

2012 NATIONAL RECOGNITION REPORT

Initial Preparation of Science Teachers (2012 Standards)

National recognition of this program is dependent on the review of the program by representatives of the National Science Teachers Association.

COVER PAGE

Name of Institution

Lehman College, City University of New York

Date of Review

MM DD YYYY

08 / 01 / 2019

This report is in response to a(n):

- Initial Review
- Revised Report
- Response to Conditions Report

Program Covered by this Review

Secondary Science Education

Grade Level⁽¹⁾

7-12

(1) e.g. Early Childhood; Elementary K-6

Program Type (First Teaching License or Unspecified)

First Teaching License

Title for State License for which candidates are prepared, including science areas licensed to teach ⁽²⁾

New York State Initial Certificate Biology(grades 7-12); Chemistry (grades 7-12); Earth Science (grades 7-12); Physics (grades 7-12)

(2) i.e., Single Field -Biology; Dual Field -- Biology and Chemistry; Broad Field, Integrated Science, etc.

Award or Degree Level

- Baccalaureate
- Post Baccalaureate
- Master's

PART A - RECOGNITION DECISION

SPA decision on national recognition of the program(s):

- Nationally recognized
- Nationally recognized with conditions
- Further development required **OR** Nationally recognized with probation **OR** Not nationally recognized [See Part G]

Test Results (from information supplied in Assessment #1, if applicable)

The program meets or exceeds SPA benchmarked licensure test data requirement, if applicable:

- Yes
- No
-

Not applicable

Not able to determine

Comments, if necessary, concerning Test Results:

previously met

Summary of Strengths:

Program leaders are commended on effective, ongoing refinement of the assessments 5 and 6, and the effective aligned with assessments with NSTA standards 1, 2, 3, 4.

PART B - STATUS OF MEETING SPA STANDARDS

NSTA Standard 1

Effective teachers of science understand and articulate the knowledge and practices of contemporary science. They interrelate and interpret important concepts, ideas, and applications in their fields of licensure.

Preservice teachers will:

1a) Understand the major concepts, principles, theories, laws, and interrelationships of their fields of licensure and supporting fields as recommended by the National Science Teachers Association.

1b) Understand the central concepts of the supporting disciplines and the supporting role of science-specific technology.

1c) Show an understanding of state and national curriculum standards and their impact on the content knowledge necessary for teaching P-12 students.

Met



Met with Conditions



Not Met



Comment:

Previously met

NSTA Standard 2

Effective teachers of science understand how students learn and develop scientific knowledge. Preservice teachers use scientific inquiry to develop this knowledge for all students.

Preservice teachers will:

2a) Plan multiple lessons using a variety of inquiry approaches that demonstrate their knowledge and understanding of how all students learn science.

2b) Include active inquiry lessons where students collect and interpret data in order to develop and communicate concepts and understand scientific processes, relationships and natural patterns from empirical experiences. Applications of science-specific technology are included in the lessons when appropriate.

2c) Design instruction and assessment strategies that confront and address naïve concepts/preconceptions.

Met



Met with Conditions



Not Met



Comment:

Previously met

NSTA Standard 3

Effective teachers of science are able to plan for engaging all students in science learning by setting appropriate goals that are consistent with knowledge of how students learn science and are aligned with state and national standards. The plans reflect the nature and social context of science, inquiry, and appropriate safety considerations. Candidates design and select learning activities, instructional settings, and resources--including science-specific technology, to achieve those goals; and they plan fair and equitable assessment strategies to evaluate if the learning goals are met.

Preservice teachers will design a Unit of Study that:

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

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

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

understandings that students have formulated.

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

Met

Met with Conditions

Not Met

Comment:

Assessment 3 (PBL and Lesson Plan) meets three of the four elements of the standard so the Standard is met. Element 3d is assessed by the same criteria as 4a and 4b in the rubric. Criteria cannot assess more than one element of a standard. Assessment 3, Unit Plan, provides evidence that candidates can implement a variety of teaching strategies that are inclusive and motivating (3a) and that illustrate active inquiry strategies to help students understand scientific processes and develop their science literacy (3b). Assessment 3 also demonstrates that candidates implement fair and equitable assessment strategies (3c) and that the learning environment and experiences are safe and appropriate for their licensure area (3d).

NSTA Standard 4

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

Preservice teachers will:

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

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

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

Met

Met with Conditions

Not Met

Comment:

Previously met. Initial reviews did not address multiple elements of the standards scored using one rubric criteria. Criteria cannot assess more than one element of a standard. The Program should revise this rubric to assess one element per criteria.

NSTA Standard 5

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

Preservice teachers will:

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

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

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

Met

Met with Conditions

Not Met

Comment:

Standard 5 is met with conditions. Evidence provided does not adequately meet the preponderance of evidence required for this standard.

Assessment 5 Impact on Student Learning uses edTPA. Rubric 8 assesses 5a and 5c using one criteria. Criteria cannot assess more than one element of a standard.

Assessment 6 Evidence of Professional Skills contains an action research component which addresses 5b.

NSTA Standard 6

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

Preservice teachers will:

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

6b) Engage in professional development opportunities such as conferences, research opportunities, or projects within their community.

Met

Met with Conditions

Not Met



Comment:

Standard 6 is not met. Assessments are either not properly aligned with or do not meet the meet the preponderance of evidence required for this standard. Multiple assessments are included in the narrative which should be presented as distinct assessments. It is unclear where element 6a is specifically assessed.

PART C - EVALUATION OF PROGRAM REPORT EVIDENCE

C.1. Candidates' knowledge of content

The program's use of Assessments 1 and 2 provide sufficient evidence that candidates understand the content in their subject area(s).

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

Because of the multiple elements assessed by a single rubric criteria in this area, evidence is weak or insufficient that candidates have the professional and pedagogical knowledge and skills specific to science as reflected by the NSTA standards.

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

Evidence provided did not demonstrate that the program's candidates are positively impacting P-12 student learning in the areas of described by Standard 5.

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)

Section V narrative provides clear indication that the program uses diverse sources of data as the basis for ongoing improvement of the program.

PART E - AREAS FOR CONSIDERATION

Areas for consideration

For credible claims about candidate performance relative to each element (a, b, c) of the Standard, each element of the standard should be represented separately on the rubric (one element per row) and each should include a qualitative continuum of criteria ranging from "exceeding" to "met" to "not met."

Standard 5: Assessment 5 should be revised to provide evidence that candidates demonstrate the impact of their instruction on P-12 students scientific knowledge

(5a), ability to understand aspects of the nature of scientific practices (5b), and use of scientific inquiries (5c).

Standard 6: Assessment 6 should be revised to provide evidence that candidates engage in professional development both within their content area (6a) and within science pedagogy (6b). Evidence for a minimum of one element must be provided in order for Standard 6 to be met.

Data Rule - Revised Report: Programs submitting a revised report are required to submit data from one applications of the assessment for full national recognition.

PART F - ADDITIONAL COMMENTS

F.1. Comments on Section I (Context) and other topics not covered in Parts B-E:

None

F.2. Concerns for possible follow-up by the CAEP site visitors:

Review of reports using NSTA Standards has been discontinued as part of the CAEP accreditation process. Programs that have conducted review using these standards can refer to the NSTA decision report they have received so far, while discussing evidence for CAEP Component 1.3 on the self-study report (SSR). Evidence of the program's efforts to address the remaining concerns may be provided on the self-study report and to the CAEP site team, as required, for CAEP accreditation purposes.

PART G - DECISIONS

Please select final decision:

- National Recognition with Conditions.** The program has received a decision of conditional national recognition. See below for details.

NATIONAL RECOGNITION WITH CONDITIONS

The program is recognized through:

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08 / 01 / 2021

Subsequent action by the institution: As of August 2019, the National Science Teachers Association (NSTA) will discontinue SPA Program Review with National Recognition as part of the CAEP accreditation process. If a program is currently "Recognized with Conditions," or received a decision of "Further Development Required," or "Recognized with probation," Response to Conditions and Revised Reports will not be reviewed by NSTA starting August 1, 2019. Moving forward, EPPs participating in the CAEP process that offer licensure, certification, or endorsement programs in Science Education will be reviewed using either the CAEP Evidence Review of Standard One (formerly known as CAEP Program Review with Feedback) or the State Program Review options.

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NSTA identified the following conditions based on which a full national recognition decision could not be provided.

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Please click "Next"

This is the end of the report. Please click "Next" to proceed.