600 hours or more engaged in clinical experiences throughout their course of study. The Office of Field and Clinical Partnerships and Outreach in the College of Education coordinates field and clinical experiences for candidates. Our candidates apply and reflect on their content, professional, and pedagogical knowledge, skills, and dispositions in a variety of field experiences prior to their student teaching clinical experience. Field experiences represent a variety of early and ongoing school-based opportunities in which candidates may observe, assist, tutor, instruct, or conduct applied research. These field experiences align to and extend beyond South Carolina's Expanded ADEPT (Assisting, Developing, and Evaluating Professional Teaching) performance standards into practice in school settings. All field experiences are monitored to ensure that candidates can work with diverse students. Candidates are surveyed at the completion of each field experience to determine the diversity of students with whom the candidates observed/worked to ensure a diverse spectrum of future experiences. All student teacher/teacher residency candidates work under the mentorship of a cooperating teacher and are assigned a university supervisor mentor/evaluator. Teachers selected to serve as cooperating teachers must have an interest in supervising candidates as part of their responsibility to the profession; possess full certification for the area in which they are teaching; have taught successfully for a minimum of three years; have the capacity to mentor with skills in observation, providing feedback, holding professional conversations, and working collaboratively; be aware of new teaching methods, flexible, and receptive to new ideas; demonstrate the ability to have a positive impact on student learning; have a positive attitude toward their profession, the candidate, and others; work with candidates and supervisors using the Expanded ADEPT Performance Standards; and be recommended by a school or district administrator. University Supervisors must have a minimum of a master's degree, three years of experience teaching in a PK-12 school setting or institution of higher education, a solid foundation in professional education, and a strong academic background in the certification area of the assigned candidates. Additionally, all University Supervisors must take and pass South Carolina's SC Teaching Standards 4.0 Rubric certification exam. Science Teaching Initial Licensure Program, BS During their field experiences (prior to student teaching), candidates have opportunities to work one-on-one with middle or high school students (ED 1050), engage in purposeful, challenging, diverse, and

SBE Guidelines and SCDE Policy	Description
	supervised field-based observations, tutoring, and co-teaching across elementary, middle to high school settings (EDF 3350, EDSC 3270, EDSC 4270), service learning (EDF 3350), and lesson planning, assessment development, data analysis, differentiated teaching practices, and reflective practices in high school settings (EDSC 4470). In all that they do throughout their coursework and associated clinical experiences, candidates focus on and develop their content knowledge, pedagogical content knowledge, and their pedagogical knowledge.

	Description of Field Experiences and Clinical Practice The teacher preparation program offers a structured sequence of field experiences and clinical practice opportunities that span across multiple academic years, progressively building candidates' skills in real-world educational settings. These experiences total 646 hours and are intentionally designed to align with developmental stages of teacher education. In ED 1050: Orientation to Education, typically taken during the freshman year, candidates complete 10 hours of tutoring in public schools. This initial experience is intended to introduce candidates to the profession and familiarize them with the behaviors and learning needs of middle or high school students. During the sophomore year, students enroll in EDF 3350: Adolescent Growth and Development, where they complete 6 hours of observation focused on adolescent development. These observations are conducted in middle or high school settings, allowing candidates to examine the cognitive, emotional, and social development of students during adolescence. In the junior year, candidates participate in EDSC 3270: Practicum in Secondary Science, a more immersive experience requiring 45 hours of engagement. During this practicum, candidates collaborate closely with mentor teachers and university faculty to conduct focused classroom observations, tutor individual students, and lead instructional activities across middle to high school science classrooms. By the senior year, students enroll in EDSC 4270: Teaching Secondary Science, where they complete an additional 45 hours in public high school classrooms. In this experience, candidates observe instruction, assist with classroom activities, and co-teach alongside a cooperating teacher, further refining their teaching competencies. The culminating field experience occurs in EDSC 4470: Teaching Internship in Secondary Science (student teaching), where candidates spend 540 hours in a high school classroom. Under the joint supervision of a cooperating teacher and a university supervisor, candidates take on increasing instructional responsibilities, eventually managing the full range of teaching duties. Altogether, these field experiences ensure candidates are thoroughly prepared for the teaching profession through a total of 646 hours of guided, reflective, and developmentally appropriate clinical practice. Procedures for Monitoring Candidates' Progress, BA *Transition Point 1: Admission to Secondary Science Education*

SBE Guidelines and SCDE Policy	Description
	Initial Undergraduate Level: 1. The undergraduate candidate applies to Clemson University Office of Admissions. Upon acceptance, the College of Education receives a list of students identifying themselves as pre-professional majors in Secondary Science Education. 2. Pre-professional majors are assigned an academic advisor who facilitates and monitors progression through the program. 3. Pre-professional majors complete a minimum of 60 credit hours in general education coursework and pre-professional coursework with a minimum GPA of 2.75, successfully pass the Praxis Core (Praxis CORE may be exempted if the student meets minimum ACT or SAT requirements as determined by the South Carolina State Department of Education). 4. Pre-professional majors meet with an academic advisor and apply to the professional level prior to the semester they wish to enter the program. 5. The academic advisor verifies the satisfactory completion of all requirements with the applicant and recommends the candidate to the professional education program. 6. Advancement to the professional level is noted in the candidate's records so that course holds can be lifted which allows students to take professional level courses. *Transition Point 2: Admission to Internship* 1. All candidates complete the State Department of Education online application for a South Carolina Teaching Certificate and schedule an appointment for electronic fingerprinting prior to their clinical experience. 2. The Certification Coordinator monitors and verifies the completion of all requirements for admission to the clinical experience. 3. The Office of Field and Clinical Partnerships and Outreach begins to coordinate the clinical experiences placement process. 4. Candidate records indicate the candidate is ready to register for clinical experience course(s) and accompanying seminar course(s). 5. The Office of Field and Clinical Partnership and Outreach finalizes clinical experience sites, cooperating teachers, and university supervisors. Candidates are notified of their clinical experience the semester prior to the beginning of their student teaching. *Transition Point 3: Completion on Internship* 1. Candidate's progress during the internship is monitored and assessed by the university supervisor and cooperating teacher for required coursework completion.

SBE Guidelines and SCDE Policy	Description
	2. The Office of Field and Clinical Partnership and Outreach verifies and documents the completion of all requirements for the internship. *Transition Point 4: Program Completion and Recommendation for Certification* 1. The candidate submits a Graduation Application prior to graduation. 2. The Office of Field and Clinical Partnerships and Outreach verifies that each candidate has passed the required Praxis II exams (content and PLT). 3. The Office of the Registrar audits the candidate's completion of program requirements. 4. The Office of Field and Clinical Partnerships and Outreach, specifically, the Certification Coordinator, submits the names and appropriate documentation to the South Carolina State Department of Education for initial licensure.
2.2 Professional Ethics and Decision-making The EPP must ensure through coursework and field and clinical experiences that candidates are provided with instruction in professional ethics as well as ethical principles and decision-making aligned with the standards of the Model Code of Ethics for Educators.	Candidates are informed in writing of the state Standards of Conduct (59-25-160; 59-25-530; 63-17-1060) required for initial certification. All initial licensure candidates attend a mandatory Orientation session in preparation for the internship; during the meeting the South Carolina Code of Conduct is addressed. Additionally, candidates are provided with a Code of Conduct Handout and the handout is reviewed. The EPP formally assesses candidates' understanding of the South Carolina Code of Conduct as part of the Student Teaching Orientation. Throughout their clinical experiences, the EPP monitors candidates' application of professional standards (SC Code of Conduct, Model Code of Ethics) using a Disposition assessment, the Midterm Evaluation, and a Final Evaluation. Per state standards and requirements, all candidates will be provided with instruction in ethical principles and decision making aligned with the Model Code of Ethics for Educators. All candidates will be required to attend a mandatory orientation to the clinical experience that will address the following: Model Code of Ethics; responsibility to the profession; responsibility for professional competence; responsibility to students; responsibility to the school community; responsible and ethical use of technology; and the South Carolina Code of Conduct, including just cause for disciplinary action. Candidates will also be provided with instruction as required in the Safe Schools Climate Act during the clinical experience orientation meeting. The EPP formally assesses candidates' understanding of the Model Code of Ethics. This is done at the conclusion of candidates' Orientation to Student Teaching/Residency meeting. The EPP will also follow-up with candidates during their clinical experience to ensure application of material.

SBE Guidelines and SCDE Policy	Description
	Additionally, prior to the clinical experience, all candidates will be notified of the SCDE fingerprint-based criminal background check requirements, SCDE timelines for completion of the application and clearance process, and of the potential adverse impact of criminal charges on approval for student teaching and eligibility for certification.
2.3 Initial Program Approval The EPP must ensure that initial program proposals meet the specialty area program approval standards adopted by the SBE for the specific certification field. All new program proposals must gain SBE approval prior to implementation, recruitment, and admission of candidates.	The COE will meet the SPA (NSTA) standards for this program. Key assessments and rubrics, along with alignment to NSTA standards are included in Section IV of this proposal.
2.4 Continuing Program Recognition The EPP must ensure that each continuing program is fully recognized by a specialized accrediting agency, specialized professional association, or the state. Providers must gain full recognition for all SBE-approved educator preparation programs.	While the BS Science Teaching programs in Chemistry and Physics are new, the COE has an existing BS Science Teaching program in Biology and existing BA Science Teaching programs in Biology, Chemistry, and Physics that are recognized via state-level review using NSTA standards. Our most recent program recognition reports were submitted to the state in March 2025.
2.5 Verification of Candidate Program Completion for Educator Certification The EPP must submit the verification of program completion for certification for each candidate seeking South Carolina educator certification. The verification signifies that a candidate has successfully completed all requirements of the provider's approved program for educator certification. The provider must also indicate if, at the time of program completion, the candidate has	Teacher candidates in the secondary science program are required to achieve qualifying scores on specific Praxis assessments to demonstrate content knowledge and pedagogical readiness for licensure. For candidates seeking certification in Chemistry, the required Praxis exam is Praxis Chemistry (5246), with a qualifying score of 146. Those pursuing certification in Physics must take the Praxis Physics (5266) exam and earn a qualifying score of 145. In addition to content-specific assessments, all candidates must also complete the Principles of Learning and Teaching: Grades 7–12 (5624), for which the qualifying score is 157.

SBE Guidelines and SCDE Policy	Description
earned qualifying scores on required subject area and pedagogy exam assessments for certification purposes.	
2.6 Annual Reporting The EPP must ensure that it meets annual reporting requirements and deadlines related to Title II, accreditation, program recognition, ADEPT, and any other assurances that may be required by the SBE.	The EPP will ensure it meets all annual reporting requirements related to this program, such as SACSCOC Annual Report, Title II Report, CAEP Annual Report, SCDE ADEPT Annual Assurances Report, etc.
2.7 *Technology for the Enhancement of PK–12 Student Learning* The EPP must ensure that candidates are prepared to model and apply technology standards to enhance the learning of all PK–12 students. Candidates should be able to design instruction, implement lessons and activities, and assess learning using varied technology platforms, tools, and digital resources. Because South Carolina school districts must have approved instructional technology plans aligned with the standards of the International Society for Technology in Education (ISTE), EPPs must utilize the ISTE standards in preparing candidates for field and clinical experiences and classroom practice.	This educator preparation program integrates the ISTE National Educational Technology Standards throughout a candidate's time in the program. ISTE Standards are presented in the EDLT 4800, Foundations in Literacy and are added to rubrics throughout the program. ISTE Standards for Educators **Standard 2.1: Learner** and **Standard 2.2: Leader** are addressed in both EDLT 4800 and EDSC 4470. Candidates demonstrate these competencies by engaging with technology-based instructional practices, reflecting on their use in the classroom, and seeking leadership opportunities to enhance student learning. Assignments such as the Tech to Try assignment, Reflections and Connections, and a Final Project in EDLT 4800 provide structured opportunities for growth in these areas. During the teaching internship (EDSC 4470), these competencies are also assessed through Formative and Summative Lesson Observations, as well as the Mid-Term and Final Evaluations conducted by cooperating teachers and university supervisors. **Standard 2.3: Citizen** emphasizes digital responsibility and ethical participation in the digital world. This standard is explored through activities in EDLT 4800 that challenge candidates to consider students' digital citizenship. In EDSC 4470, candidates are expected to model and promote responsible technology use, which is documented through lesson observations and evaluated during their internship assessments. **Standard 2.4: Collaborator** is integrated through collaborative learning tasks and peer feedback activities in EDLT 4800, particularly the Reflections and Connections assignments. During the internship experience in EDSC 4470, candidates are evaluated on their ability to collaborate effectively

SBE Guidelines and SCDE Policy	Description
	with colleagues, students, and mentors. This collaboration is observed and assessed through formal evaluations. **Standard 2.5: Designer** focuses on designing learner-driven, flexible learning environments. In EDLT 4800, candidates use technology to create instructional materials and experiences that accommodate diverse learning needs. The Tech to Try and Final Project provide opportunities for candidates to design and implement technology-enhanced lessons. In EDSC 4470, design elements are evaluated through observed teaching and lesson planning, as well as mid-term and final evaluations. **Standard 2.6: Facilitator** is demonstrated as candidates use technology tools to support student achievement. This occurs through assignments in EDLT 4800 that require candidates to explore and integrate digital tools into their instruction. In the internship, candidates facilitate student learning using technology, which is observed and assessed through lesson observations and formal evaluations. **Standard 2.7: Analyst** is addressed as candidates are expected to use data to inform instruction. In EDLT 4800, candidates analyze data from literacy assessments and reflect on how to adjust instruction accordingly. Similarly, in EDSC 4470, candidates are expected to collect and analyze student learning data to adjust instructional strategies. This standard is evaluated through lesson observations and formal assessments during the internship. Through this integrated approach, the program ensures that candidates are not only competent users of technology but also reflective practitioners who understand how to use digital tools to enhance teaching, learning, and student engagement in meaningful ways.

Section IV: National Accreditor and Specialized Programmatic Association Standards

Please review the assurances below. Providers that have received national accreditation must complete Part A. Providers that have not received national accreditation must complete Part B.

A. National Accreditation: Statement of Accreditation

Program proposals in certification fields that have achieved national recognition (e.g.: NASAD, NASM, etc.) must affirm the following:

☐ I affirm that the program is nationally approved by an accrediting agency recognized by the United States Department of Education or the Council for Higher Education Accreditation, and

☐ I affirm that this proposal includes a letter from the national accreditor.

B. Specialized Programmatic Association Requirements

For Modified Program Proposals Only – Program proposals seeking to <u>modify</u> a program must affirm the following:

☐ I affirm that the institution is seeking to modify a program, and

☐ I affirm that this proposal includes a copy of the most recent specialized programmatic report and any response to conditions in the appendices.

B. Specialized Programmatic Association Requirements (Cont.)

For New Program Proposals Only – Program proposals seeking to add new programs must complete all sections below:

Descriptions of any state or institutional policies that may influence the application of standards.
Clemson University is a state-supported, land-grant institution founded in 1889 located in upstate South Carolina. For more than a century after its opening, the University provides diverse learning, research facilities, and educational opportunities not only for people of the state, but for thousands throughout the country and world. Clemson is accredited by SACS and holds a Carnegie classification of a highest research activity institution (R1). At the undergraduate level, Clemson has more than 80 majors and at the graduate level, more than 130 degree programs. Clemson University College of Education (CoE) is a transformational leader in education across the life-and-career-span. With a particular focus on rural and underserved schools and communities, the college has award-winning programs that prepare teachers, educational specialists, school-and-community-based mental health counselors, human resource professionals and leaders in education and allied fields. Clemson CoE equips students for lives and careers that make a difference. Through innovative educational programming, high-impact research and transformative outreach, the college responds to critical societal and educational issues, such as workforce development; the role of technology in education and society; teacher recruitment and retention; mental health and well-being and leadership development. Clemson CoE leads these vital initiatives as part of Clemson University's land-grant mission to serve the state of South Carolina and beyond. Educator preparation programs in the Clemson College of Education adhere to the South Carolina Educator Preparation Guidelines, Standards, Policies, and Procedures, a series of documents approved by the State Board of Education. https://ed.sc.gov/educators/educator-preparation/guidelines/ The SC Preparation Guidelines include but are not limited to policy on standards, program content, admissions requirements, clinical experiences requirements, eligibility for certification, accreditation, and program review. In accordance with State guidelines, initial and advanced preparation programs are reviewed by the Council for the Accreditation of Educator Preparation (CAEP). The CoE received full accreditation in its last site visit and review with the current accreditation term expiring in December of 2028. Also, in adherence to state guidelines, the CoE submits Title II, State Assurance, and CAEP review reports annually. Related to SC policies is the use of the Expanded ADEPT (Assisting, Developing, and Evaluating Professional Teaching) process. A collection of ADEPT resources can be found here: https://ed.sc.gov/educators/educator-effectiveness/expanded-adept-resources/https-ed-sc-gov-educators-educator-effectiveness-expanded-adept-resources-educator-evaluation-guidance/.

Descriptions of any state or institutional policies that may influence the application of standards.

The overview found on the page linked above provides the following description:
As part of the Expanded ADEPT system, South Carolina Teaching Standards (SCTS) 4.0 is South Carolina's primary formal evaluation model for classroom-based teachers. The SCTS 4.0 rubric is based on sets of performance standards designed and validated by the National Institute for Excellence in Teaching (NIET) and establishes the expectations for what classroom-based teachers are to know, be able to do, and carry out as an integral part of their practice. These expectations, called the SCTS Indicators, are the foundation for good teaching and are designed to grow classroom-based teachers throughout their career continuum, beginning with teacher preparation and continuing through Induction, summative performance evaluations, and ongoing professional growth and development. A classroom-based teacher's proficiency in each of the standards is expected to occur developmentally and to increase continuously throughout the entirety of the teaching career.

To best prepare candidates for future teaching positions, the Clemson College of Education also utilizes the SCTS 4.0 evaluation instrument. Students are introduced to SCTS indicators and expectations in ED 1050 Orientation to Education. The rubric is then used in their culminating placement as a summative evaluation of their performance and growth.

Descriptions of field and clinical experiences required for the program, including the number of hours for early field experiences and the number of hours/weeks for student teaching or internships.

Undergraduate students in Clemson University's Secondary Science Education program engage in a series of structured field and clinical experiences designed to develop their teaching skills progressively. Beginning with **ED 1050: Orientation to Education**, freshman candidates complete 10 hours of tutoring in public schools, where they gain early exposure to student behaviors and educational settings. In the sophomore year, **ED 3350: Adolescent Growth and Development** involves 6 hours of observation in middle and high school environments, allowing candidates to examine adolescent behavior and development firsthand. As juniors, candidates enroll in **EDSC 3270: Practicum in Teaching Secondary Science**, completing 45 hours of fieldwork that includes collaboration with mentor teachers and university instructors through structured observations, tutoring, and leading instructional activities. During the senior year, **EDSC 4270: Teaching Secondary Science** places candidates in high school science classrooms for an additional 45 hours, where they actively assist and co-teach with their cooperating teachers. The program culminates in **EDSC 4470: Teaching Internship in Secondary Science**, a full-time teaching internship lasting approximately 72 days or 540 hours. In this capstone experience, candidates take on comprehensive teaching responsibilities under the supervision of both a cooperating teacher and a university supervisor, gaining practical experience across diverse student populations and instructional settings.

Chart of Assessments

In this section, list the 6-8 assessments that are being submitted as evidence for meeting the programmatic standards. 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.

	Assessment Title	Form[1]	Course or Timing within the Program[2]
Assessment 1: Content	Praxis II	State licensure test	Students take the Praxis II exams during their senior year, either in the semester before or during their student teaching experience.
Assessment 2: Content	Content Forms/GPA	Transcript review	Admission to professional program and admission to student teaching internship.
Assessment 3: Planning	Unit Plan	Portfolio	Senior Methods – Teaching Secondary Science EDSC 4270
Assessment 4: Instruction	ST Observation Form	Observation	Teaching Internship in Secondary Science EDSC 4470
Assessment 5: Student Learning	Impact on Student Learning	Artifacts and reflection	Capstone Seminar EDSC 4570
Assessment 6: Professional Knowledge and Skills	Professional Development Form	Reflection	Capstone Seminar EDSC 4570
Assessment 7 (Optional)	3D Phenomenon Lesson	3D Lesson Plan	Senior Methods – Teaching Secondary Science EDSC 4270
Assessment 8 (Optional)	Safety Evaluation	Observation	Teaching Internship in Secondary Science EDSC 4470

Relationship of Assessments to Standards

For each program specific standard, identify the assessment(s) that address the standard. One assessment may apply to multiple standards. This alignment should match the standard alignment section in the individual assessment templates and rubrics.

	A 1	***A 2***	***A 3***	***A 4***	***A 5***	***A 6***	***A 7***	***A 8***
Standard 1: Content Knowledge 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.	*x*	*x*				*x*		
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.	*x*	*x*	*x*			*x*		
1c) Demonstrate knowledge of how to implement science standards, learning progressions, and sequencing of science content for teaching their licensure level PK-12 students.	*x*	*x*	*x*			*x*		
Standard 2: Content Pedagogy Preservice teachers will design lessons:								
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.			*x*			*x*		
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.						*x*		
2c) Using engineering practices in support of science learning wherein all students design, construct, test and optimize possible solutions to a problem.						*x*		
2d) Aligning instruction and assessment strategies to support instructional decision making that identifies and addresses student misunderstandings, prior knowledge, and naïve conceptions.			*x*			*x*		
2e) Integrating science-specific technologies to support all students' conceptual understanding of science and engineering.						*x*		
Standard 3: Learning Environments Preservice teachers will:								
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.						*x*		
3b) Plan learning experiences for all students in a variety of environments (e.g., the laboratory, field, and community) within their fields of licensure.						*x*		
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.						*x*		
Standard 4: Safety Preservice teachers will:								

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.			*x*	*x*	*x*			
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).				*x*	*x*			
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.				*x*	*x*			
Standard 5: Impact on Student Learning 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.						*x*	*x*	
5b) Collect, organize, analyze, and reflect on formative and summative evidence and use those data to inform future planning and teaching.							*x*	
5c) Analyze science-specific assessment data based upon student demographics, categorizing the levels of learner knowledge, and reflect on results for subsequent lesson plans.							*x*	
Standard 6: Professional Knowledge and Skills Preservice teachers will:								
6a) Engage in critical reflection on their own science teaching to continually improve their instructional effectiveness.								*x*
6b) Participate in professional development opportunities to deepen their science content knowledge and practices.								*x*
6c) Participate in professional development opportunities to expand their science-specific pedagogical knowledge.								*x*

Use of Assessments

Assessment Templates used in the Continuing Program Review should be submitted as separate documents. Abbreviated versions without data are available for use. No data are required for this documentation.

Planned use of assessment results to improve candidate and program performance

Overview

Program response reports (informing our SACS COC reporting and College of Education unit CAEP report) are reviewed annually as a means to determine program strengths and weaknesses. Often, this occurs in a formal setting at our annual College of Education Retreat. During the last several years, we have made some significant changes to our program that are based on candidate feedback, assessment results, and research data.

Content Knowledge

With assistance from the content alignment matrix, content area faculty, science education faculty, and the state and national standards, we have revised the curriculum plans for all of our majors in an effort to make sure that critical content knowledge is revisited multiple times throughout their college experience. Additionally, we continue to make curriculum revisions with departments that share double majors (e.g. Biological Sciences). Some examples include broadening the physiology courses that can be used to meet the functional biology requirement. We also changed the sequence of courses so genetics comes before evolution which ensures our students have the appropriate prior knowledge. Our candidates continue to excel on the PRAXIS II Content knowledge test, so this provides additional evidence that our candidates are well prepared as they finish our program.

Professional and Pedagogical Knowledge, Skill, and Dispositions

In an effort to improve professional preparation before graduation, we have added several components to our spring callbacks for all majors. These include the following: 1.) a human resources panel from local school districts who address issues of professionalism in the classroom as well as topics around safety (including active shooter situations) in the classrooms; 2.) principal panel from local districts who address transitioning into the classrooms and district requirements in terms of professionalism; 3.) teacher panel from local school districts who focus on strategies for navigating a successful first year as an in-service teacher; 4). a class focused on special education implementation; and 4.) a class focused on strategies for supporting multilingual learners in classrooms. These topics were chosen because of survey feedback from candidates.
Additionally, we are constantly working to ensure high quality placements and are responsive when issues arise. For example, we've had to change the high school placement location because it wasn't meeting the needs of the course or students. We've tried to use these placements to expose students to a wide range of learners, developmental stages, and teaching approaches. This year, we moved our junior placements to a different district. We have developed strong relationships with this district and the district representative and curriculum coordinator have a better understanding of our needs and our expectations for students. Along similar lines in terms of field placements, we have added formal supervision of undergraduate practicum students. Prior to this change, the methods instructors were responsible for this. Without dedicated time for instructors to do this, this was not consistently occurring. This change was due to faculty concerns about how to provide quality feedback to students in the early stages of the program.

Impact on Student Learning

Planned use of assessment results to improve candidate and program performance
With all the accountability pressures on teachers, pre-service programs have had to begin focusing more heavily on student learning and achievement. Although this has always been part of our program, we have been more explicit in integrating how to measure, analyze, and act upon findings related to student learning. This course focuses both on the ways to assess student literacy but also how to integrate literacy into the science content. Additionally, we redesigned the Classroom Learning Environments Course to focus on the needs of our current 9-12 student population. The focus shifted from solely focusing on Classroom Management to thinking about the ways in which science teachers can design their classroom to increase engagement across all students.

Changes of Additions to the Program

Commentary for program (modifications only)

List of Assessments

Please list all assessments required by the institution that align with the Specialty Area Program Approval Standards (i.e., content, pedagogy, etc.)

Assessment 1 – Praxis II

Description of Assessment and Use:

The Praxis II is a series of standardized tests developed and administered by the Educational Testing Service that is used to ensure that teacher candidates meet the requirements for graduation and licensure.

Alignment with Standards:

• Application of Scientific Concepts and Understanding of the Nature of Science (1a)
• Knowledge of Core Concepts, Practices, and Diversity in Science (1b)
• Implementing Science Standards (1c)

Assessment Tool:

Assignment Description

The Praxis II series of assessments is a suite of subject-specific tests designed to evaluate the knowledge and teaching skills of aspiring educators. These tests are a critical component in the teacher certification process across many states and serve to ensure that candidates possess a deep

understanding of the content they plan to teach. The tests are rigorous and aligned with national and state standards for education. They challenge candidates to synthesize their academic training, practical experiences, and pedagogical skills into actionable teaching practices.

Rubric

Not applicable

Assessment 2 – Content Forms/GPA

Description of Assessment and Use:

To be admitted to the professional level, candidates must complete 60 semester hours of education coursework and have a minimum cumulative GPA of 2.75. After admission to the professional level, candidates must maintain a 2.75 GPA to continue in the program's coursework sequence.

Alignment with Standards:

• Application of Scientific Concepts and Understanding of the Nature of Science (1a)
• Knowledge of Core Concepts, Practices, and Diversity in Science (1b)
• Implementing Science Standards (1c)

Assessment Tool:

Assignment Description

To be admitted to the professional level, candidates must complete 60 semester hours of education coursework and have a minimum cumulative GPA of 2.75. After admission to the professional level, candidates must maintain a 2.75 GPA to continue in the program's coursework sequence.

-PHYS 2070/2090 Physics I

Introductory course for students who are not majoring in physical science or engineering. Covers such topics as mechanics, waves, fluids, and thermal physics. Introductory laboratory course for students who are not majoring in physical science or engineering. Covers such topics as mechanics, waves, fluids, and heat.

-PHYS 2080/2100 Physics II

Continuation of PHYS 2070. Covers such topics as electricity, magnetism, electromagnetic waves, optics, and modern physics. Laboratory covers such topics as electricity, magnetism, electromagnetic waves, optics, and modern physics.

-PHYS 2220 Physics III

Topics include wave motion, electromagnetic waves, interference and diffraction, relativity, atomic particles, and atomic and nuclear structure.

-PHYS 3250 Electronics for Physicists

Introduction to experimental modern physics, measurement of fundamental constants, repetition of crucial experiments of modern physics (Stern-Gerlach, Zeeman effect, photoelectric effect, etc.)

-PHYS 3150 Computational Physics

Basic numerical methods important for data interpretation and modeling in physics, such as interpolation, derivatives, integration, solving differential and matrix equations, and Monte Carlo simulation. Methods are applied to physics problems, including realistic projectile motion, harmonic oscillators, chaotic pendulum, nonlinear systems, and Ising model.

-PHYS 3210 Mechanics I
Statics, motions of particles and rigid bodies, vibratory motion, gravitation, properties of matter, flow of fluids.
-PHYS 3110 Theoretical Physics
Survey of methods and techniques of problem-solving in physics. Emphasizes the application of mathematical techniques to the solution of problems of vectors, fields, and waves in mechanics, electromagnetism, and quantum physics.
-PHYS 4410 Electromagnetics I
Study of the foundations of electromagnetic theory. Topics include electric fields, electric potential, dielectrics, electric circuits, solution of electrostatic boundary-value problems, magnetic fields, and magnetostatics.
-PHYS 4550 Quantum Physics I
Discussion of solution of the Schroedinger equation for free particles, the hydrogen atom, and the harmonic oscillator.
-ASTR 1010 Solar System
Descriptive survey of the universe, with emphasis on basic physical concepts and the objects in our solar system.
-CH 3300 Physical Chemistry
One-semester treatment of physical chemistry emphasizing topics that are especially useful in the life sciences, agriculture, and medicine: chemical thermodynamics, equilibrium, solutions, kinetics, electrochemistry, macromolecules, and surface phenomena.
-GEOL 1010/1030 Physical Geology
Study of the minerals and rocks that compose Earth's crust, their origins and transformations. Emphasizes geological processes, both internal and external, by which changes are produced on or in the Earth.
-EDSC 4820 Lab Techniques for Teaching Science
Focuses on basic lab skills needed to plan, prepare, and conduct inquiry-based laboratories and to familiarize pre-service teachers with a variety of scientific equipment and their methodologies. Topics include ways to integrate technology into the classroom, lab safety, and the development of inquiry-based classroom activities.
-BIOL 1030/1050 General Biology I
First in a two-semester sequence. Includes an evolutionary approach to cells, cellular activities, genetics, and animal diversity emphasizing the processes of science. OR
-BIOL 1100 Principles of Biology I
Introductory course designed for students majoring in biological disciplines. Integrates lecture and laboratory and emphasizes a modern, quantitative, and experimental approach to explanations of structure, composition, dynamics, interactions, and evolution of cells and organisms.
-BIOL1040/1060 General Biology II
Continuation of Biol 1030. Includes an evolutionary approach to human anatomy and physiology, plant diversity, morphology, and physiology and principles of ecology. OR
-BIOL 1110 Principles of Biology II
Continuation of Biol 1100, emphasizing the study of plants and animals as functional organisms and the principles of ecology.

-CH 1010 General Chemistry I
Introduction to the elementary concepts of chemistry through classroom and laboratory experience. Emphasizes chemical reactions and the use of symbolic representation, the mole concept and its applications and molecular structure.
-CH 1020 General Chemistry II
Continuation of CH 1010, treating solutions, rates of reactions, chemical equilibrium, electrochemistry, chemistry of selected elements, and an introduction to organic chemistry.

Rubric

Not applicable.

Assessment 3 – 3D Phenomenon Lesson

Description of Assessment and Use:

Assessing 3D phenomenon-based lessons ensures that preservice science teachers can effectively integrate science and engineering practices, cross cutting concepts, and disciplinary core ideas into their teaching, fostering deeper understanding and real-world application of scientific concepts for
their students.

Alignment with Standards:

• Knowledge of Core Concepts, Practices, and Diversity in Science (1b)
• Implementing Science Standards (1c)
• Standards-Based, Student-Centered Science Instruction (2a)
• Alignment of Instruction and Assessment Strategies (2d)
• Appropriate Activities for ALL students (4a)

Assessment Tool:

Assignment Description
In conjunction with your field placement experience, you will plan and implement a 3D Phenomenon-Based lesson. As part of this lesson, you will select a phenomenon connected to a disciplinary core idea (DCI) to explore by using the Science and Engineering Practices (SEPs) with an explicit connection to a Crosscutting Concept (CCC). The selected phenomenon should be engaging, appropriate, and clearly connected to a DCI.
During the implementation of the lesson, you should be facilitating the lesson and supporting students in understanding the phenomenon and DCI by engaging in the SEPs. You should also incorporate an explicit connection a CCC and use it as a lens to understand the phenomenon and DCI.

Rubric

Lesson Component	NSTA Standard	Does not fully meet requirements (1)	Developing (2)	Proficient (3)
Grounding Phenomenon	2a	States a phenomenon.	States a specific phenomenon that is appropriate for the content.	States a specific phenomenon that is engaging and appropriate for the content. The phenomenon is used to understand the content.
Conceptual Goals & Learning Objectives	1c	States specific goals and objectives in some format.	States specific conceptual goals and content and process learning objectives derived from state and national standards.	States specific conceptual goals and content and process learning objectives derived from state and national standards and restated in the students' own words.
Use of SEPs	1b	SEPs are used in the lesson.	SEPs are used to understand the DCI and connects to the CCCs.	SEPs are purposely used to understand the phenomenon and DCI and explicitly connects to the CCCs.
Use of DCIs	1b	DCI is selected for the lesson.	DCI is selected for the lesson and connects the SEPs and CCCs.	DCI is selected for the lesson and explicitly connects to the SEPs and CCCs.

Use of CCCs	1b	CCC(s) selected for the lesson.	CCC(s) selected for the lesson and connects the SEPs and DCIs.	CCC(s) selected for the lesson and explicitly connects the SEPs and DCIs.
Scripting of Lesson	1c	Contains an outline of the lesson and schedule of activities with timeline.	Includes some scripting of the lesson and a timeline of activities containing student expectations, planned questions, plan to ensure participation, and respectful tasks.	Includes a detailed scripting of the lesson and timeline of activities containing student expectations, planned questions, plan to ensure participation, and respectful tasks.
Assessment	2d	Includes some form of assessment of student learning.	Uses at least two assessments throughout the lesson.	Includes at least two assessments. Uses formative assessment throughout.
Safety Considerations	4a	Includes safety considerations specific to lesson, if any.	Includes physical or emotional safety considerations for any classroom or lesson.	Includes both physical and emotional safety considerations for any classroom or lesson.

Supporting Materials	2a	Contains a list of all critical equipment and materials that will be handed out to students.	Contains a detailed description of all equipment. Includes links to all materials (handouts, assessments, instructions) that will be distributed to students.	Contains a detailed description of all equipment. Includes links to all material (handouts, assessments, instructions) that will be distributed to students and notes on when/how materials will be used, as well as any ancillary materials.
References & Resources	2a	Includes a list of links of references and resources.	Includes a descriptive list of references and resources.	Includes an exhaustive and descriptive list of references and resources.

Assessment 4 – ST Observation Form

Description of Assessment and Use:

The South Carolina Teaching Standards 4.0 Rubric is a comprehensive evaluation tool used to assess and support teachers' effectiveness in planning, instruction, environment, and professionalism to ensure high-quality teaching practices.

Alignment with Standards:

• Implementation of appropriate activities for all students (4a)
• Safety guidelines (4b)
• Ethical decision-making (4c)

Assessment Tool:

Assignment Description

The South Carolina Teaching Standards 4.0 Rubric is a framework designed to evaluate, guide, and enhance the effectiveness of classroom teachers in the state. It provides a structured approach to observing and assessing teacher performance, focusing on four critical domains essential for

fostering student success: Planning, Instruction, Environment, and Professionalism. The SC Teaching Standards 4.0 Rubric uses a performance-level scale (e.g., Exemplary, Proficient, Needs Improvement, and Unsatisfactory), providing specific, observable criteria for each level. By offering
detailed feedback, the rubric serves not only as an evaluation tool but also as a guide for professional development, encouraging teachers to reflect on their practice and pursue targeted improvement.

Rubric:

South Carolina Teaching Standards Rubric				
Instruction				
	Exemplary (4)	Proficient (3)	Approaching Proficient	Unsatisfactory (1)
Description of Qualifying Measures	Consistent Evidence of Student Centered Learning/Student Ownership of Learning - Teacher Facilitates the Learning	Some Evidence of Student Centered Learning/Student Ownership of Learning - Teacher Facilitates the Learning	Moving Towards Student Centered Learning/Student Ownership of Learning- Consistent Reliance on Teacher Direction.	Heavy Emphasis on Teacher Direction - Minimal Evidence of Student Ownership of Learning

Standards and Objectives
 	
ADEPT 1B; 2A; 4A; 7A; InTASC4
 	
Score:
	• All learning objectives and state content standards are explicitly communicated.
	• Sub-objectives are aligned and logically sequenced to the lesson's major objective.
	• Learning objectives are: (a) consistently connected to what students have previously learned, (b) know from life experiences, and (c) integrated with other disciplines.
	• Expectations for each student's performance are clear, demanding, and high.
	• State standards are displayed, referenced throughout the lesson with explanations.
	• There is evidence that most students demonstrate mastery of the objective.
		• Most learning objectives and state content standards are communicated.
		• Sub-objectives are mostly aligned to the lesson's major objective.
		• Learning objectives are connected to what students have previously learned.
		• Expectations for each student's performance are clear, demanding, and high.
		• State standards are displayed and referenced in the lesson.
		• There is evidence that most students demonstrate mastery of the objective.
			• Some learning objectives and state content standards are communicated.
			• Sub-objectives are sometimes aligned to the lesson's major objective.
			• Learning objectives are not clearly connected to what students have previously learned.
			  ◦ Expectations for student performance are clear.
			  ◦ State standards are appropriately displayed
			• There is evidence that some of the students demonstrate mastery of the objective.
				• Learning objectives and state content standards are not communicated.
				• Sub-objectives are rarely aligned to the lesson's major objective.
				• Learning objectives are rarely connected to what students have previously learned.
				  ◦ Expectations for student performace are vague.
				  ◦ State standards are not appropriately displayed.
				• There is evidence that few students demonstrate mastery of the objective.

Motivating Students
 	
ADEPT 1E; 4B,C; 6C; 8B; 9A; InTASC 4,5 EEDA 5
 	
Score:
	• The teacher consistently and explicitly organizes the content so that it is personally meaningful, relevant and intellectually engaging to all students.
	• The teacher consistently develops learning experiences where inquiry, curiosity and exploration are valued.
	  ◦ The teacher consistently reinforces and rewards effort.
		• The teacher often organizes the content so that it is personally meaningful, relevant and intellectually engaging to most students.
		• The teacher often develops learning experiences where inquiry, curiosity and exploration are valued.
		  ◦ The teacher regularly reinforces and rewards effort.
			• The teacher sometimes organizes the content so that it is personally meaningful, relevant and intellectually engaging to some students.
			• The teacher sometimes develops learning experiences where inquiry, curiosity and exploration are valued.
			  ◦ The teacher sometimes reinforces and rewards effort.
				• The teacher rarely organizes the content so that it is personally meaningful, relevant and intellectually engaging to students.
				• The teacher rarely develops learning experiences where inquiry, curiosity and exploration are valued.
				  ◦ The teacher rarely reinforces and rewards effort.

Presenting Instructional Content
 	
ADEPT 5A,C; 6B,C; inTASC 5
 	
Score:
	Presentation of content always includes:
	● visuals that establish: the purpose of the lesson, preview the organization of the lesson, and include reflective internal summaries of the lesson.
	● Explicit examples, illustrations, analogies, and labels for new concepts and ideas.
	● modeling by the teacher to demonstrate his or her performance expectations throughout the lesson.
	  ● consise communication.
	  ● logical sequencing and segmenting,
	  ● all essential information.
	  ● no irrelevant, confusing, or non-essential information.
		Presentation of content most of the time includes:
		● visuals that establish the purpose of the lesson, preview the organization of the lesson, and include reflective internal summaries of the lesson.
		● examples, illustrations, analogies, and labels for new concepts and ideas.
		● modeling by the teacher to demonstrate his or her performance expectations.
		  ● consise communication.
		  ● logical sequencing and segmenting,
		  ● all essential information.
		● no irrelevant, confusing, or non-essential information.
			Presentation of content sometimes includes:
			● visuals that establish the purpose of the lesson, preview the organization of the lesson, and include internal summaries of the lesson.
			● examples, illustrations, analogies, and labels for new concepts and ideas.
			● modeling by the teacher to demonstrate his or her performance expectations.
			  ● consise communication.
			  ● logical sequencing and segmenting,
			  ● all essential information.
			  ● no irrelevant, confusing, or non-essential information.
				Presentation of content rarely includes:
				● visuals that establish the purpose of the lesson, preview the organization of the lesson, and include internal summaries of the lesson.
				● examples, illustrations, analogies, and labels for new concepts and ideas.
				● modeling by the teacher to demonstrate his or her performance expectations.
				  ● consise communication.
				  ● logical sequencing and segmenting,
				  ● all essential information.
				  ● no irrelevant, confusing, or non-essential information.

Lesson Structure and Pacing
 	
ADEPT 6C; 9B,C; inTASC 5,7
 	
Score:
	● The lesson starts promptly.
	● The lesson's structure is coherent, with a significant beginning, middle, and end, and extended time for reflection.
	● Pacing is brisk, and provides many opportunities for individual students who progress at different learning rates.
	  ● Routines for distributing materials are seamless.
	  ● No instructional time is lost during transitions.
		● The lesson starts promptly.
		● The lesson's structure is coherent, with a beginning, middle, and end, and reflection.
		● Pacing is appropriate, and sometimes provides opportunities for students who progress at different learning rates.
		  ● Routines for distributing materials are efficient.
		  ● Little instructional time is lost during transitions.
			● The lesson starts somewhat promptly.
			● The lesson's structure is coherent, with a beginning, middle, and end.
			● Pacing is appropriate for some students and rarely provides opportunities for students who progress at different learning rates.
			  ● Routines for distributing materials are efficient.
			  ● Instructional time is lost during transitions.
				● The lesson does not start promptly.
				● The lesson has a structure, but may be missing closure or introductory elements.
				● Pacing is appropriate for few students, and does not provide opportunities for students who progress at different learning rates.
				  ● Routines for distributing materials are inefficient.
				  ● Considerable time is lost during transitions.

Activities and Materials **ADEPT 2B; 5B,C; 6C; InTASC 5,8** **Technology EEDA 5, 6, 7** **Score:**	**Activities and materials include all of the following:** ● support the lesson objectives. ● are challenging. ● sustain students' attention. ● elicit a variety of thinking. ● provide time for reflection. ● are relevant to students' lives. ● provide opportunities for student to student interaction. ● induce student curiosity and suspense. ● provide students with choices. ● incorporate multimedia and technology which enhances student learning and thinking. ● incorporate resources beyond the school curriculum texts (e.g., teacher made materials, manipulatives, resources from museums, cultural centers, etc). ● In addition, sometimes activities are game-like, involve simulations, require creating products, and demand self- direction and self-monitoring.	**Activities and materials include most of the following:** ● support the lesson objectives. ● are challenging. ● sustain students' attention. ● elicit a variety of thinking. ● provide time for reflection. ● are relevant to students' lives. ● provide opportunities for student to student interaction. ● induce student curiosity and suspense. ● provide students with choices. ● incorporate multimedia and technology. ● incorporate resources beyond the school curriculum texts (e.g., teacher made materials, manipulatives, resources from museums, cultural centers, etc).	**Activities and materials include some of the following:** ● support the lesson objectives. ● are challenging. ● sustain students' attention. ● elicit a variety of thinking. ● provide time for reflection. ● are relevant to students' lives. ● provide opportunities for student to student interaction. ● induce student curiosity and suspense. ● provide students with choices. ● incorporate multimedia and technology. ● incorporate resources beyond the school curriculum texts (e.g., teacher made materials, manipulatives, resources from museums, cultural centers, etc).	**Activities and materials include few of the following:** ● support the lesson objectives. ● are challenging. ● sustain students' attention. ● elicit a variety of thinking. ● provide time for reflection. ● are relevant to students' lives. ● provide opportunities for student to student interaction. ● induce student curiosity and suspense. ● provide students with choices. ● incorporate multimedia and technology. ● incorporate resources beyond the school curriculum texts (e.g., teacher made materials, manipulatives, resources from museums, etc).
Questioning **ADEPT 5C; 7A; InTASC 5, 8** **Score:**	**Teacher questions are varied and high quality providing a consistently balanced mix of question types:** •knowledge and comprehension, •application and analysis, and •creation and evaluation. ● Questions are consistently purposeful and coherent. ● A high frequency of questions is asked. ● Questions are consistently sequenced with attention to the instructional goals. ● Questions regularly require active responses (e.g., whole class signaling, choral responses, written and shared responses, or group and individual answers). ● Wait time (3-5 seconds) is consistently provided. ● The teacher calls on volunteers and non-volunteers, and a balance of students based in ability and sex.	**Teacher questions are varied and high quality providing a balanced mix of question types:** •knowledge and comprehension, •application and analysis, and •creation and evaluation. ● Questions are usually purposeful and coherent. ● A moderate frequency of questions asked. ● Questions are often sequenced with attention to the instructional goals. ● Questions sometimes require active responses (e.g., whole class signaling, choral responses, or group and individual answers). ● Wait time is often provided. ● The teacher calls on volunteers and non-volunteers, and a balance of students based in ability and sex.	**Teacher questions are varied and high quality providing for some, but not all, question types:** •knowledge and comprehension, •application and analysis, and •creation and evaluation. ● Questions are sometimes purposeful and coherent. ● A moderate frequency of questions asked. ● Questions are sometimes sequenced with attention to the instructional goals. ● Questions sometimes require active responses (e.g., whole class signaling, choral responses, or group and individual answers). ● Wait time is sometimes provided. ● The teacher calls on volunteers and non-volunteers, and a balance of students based in ability and sex.	**Teacher questions are inconsistent in quality and include few question types:** •knowledge and comprehension, •application and analysis, and •creation and evaluation. ● Questions are random and lack coherence. ● A low frequency of questions asked. ● Questions are rarely sequenced with attention to the instructional goals. ● Questions rarely require active responses (e.g., whole class signaling, choral responses, or group and individual answers). ● Wait time is inconsistently provided. ● The teacher mostly calls on volunteers and high ability students.

	• Students generate higher order questions that lead to further inquiry and self-directed learning.	• Students generate questions that lead to further inquiry and self-directed learning.		
Academic Feedback **ADEPT 7B,C; InTASC 6, 8** **Score:**	• Oral and written feedback is consistently academically focused, frequent, and high quality. • Feedback is frequently given during guided practice and homework review. • The teacher circulates to prompt student thinking, assess each student's progress, and provide individual feedback. • Feedback from students is consistently used to monitor and adjust instruction. • Teacher engages students in giving specific and high quality feedback to one another.	• Oral and written feedback is mostly academically focused, frequent, and mostly high quality. • Feedback is often given during guided practice and homework review. • The teacher circulates regularly during instructional activities to support engagement, and monitor student work. • Feedback from students is regulary used to monitor and adjust instruction. • Teacher engages students in giving feedback to one another.	• Oral and written feedback is sometimes academically focused, frequent, and mostly high quality. • Feedback is sometimes given during guided practice and homework review. • The teacher circulates sometimes during instructional activities to support engagement, and monitor student work. • Feedback from students is sometimes used to monitor and adjust instruction.	• The quality and timeliness of feedback is inconsistent. • Feedback is rarely given during guided practice and homework review. • The teacher circulates during instructional activities, but monitors mostly behavior • Feedback from students is rarely used to monitor or adjust instruction.
Grouping Students **ADEPT 5B,C; InTASC 3** **EEDA 6** **Score:**	• The instructional grouping arrangements (either whole class, small groups, pairs, individual; hetero-or homogenous ability) consistently maximize student understanding and learning efficiency. • All students in groups know their roles, responsibilities, and group work expectations. • All students participating in groups are held accountable for group work and individual work. • Instructional group composition is varied (e.g., race, gender, ability,	• The instructional grouping arrangements (either whole class, small groups, pairs, individual; hetero-or homogenous ability) adequately enhance student understanding and learning efficiency. • Most students in groups know their roles, responsibilities, and group work expectations. • Most students participating in groups are held accountable for group work and individual work. • Instructional group composition is varied (e.g., race, gender, ability, and age) to most of the	• The instructional grouping arrangements (either whole class, small groups, pairs, individual; hetero-or homogenous ability) sometimes enhance student understanding and learning efficiency. • Some students in groups know their roles, responsibilities, and group work expectations. • Some students participating in groups are held accountable for group work and individual work. • Instructional group composition is varied (e.g., race, gender, ability, and	• The instructional grouping arrangements (either whole class, small groups, pairs, individual; hetero-or homogenous ability) inhibit student understanding and learning efficiency. • Few students in groups know their roles, responsibilities, and group work expectations. • Few students participating in groups are held accountable for group work and individual work. • Instructional group composition remains unchanged irrespective of the learning, and instructional goals of a lesson.

	and age) to best accomplish the goals of the lesson. ● Instructional groups facilitate opportunities for students to set goals, reflect on, and evaluate their learning.	time, accomplish the goals of the lesson.	age) to sometimes, accomplish the goals of the lesson.	

Teacher Content Knowledge **ADEPT 5A; 6A,B,C; InTASC 4, 8** **Score:**	● Teacher displays extensive content knowledge of all the subjects she or he teaches. ● Teacher consistently implements a variety of subject- specific instructional strategies to enhance student content knowledge. ● The teacher consistently highlights key concepts and ideas, and uses them as bases to connect other powerful ideas. ● Limited content is taught in sufficient depth to allow for the development of understanding.	● Teacher displays accurate content knowledge of all the subjects she or he teaches. ● Teacher regularly implements subject-specific instructional strategies to enhance student content knowledge. ● The teacher regularly highlights key concepts and ideas, and uses them as bases to connect other powerful ideas.	● Teacher displays adequate content knowledge of all the subjects she or he teaches. ● Teacher sometimes implements subject-specific instructional strategies to enhance student content knowledge. ● The teacher sometimes highlights key concepts and ideas, and uses them as bases to connect other powerful ideas.	● Teacher displays under-developed content knowledge in several subject areas. ● Teacher rarely implements subject-specific instructional strategies to enhance student content knowledge. ● The teacher does not understand key concepts and ideas in the discipline, and therefore presents content in an unconnected way.
Teacher Knowledge of Students **ADEPT 5A; 6B; InTASC 1, 2** **EEDA 7** **Score:**	● Teacher practices display understanding of each student's anticipated learning difficulties. ● Teacher practices consistently incorporate student interests and cultural heritage. ● Teacher consistently provides differentiated instructional methods and content to ensure children have the opportunity to master what is being taught.	● Teacher practices display understanding of most student's anticipated learning difficulties. ● Teacher practices regularly incorporate student interests and cultural heritage. ● Teacher regularly provides differentiated instructional methods and content to ensure children have the opportunity to master what is being taught.	● Teacher practices display understanding of some student's anticipated learning difficulties. ● Teacher practices sometimes incorporate student interests and cultural heritage. ● Teacher sometimes provides differentiated instructional methods and content to ensure children have the opportunity to master what is being taught.	● Teacher practices demonstrate minimal knowledge of student's anticipated learning difficulties. ● Teacher practices rarely incorporate student interests and cultural heritage. ● Teacher practices demonstrate little differentiation of instructional methods or content.

Thinking **ADEPT 5B; InTASC 5, 8** **EEDA 5** **Score:**	**The teacher thoroughly teaches three types of thinking:** ● **analytical thinking where students analyze, compare and contrast, and evaluate and explain information.** ● **practical thinking where students use, apply, and implement what they learn in real-life scenarios.** ● **creative thinking where students create, design, imagine, and suppose.** ● **research-based thinking where students explore and review a variety of ideas, models, and solutions to problems.** ● **instructional groups facilitate opportunities for students to set goals, reflect on and evaluate their learning.** **The teacher consistently provides opportunities where students:** ○ **generate a variety of ideas and alternatives.** ● **analyze problems from multiple perspectives and viewpoints.** ● **monitior their thinking to insure that they understand what they are learning, are attending to critical information, and are aware of the learning strategies that they are using and why.**	**The teacher thoroughly teaches two types of thinking:** ● **analytical thinking where students analyze, compare and contrast, and evaluate and explain information.** ● **practical thinking where students use, apply, and implement what they learn in real-life scenarios.** ● **creative thinking where students create, design, imagine, and suppose.** ● **research-based thinking where students explore and review a variety of ideas, models, and solutions to problems.** ● **instructional groups facilitate opportunities for students to set goals, reflect on and evaluate their learning.** **The teacher regularly provides opportunities where students:** ○ **generate a variety of ideas and alternatives.** ● **analyze problems from multiple perspectives and viewpoints.**	**The teacher attempts to teach one type of thinking but does not thoroughly teach at least one type of thinking:** ● **analytical thinking where students analyze, compare and contrast, and evaluate and explain information.** ● **practical thinking where students use, apply, and implement what they learn in real-life scenarios.** ● **creative thinking where students create, design, imagine, and suppose.** ● **research-based thinking where students explore and review a variety of ideas, models, and solutions to problems.** ● **instructional groups facilitate opportunities for students to set goals, reflect on and evaluate their learning.** **The teacher sometimes provides opportunities where students:** ○ **generate a variety of ideas and alternatives.** ○ **analyze problems from multiple perspectives and viewpoints.**	**The teacher implements no learning experiences that thorougly teach any type of thinking.** **The teacher provides few opportunities where students:** ○ **generate a variety of ideas and alternatives.** ● **analyze problems from multiple perspectives and viewpoints.**
Problem Solving **ADEPT 5B; InTASC 5, 8** **Score:**	**The teacher implements activities that teach and reinforce 3 or more of the following problem solving types:** ● **Abstraction** ● **Categorization** ● **Drawing Conclusions/Justifying** ● **Solutions** ● **Predicting Outcomes** ● **Observing and Experimenting** ● **Improving Solutions** ● **Identifying Relevant/Irrelevant Information** ● **Generating Ideas** ● **Creating and Designing**	**The teacher implements activities that teach and reinforce 2 of the following problem solving types:** ● **Abstraction** ● **Categorization** ● **Drawing Conclusions/Justifying** ● **Solutions** ● **Predicting Outcomes** ● **Observing and Experimenting** ● **Improving Solutions** ● **Identifying Relevant/Irrelevant Information** ● **Generating Ideas** ● **Creating and Designing**	**The teacher implements activities that teach and reinforce 1 of the following problem solving types:** ● **Abstraction** ● **Categorization** ● **Drawing Conclusions/Justifying** ● **Solutions** ● **Predicting Outcomes** ● **Observing and Experimenting** ● **Improving Solutions** ● **Identifying Relevant/Irrelevant Information** ● **Generating Ideas** ● **Creating and Designing**	**The teacher implements no activities that teach and reinforce any of the following problem solving types:** ● **Abstraction** ● **Categorization** ● **Drawing Conclusions/Justifying** ● **Solutions** ● **Predicting Outcomes** ● **Observing and Experimenting** ● **Improving Solutions** ● **Identifying Relevant/Irrelevant Information** ● **Generating Ideas** ● **Creating and Designing**

Evidence Notes:

Planning				
	Exemplary (4)	Proficient (3)	Approaching Proficient (2)	Unsatisfactory (1)
Description of Qualifying Measures	Consistent Evidence of Student Centered Learning/Student Ownership of Learning - Teacher Facilitates the Learning	Some Evidence of Student Centered Learning/Student Ownership of Learning - Teacher Facilitates the Learning	Moving Towards Student Centered Learning/Student Ownership of Learning- Consistent Reliance on Teacher Direction.	Heavy Emphasis on Teacher Direction - Minimal Evidence of Student Ownership of Learning
Instructional Plans ADEPT 1A,B,C; 2A,2B; InTASC 6, 7, 8 Score:	Instructional plans include: ● measureable and explicit goals aligned to state content standards. •activities, materials, and assessments that: •are aligned to state standards. •are sequenced from basic to complex. •build on prior student knowledge, are relevant to students' lives, and integrate other disciplines. •provide appropriate time for student work, student reflection, and lesson and unit closure. ● evidence that plan is appropriate for the age,	Instructional plans include: ● goals aligned to state content standards. •activities, materials, and assessments that: •are aligned to state standards. •are sequenced from basic to complex. •build on prior student knowledge. •provide appropriate time for student work, and lesson and unit closure. ● evidence that plan is appropriate for the age, knowledge, and interests of most learners.	Instructional plans include: ● some goals aligned to state content standards. •activities, materials, and assessments that: •are sometimes aligned to state standards. •are sometimes sequenced from basic to complex. ● sometimes build on prior student knowledge. ● sometimes provide appropriate time for student work, and lesson and unit closure. ● some evidence that plan is appropriate for the age, knowledge, and interests of most learners.	Instructional plans include: ● few goals aligned to state content standards. •activities, materials, and assessments that: •are rarely aligned to state standards. •are rarely logically sequenced. •rarely build on prior student knowledge. •inconsistently provide time for student work, and lesson and unit closure. ● little evidence that plan is appropriate for the age, knowledge, and interests of the learners. ● little evidence that the plan provides some opportunities to accomodate individual student needs.

	knowledge, and interests of all learners. ● evidence that the plan provides regular opportunities to accomodate individual student needs.	● evidence that the plan provides some opportunities to accomodate individual student needs.	● evidence that the plan provides some opportunities to accomodate individual student needs.	
Student Work **ADEPT 1C,D; 2C; 3B InTASC 6, 7, 8** **Score:**	**Assignments require students to:** ● organize, interpret, analyze, synthesize, and evaluate information rather than reproduce it. ● draw conclusions, make generalizations, and produce arguements that are supported through extended writing. ● connect what they are learning to experiences, observations, feelings, or situations significant in their daily lives both inside and outside of school.	**Assignments require students to:** ● interpret and analyze information rather than reproduce it. ● draw conclusions and support them through writing. ● connect what they are learning to prior learning and some life experiences.	**Assignments require students to:** ● interpret information rather than reproduce it. ● sometimes draw conclusions and support them through writing. ● sometimes connect what they are learning to prior learning.	**Assignments require students to:** ● mostly reproduce information. ● rarely draw conclusions and support them through writing. ● rarely connect what they are learning to prior learning or life experiences.
Assessment **ADEPT 2C; 3A,B,C; 7B;** **InTASC 6, 7, 8** **Score:**	**Assessment Plans:** ● are consistently aligned with state content standards. ● have clear appropriate measurement criteria. ● measure student performance in more than three ways (e. g., in the form of a project, experiment, presentation, essay, short answer, or multiple choice test.) ● require extended written tasks. ● are portfolio-based with clear illustrations of student progress toward state content standards. ● include descriptions of how assessment results will be	**Assessment Plans:** ● are aligned with state content standards. ● have clear measurement criteria. ● measure student performance in more than two ways (e.g., in the form of a project, experiment, presentation, essay, short answer, or multiple choice test.) ● require written tasks. ● include performance checks throughout the school year.	**Assessment Plans:** ● are sometimes aligned with state content standards. ● have measurement criteria. ● measure student performance in more than one way (e.g., in the form of a project, experiment, presentation, essay, short answer, or multiple choice test.) ● require limited written tasks. ● include performance checks but may not be monitored consistently.	**Assessment Plans:** ● are rarely aligned with state content standards. ● have ambiguous measurement criteria. ● measure student performance in less than two ways (e. g., in the form of a project, experiment, presentation, essay, short answer, or multiple choice test.) ● require written tasks. ● include performance checks, although the purpose of these checks is not clear.

	used to inform future instruction.			
Evidence Notes:				

Environment				
	Exemplary (4)	**Proficient (3)**	**Approaching Proficient (2)**	**Unsatisfactory (1)**
Description of Qualifying Measures	**Consistent Evidence of Student Centered Learning/Student Ownership of Learning - Teacher Facilitates the Learning**	**Some Evidence of Student Centered Learning/Student Ownership of Learning - Teacher Facilitates the Learning**	**Moving Towards Student Centered Learning/Student Ownership of Learning- Consistent Reliance on Teacher Direction.**	**Heavy Emphasis on Teacher Direction - Minimal Evidence of Student Ownership of Learning**

Expectations
 	
ADEPT 4A,B; 8C; 9B; InTASC 1, 2
 	
Score:
	• Teacher engages students in learning with clear and rigorous academic expectations for every student and actively uses aligned materials and resources to ensure equitable access to learning.
	• Students regularly learn from their mistakes and can describe their mistakes and their thinking on what they learned.
	• Teacher creates learning opportunities where all students can experience success.
	  ◦ Students lead opportunities that support learning.
		• Teacher engages students in learning with clear and rigorous academic expectations for every student with aligned materials and resources for students to access.
		• Teacher encourages students to learn from mistakes.
		• Teacher creates learning opportunities where all students can experience success.
		• Students complete their work according to teacher expectations.
			• Teacher engages students in learning with clear and rigorous academic expectations for most students.
			  ◦ Teacher encourages students to learn from mistakes.
			• Teacher creates learning opportunities where some students can experience success.
			• Teacher expectations for student work are not clear for all students.
				• Teacher expectations are not rigorous for every student.
				• Teacher creates an environment where mistakes and failure are not viewed as learning experiences.
				• Teacher does not create learning opportunities where students can experience success.
				• Student work is rarely completed to meet teacher expectations.

	• Students take initiative and follow through with their own work. • Teacher optimizes instructional time to ensure each student meets their learning goals.			

Managing Student Behavior
 	
ADEPT 1E; 8B; InTASC 1, 2, 3
 	
Score:
	• Students are consistently engaged in behaviors that optimize learning and increase time on task.
	• Teacher and students establish clear commitments for learning and behavior.
	• The teacher consistently uses and students reinforce several techniques (e.g., rewards, intrinsic motivation, approval, contingent activities, and consequences) that maintain student engagement and promote a positive classroom environment.
	• The teacher consistently recognizes and motivates positive behaviors and does not allow inconsequential behavior to interrupt the lesson.
	• The teacher addresses individual students who have caused disruptions rather than the entire class.
	• The teacher attends to disruptions quickly with minimal interruption to learning.
		• Students are mostly engaged in behaviors that optimize learning and increase time on task; some minor learning disruptions may occur.
		  ○ Teacher establishes rules for learning and behavior.
		• The teacher uses several techniques (e.g., rewards, intrinsic motivation, approval, contingent activities, and consequences) that maintain student engagement and promote a positive classroom environment.
		• The teacher often recognizes and motivates positive behaviors and does not allow inconsequential behavior to interrupt the lesson.
		• The teacher addresses students who have caused disruptions, yet sometimes they address the entire class.
			• Students are sometimes engaged in behaviors that optimize learning and increase time on task; minor learning disruptions are frequent.
			  ○ Teacher establishes rules for learning and behavior.
			• The teacher uses some techniques (e.g., rewards, intrinsic motivation, approval, contingent activities, and consequences) to maintain appropriate student behavior.
			• The teacher sometimes recognizes and motivates positive behaviors and overlooks inconsequential behavior, but other times addresses it, stopping the lesson.
			• The teacher inconsistently deals with students who have caused disruptions, and frequently addresses the entire class.
				• Students are consistently engaged in behavior that interrupts learning or minimizes time on task.
				  ○ Teacher establishes few rules for learning and behavior.
				• The teacher uses few techniques to maintain students engagement.
				  ○ The teacher overaddresses inconsequential behavior.
				• Teacher does not or inconsistently addresses behavior that interrupts learning.

Environment **ADEPT 8A, B; InTASC 1, 2, 3** **Score:**	**The classroom** ● welcomes all students and guests and provides a safe space for all students to take risks and interact with peers. ● is clearly organized and designed for and with students to promote learning for all. ● has supplies, equipment, and resources are easily accessible to provide equitable opportunities all students. ● displays current student work that promotes a positive and inclusive classroom environment. ● is consistently arranged to maximize individual and group learning and to reinforce a positive classroom culture.	**The classroom** ● welcomes all students and guests. ● is organized to promote learning for all students. ● has supplies, equipment, and resources accessible to provide equitable opportunities students. ● displays current student work ● is arranged promote individual and group learning.	**The classroom** ● welcomes most students and guests. ● is somewhat organized to promote learning for all students. ● has supplies, equipment, and resources accessible. ● displayed student work is not updated regularly. ● is sometimes arranged promote individual and group learning.	**The classroom** ● is somewhat uninviting. ● is not well organized to promote student learning. ● has supplies, equipment, and resources are difficult to access. ● displayed student work is not updated regularly. ● is not arranged promote group learning.
Respectful Culture **ADEPT 8B,C; 9A; InTASC 1, 2, 3** **Score:**	● Teacher-student interactions demonstrate caring and respect for one another and celebrate and acknowledge all students' background and culture. ● Teacher fosters positive teacher-to-student and student- to-student interactions that demonstrate overall care, kindness, and respect for one another. ● Teacher seeks out, and is receptive to the interests and opinions of all students. ● Positive relationships and interdependence characterize the classroom.	● Teacher-student interactions are generally friendly and reflect awarness and consideration of all students' background and culture. ● Teacher and students exhibit respect and kindness for the teacher and each other; classroom is free of unhealthy conflict, sarcasm, and put-downs. ● Teacher is receptive to the interests and opinions of students.	● Teacher-student interactions are sometimes friendly, but may reflect occasional inconsistencies. ● Students exhibit respect for the teacher and each other ● Teacher is sometimes receptive to the interests and opinions of students.	● Teacher does not establish a safe and positive classroom culture for students. ● Students do not exhibit respect for the teacher or each other. ● Teacher and/or student interaction is characterized by unhealthy conflict, sarcasm, or put-downs. ● Teacher is not receptive to interests and opinions of students.
Evidence Notes:				

Us	**Candidate uses instructional technology in the classroom for student learning (e.g., smartboards, laptops, ipads).**	**Always**	**Often**	**Sometimes**	**Rarely**
Us	**Candidate uses web sites and web applications in the design and implementation of lessons.**	**Always**	**Often**	**Sometimes**	**Rarely**
Evidence Notes:					

Professionalism: Advocate for Students

Indicator	Exemplary (4)	Proficient (3)	Approaching Proficient (2)	Unsatisfactory (1)	Not Observable
Beliefs about Student Learning	Candidate demonstrates a belief that all students can learn and treats all students with kindness, patience, dignity, and respect. Candidate uses culturally responsive teaching practices to recognize students' culture and identity.	Candidate demonstrates a belief that students can learn and treats most students with kindness, patience, dignity, and respect.	Candidate demonstrates a belief that few students can learn and treats few students with kindness, patience, dignity, and respect.	Candidate does not demonstrate a belief that all students are capable of learning and does not treat students with kindness, patience, dignity, and respect.	Not observable during lesson observation
Collaboration for Student Learning	Candidate collaborates with cooperating teacher, other teachers and pre-service teachers, school personnel, and other professionals to determine the needs of students and to provide students with appropriate learning experiences and assessments.	Candidate collaborates with cooperating teacher, other teachers and pre-service teachers in an attempt to to provide students with appropriate learning experiences and assessments.	Candidate attempts to collaborate with cooperating teacher but does not attempts to collaborate with other teachers, pre-service teachers, or school personnel.	Candidate does not attempt to collaborate with cooperating teacher, other teachers, other pre-service teachers, school personnel, or other professionals.	Not observable during lesson observation
Professionalism: Professional & Ethical Demeanor & Behavior					

Professional Behavior	**Candidate demonstrates responsibility, initiative, and an ability to follow through with plans to engage in the placement (e.g., prompt, professional dress, takes initiative in field placement, avoids misuse of social media, does not criticize school, safeguards confidential information, effective time management skills).**	**Candidate demonstrates initiative but is not always able to follow through with plans to engage in the placement (e.g., prompt, professional dress, ideas about engagement but no follow through, avoids misuse of social media, does not criticize school, safeguards confidential information, effective time management skills).**	**Candidate does not continually seek opportunities to engage in the field placement (e.g., tardy, professional dress, lack of initiative, misuses social media, criticizes school, safeguards confidential information, effective time management skills).**	**Candidate does not seek opportunities or show initiative (e.g., tardy, unprofessional dress, lack of initiative, misuses social media, criticizes school, does not safeguard confidential information, effective time management skills).**	**Not observable during lesson observation**
Standards of Conduct	**Candidate demonstrates a complete understanding of and adheres to all professional standards, school and district rules, policies, and procedures, and the SC Standards of Conduct.**	**Candidate adheres to most school and district rules, policies, and procedures, and the SC Standards of Conduct.**	**Candidate adheres to some school and district rules, policies, and procedures, and the SC Standards of Conduct.**	**Candidate fails to adhere to school and district rules, policies, and procedures, and the SC Standards of Conduct.**	**Not observable during lesson observation**
Professionalism: Effective Communicator					
Communication with Families	**Candidate consistently, clearly, and effectively communicates and engages with families of classroom children to support learning and through a variety of formats (contacts, meetings, telephone, conference, letters/newsletters, technology, etc.) and maintains effective communication.**	**Candidate communicates with and engages families of classroom children in a variety of ways to maintain effective and ongoing communication.**	**Candidate does not consistently, clearly, or effectively communicate with families of classroom children in a variety of ways (i.e., only communicates via email).**	**Candidate does not communicate with families of classroom children.**	**Not observable during lesson observation**

Communication with Professionals	**Candidate's concerns and questions are communicated in a professional manner with all appropriate stakeholders (i.e., teachers,, school personnel, and university faculty and staff).**	**Candidate's questions and concerns are often shared in a professional manner but not necessarily with all appropriate stakeholders (i.e., teachers,, school personnel, and university faculty and staff).**	**Candidate has questions or concerns and sometimes shares questions and concerns byt not necessarily with the appropriate audience.**	**Candidate has questions or concerns but does not share concerns or questions with others.**	**Not observable during lesson observation**
Professionalism: Active Learner and Engagement					
Reflective Practitioner	**Candidate is a reflective practitioner who systematically seeks out and collects, synthesizes, and evaluates student growth data to identify ways to enhance learning.**	**Candidate is a reflective practitioner who attempts to analyze student growth data to identify ways to enhance learning.**	**Candidate is inconsistently reflective and does not evaluate student data as a way to enhance student learning.**	**Candidate does not reflect and does not evaluate student data as a way to enhance learning.**	**Not observable during lesson observation**
Professional Learning and Engagement	**Candidate seeks out and participates in a variety of professional growth activities such as conference attendance, presentations, and school professional development offerings; candidate attends and volunteers at a variety of school and/or community events.**	**Candidate seeks out and participates in some professional growth activities; candidate attends some school and/or community events.**	**Candidate seeks out but does not participate in professional growth activities; candidate attends few school events.**	**Candidate does not seek out or participate in professional growth activities; candidate does not attend school events.**	**Not observable during lesson observation**

Assessment 5 – Safety Evaluation

Description of Assessment and Use:

The assessment ensures that teachers practice biological, chemical, and physical safety in their classrooms, uphold ethical treatment of living organisms, and properly maintain equipment and chemicals according to their licensure field.

Alignment with Standards:

- Appropriate Activities for ALL Students (4a)
- Competence in Safety and Hazard Management (4b)
- Humane Treatment of Living Organisms (4c)

Assessment Tool:

Assignment Description

Student teachers must demonstrate and facilitate a safe learning environment. At the conclusion of student teaching, student teachers will be evaluated by both the university supervisor and cooperating teacher on issues concerning safety. Any areas that were unsatisfactory must be remediated until proficiency is noted.

Student Name_____
Date _____
Evaluator: _____

Evaluation Criteria

Students must be at a level of proficient in order to meet the safety standard. A student scoring unsatisfactory on this standard will require a remediation plan and a subsequent evaluation.

N/A –was not demonstrated or facilitated by the student teacher due to the subject area or units of instruction taught.

Unsatisfactory—1 – student teacher behaved unsafely, demonstrated unsafe practices, or allowed students to conduct science in an unsafe manner.

Proficient—4 – student teacher behaved safely, modeled safe practices, or allowed student to conduct science only in a safe manner.

Note: Because the topic is safety, only proficient or unsatisfactory scores are allowed. To be developing in safety is contradictory and not allowed.

Rubric

Topic/Issue	Score (Circle)	Evidence (from lesson plans and lesson observations):
Animals and/or organisms were treated in a safe, ethical, and humane fashion.	N/A 1 4	
Chemicals were always handled safely. This includes student teacher modeling proper safety before investigations occurred as well as proper supervision of students during investigations	N/A 1 4	
Proper storage, dispensing, and disposal of chemicals was followed.	N/A 1 4	

Proper safety equipment was worn at all times by students and teacher when in the lab area.	N/A 1 4	
Safety equipment is routinely inspected and maintained in good working order.	N/A 1 4	
Proper first aid, clean up, and reporting procedures were followed in the event of any accident.	N/A 1 4	
Lab equipment was handled safely by student teacher and students.	N/A 1 4	
Teacher always reviewed important safety issues with students before beginning the lab.	N/A 1 4	
The investigations implemented were appropriate for the abilities of all students.	N/A 1 4	

Assessment 6 – Unit Plan

Description of Assessment and Use:
The unit plan assessment ensures that preservice teachers can design comprehensive, standards-aligned units that engage students in scientific inquiry, foster conceptual understanding, and incorporate practical considerations such as classroom safety.

Alignment with Standards:

- Standard 1: Content Knowledge
- Standards-Based, Student-Centered Science Instruction (2a)
- Incorporating Appropriate Differentiation Strategies (2b)
- Using Engineering Practices (2c)
- Alignment of Instruction and Assessment Strategies (2d)
- Integrating Science-Specific Technologies (2e)
- Standard 3: Learning Environments
- Variety in Lesson Planning (3a)
- Planning Learning Experiences for ALL students (3b)
- Planning Lessons for ALL Students (3c)

- Standard 4: Safety
- Implement Assessments for ALL students (5a)

Assessment Tool:

Assignment Description

Develop a comprehensive Unit Plan that demonstrates your ability to design, implement, and reflect on a cohesive instructional unit, aligned with the South Carolina Teaching Standards 4.0 Rubric. This assignment is an opportunity to showcase your planning, content delivery, integration of resources, assessment design, and reflective practice. Your unit plan must include copies of assessments, rubrics, lesson plans, visual representations of data, and thoughful reflections.

Rubric

Indicator	Unacceptable (0)	Emerging (1)	Acceptable (2)	Target (3)
The unit plan is built on a grounding phenomenon and driven by essential questions. (NSTA 3c)	Missing or not included.	Plans include a phenomenon and questions, but instruction focuses solely on memorization and following prescribed procedures with no opportunities for students to engage in scientific practices.	Plans include a phenomenon and essential questions and build on each other to support students learning of science concepts by engaging the science and engineering practices to generate explanations. .	Plans include a phenomenon and essential questions and build on each other to support students learning of science concepts by engaging the science and engineering practices to generate explanations and/or evaluate evidence-based arguments.
The unit plan is developed so that content knowledge is accurate and appropriately sequenced. (NSTA 1C)	Unacceptable level of content included or no content focus.	Makes multiple content errors, or content sequence is missing components.	Makes few content errors, or content is not sequenced or connected across lessons.	Content knowledge is correct, sequenced, and connected.

The unit plan makes clear, explicit connections between disciplinary core ideas, science and engineering practices, and crosscutting concepts and includes an engineering task. (NSTA 2a)	Missing or not included.	Plans make 1 or 2 connections between DCIs, SEPs, and/or CCCs. OR Connections are not clear and explicit.	Plans make 3 or 4 explicit connections between DCIs, SEPs, and/or CCCs.	Every lesson plan makes a clear, explicit connection between DCIs, SEPs, and CCCs.
The unit plan integrates engineering practices to support science learning. (NSTA 2c)	Missing or not included.	Does not incorporate an appropriate engineering task.	Includes an engineering task as part of the unit where students solve a problem by designing, constructing, testing, or optimizing a solution that is clearly tied to the science learning.	Includes an engineering task as part of the unit where students solve a problem by designing, constructing, testing, and optimizing a solution that is clearly tied to the science learning and moves the science learning forward.
The unit is planned using appropriate pedagogical knowledge that supports an inclusive and equitable environment. (NSTA 3a)	Instructional strategies are not used OR does not promote an inclusive and equitable environment.	Only 1 or 2 instructional strategies are used, not matched to content and its sequence, or are unlikely to promote an inclusive and equitable environment.	Some (3-4) instructional strategies are used and matched to content and its sequence. Strategies are likely to promote an inclusive and equitable environment.	A variety (5 or more) of instructional strategies are used and matched to content and its sequence. Strategies are highly likely to promote an inclusive and equitable environment.

The unit includes learning experiences within a variety of environments (e.g., lab, field, community) appropriate for the content area. (NSTA 3b)	Missing or not included.	Plans only occur in one type of environment.	Plans include experiences in at least two environments appropriate for the content area.	Plans include experiences in at least three environments appropriate for the content area.
There is alignment between high quality learning objectives and state/national standards. (NSTA 2b)	No effort at alignment was utilized.	Objectives are not aligned to state and/or district standards. AND Objectives only represent knowledge.	Objectives are aligned to state and/or district standards. AND Objectives only represent knowledge and application.	Objectives are aligned to state and/or district standards AND are measurable. AND Objectives push cognitive demand for learners to evaluate, synthesize and create connections.

The unit plan aligns learning objectives to assessment and embeds multiple opportunities for formative assessment and includes an appropriate 3D summative assessment. (NSTA 5a)	Missing or not included or there was no effort at alignment.	Does not include formative assessments beyond the pre-assessment. OR Pre- and post- summative assessments do not target the same learning standards and/or objectives. OR Most assessments do not measure student understanding of CCCs or the application of SEPs.	Unit plan includes some learning objectives and/or standards with a plan for formative and/or summative assessment. AND Pre- and post- summative assessments target the same learning standards and/or objectives. AND Some assessments measure student understanding of CCCs and/or the application of SEPs.	Unit plan includes a list of all learning standards and/or objectives. Each learning outcome includes a plan for formative and/or summative assessment. AND Pre- and post- summative assessments target the same learning standards and/or objectives. AND Assessments measure student understanding of CCCs and the application of SEPs.
The candidate plans lessons that use advanced technologies to collect data and to teach students science. (NSTA 2e)	Missing or not included.	Included less than 2 different modes of technology, including computer-based instruments, to teach students science and/or to collect data in the process of teaching science.	Included at least 2 different modes of technology, including computer-based instruments, to teach students science and/or to collect data in the process of teaching science.	Included 3 or more different modes of technology, including computer-based instruments, to teach students science and/or to collect data in the process of teaching science.

The candidate plans to use prior conceptions and interests of students to promote their learning of science (NSTA 2d)	Missing or not included.	Included 2 opportunities to determine and respond to student prior conceptions in science both before and during instruction.	Included at least 2 different opportunities to determine and respond to student prior conceptions in science both before and during instruction. AND Included at least 2 lessons that related science to the personal lives and interests of students.	Consistently included opportunities to determine and respond to student prior conceptions in science before and during instruction and effectively promotes new learning. AND consistently relates science to the personal lives and interests of students.
The unit plan appropriate plans for and addresses safety issues. (NSTA Standard 4)	Missing or not included.	Unit plan appropriately addresses some safety issues, but not all potential issues that could arise OR Does not address safety issues appropriately.	Unit plan appropriately addresses some safety issues, but not all potential issues that could arise.	Unit plan appropriately addresses all safety issues.

Assessment 7 – Impact on Student Learning

Description of Assessment and Use:
The assessment of impact on student learning of science provides evidence that students have learned and can apply disciplinary core ideas, cross cutting concepts, and science and engineering practices as a result of instruction.

Alignment with Standards:

- Implementation of Assessments for ALL students (5a)
- Formative and Summative Assessments (5b)
- Analysis of Assessment Data (5c)

Assessment Tool:

Assignment Description

In conjunction with the student teaching experience, candidates will provide evidence of positive effects on student learning in the following areas:

- Disciplinary Knowledge
- Engagement in Nature of Science
- Integration of Science & Engineering Practices
- Crosscutting Concepts

1. Disciplinary Knowledge

In your student teaching placement, it is expected that you understand and successfully develop correct scientific understandings with your students. For this assignment, you will provide evidence that you are facilitating cognitive growth in your students toward correct conceptual understanding of a major concept or idea in your discipline by increasing the disciplinary content knowledge of your students. You will also address how student assessment is informing your future planning and teaching. Specifically, you are asked to:

- Include a copy of diagnostic, formative, and summative assessments used to determine the level of student understanding of the disciplinary content knowledge. You should also discuss your delivery of instruction around the disciplinary content. This can be a short summary.
- Provide evidence and data (multiple examples of student work) illustrating your effectiveness (including diagnostic, formative, and/or summative assessments) in increasing the conceptual understanding of your students on a major disciplinary concept or idea investigated in one of your units.
- Using the evidence and data you have provided, write an analysis reflecting on the artifacts collected and justifying how your instruction has had impacted your understanding of student learning. Through the analysis you should also identify different levels of student learning.
- Reflect on the strengths and weaknesses of your instruction and assessments. Based on the evidence, what would you change about how you taught the lesson? What would you keep the same?

2. Engagement in Nature of Science

In your student teaching placement, it is expected that you engage your students in studies of the nature of science. For this assignment, you will provide evidence that your nature of science instruction is enhancing student learning. Specifically, you are asked to:

- Include a copy of 2-3 lesson plans where you have embedded nature of science instruction or opportunities for reflection on the nature of science.
- Provide data (multiple examples of student work, from 2-3 lessons) illustrating your study of the nature of science in the classroom.
- Using the evidence and data you have provided, write an analysis reflecting on the artifacts collected and justifying how your incorporation of explicit nature of science instruction promotes student learning.
- Reflect on the strengths and weaknesses of your nature of science instruction. How might you improve your teaching in this area?

The collected products and your analysis should provide evidence that your teaching is prompting students to develop an appropriate grade-level understanding of the nature of science as suggested by NGSS Appendix H.

3. Integration of Science & Engineering Practices

In your student teaching placement, it is expected that you engage your students in the science and engineering practices in order to develop a conceptual understanding of content through practical, authentic, and real-world situations. For this assignment you will provide evidence of how your integration of science and engineering practices impacts student learning. Specifically, you are asked to:

- Include a copy of 2-3 lessons where you have integrated different science and engineering practices to learn disciplinary content.
- Provide evidence and data (multiple examples of student work, from 2-3 lessons) of students engaging in science and engineering practices in the classroom.
- Using the evidence and data you have provided, write an analysis reflecting on the artifacts collected and justifying how your incorporation of science and engineering practices impacted student learning.
- Reflect on the strengths and weaknesses of your instruction. Based on the evidence, what would you change about how you taught the lesson? What would you keep the same?

4. Crosscutting Concepts

In your student teaching placement, it is expected that you explicitly engage your students in using the crosscutting concepts as lenses for understanding disciplinary core ideas. For this assignment you will provide evidence of how you have embedded crosscutting concepts into lessons to impact student learning. Specifically, you are asked to:

- Include a copy of 2-3 lessons where you have explicitly embedded at least one crosscutting concept.
- Provide evidence and data (multiple examples of student work, from 2-3 lessons) of students developing an understanding of crosscutting concepts in the classroom.
- Using the evidence and data you have provided, write an analysis reflecting on the artifacts collected and justifying how your incorporation of crosscutting concepts impacted student learning.
- Reflect on the strengths and weaknesses of your instruction. Based on the evidence, what would you change about how you taught the lesson? What would you keep the same?

Rubric

NSTA Standard Addressed	Major Concept or Component	Developing* (2)	Proficient** (3)	Score Earned

Disciplinary Knowledge	Student Growth for Major Disciplinary Concept (5a)	Assessment data and student work focuses on mastery of facts and process skills rather than understanding of content. Little to no analysis of prior conceptual understanding addressed.	Assessment data and student work focuses on understanding of disciplinary content rather than mastery of facts and process skills. Students' prior conceptions and growth to more accurate scientific knowledge is addressed.	
	Analysis of Evidence (5b)	Analysis of data and student work draws on either formative or summative assessment to justify how instruction has impacted student understanding of a disciplinary concept. There is some categorization of the data by student level of learning.	Analysis of data and student work clearly draws on both formative and summative assessment to justify how instruction has impacted student understanding of a disciplinary concept. It also categorizes the data by student level of learning.	
	Reflection on Assessments and Instruction (5c)	Some of the diagnostic, formative, and summative assessments were included and/or mostly aligned with the delivery of instruction. Reflection addresses either strengths or weaknesses and discusses how instruction and/or assessments would be changed in the future.	Diagnostic, formative, and summative assessments were included and aligned with the delivery of instruction. Reflection addresses both strengths and weaknesses and explicitly discusses how instruction and assessments would be changed in the future.	
Nature of Science	Student Growth for Nature of Science (5a)	Assessment data and student work somewhat illustrates how students have developed an understanding of the nature of science.	Assessment data and student work illustrates how students have explicitly developed an appropriate grade-level understanding of the nature of science.	

	Analysis of Evidence (5b)	Analysis of data and student work draws on either formative or summative assessment to justify how instruction has impacted student understanding of the nature of science. There is some categorization of the data by student level of learning.	Analysis of data and student work clearly draws on both formative and summative assessment to justify how instruction has impacted student understanding of the nature of science at an appropriate grade-level. It also categorizes the data by student level of learning.	
	Reflection on Instruction (5c)	Some of the lesson plans were included and/or mostly aligned with an appropriate approach for teaching the nature of science. Reflection addresses either strengths or weaknesses and discusses how instruction would be changed in the future.	Lesson plans were included and aligned with an appropriate approach for teaching the nature of science. Reflection addresses both strengths and weaknesses and explicitly discusses how instruction would be changed in the future.	
Integration of Science & Engineering Practices	Student Growth for Science & Engineering Practices (5a)	Assessment data and student work somewhat illustrates how students have occasionally engaged in appropriate grade-level science and engineering practices or did not fully engage with the practices for the purpose of developing conceptual understanding of content.	Assessment data and student work clearly illustrates how students have explicitly engaged in appropriate grade-level science and engineering practices for the purpose of developing conceptual understanding of content.	

	Analysis of Evidence (5b)	Analysis of data and student work draws on either formative or summative assessment to justify how instruction has impacted student engagement with the science and engineering practices. There is some categorization of the data by student level of learning.	Analysis of data and student work clearly draws on both formative and summative assessment to justify how instruction has impacted student engagement with the science and engineering practices at an appropriate grade-level. It also categorizes the data by student level of learning.	
	Reflection on Instruction (5c)	Some of the lesson plans were included and/or mostly aligned with an appropriate approach for engaging students with the science and engineering practices. Reflection addresses either strengths or weaknesses and discusses how instruction would be changed in the future.	Lesson plans were included and aligned with an appropriate approach for engaging students with the science and engineering practices. Reflection addresses both strengths and weaknesses and explicitly discusses how instruction would be changed in the future.	
Crosscutting Concepts	Student Growth for Crosscutting Concepts (5a)	Assessment data and student work somewhat illustrates how students have developed an understanding of at least one crosscutting concept.	Assessment data and student work illustrates how students have explicitly developed an appropriate grade-level understanding of at least one crosscutting concept.	

	Analysis of Evidence (5b)	Analysis of data and student work draws on either formative or summative assessment to justify how instruction has impacted student understanding of at least one crosscutting concept. There is some categorization of the data by student level of learning.	Analysis of data and student work clearly draws on both formative and summative assessment to justify how instruction has impacted student understanding of at least one crosscutting concept. It also categorizes the data by student level of learning.	
	Reflection on Instruction (5c)	Some of the lesson plans were included and/or mostly aligned with an appropriate approach for teaching crosscutting concepts. Reflection addresses either strengths or weaknesses and discusses how instruction would be changed in the future.	Lesson plans were included and aligned with an appropriate approach for teaching crosscutting concepts. Reflection addresses both strengths and weaknesses and explicitly discusses how instruction would be changed in the future.	

Assessment 8 – Professional Development Form

Description of Assessment and Use:
In the assessment of professional development, educators engage in critical reflection to evaluate their growth, participate in science content professional development to deepen their subject knowledge, and utilize science pedagogy professional development to refine their teaching strategies, ensuring they can effectively convey scientific concepts to students.

Alignment with Standards:

- Engage in Critical Reflection (6a)
- Science Content Professional Development (6b)
- Science Pedagogy Professional Development (6c)

Assessment Tool:

Assignment Description

Preservice teachers were required to complete two science education and two content specific professional development experiences. For each experience they engaged in, they completed a reflection that answered the following questions:

- What did you do during the professional development?
- How did the professional development impact you as a teacher?
- What effect did it have on your knowledge?
- What effect did it have on your pedagogical knowledge?

Professional Development Tracking Form

The purpose of this form is to provide you with a place to keep track of your professional development throughout the program. By the time you complete your student teaching experience you are required to have two science education and two content specific professional development experiences. For each experience that you engaged in, you will need to complete a reflection that answers the following questions:

- What did you do during the professional development?
- How did the professional development impact you as a teacher?
- What effect did it have on your knowledge?
- What effect did it have on your pedagogical knowledge?

Name: _____

Name of Activity:	Date(s): *mm/dd/yy*	Hours:
Location:	☐Science Education ☐Content Specific	
Reflection:		

Name of Activity:	Date(s): *mm/dd/yy*	Hours:

Location:	☐Science Education ☐Content Specific
Reflection:	

Name of Activity:	Date(s): *mm/dd/yy*	Hours:
Location:	☐Science Education ☐Content Specific	
Reflection:		

Name of Activity:	Date(s): *mm/dd/yy*	Hours:
Location:	☐Science Education ☐Content Specific	
Reflection:		

Rubric for Assessment 8: Professional Development

NSTA Standard Addressed	Major Concept or Component	Developing* (2)	Proficient** (3)	Score Earned
Content Professional Development (6a)	Content Experiences	Students will document at least two content specific PD experiences that they have engaged in since entering the program. Reflections lack clarity in detailing how the experiences have affected them as a teacher or as a future professional.	Students will document at least two content specific PD experiences that they have engaged in since entering the program. Students are able to detail how the experiences have affected them as a teacher or as a future professional.	

Education Professional Development (6b)	Science Education Experiences	Students will document at least two science education specific PD experiences that they have engaged in since entering the program. Reflections lack clarity in detailing how the experiences have affected them as a teacher or as a future professional.	Students will document at least two science education specific PD experiences that they have engaged in since entering the program. Students are able to detail how the experiences have affected them as a teacher or as a future professional.	

*Anything below Developing earns a Level 1 or Unsatisfactory
**Anything above Proficient earns a Level 4 or Exemplary

Note that since each construct measured represents a critical piece of science teacher education certification that any score of Level 1 must be successfully remediated before a passing grade will be earned in the course. All remediation must be completed by the end of the term.

Rubric

NSTA Standard Addressed	Major Concept or Component	Developing* (2)	Proficient** (3)	Score Earned
Engage in Critical Reflection (6a)	Reflection	Students will engage in reflection regarding the PD experiences and how it informs their practice.	Students will engage in critical reflection regarding the PD experiences and how it informs their practice. Students are able to detail how the experiences have affected them as a teacher or as a future professional.	

Science Content Professional Development (6b)	Science Content Experiences	Students will document at least two content specific PD experiences that they have engaged in since entering the program. Reflections lack clarity in detailing how the experiences have affected them as a teacher or as a future professional.	Students will document at least two content specific PD experiences that they have engaged in since entering the program. Students are able to detail how the experiences have affected them as a teacher or as a future professional.	
Science Pedagogy Professional Development (6c)	Science Pedagogy Experiences	Students will document at least two science pedagogy specific PD experiences that they have engaged in since entering the program. Reflections lack clarity in detailing how the experiences have affected them as a teacher or as a future professional.	Students will document at least two science pedagogy specific PD experiences that they have engaged in since entering the program. Students are able to detail how the experiences have affected them as a teacher or as a future professional.	