

NATIONAL RECOGNITION REPORT

Preparation of Science Education Teachers

Southeastern Louisiana University

July 15, 2007

NCATE recognition of this program is dependent on the review of the program by representatives of the **National Science Teachers Association (NSTA)**.

This report is in response to a(n):

- Initial Review
 Revised Report
 Response to Conditions

Program(s) Covered by this Review	Program Type	Award or Degree Level(s)
<p>Model of Program Dual Certification – General Science</p> <p>Disciplines Biology, chemistry, general science, physics</p> <p>Grade Level: 9-12</p>	Initial teacher license in field	Baccalaureate

PART A—RECOGNITION DECISION (see Part G for specifics on decision)

A.1—SPA Decision on NCATE recognition of the program(s):

- Nationally recognized
 Nationally recognized with conditions
 Not nationally recognized

A.2—Test Results (from information supplied in Assessment #1, if applicable)

The program meets or exceeds an 80% pass rate on state licensure exams:

- Yes
 No
 Not applicable
 Not able to determine

A.3—Summary of Strengths:

Assessments are well defined and developed.

PART B—STATUS OF MEETING SPA STANDARDS

NSTA Standard	Specific Program or Level: Biology Chemistry Physics	Specific Program or Level:	Specific Program or Level:	Specific Program or Level
<p>Standard 1. Content Teachers of science understand and can articulate the knowledge and practices of contemporary science. They can interrelate and interpret important concepts, ideas, and applications in their fields of licensure; and can conduct scientific investigations. To show that they are prepared in content, teachers of science must demonstrate that they:</p> <ul style="list-style-type: none"> a. Understand and can successfully convey to students the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields as recommended by the National Science Teachers Association. b. Understand and can successfully convey to students the unifying concepts of science delineated by the National Science Education Standards. c. Understand and can successfully convey to students important personal and technological applications of science in their fields of licensure. d. Understand research and can successfully design, conduct, report and evaluate investigations in science. e. Understand and can successfully use mathematics to process and report data, and solve problems, in their field(s) of licensure. 	Met			
<p>Comment: Assessment #7: The research component for sub-standards d and e will have to be implemented for biology and physics for this standard to be passed for those disciplines. Make sure that the questions for research are not glorified science fair questions as stated in the Assessment 7 directions. This should be a research project that mimics how scientists work.</p>				
<p>Standard 2. Nature of Science. Teachers of science engage students effectively in studies of the history, philosophy, and practice of science. They enable students to distinguish science from nonscience, understand the evolution and practice of science as a human endeavor, and critically analyze assertions made in the name of</p>	Met			

NSTA Standard	Specific Program or Level: Biology Chemistry Physics	Specific Program or Level:	Specific Program or Level:	Specific Program or Level
<p>science. To show they are prepared to teach the nature of science, teachers of science must demonstrate that they:</p> <ol style="list-style-type: none"> Understand the historical and cultural development of science and the evolution of knowledge in their discipline. Understand the philosophical tenets, assumptions, goals, and values that distinguish science from technology and from other ways of knowing the world. Engage students successfully in studies of the nature of science including, when possible, the critical analysis of false or doubtful assertions made in the name of science. 				
Comment:				
<p>Standard 3. Inquiry. Teachers of science engage students both in studies of various methods of scientific inquiry and in active learning through scientific inquiry. They encourage students, individually and collaboratively, to observe, ask questions, design inquiries, and collect and interpret data in order to develop concepts and relationships from empirical experiences. To show that they are prepared to teach through inquiry, teachers of science must demonstrate that they:</p> <ol style="list-style-type: none"> Understand the processes, tenets, and assumptions of multiple methods of inquiry leading to scientific knowledge. Engage students successfully in developmentally appropriate inquiries that require them to develop concepts and relationships from their observations, data, and inferences in a scientific manner. 	Met			
Comment:				
<p>Standard 4. Issues. Teachers of science recognize that informed citizens must be prepared to make decisions and take action on contemporary science- and technology-related issues of interest to the general society. They require students to conduct inquiries into the factual basis of such issues and to assess possible actions and outcomes based upon their goals and values. To show that they are prepared to engage students in studies of issues related to science, teachers of science must</p>	Met			

NSTA Standard	Specific Program or Level: Biology Chemistry Physics	Specific Program or Level:	Specific Program or Level:	Specific Program or Level
<p>demonstrate that they:</p> <p>a. Understand socially important issues related to science and technology in their field of licensure, as well as processes used to analyze and make decisions on such issues.</p> <p>b. Engage students successfully in the analysis of problems, including considerations of risks, costs, and benefits of alternative solutions; relating these to the knowledge, goals and values of the students.</p>				
Comment:				
<p>Standard 5. General Skills of Teaching. Teachers of science create a community of diverse learners who construct meaning from their science experiences and possess a disposition for further exploration and learning. They use, and can justify, a variety of classroom arrangements, groupings, actions, strategies, and methodologies. To show that they are prepared to create a community of diverse learners, teachers of science must demonstrate that they:</p> <p>a. Vary their teaching actions, strategies, and methods to promote the development of multiple student skills and levels of understanding.</p> <p>b. Successfully promote the learning of science by students with different abilities, needs, interests, and backgrounds.</p> <p>c. Successfully organize and engage students in collaborative learning using different student group learning strategies.</p> <p>d. Successfully use technological tools, including but not limited to computer technology, to access resources, collect and process data, and facilitate the learning of science.</p> <p>e. Understand and build effectively upon the prior beliefs, knowledge, experiences, and interests of students.</p> <p>f. Create and maintain a psychologically and socially safe and supportive learning environment.</p>	Met			
Comment:				
<p>Standard 6. Curriculum. Teachers of science plan and implement an active, coherent, and effective curriculum that is consistent with the goals and recommendations of the National Science Education Standards. They begin with</p>	Met			

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<p>the end in mind and effectively incorporate contemporary practices and resources into their planning and teaching. To show that they are prepared to plan and implement an effective science curriculum, teachers of science must demonstrate that they:</p> <ol style="list-style-type: none"> Understand the curricular recommendations of the National Science Education Standards, and can identify, access, and/or create resources and activities for science education that are consistent with the standards. Plan and implement internally consistent units of study that address the diverse goals of the National Science Education Standards and the needs and abilities of students. 				
Comment:				
<p>Standard 7. Science in the Community. Teachers of science relate their discipline to their local and regional communities, involving stakeholders and using the individual, institutional, and natural resources of the community in their teaching. They actively engage students in science-related studies or activities related to locally important issues. To show that they are prepared to relate science to the community, teachers of science must demonstrate that they:</p> <ol style="list-style-type: none"> Identify ways to relate science to the community, involve stakeholders, and use community resources to promote the learning of science. Involve students successfully in activities that relate science to resources and stakeholders in the community or to the resolution of issues important to the community. 	Met			
Comment:				
<p>Standard 8. Assessment. Teachers of science construct and use effective assessment strategies to determine the backgrounds and achievements of learners and facilitate their intellectual, social, and personal development. They assess students fairly and equitably, and require that students engage in ongoing self-assessment. To show that they are prepared to use assessment effectively, teachers of science must demonstrate that they:</p> <ol style="list-style-type: none"> Use multiple assessment tools and strategies 	Met			

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<p>to achieve important goals for instruction that are aligned with methods of instruction and the needs of students.</p> <p>b. Use the results of multiple assessments to guide and modify instruction, the classroom environment, or the assessment process.</p> <p>c. Use the results of assessments as vehicles for students to analyze their own learning, engaging students in reflective self-analysis of their own work.</p>				
Comment:				
<p>Standard 9. Safety and Welfare. Teachers of science organize safe and effective learning environments that promote the success of students and the welfare of all living things. They require and promote knowledge and respect for safety, and oversee the welfare of all living things used in the classroom or found in the field. To show that they are prepared, teachers of science must demonstrate that they:</p> <p>a. Understand the legal and ethical responsibilities of science teachers for the welfare of their students, the proper treatment of animals, and the maintenance and disposal of materials.</p> <p>b. Know and practice safe and proper techniques for the preparation, storage, dispensing, supervision, and disposal of all materials used in science instruction.</p> <p>c. Know and follow emergency procedures, maintain safety equipment, and ensure safety procedures appropriate for the activities and the abilities of students.</p> <p>d. Treat all living organisms used in the classroom or found in the field in a safe, humane, and ethical manner and respect legal restrictions on their collection, keeping, and use.</p>	Met			
Comment: Assessment #3 allows for the evaluation of safety as an implementation of knowledge. Assessment #6 shows candidate knowledge of these sub-standards. No data have been collected yet.				
<p>Standard 10. Professional Growth. Teachers of science strive continuously to grow and change, personally and professionally, to meet the diverse needs of their students, school, community, and profession. They have a desire and disposition for growth and betterment. To show their disposition for growth, teachers of</p>	Met			

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science must demonstrate that they: a. Engage actively and continuously in opportunities for professional learning and leadership that reach beyond minimum job requirements. b. Reflect constantly upon their teaching and identify ways and means through which they may grow professionally. c. Use information from students, supervisors, colleagues and others to improve their teaching and facilitate their professional growth. d. Interact effectively with colleagues, parents, and students; mentor new colleagues; and foster positive relationships with the community.				
Comment:				

PART C—EVALUATION OF PROGRAM REPORT EVIDENCE

C.1—Candidates' knowledge of content

Assessment 1 seems to be well organized, but it is difficult to follow specifically how the science completers did on the sub-scores. Assessment 2 was well done.

C.2—Candidates' ability to understand and apply pedagogical and professional content knowledge, skills, and dispositions

Sufficiently addressed

C.3—Candidate effects on P-12 student learning

Assessment #3 is a well thought out instrument and rubric.

PART D—EVALUATION OF THE USE OF ASSESSMENT RESULTS

Evidence that assessment results are evaluated and applied to the improvement of candidate performance and strengthening of the program (as discussed in Section V of the program report)

As of now, any data submitted have been used to alter the program. More data in the future will allow for further reflection.

PART E—AREAS FOR CONSIDERATION

PART F—ADDITIONAL COMMENTS

F.1—Comments on context and other topics not covered in Parts B-E:

F.2—Concerns for possible follow-up by the Board of Examiners:

PART G—TERMS AND SUBSEQUENT ACTIONS FOR DECISIONS

Program is nationally recognized with conditions. The program is recognized through spring 2009. The program will be listed as nationally recognized on websites and/or other publications of the SPA and NCATE. The institution may designate its program as nationally recognized by NCATE, through the time period specified above, in its published materials. **National recognition is dependent upon NCATE accreditation.**

Subsequent action by the institution: To retain accreditation, a report addressing the conditions to recognition must be submitted within 18 months, or no later than **February 1, 2009**. The report must address the conditions ***specified in the box below***. Failure to submit a report by the date specified above will result in loss of national recognition.

Unless required to submit earlier by the state, programs are encouraged to take the full time period specified above to address conditions to recognition. If conditions to recognition are not removed in the Response to Conditions report, program status will change to Not Recognized.

National recognition with conditions. The following conditions must be addressed within 18 months (see above for specific date):

The program has developed assessments that are aligned with the standards. As data are collected, assessments will likely be refined to meet the specific needs of the institution.

NCATE requires that data be collected on at least five (5) assessments to recommend national recognition. Southeastern has provided data for Assessments #1, #2 and #4. Data for a total of five assessments is required. When the program submits the data, please also include the rubrics and reflections on possible changes based on the use of the instruments.

The research component needs to reflect that candidates ask questions, design an experiment, collect data and report on that data and be implemented for biology and physics majors.

For further information on due dates or requirements, contact program review staff at NCATE (202-466-7496).