

NEW PROGRAM PROPOSAL FORM

Name of Institution: Coastal Carolina University

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

B.S. in Science Education (Grades 9-12, Marine biology concentration)

Program Designation:

- | | |
|---|--|
| <input type="checkbox"/> Associate's Degree | <input type="checkbox"/> Master's Degree |
| <input checked="" type="checkbox"/> Bachelor's Degree: 4 Year | <input type="checkbox"/> Specialist |
| <input type="checkbox"/> Bachelor's Degree: 5 Year | <input type="checkbox"/> Doctoral Degree: Research/Scholarship (e.g., Ph.D. and DMA) |
| <input type="checkbox"/> Doctoral Degree: Professional Practice (e.g., Ed.D., D.N.P., J.D., Pharm.D., and M.D.) | |

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

- Yes
 No

Proposed Date of Implementation: Fall 2025

CIP Code: 13.1316

Delivery Site(s): 51001

Delivery Mode:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Traditional/face-to-face *select if less than 25% online | <input type="checkbox"/> Distance Education |
| | <input type="checkbox"/> 100% online |
| | <input type="checkbox"/> Blended/hybrid (50% or more online) |
| | <input type="checkbox"/> Blended/hybrid (25-49% online) |
| | <input type="checkbox"/> Other distance education (explain if selected) |

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

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Institutional Approvals and Dates of Approval:

| <i>Internal Institutional Unit</i> | <i>Approval Date</i> |
|--|-----------------------------|
| Department of Marine Science | 4/28/2022 |
| Board of Trustees | 8/12/2022 |
| Gupta College of Science College Curriculum: | |
| Academic Affairs: | |
| Provost: | |
| President: | |

Background Information

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

The B.S. in Science Education (Grades 9-12, Marine biology concentration, MSSE) will provide foundational knowledge leading to licensure in biology and general science, for grades 9-12 based on a quantitative interdisciplinary understanding of coastal and marine environments. This degree integrates a broad natural science foundation (biology, chemistry, geology, mathematics, physics) with foundational knowledge in marine biology as well as marine geology, marine chemistry, or physical oceanography. MSSE graduates will be able to apply data to demonstrate the relevance of known and emerging connections between anthropogenic activities and marine environments and ecosystems for secondary science students in biology as well as advanced classes including marine biology, marine science, and/or environmental science.

A high-caliber B.S. in Science Education focused on Marine biology directly aligns with the University's stated mission supporting engaged learning that produces alumni who are well prepared in their chosen fields as well as Coastal Carolina's historic dedication to the teacher-scholar model. Every level of the MSSE degree incorporates high impact STEM learning practices to enhance academic instruction by experienced and professionally-active faculty in marine biology, marine science, and education ([Strategies 1 and 3](#)). The resulting student experiences and opportunities promote student excellence (Strategy 2) with focus on interdisciplinary secondary science education that incorporates mathematics into focused examination of marine biology in local and regional habitats. It is likely that the new B.S. will be also be attractive to out-of-state students thereby aligning with Coastal Carolina University's commitment to building undergraduate degree programs of national or regional significance. These outcomes directly support the [University mission](#) to produce alumni who are knowledgeable and productive that will apply their expertise to contribute to the community, state, nation and world.

Assessment of Need

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

The proposed B.S. in Science Education (Grades 9-12, Marine biology concentration, MSSE) will provide rigorous interdisciplinary modern training for students who are interested in both marine biology and science education. Our proposed 4 year marine biology science education program differs from existing South Carolina science education degree programs by requiring both a quantitative natural and marine science foundation with application to modern marine and coastal issues in addition to a solid education pedagogy and practical foundation. The required MSSE interdisciplinary science curriculum incorporates and applies biology, chemistry, physics, and mathematics. Graduates of our program will have the background to certify for biology and general science, as well specialty areas like marine biology, marine science, and/or environmental science. Some of our graduates will also have the background to pursue certification in chemistry, physics, or earth science, depending on their upper level course choices. This breadth of foundational knowledge makes the MSSE degree versatile and potentially very attractive. Since 2010, Coastal Carolina Marine Science program alumni have composed 50% of the participants in the existing Coastal Carolina Master of Arts in Teaching program for secondary math and science teachers, demonstrating a clear demand for the proposed four year degree.

Experienced teachers that can apply marine and coastal environmental science to real world scenarios are desperately needed by local, state, and regional school systems throughout the U.S. to enhance scientific awareness within an accurate and realistic natural science framework. Biology, chemistry, earth and space science, mathematics, physics, and science are on the [South Carolina Department of Education list of Critical Need Subject areas](#) for 2022-2023¹. Horry County Schools started the 2022-2023 school year with

¹See: <https://ed.sc.gov/educators/recruitment-and-recognition/critical-need-areas/22-23-sub/> (accessed 9/5/22).

middle and high school science teachers identified as a priority need (see below). Coastal Carolina alumni contributed >20% of the 300 new teachers hired in 2022.

The Department of Marine Science at Coastal Carolina University (CCU) has delivered a nationally recognized undergraduate B.S. in Marine Science integrating the four marine science subdisciplines (marine biology, geology, chemistry and physical oceanography) for over 40 years. We are the largest undergraduate Marine Science program on the U.S. Atlantic coast. Our graduates are welcomed by local, regional, and national employers including graduate schools, internship providers, non-profit organizations, as well as a range of agencies performing monitoring, resource management and assessment, and regulatory functions. In short, we have an established reputation for delivering a rigorous interdisciplinary curriculum describing both oceanic and nearshore marine habitats.

CCU's proximity to Grand Strand beaches, salt marsh estuaries, nearshore shelf habitats, and the Winyah Bay watershed provides ample opportunities to integrate hands-on practical application of real world methods and training into our current curricula. The University has been and remains both an integral partner in the local community and a recognized resource for factual science-based advice related to local natural resources and balance between local growth and maintenance of the local environments and the ecosystems that they support. The proposed B.S. in Science Education builds on these strong foundations to directly address the stated needs of the State Department of Education and local school districts.

The new B.S. in Science Education (Grades 9-12, Marine biology concentration) will focus on training highly qualified secondary science educators who understand modern marine science and marine biology, think critically about applied marine science, and can communicate related concepts and forecasts quantitatively and clearly to interested learners of all ages. The proposed MSSE program provides a previously unavailable bachelor of science degree option for students who want to focus on integrating marine science based STEM with modern secondary education pedagogy and best practices moving into the 21st century. Coastal Carolina University is uniquely positioned figuratively and literally to deliver the proposed B.S. in Science Education (Marine biology concentration). There is a pressing need for secondary science educators who understand and can accurately communicate modern interdisciplinary marine science as it applies to coastal zone issues that directly influence daily life in coastal South Carolina and the Southeastern United States.

Transfer and Articulation

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

Students who complete an Associate of Science degree at a community or technical college will be tracked to complete the MSCI Science Education degree program in four years.

Employment Opportunities

| Occupation | State | | National | | Data Type and Source |
|--|-------------------------|-----------------------|-------------------------|-----------------------|--|
| | Expected Number of Jobs | Employment Projection | Expected Number of Jobs | Employment Projection | |
| Secondary or High School science teacher | 12,155 | 11.24% (2020-2030) | 78,200 | 8% (2020-2030) | SC Works Online ² US Bureau of Labor Statistics ³ |

Supporting Evidence of Anticipated Employment Opportunities

Provide supporting evidence of anticipated employment opportunities for graduates

MSSE graduates would be qualified to pursue secondary science certification in biology and general science with no additional coursework. The Grand Strand and Myrtle Beach area are currently (2022-2023) ranked as the fastest growing areas in the United States by [U.S. News and World Report](#). The state school districts from Horry, Georgetown, Florence, Marion, and Williamsburg counties, the five counties primarily serviced by Coastal Carolina University, contributed 39% of incoming CCU freshmen in 2021⁴. The addition of the MSSE program to the Coastal Carolina University undergraduate curricula will provide a timely and relevant opportunity for local students to train as educators in the school districts with which they are familiar and are likely to be hired by upon matriculation. As mentioned above, biology, chemistry, earth and space science, physics, and science are on the [South Carolina Department of Education list of Critical Need Subject areas](#) for 2022-2023. The South Carolina Department of Education list of [Critical Need Geographic areas](#) for 2022-2023⁵ includes 25 high schools from these five counties. Horry County Schools published appeals in local news outlets at the beginning of the current school year for >50 [certified math and science](#)⁶ teachers.

Horry and Williamsburg Counties had openings for secondary science teachers (9 and 2, respectively) as of 10/18/22. A review of postings for "science teacher" on Indeed.com (7/17/22) and sciway.net (7/17/22) indicated more than 20 available positions in Horry (10), Florence (7), Georgetown (2), Marion (0), and Williamsburg (5) county schools. The South Carolina [Center for Educator Recruitment, Retention, and Advancement](#) (CERRA) website listed 32 available science and math jobs in high school science statewide (7/17/22) while the [CERRA Annual Supply and Demand Report](#) (11/2022) listed 49 vacancies for secondary science classrooms. The November 2022 CERRA report also noted a 39% increase in vacant positions at the start of the school year as well as a 20% increase in teacher departures from 2021-2022 to 2022-2023. Nationally, the [U.S. Bureau of Labor](#) projects an 8% increase in high school teacher positions between 2020 and 2030. As with other CCU education degrees, successful completion of the MSSE degree and related topic-specific South Carolina state certification tests would provide reciprocity for credentialing in many/most other states. The MSSE degree will provide additional career opportunities for local students by providing a 4 year path to attain credentials that qualify them to teach at least secondary general science. The proposed MSSE degree will potentially increase enrollment within the Department of Marine Science while providing highly qualified educators needed by local and state schools.

² <https://jobs.scworks.org/vosnet/Default.aspx>

³ <https://www.bls.gov>

⁴ n = 2,755 from [CCU Fact Book 2021](#). Geographic distribution of enrollment by South Carolina counties.

⁵ See: <https://ed.sc.gov/educators/recruitment-and-recognition/critical-need-areas/> ; accessed 9/5/22.

⁶ See: <https://www.wmbfnews.com/2022/08/23/horry-county-schools-looks-more-teachers-deals-with-growth-throughout-district/>, accessed 8/23/22. ; See also: <https://www.wbtw.com/news/grand-strand/horry-county-more-than-300-new-teachers-coming-to-horry-county-schools-during-teacher-shortage/>, accessed 8/16/22.

Description of the Program

The Department of Marine Science within the Gupta College of Science currently offers both undergraduate and graduate degrees to provide interdisciplinary training in the areas of marine biology, marine chemistry, marine geology, and physical oceanography. More than 900 students are currently pursuing academic credentials within the Department of Marine Science. These include the B.S. in Marine Science (891 majors⁷), the Marine Science minor (18 students, as of 1/24/22), the Coastal Geology minor (5 students, as of 1/24/22), an M.S. in Coastal, Marine and Wetlands Studies (42 students¹¹), and a Ph.D. in Marine Science (11 students¹¹). Since 2010, 50% of graduates from the Master of Arts in Teaching program have been Coastal Carolina alumni who earned a B.S. in Marine Science. The MSSE degree will complement the existing B.S. in Marine Science by providing an option for interested students to receive training in marine science subdisciplines and secondary education pedagogy with modern best practices that will yield licensure in biology as well as other secondary science areas (e.g. chemistry, physics) through the partnership with the Spadoni College of Education and Social Sciences.

At least 300 students typically enter the Department of MSCI each fall (average number of entering freshman for 2015-2020 = 319). The current B.S. degree in MSCI provides a highly successful pathway for students seeking an interdisciplinary career as practicing professional marine scientists. Some MSCI students are eager to learn about MSCI and then formally share this knowledge with high school students as indicated above the historic contribution of MSCI alumni to the successful MAT program graduates. The proposed MSSE degree is expected to retain 8-10 existing MSCI majors and attract at least an equal number of new students to CCU each fall for the first several years with increasing new student enrollment likely in the future. We have deliberately planned the program start date to work with Admissions and capitalize on a full recruitment cycle before the program launch.

Projected Program Enrollment

| Projected Enrollment | | | |
|----------------------|-------------------|---------------------|---------------------|
| Year | Fall Headcount | Spring Headcount | Summer Headcount |
| | Total | Total | Total |
| 2025-2026 | 5 | 9 | 0 |
| 2026-2027 | 13 | 16 | 0 |
| 2027-2028 | 19 | 22 | 0 |
| 2028-2029 | 24 | 26 | 0 |
| 2029-2030 | 26 | 26 | 0 |

Explain how the enrollment projections were calculated.

Enrollment projections are based on enrollment of 5 new students each fall and spring. Years 1 through 4 total headcounts are based on a 90% return from fall to spring and spring to fall. The Year 5 headcount incorporates a 40% graduation rate for returning students. If/when MSSE program enrollment reaches:

- 20 students, we expect to need additional Marine Science tenure track faculty members to cover the related demand for the required MSCI 100 and 300 level foundation courses and upper level electives.
- 20 students, the Department of Mathematics and Statistics will need one half of a full time lecturer to cover demand for MATH 160 (or MATH 161) and STAT 201/L which MSSE requires.

⁷ [CCU Fact book, FA 2021](#)

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 specific for the MSSE major are currently planned.

Program Description

Degree title: **B.S. in Science Education (Grades 9-12, Marine biology concentration)**

Sponsoring Department: **Department of Marine Science**

Objectives: The B.S. in Science Education (Grades 9-12) with a concentration in Marine biology (MSSE) will provide foundational knowledge leading to licensure in biology and general science for grades 9-12 based on a quantitative interdisciplinary understanding of coastal and marine environments. This degree integrates a broad natural science foundation (biology, chemistry, geology, mathematics, physics) with foundational knowledge in marine biology and marine geology, marine chemistry or physical oceanography. MSSE graduates will be able to apply data to demonstrate the relevance of known and emerging connections between anthropogenic activities and marine environments and ecosystems for secondary science students in standard biology classes as well as advanced classes including marine biology, marine science, and/or environmental science.

Student Learning Outcomes: Students who earn a B. S. in Science Education (Grades 9-12) with a concentration in Marine biology should be able to:

1. Explain the principles, concepts, and inter-relations of the natural sciences (biology, chemistry, geology, mathematics, physics) to the structure and function of marine and coastal environments and related resources,
2. Apply the principles of scientific inquiry to describe, analyze, and solve scientific problems involving marine and coastal environments, resources, and issues,
3. Demonstrate proficiency in education pedagogy and apply it to effectively deliver natural and marine science content to high school students,
4. Integrate knowledge of marine science and education pedagogy and practices to effectively communicate content to secondary science students,
5. Communicate effectively with peers, mentors, students, and the larger community, and
6. Obtain the related science education licensure to teach grades 9-12.

Double Majors: Students may double major in any CCU program which offers a bachelor's degree. To complete a double major, students must satisfy the major requirements for both programs and complete a minimum combined total of 48 upper-level credits in the two majors, all with a grade of 'C' or better. MSSE students that complete a second major in MSCI may apply the 8 required 300 level foundation credits in MSCI (MSCI 301/L, MSCI 302/L, MSCI 304/L, and/or MSCI 305L) between the MSSE and MSCI degree⁸.

⁸ If the B.S. in Marine Coastal Environmental Science (MCES) is approved after review by SC CHE during FA 2022 (potentially beginning FA 2023), MSSE majors would also be able to apply 8 required 300 level foundation credits in MSCI (MSCI 301/L, MSCI 302/L, MSCI 304/L, and/or MSCI 305L) toward both MSSE and MCES degrees.

Degree Requirements (125-132 Credits)

Core Curriculum Requirements

Core Curriculum (36-40 Total Credit Hours)

- MSSE majors must take MATH 160 (or 160A and 160B) or MATH 161 (or 161A and 161B) to fulfill Core Curriculum requirement D (Quantitative Literacy).

Graduation Requirements

Graduation Requirements (3-6+ Credits) *

REACH Act Compliance: As part of their graduation requirements, all students at CCU must complete either *HIST 201 - History of the United States from Discovery to the Present: Discovery through Reconstruction*, or *POLI 201 - Introduction to American Government*, which are both REACH Act compliant. Sample syllabi are available upon request.

Education Requirements (grade 9-12 educator certification)

General Science Requirements (State Licensure Requirements)

- BIOL 121 - Biological Science I (3 credits) * AND
- BIOL 121L - Biological Science I Laboratory (1 credit) *

- BIOL 122 - Biological Science II (3 credits) * AND
- BIOL 122L - Biological Science II Laboratory (1 credit) *

- CHEM 111 - General Chemistry I (3 credits) * AND
- CHEM 111L - General Chemistry Laboratory I (1 credit) *

- CHEM 112 - General Chemistry II (3 credits) AND
- CHEM 112L - General Chemistry Laboratory II (1 credit)

EITHER:

- PHYS 205 - Introductory Physics for Life Sciences I (3 credits) AND
- PHYS 205L - Introductory Physics for Life Sciences I Laboratory (1 credit)

AND

- PHYS 206 - Introductory Physics for Life Sciences II (3 credits) AND
- PHYS 206L - Introductory Physics for Life Sciences II Laboratory (1 credit)

OR:

- PHYS 211 - Essentials of Physics I (3 credits) AND
- PHYS 211L - Essentials of Physics I Laboratory (1 credit)

AND

- PHYS 212 - Essentials of Physics II (3 credits) AND
- PHYS 212L - Essentials of Physics II Laboratory (1 credit)

Education Certification Requirements (State Licensure Requirements) (42 credits)

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

MSCI Foundation Courses (32 Credits)

Complete the following courses:

- BIOL 121 - Biological Science I (3 credits)* AND
- BIOL 121L - Biological Science I Laboratory (1 credit) *

- BIOL 122 - Biological Science II (3 credits)* AND
- BIOL 122L - Biological Science II Laboratory (1 credit) *

- CHEM 111 - General Chemistry I (3 credits)* AND
- CHEM 111L - General Chemistry Laboratory I (1 credit) *

- CHEM 112 - General Chemistry II (3 credits) AND
- CHEM 112L - General Chemistry Laboratory II (1 credit)

- MSCI 111 - Introduction to Marine Science (3 credits)* AND
- MSCI 111L - Introduction to Marine Science Laboratory (1 credit)

- MSCI 112 - Introduction to Earth and Marine Geology (3 credits) AND
- MSCI 112L -Introduction to Earth and Marine Geology Laboratory (1 credit)

- STAT 201 - Elementary Statistics (3 credits) AND
- STAT 201L - Elementary Statistics Computer Laboratory (1 credit)

Choose from the following: (4 credits)

EITHER

- MATH 160 - Calculus I (4 credits) ** OR
- MATH 160A - Calculus I A (2 credits) ** AND
- MATH 160B - Calculus I B (2 credits) **

OR

- MATH 161 - Calculus II (4 credits) OR
- MATH 161A - Calculus II A (2 credits) AND
- MATH 161B - Calculus II B (2 credits)

Choose from the following: (8 credits)

EITHER:

- PHYS 205 - Introductory Physics for Life Sciences I (3 credits) AND
- PHYS 205L - Introductory Physics for Life Sciences I Laboratory (1 credit)

AND

- PHYS 206 - Introductory Physics for Life Sciences II (3 credits) AND
- PHYS 206L - Introductory Physics for Life Sciences II Laboratory (1 credit)

OR:

- PHYS 211 - Essentials of Physics I (3 credits) AND
- PHYS 211L - Essentials of Physics I Laboratory (1 credit)

AND

- PHYS 212 - Essentials of Physics II (3 credits) AND
- PHYS 212L - Essentials of Physics II Laboratory (1 credit)

Note: 24 credits of the foundation courses above (BIOL 121, 121L, 122, 122L, CHEM 111, 111L, 112, 112L, PHYS 205, 205L, 206, 206L or PHYS 211, 211L, 212, 212L) are shared with the Education General State Licensure requirements.

MSSE Major Requirements (12 credits)

Complete the following courses:

- MSCI 302 Marine Biology (3 credits) AND
- MSCI 302L Marine Biology Laboratory (1 credit)

Choose one course and the corresponding laboratory from the list below. (4 credits)

- MSCI 301 Physical Oceanography (3 credits) AND
- MSCI 301L Physical Oceanography Laboratory (1 credit)

- MSCI 304 Marine Geology (3 credits) AND
- MSCI 304L Q Marine Geology Laboratory (1 credit)
- MSCI 305 Marine Chemistry (3 credits) AND
- MSCI 305L Marine Chemistry Laboratory (1 credit)

Choose 4 credits from the list below.

- MSCI 376 Biology of Sea Turtles (2 credits) AND
- MSCI 376L Biology of Sea Turtles Laboratory (1 credit)
- MSCI 458 Q* Fisheries Science (3 credits) AND
- MSCI 458L Fisheries Science Laboratory (1 credit)
- MSCI 461 Marine Biological Invasions (3 credits)
- MSCI 464 Marine Molecular Ecology (3 credits) AND
- MSCI 464L Marine Molecular Ecology Laboratory (1 credit)
- MSCI 471 Biology of Marine Mammals (3 credits) AND
- MSCI 471L Biology of Marine Mammals Laboratory (1 credit)
- MSCI 472 Population Biology of Marine Organisms (3 credits) AND
- MSCI 472L Population Biology of Marine Organisms Laboratory (1 credit)
- MSCI 473 Biology of Sharks (3 credits)
- MSCI 473L Q Biology of Sharks Laboratory (1 credit)
- MSCI 476 Marine Plankton (3 credits)
- MSCI 476L Marine Plankton Laboratory (1 credit)
- MSCI 477 Biology of Coral Reefs (3 credits)
- MSCI 478 Marine Invertebrate Zoology (3 credits)
- MSCI 478L Marine Invertebrate Zoology Laboratory (1 credit)
- MSCI 479 Marine Benthic Ecology (3 credits)
- MSCI 479L Marine Benthic Ecology Laboratory (1 credit)

A grade of 'C' or better is required for all major foundation and required courses except BIOL 121, CHEM 111, and CHEM 111L. No MSCI research or internship courses may be used for MSSE major credit.

* BIOL 121, BIOL 121L; CHEM 111, CHEM 111L; and MSCI 111, MSCI 111L also satisfy the University Core Curriculum Scientific Concept requirements (Group A). Though listed above under MSSE foundation courses, the 4 credits that apply toward the University Core Curriculum are counted toward the total credits for the University Core Curriculum and not toward the MSSE foundation total.

** MATH 160 or MATH 160A and MATH 160B also satisfy the University Core Curriculum Quantitative Literacy requirement (Group D). If MATH 161 (or MATH 161A and MATH 161B) are taken instead of

MATH 160/A/B, STAT 201/L may be applied to satisfy this University Core Curriculum requirement. Though listed above under MSSE foundation courses, the 4 credits that apply toward the University Course Curriculum are counted toward the total credits for the University Core Curriculum and not toward the MSSE foundation credit total.

Cognate or Minor Requirements (0 Credits)

Students majoring in Science Education (Grades 9-12; Marine biology concentration) are not required to complete a minor or cognate. However, they may elect to minor in any field in which Coastal Carolina offers a minor except Marine Science⁹. Students seeking minors must have an advisor selected from the department offering the minor in addition to their Marine Science and Education academic advisors.

Electives: 0-13 Credits

Total Credits Required: 125-132 Credits

⁹ MSSE majors will not be able to minor in Marine Coastal Environmental Science either if the proposed B.S. in MCES is approved after review by SC CHE during FA 2022 (potentially beginning FA 2023).

Curriculum by year: Total Credit Hours Required: 125-132

| Course Name | Credit Hours | Course Name | Credit Hours | Course Name | Credit Hours |
|------------------------------|--------------|---|--------------|---------------|--------------|
| Year 1 | | | | | |
| Fall | | Spring | | Summer | |
| UNIV 110E | 3 | STAT 201/L or MATH 160 (A&B) | 4 | | |
| ENGL 101 | 4 | ENGL 102 | 4 | | |
| MSCI 111/L or MSCI 112/L | 4 | MSCI 112/L or MSCI 111/L | 4 | | |
| BIOL 121/L | 4 | BIOL 122/L | 4 | | |
| EDUC 111 | 3 | | | | |
| Total Semester Hours | 18 | Total Semester Hours | 16 | | |
| Year 2 | | | | | |
| Fall | | Spring | | Summer | |
| MATH 160 (A&B) or STAT 201/L | 4 | EDSC 308 | 3 | | |
| MSCI 302/L | 4 | MSCI 304/L Q or MSCI xxx/L upper level elective | 4 | | |
| CHEM 111/L | 4 | CHEM 112/L | 4 | | |
| Foreign Language (115) | 5 | PHYS 211/L or PHYS 205/L | 4 | | |
| Total Semester Hours | 17 | Total Semester Hours | 15 | | |

| | | | | | |
|---|----|--------------------------|-------|----------------------|--|
| Year 3 | | | | | |
| Fall | | Spring | | Summer | |
| MSCI 305/L ¹⁰ or MSCI xxx/L upper level elective | 4 | MSCI 301/L ¹⁰ | 0-4 | | |
| PHYS 212/L or PHYS 206/L | 4 | EDSC 400 | 3 | | |
| HIST 201 or POLI 201 | 3 | EDSC 410 | 3 | | |
| Core Curriculum Class | 3 | EDSP 200 Q* | 3 | | |
| Core Curriculum Class | 3 | Core Curriculum Class | 3 | | |
| Total Semester Hours | 17 | Total Semester Hours | 12-16 | Total Semester Hours | |
| Year 4 | | | | | |
| Fall | | Spring | | Summer | |
| EDSC 415 | 3 | EDUC 480 | 3 | | |
| EDSC 418 | 3 | EDSC 490 | 9 | | |
| EDML 491 | 3 | | | | |
| EDUC 204 Q* | 3 | | | | |
| Core Curriculum Class | 3 | | | | |
| Total Semester Hours | 15 | Total Semester Hours | 12 | Total Semester Hours | |

¹⁰ If chosen to be the 2nd MSCI 300 subdiscipline lecture/lab.

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 |
|---|--------------------------------|-----------------------------------|---|---|
| B.S. in Secondary Education Biology | 126-129 | The Citadel | Prepares for secondary science education licensure. | Does not have a focus on marine biology and marine science. |
| B.S. in Secondary Education in Chemistry | 131-135 | The Citadel | Prepares for secondary science education licensure. | Does not have a focus on marine biology and marine science. |
| B.S. in Secondary Education Cognate with Biology, Chemistry, or Physics content major | 120 | College of Charleston | Prepares for secondary science education licensure in biology, chemistry, or physics. | Does not have a focus on marine biology and marine science. |
| B.A./B.S. Science Teaching | 120 | Clemson University | Prepares for secondary science education licensure. | Does not have a focus on marine biology and marine science. |
| B.A/B.S. Secondary education - Biology | 120 | Francis Marion University | Prepares for secondary science education licensure. | Does not have a focus on marine biology and marine science. |
| B.S. in Education | 122 | Univ. of South Carolina, Aiken | Prepares for secondary science education licensure. | Does not have a focus on marine biology and marine science. |
| B.A./B.S. plus M.T. | 120+33 | Univ. of South Carolina, Columbia | Prepares for secondary science education licensure in biology, chemistry, physics, geology, <u>or</u> marine science. | 5 year B.S. + MT program vs. 4 year B.S. program, does not require a focus on marine science with background in biology, chemistry, physics, <u>and</u> geology, requires 57-59 credits of education vs 42. |
| Science education minor | 20+ discipline specific degree | Furman University | Prepares for secondary science education licensure. | Minor instead of B.S., does not have a focus on marine biology and marine science. |
| Education licensure for teaching in other subject areas | 27+ discipline specific degree | Furman University | Prepares for secondary education licensure within BIOL, CHEM or PHYS. | Licensure instead of B.S., does not have a focus on marine biology and marine science. |
| B.S. in Biology - Certification as Secondary School Teacher | 134-144 | Winthrop University | Prepares for secondary science education licensure. | Does not have a focus on marine biology and marine science. |

MSCI Faculty

| Rank and Full- or Part-time | Courses Taught for the MSSE 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.) |
|---|---|--|--|
| Lecturer, Mathematics and Statistics, part time (0.5 FTE) | MATH 160A, MATH 160B, MATH 161A, MATH 161B, STAT 201, 201L. | M.S. or Ph.D. in Mathematics, Statistics or related field with preference given to candidates with previous undergraduate mathematics and/or statistics teaching experience. | Anticipated start date: August 2025 |
| Lecturer, full-time MSCI | MSCI 112/L, MSCI 304/L Q | Ph.D. (Marine Science; Univ. of South Florida), M.S. (Marine Science; Univ. of North Carolina, Chapel Hill) | Research and teaching experience, scholarly publications and presentations |
| Lecturer, full-time MSCI | MSCI 111/L, MSCI 112/L | Ph.D. (Zoology; Texas A&M University), M.S. (Marine Biology and Coastal Zone Management; Nova Southeastern University) | Research and teaching experience, scholarly publications and presentations |
| Senior Lecturer, full time MSCI | MSCI 111/L, MSCI 112/L, MSCI 305L, MSCI 476/L | Ph.D. (Biological Oceanography; Old Dominion University) | Research and teaching experience, scholarly publications and presentations |
| Senior Lecturer, full-time MSCI | MSCI 111/L, MSCI 112/L | M.S. (Ocean and Earth Sciences, Old Dominion University) | Research and teaching experience, scholarly publications and presentations |
| Assistant Professor, full time MSCI | MSCI 111/L, MSCI 112/L, MSCI 304/L Q, MSCI 305/L | Ph.D. (Ocean Earth, and Atmospheric Science; Oregon State University), M.S. (Geological Sciences, Univ. of Minnesota) | Research and teaching experience, scholarly publications and presentations |
| Assistant Professor, full time MSCI | MSCI 111/L, MSCI 302/L | Ph.D. (Marine Science, Texas A&M University, Corpus Christi); MAS (Marine Biodiversity & Conservation, Scripps Institution of Oceanography) | Research and teaching experience, scholarly publications and presentations |
| Assistant Professor, full-time MSCI | MSCI 111/L, MSCI 302/L, MSCI 464/L | Ph.D. (Marine Science, Univ. of Connecticut) | Research and teaching experience, scholarly publications and presentations |
| Associate Professor, full time MSCI | MSCI 111/L, MSCI 301/L | Ph.D. (Atmospheric Science, North Carolina State University), M.S. (Atmospheric Physics, Chinese Academy of Meteorological Sciences) | Research and teaching experience, scholarly publications and presentations |
| Associate Professor, full time MSCI | MSCI 111, MSCI 301/L, MSCI 321/L | Ph.D. (Oceanography, University of Rhode Island), M.S. (Oceanography, University of Rhode Island) | Research and teaching experience, scholarly publications and presentations |
| Associate Professor, full time MSCI | MSCI 111, MSCI 301/L, MSCI 311/L | Ph.D. (Oceanography, Univ. of Connecticut), M.S. (Oceanography, Univ. of Connecticut) | Research and teaching experience, scholarly publications and presentations |
| Associate Professor, full-time MSCI | MSCI 111, MSCI 305/L, MSCI 401/L | Ph.D. (Oceanography; Univ. of Hawai'i, Manoa), M.S. (Marine Environmental Sciences, SUNY-Stonybrook) | Research and teaching experience, scholarly publications and presentations |

| Rank and Full- or Part-time | Courses Taught for the MSSE 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.) |
|---|--|---|--|
| Associate Professor, full-time MSCI | MSCI 112/L, MSCI 304/L Q | Ph.D. (Geology-Paleontology; Christian-Alberchts University, Kiel, Germany) | Research and teaching experience, scholarly publications and presentations |
| Associate Professor, full-time MSCI | MSCI 112/L, MSCI 304/L Q, MSCI 316/L, MSCI 441/L | Ph.D. (Geography, University of Liverpool) | Research and teaching experience, scholarly publications and presentations |
| Professor, full time MSCI | MSCI 111/L, MSCI 302/L, MSCI 458/L Q*, MSCI 471 | Ph.D. (Oceanography; Univ. of Rhode Island) | Research and teaching experience, scholarly publications and presentations |
| Professor, full time MSCI | MSCI 302/L, MSCI 473/L Q | Ph.D. (Marine Biology; Scripps Institution of Oceanography), M.S. (Marine Biology, College of Charleston) | Research and teaching experience, scholarly publications and presentations |
| Professor, full time MSCI | MSCI 111/L, MSCI 302/L, MSCI 466/L | Ph.D. (Marine Science, College of William & Mary) | Research and teaching experience, scholarly publications and presentations |
| Professor, full time MSCI | MSCI 301L | Ph.D. (Physical Oceanography, Johns Hopkins University), M.C.E. (Civil Engineering, Johns Hopkins University) | Research and teaching experience, scholarly publications and presentations |
| Professor, full time MSCI | MSCI 111, MSCI 305/L, MSCI 355/L | Ph.D. (Oceanography, Florida State University) | Research and teaching experience, scholarly publications and presentations |
| Professor, full time MSCI | MSCI 111, MSCI 302/L, MSCI 458/L, MSCI 461, MSCI 478/L, MSCI 479/L | Ph.D. (Marine Science, College of William & Mary), M.S. (Biology, University of Dayton) | Research and teaching experience, scholarly publications and presentations |
| Professor, full-time MSCI | MSCI 472/L, MSCI 475/L | Ph.D. (Biology; Univ. of South Florida), M.S. (Biology; Florida State University) | Research and teaching experience, scholarly publications and presentations |
| Professor, full-time, Education | Education general courses. | Ph.D. (Curriculum and Instruction, Indiana University) | Core Faculty. 21 years at institution. |
| Professor, full-time, Education | Education general courses. | Ph.D. (Social Studies Education, Indiana University) | Core Faculty. 15 years at institution. |
| Professor, full-time, Education | Internship Supervisor | Ed.D. (Education and Curriculum with a focus in Mathematics, University of Massachusetts Amherst) | Core Faculty. Seven years in higher education. |
| Associate Professor, full-time, Education | S.C. Read to Succeed Act Courses | Ph.D. (Curriculum and Instruction, UNC Greensboro) | Core Faculty. Six years at institution. |

EDUC Faculty

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

Faculty, Staff, and Administrative Personnel

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

Total FTE needed to support the proposed program: 2.2

Faculty: 1.93

Staff: 0.14

Administration: 0.13

The Department of Marine Science and the College of Education and Social Sciences currently have faculty expertise to offer the marine science courses associated with the proposed MSSE degree. The Department of Mathematics and Statistics anticipates needing one half (0.5) of a new full-time mathematics/statistics lecturer to cover course sections required by the new major when/if new fall MSSE enrollment exceeds 20 students at an annual cost of ~ \$28,000 each year. Coverage of most MSSE major administrative support will be provided by the existing EDUC, MSCl, and GCOS administrative staff. Costs for the new MSSE program will be covered by the tuition generated by enrollment.

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.

Kimbel Library and Bryan Information Commons has holdings of more than 740,000 titles in all formats. The library has access to over 120,000 periodicals: magazines, newspapers, scholarly journals, and proceedings in print and online formats and provides on-line access to its holdings at (<http://www.coastal.edu/library>). Library staff will provide instruction sessions by request for all academic departments on general library usage as well as dedicated project or course-specific sessions by request. Coastal Carolina University provides access to additional holdings through a membership in the South Carolina library consortium PASCAL (Partnership Among South Carolina Academic Libraries). CCU students have access to books from other South Carolina academic libraries through PASCAL Delivers, a rapid book delivery service provided by PASCAL.

Library holdings are as follows (July 2022):

Monographs

Kimbel Library currently has 3,117 print and electronic books related to marine and coastal environmental science and related fields.

Audiovisual

Kimbel Library currently has access to 632 videos/films related to marine and coastal environmental science and related fields. .

Serials and Subscriptions

Kimbel Library currently provides access to more than 1,140 peer reviewed journals for marine science and related fields. Online access is provided via aggregator databases, publisher packages, open access titles, and direct online subscriptions.

Kimbel library provides access for marine science journals and related resources including but not limited to:

- Aquatic Sciences & Fisheries Abstracts
- BioOne
- JSTOR
- Natural Science Collection
- ProQuest Dissertations & Theses Global
- ScienceDirect
- Web of Science
- Wiley Online Services

Student Support Services

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

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

MSSE majors will receive academic advising from the Gupta College of Science first year advisors. Department of Marine Science and College of Education faculty will share responsibilities for academic advising to all MSSE students.

Physical Resources/Facilities

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

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

Equipment

Identify new instructional equipment needed for the proposed program.

The MSSE program will not require any special physical resources/facilities beyond the equipment, laboratories, vans, and vessels currently provided by CCU within the Department of Marine Science at least initially.

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 addition of the new MSSE program will increase the number of students that need to take MATH 160A/B, MATH 161 A/B, and STAT 201/L. These new students will require half of a new full time lecturer within the Department of Mathematics and Statistics anticipates needing one half (0.5) of a new full-time mathematics/statistics lecturer to cover course sections required by the new major when/if new fall MSSE enrollment exceeds 20 students at an annual cost of ~ \$28,000 each year.

Existing MSCI faculty will be delivering courses within the new major. While these are not new courses, the MSSE major has potential to increase the number of required seats in courses that are shared across the existing Marine Science major and the proposed MSSE.¹¹ As the MSSE program becomes established, it may be necessary to adjust the number of sections in 100 and 300 level MSCI foundation classes as well as upper level electives if the program is well received and brings new students to CCU. If demand in the new MSSE program exceeds 20 new MSSE majors each fall, it will be necessary to re-evaluate impacts on MSCI and related Tenure Track Faculty line and resource requests.

¹¹ Course demands from the MSSE major would be in additoin to demands in the same classes related to the MCES major (pending CHE approval, 11/2022) with anticipated start date in Fall 2023.

Financial Support

| Sources of Financing for the Program by Year | | | | | | | | | | | | |
|---|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|------------------|--------------------|--------------------|
| Category | 1 st | | 2 nd | | 3 rd | | 4 th | | 5 th | | Grand Total | |
| | New | Total | New | Total | New | Total | New | Total | New | Total | New | Total |
| Tuition Funding | \$136,619 | \$136,619 | \$278,703 | \$278,703 | \$406,110 | \$406,110 | \$517,790 | \$517,790 | \$549,272 | \$549,272 | \$1,888,493 | \$1,888,493 |
| Program-Specific Fees | | | | | | | | | | | \$0 | \$0 |
| Special State Appropriation | | | | | | | | | | | \$0 | \$0 |
| Reallocation of Existing Funds | | | | | | | | | | | \$0 | \$0 |
| Federal, Grant or Other Funding | | | | | | | | | | | \$0 | \$0 |
| Total | \$136,619 | \$136,619 | \$278,703 | \$278,703 | \$406,110 | \$406,110 | \$517,790 | \$517,790 | \$549,272 | \$549,272 | \$1,888,493 | \$1,888,493 |
| Sources of Financing for the Program by Year | | | | | | | | | | | | |
| Category | 1 st | | 2 nd | | 3 rd | | 4 th | | 5 th | | Grand Total | |
| | New | Total | New | Total | New | Total | New | Total | New | Total | New | Total |
| Program Administration and Faculty/Staff Salaries | \$97,792 | \$97,792 | \$99,748 | \$99,748 | \$181,646 | \$181,646 | \$185,278 | \$185,278 | \$188,984 | \$188,984 | \$753,448 | \$753,448 |
| Facilities, Equipment, Supplies, and Materials | | \$0 | | \$0 | | \$0 | | \$0 | | \$0 | \$0 | \$0 |
| Library Resources | | \$0 | | \$0 | | \$0 | | \$0 | | \$0 | \$0 | \$0 |
| Other | | | | | | | | | | | | |
| Total | \$97,792 | \$97,792 | \$99,748 | \$99,748 | \$181,646 | \$181,646 | \$185,278 | \$185,278 | \$188,984 | \$188,984 | \$753,448 | \$753,448 |
| Net Total (Sources of Financing Minus Estimated Costs) | \$38,827 | \$38,827 | \$178,955 | \$178,955 | \$224,464 | \$224,464 | \$332,511 | \$332,511 | \$360,288 | \$360,288 | \$1,135,045 | \$1,135,045 |

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.

Program cost-effectiveness and return-on-investment are evaluated institutionally using an induced revenue/expense model. As shown in the Financial Support table, tuition revenues are based on a 9-credit course load for each student projected to enroll in the program. These revenues represent course revenues derived from all courses taken by the student, including both departmental-fielded courses and cross-department electives. The expenses shown in the Financial Support table represent only direct expenses necessary for delivering program courses and administration. The university uses a 50% gross academic margin assessment to ensure that new undergraduate and certificate programs will provide sufficient revenues to support their expense impact on institutional operations.

To derive gross academic margin, total induced revenue (\$1,888,493 for the period) is calculated minus total direct expenses (\$753,448 for the period) divided by total induced revenue (\$1,888,493 for the period). [(Revenue-Expenses)/Revenue]

For a program to be considered cost-effective, the University looks for undergraduate and certificate programs to produce a gross academic margin of 50% or better. This program's gross academic margin is **60.10%** for the period, which indicates that this program has a high likelihood of producing sustainable revenues.

Evaluation and Assessment

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.

| Program Objectives | Student Learning Outcomes Aligned to Program Objectives | Methods of Assessment |
|--|---|--|
| Goal 1. Marine science foundation knowledge | 1.1 Demonstrate knowledge of introductory marine science concepts | Student performance on the Introduction to Marine Science (MSCI 111) Student Learning Outcomes will be assessed by comparing results of a pre-test administered during the first week of classes to the results of the same exam given as a post-test at the end of the term. Normalized gains overall and for each SLO will be calculated for each student completing the course. |
| | 1.2 Core marine science subdiscipline concepts | Student performance for each of the marine science midlevel core courses (MSCI 301, 302, 304, and 305) Student Learning Outcomes will be assessed by comparing results of a pre-test administered during the first week of classes to the results of the same exam given as a post-test at the end of the term. Normalized gains overall and for each SLO will be calculated for each student completing the course. |
| Goal 2: Effective marine science communication | 2.1 Marine science communication skill demonstration | Demonstrate the ability to effectively communicate scientific knowledge and research findings through both written and oral presentations. |
| Goal 3: Content knowledge | 3.1 Candidates will earn a passing score, as determined by the South Carolina Department of Education (SCDOE), on the PRAXIS II examination in their content area. | PRAXIS II Exam |
| | 3.2 Candidates will pass with a minimum grade of 'C' courses covering their content disciplines either during their undergraduate program. | Transcript Analysis: The transcript will be analyzed by a faculty expert in that content area to make sure that all needed coursework is present with a grade of C or above |
| | 3.3 Candidates will create a discipline-specific lesson plan during their methods class. | SCESS Lesson Plan Rubric: The lesson plan is graded by a normed rubric that is common across the College of Education and Social Sciences. The rubric will include addendum items related to the NSTA SPA Content Requirements. |
| | 3.4 Candidates will demonstrate an understanding of the nature of science. | Nature of Science Assessment: Candidates must earn a score of proficient or higher on this assessment, completed during the internship semester. |
| Goal 4: Pedagogical Knowledge | 4.1 Candidates will earn a score of proficient or higher on all of the components of the summative internship evaluation, including the discipline-specific evaluation, the Conceptual Framework Rubric, and the South Carolina ADEPT 4.0 rubric. | Internship Summative Evaluations: Through clinical experiences and through student teaching, candidates are observed using the rubric. Candidates must earn a score of Proficient or higher on all three components of the summative internship evaluation. |
| | 4.2 Candidates will earn a score of proficient or higher on the Teacher Work Sample. | Teacher Work Sample: The Teacher Work Sample requires candidates to demonstrate their abilities to plan for, implement, and assess instruction. |

| Program Objectives | Student Learning Outcomes Aligned to Program Objectives | Methods of Assessment |
|--------------------|---|--|
| | 4.3 Candidates will earn a score of proficient or higher on the Bioethics and Safe Science Teaching Assessment (BEASST) and the Knowledge of Skills and Teaching Assessment (KOST). | <p>The BEASST utilizes a rubric to evaluate a portfolio of submissions related to science safety and ethics.</p> <p>The KOST utilizes a rubric to evaluate a portfolio documenting participation in local, regional, state, and national science activities and conferences.</p> |

The Goal 1 objectives will be assessed each semester using paired pre and post-tests. Normalized gains overall and within each SLO will be calculated for each student completing each course. Within a course, negative normalized gain overall or for multiple SLOs are unsatisfactory. Positive normalized gains overall and for a majority of course SLOs are satisfactory. Positive normalized gains overall and for all course SLOs are considered exceptional.

The Goal 2 objectives will be assessed each semester in 400 level MSC1 classes, the MSC1 Fall Departmental Research Symposium, and/or the Coastal Carolina University Undergraduate Research Symposium using established rubrics for oral and written presentations. Student presentations will be grouped across semesters within an AY as needed to ensure that at least 20 rubrics are considered per AY. Satisfactory communication proficiency is equivalent to a C (70-79%) or better in a standard course. MSC1 departmental performance expectations for C (or better) in scientific communication skills are described below.

Goal 3 objectives are assessed during the semester prior to internship and the internship semester. Successful completion of each of the Goal 3 assessments is required for program completion as well as recommendation for licensure to the South Carolina Department of Education. Data from the assessments is used annually by faculty to evaluate program methods and goals, and to adjust instruction as appropriate.

Goal 4 objectives are assessed during the final internship semester, prior to graduation. Successful completion of each of the Goal 4 assessments is required for program completion and recommendation for licensure to the South Carolina Department of Education. Data from the assessments is used annually by faculty to evaluate program methods and goals, and to adjust instruction as appropriate.

We will work with the University Registrar, Alumni Relations, Philanthropy, and the Provost Offices to track MSSE alumni post-graduate professional and academic pursuits. If it is feasible, we will conduct a pre-graduation/exit survey of all graduating seniors using Moodle. We have attempted this previously with MSC1 majors but had limited success due to the number of graduating seniors each semester (~ 100-120) combined with program flexibility which allows students to take the required 300 level MSC1 core classes in any order. We plan to have similar flexibility in the new MSSE major to promote student time-to-degree and progress through the program.

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

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

Summary of MSCI Departmental performance expectations corresponding to average (C), good (B), and excellent (A) proficiency in scientific communication skills based on the relevant rubrics (attached).

| | Average (C, 70-79%) | Good (B, 80-89%) | Excellent (A, ≥ 90%) |
|--|--|--|---|
| Introduction/ background | Basic introductory and background information are provided. | Introductory and background information provide context and identify the contribution to MSCI or a specific subdiscipline. | Introductory and background information provide unique context and exceptional clarity while identifying the contribution of the current work to MSCI |
| Research question (RQ) /objectives/ hypotheses | Hypotheses or RQs are testable and clearly presented. | Hypotheses or RQs are testable, relevant to the background, and clearly presented. | Hypotheses or RQs are testable, relevant to the background, clearly presented, and directly related to a pressing question within the field. |
| Methods explanation | The Methods explanation provides basic details. | The Methods explanation is appropriately detailed and directly connected to the hypotheses/RQs. | The Methods explanation is appropriately detailed and shows creative and critical evaluation of the hypotheses/RQs |
| Presentation and interpretation of Results and Conclusions | Results are clearly presented. Conclusions are based on the Results. Both Results and Conclusions are related to the hypotheses/RQs. | Results are clearly presented and address both the major points as well as nuanced details. Conclusions are based on the Results as well as relevant literature. Results and Conclusions are related to the hypotheses/RQs. | Results are clearly presented and address both the major points as well as nuanced details. Conclusions are based on the Results as well as relevant literature. Results and Conclusions are related to the hypotheses/RQs and present a clear take-home message. |
| Demonstration of topic value or significance | Student understands the topic and how/why it is important. | Student displays detailed understanding of the topic and can explain how the project addressed a knowledge gap in the field. | Student displays exceptional topical understanding and can explain the critical relevance of the project to the field. |
| Answers to questions | Student is able to address most questions without prompting. | Student is able to address all questions and their answers add to the topic(s) discussed. | Student addresses all questions, builds on the topic discussed, and displays exceptional understanding of the broader field. |
| Design and formatting | Figures and Tables are used but minimal attention has been given to layout and consistency in presentation. Figures and Tables are integrated into well-organized text. The text is well-written with <5 grammatical or spelling errors. | Figures and Tables are appropriately and attractively formatted for the best possible data presentation. Figures and Tables are directly related to the hypotheses/RQs in the legends and seamlessly integrated into appropriately detailed text. The text is well-written and helpful with <3 grammatical or spelling errors. | Figures and Tables are appropriate, attractive, consistent with the text and in line with discipline specific standards for peer-review publication. Accompanying legends are integrated into the text and contain no redundant information. The text is exceptionally well written and contains no grammatical or spelling errors. |

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

Coastal Carolina will seek program-specific accreditation through CAEP. The EPP's current programs are recognized by CAEP. The next site visit for the EPP will occur in Fall 2026; data from this program will be shared as a part of the on-site visit. Additionally, the program will seek state approval using the National Science Teaching Association's standards. The EPP will seek state-approval for the program because the National Science Teaching Association discontinued SPA Program Review through CAEP in August 2019.

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

Yes

No

Students will be licensed for general science secondary education (9-12).

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

Candidates are admitted to the program following the guidelines set forth by the South Carolina Department of Education. Prior to program admission, candidates must earn at least a 2.75 GPA, have completed 45 hours of coursework, completed a background check, and meet or be exempted from entrance exam requirements. Candidates are prepared for licensure through coursework focused on instructional methods, classroom management practices, assessment, and two state-approved Read to Succeed courses. Courses in the sciences and mathematics support candidates' content knowledge. In addition, participate in a variety of field experiences and courses focused on implementing technology and learning about diverse student needs. They participate in over 120 hours of field experiences and a semester of student teaching. Candidates are required to create lesson plans, plan for, and implement instruction throughout their program. Their time in the classroom ends with a culminating 60-day internship, where they teach full-time for a minimum of 35 consecutive days.

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

Yes

No

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