

## Student Outcomes Assessment and Success Report AY2018-19

Consult with your college dean's office regarding due date and how to submit. Deans will submit reports to the Office of Assessment & Accreditation annually by October 15.

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### Part 1a: Summary of Student Learning Outcomes Assessment

<b>a. What learning outcomes did you assess this past year?</b>  If this is a graduate program, identify the Graduate Student Learning Outcome each outcome aligns with	<b>b. (1) What assignments or activities did you use to determine how well your students attained the outcome? (2) In what course or other required experience did the assessment occur?</b>	<b>c. What were your expectations for student performance?</b>	<b>d. What were the actual data/results?</b>  E(Exceeds Expectations) M(Meets Expectations) D(Does not Meet Expectations)	<b>e. What changes or improvements were made or will be made in response to these assessment results or feedback from previous year's report? Can expand on this in Part 2.</b>
2.1(b). Science teacher candidates (i.e., Science Education majors) plan and implement internally consistent units of study that address the diverse goals of the national and state science standards(NSTA standard 3)	(1) Unit plan (2) SCED398L (Science Teaching Methods II, Fall 2018)	All students enrolled in SCED398L (7 students) should Meet (M) or Exceed Expectations (E) on related components of the unit plan assignment	Unit plan (see Rubric #2) <ul style="list-style-type: none"> <li>• Standards E(7), M(0), D(0)</li> <li>• Unit goals E(7), M(0), D(0)</li> <li>• Selection of learning resources E(7), M(0), D(0)</li> </ul>	Revised a unit plan rubric to include NSTA standards
3.2(a). Science teacher candidates vary their teaching strategies and methods to promote the development of multiple student skills and levels of understanding (NSTA standard 3)	(1) Lesson plan, Unit plan, Exit survey (2) SCED396L (Science Teaching Methods I: Spring 2019), SCED398L (Fall 2018), SCED402 (student teaching: Spring 2019)	All students enrolled in SCED 396L (9 students), SCED398L (7 students) should Meet (M) or Exceed Expectations (E) on related components of the lesson (SCED 396L) & unit plan (SCED 398L) assignment.  All students enrolled in SCED402 should select Strongly satisfied (5) or Satisfied (4) for the related exit survey questions	Lesson plan (Rubric #1) <ul style="list-style-type: none"> <li>• Active Inquiry Lessons E(5), M(4), D(0)</li> <li>• Selection of teaching and learning activities E(8), M(1), D(0)</li> </ul> Unit plan (Rubric #2) <ul style="list-style-type: none"> <li>• Active Inquiry Lessons E(7), M(0), D(0)</li> <li>• Selection of teaching and learning activities E(7), M(0), D(0)</li> </ul> Exit survey (Q. 6) (Rubric #5)	Developed exit survey questions for CAEP data

			<ul style="list-style-type: none"> <li>Instructional strategies 5(5), 4(0), 3(0), 2(0) 1(0)</li> </ul>	
3.2(b). Science teacher candidates successfully promote the learning of science by students with different abilities, needs, interests, and backgrounds (NSTA standard 2)	(1) Clinical practice (i.e., student teaching) evaluation (2) SCED402 (Spring 2019)	All students enrolled in SCED402 (5 students) should Meet (M) or Exceed Expectations (E) on related components of the clinical practice evaluation	Clinical practice evaluation : Skills of teaching (Rubric #4) <ul style="list-style-type: none"> <li>Collaborative learning E(2), M(3), D(0)</li> <li>Use prior conceptions E(2), M(3), D(0)</li> <li>Supportive environment E(2), M(3), D(0)</li> </ul>	Need to emphasize this learning outcome during the supervising and student teaching evaluation meetings
3.2(c). Science teacher candidates successfully use technological tools to access resources, collect and process data, and facilitate the learning of science (NSTA standard 2)	(1) Lesson plan, Unit plan, Exit survey (2) SCED396L (Spring 2019), SCED398L (Fall 2018), Exit survey (Spring 2019)	All students enrolled in SCED 396L (9 students) and SCED398L (7 students) should Meet (M) or Exceed Expectations (E) on related components of the lesson plan (SCED396L) and unit plan (SCED398L)  All students enrolled in SCED402 should select Strongly Satisfied (5) or Satisfied (4) for the related exit survey questions	Lesson plan (Rubric #1) <ul style="list-style-type: none"> <li>Science-specific technology E(1), M(8), D(0)</li> </ul> Unit plan (Rubric #2) <ul style="list-style-type: none"> <li>Science-specific technology E(6), M(1), D(0)</li> </ul> Exit survey (Q.7) (Rubric #5) <ul style="list-style-type: none"> <li>Technology 5(4), 4(1), 3(0), 2(0), 1(0)</li> </ul>	Need to encourage our Science Education majors to include science-specific technology in their lesson plans during SCED396L
4.2 (a). Science teacher candidates use multiple assessment tools and strategies to achieve important goals for instruction that are aligned with methods of instruction and the needs of students (NSTA standard 5)	(1) Lesson plan, Unit plan, Exit survey (2) SCED396L (Spring 2019), SCED398L (Fall 2018), Exit survey (Spring 2019)	All students enrolled in SCED 396L (9 students) and SCED398L (7 students) should Meet (M) or Exceed Expectations (E) on related components of the lesson plan (SCED396L) and unit plan (SCED398L)	Lesson plan (Rubric #1) <ul style="list-style-type: none"> <li>Assessment strategies E(6), M(3), D(0)</li> </ul> Unit plan (Rubric #2) <ul style="list-style-type: none"> <li>Assessment strategies E(6), M(1), D(0)</li> </ul> Exit survey (Q.9) (Rubric #5) <ul style="list-style-type: none"> <li>Evaluate learning goal 5(2), 4(3), 3(0), 2(0), 1(0)</li> </ul>	

		All students enrolled in SCED402 should select Strongly Satisfied (5) or Satisfied (4) for the related exit survey questions		
4.2 (b). Science teacher candidates use the results of multiple assessments to guide and modify instruction, the classroom environment, or the assessment process (NSTA standard 5)	(1) Unit reflection (2) SCED398L (Fall 2018)	All students enrolled in SCED398L (7 students) should Meet (M) or Exceed Expectations (E) on related components of the unit plan reflection (SCED398L)	Unit reflection (Rubric #3) <ul style="list-style-type: none"> <li>• Reflection on scientific knowledge E(6), M(1), D(0)</li> <li>• Reflection on nature of science E(6), M(0), D(1)</li> <li>• Reflection on inquiry E(5), M(1), D(1)</li> </ul>	Revised the learning outcome/rubric based on SPA report feedback  Need to encourage our Science Education majors to reflect on how to use assessment results to improve their instruction

Note: If you would like to report on more than three outcomes, place the cursor in the last cell on the right and hit "tab" to add a new row.

**Link for Rubrics:**

<https://drive.google.com/file/d/1i8a2iOR2LYyTceWCsX7qdnXKq1wGgaM4/view?usp=sharing>

L:\College of Arts and Sciences\Science Education - Faculty-Staff\Rubrics

**Part 1b: Review of Student Success Data & Activities**

Use [Blue Reports](#) to generate the following information (as well as any other information helpful to you):

1) Cohort Sizes

	Fall 2016	Fall 2017	Fall 2018	Fall 2019
College of Arts & Sciences	3,827	3,752	3,686	3,479
Science Education	27	27	29	24

## 2) Fall-to-Fall Return Rates

	Retention % (Next Fall)	Retention % (Next Fall)	Retention % (Next Fall)	Retention % (Next Fall)
Term	Fall 2018	Fall 2018	Fall 2018	Fall 2018
Grade level	Freshman	Sophomore	Junior	Senior
College of Arts & Sciences	63.96%	81.44%	87.67%	66.77%
Science Education	25.00%	100.00%	100.00%	100.00%

## 3) 5-Year Graduation Rate

	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014
College of Arts & Sciences	36.01%	39.44%	38.11%	36.59%	36.84%
Science Education	66.67%	50.00%	50.00%		50.00%

### What worked well in supporting student success this year?

To increase enrollment and retention numbers, we advertise our Science Education program in various ways.

- Invited Science and Science Education majors to a Science Education open house in August 30, 2018 and January 24, 2019. A total of 19 students attended.
- Provided a Science Education Seminar in November 29, 2018 and March 12, 2019. A local science teacher was invited to speak at each seminar. A total of 21 Science Education majors and one Science Education faculty attended. The topics of the seminars were Student Engagement, Early Field Experiences, and Classroom Management.
- Encouraged and supported science education students to attend a HASTI conference (Hoosier Association of Science Teachers, Inc.). Three students attended with one Science Education faculty member in February 17 -19, 2019.
- Participated in the ISU Major Fair: October 31, 2018. A total of 50 students visited our Science Education booth.
- Updated the spreadsheet of graduating seniors to monitor whether teacher licensure was conferred along with place of employment.
- Conducted exit interviews with Science Education majors who graduated in December 2018 and May 2019  
: November 9, 2018 & May 6, 2019

### What are the most significant opportunities for improvement upon which to focus in the coming year?

Continuing to recruit and retain Science Education majors is the main challenge in Science Education. The current double major requirement for Chemistry, Physics, and Biology teaching majors is the main barrier in recruiting and retaining students. We expect the new BA degree in Chemistry and

Physics to contribute to an increased enrollment. We also hope that the Biology department can offer a BA for Science Education majors. More importantly, the BA Biology degree could contribute to the recruitment of more transfer students from IVY Tech and Vincennes University.

To increase student enrollment, we will advertise our Science Education program in various ways including; informing science majors about the Science Education program, inviting science majors to our Science Education open house, advertising our program via posters, brochures, Live TV, and the ISU Major Fair, etc. We will have a student teaching evaluation meeting and exit interviews with seniors every semester. We will also update the spreadsheet of our graduates to monitor whether teacher licensure is conferred along with place of their employment. In order to provide professional development activities to our majors, which is one of the key data resources for gaining national accreditation for our Science Education program, we will encourage our majors to participate in science education seminars as well as various community engagement activities for local students and parents.

### **Part 1: Summary of Career Readiness Activities (OPTIONAL FOR GRADUATE PROGRAMS)**

Please submit your Career Readiness Competencies curriculum map along with this report as a separate attachment. The template was sent to you with this form via email. It is not expected that every course in your curriculum correspond to a career readiness competency.

### **Part 2: Continuous Quality Improvement**

Science teacher candidates (i.e., Science Education majors) are required to take two science methods courses: SCED396L and SCED398L in their junior and senior year. After taking these two courses, they are eligible to take the clinical practice course (i.e., student teaching: SCED402). Currently we have 24 candidates in the Science Education program, and 7 candidates were enrolled in SCED 398L in Fall 2018, 9 in SCED396L in Spring 2019, and 5 in SCED402 in Spring 2019. Most of the learning outcomes in this report are assessed via candidates' lesson plan (SCED396L), unit plan (SCED398L), clinical practice evaluation (SCED402), and exit survey (SCED402).

The assessment of the learning outcome 2.1(b) shows that science teacher candidates are able to plan and implement a unit of study that addresses the diverse goals of the national and state science standards. All 7 candidates received an "Exceed Expectations" for the related components of the unit plan assessment (Rubric #2). Regarding 3.2 (a), 3.2(b), and 3.2(c) (i.e., Instructional strategies), our rubrics (#1, #2) for both SCED396L lesson plan and SCED398L unit plan assessment include specific components which are aligned to National Science Teacher Association (NSTA) standards: Active inquiry lesson, Selection of teaching and learning activities, and Science specific technology. These components are used to evaluate our candidates' ability to use various teaching strategies, including science-specific technology, to promote science learning of secondary students with diverse needs and backgrounds. The data from the exit survey and clinical practice evaluation also show that our candidates are confident in their teaching skills by using various instructional strategies. Regarding 4.2(a) and 4.2(b), the assessment results indicate that most candidates are able to use multiple assessment tools and strategies to achieve important goals for instruction, and reflect on the results of multiple assessments to improve their instruction.

Among six learning outcomes we assessed for the past year, 3.2(c) and 4.2(b) has fewer "Exceed Expectations" compared to others. For 3.2(c), we plan to cover the topic of technology before candidates develop their lesson plans, and encourage them to include science-specific technology in their lesson plans of SCED396L. For 4.2(b), we will encourage our candidates to focus on how to use assessment results to improve their instruction when they write the reflection section of their unit plan during SCED398L. As shown in the career readiness map (attached as a separate file), through the three SCED courses (SCED396L, SCED398, and SCED402), our candidates improve their career readiness competences. The assessment data in this report are related to some career readiness competences which are required for science teachers. By planning and teaching science lessons during SCED396L, SCED398L and SCED402, science teacher

candidates develop professionalism/work ethic, oral/written communications, and digital technology. Improving the quality of our curriculum and candidates' career readiness competences will contribute to increased retention and graduation rates of our program. As shown in Part 1b of this report, our program's year-to-year return rates and 5-year graduate rates are higher than the average rates of the College of Arts and Sciences. We will continue to put effort into increasing these rates.

In the coming year, our assessment plan will focus on the understanding of nature of science and safety in the science classroom. These learning outcomes align with NSTA standards, which we should implement in order to keep our national accreditation. Our assessment data will be used to prepare our program report for national accreditation (i.e., SPA and CAEP). The assessment data will also be shared with the Science Education advisory committee. Our Science Education advisory committee, consisting of tenured faculty from each science department, meets regularly to discuss enrollment, identify potential curricular changes, and identify the strengths and weaknesses of assessment in the core content-pedagogy courses. We believe that this Science Education advisory committee has contributed to Science Education program development.

***Please prepare this report as a Word document.*** Do not include any attachments. Instead, provide links to important supporting materials (e.g., detailed—but not student-specific--assessment results; rubrics; minutes; etc.), or upload them to the college's assessment site in Blackboard.

Dear Elsun,

Thank you so much for sharing your assessment process and findings for AY 2018-19 with the Assessment Council. You will find feedback and ratings on the rubric below. It is understood that some of the feedback might encompass practices that you already engage in but were not documented in this report. As the purpose of this evaluation is focused on recognizing great work and helping faculty improve assessment practice, it is not necessary to retroactively add documentation. Please feel free to let me know if you have any questions or if there is any way I can assist you in further developing assessment in your program.

This report will be shared with the Associate Dean(s) and Dean of your college and summarized findings will be shared as composite college/institutional data with the President's Office and the Provost's team.

Sincerely,

Kelley (x7975)

<b>Program: B.S. Science Education</b>	<b>Overall Rating: Exemplary (3.00/3.00)</b>
<b>Strengths</b>	<b>Recommendations</b>
<ul style="list-style-type: none"><li>• Learning outcomes are clear, specific, and measureable, and they are aligned with appropriate professional standards.</li><li>• Courses and assignments used for assessment are clearly described. A mix of direct and indirect measures provides more context for findings.</li><li>• Assessment data are evaluated using tools like analytical rubrics so that the separate outcomes in assignments can be accurately assessed.</li><li>• Clearly described expected and actual student performance. Excellent breakout of scores by performance level to provide more granular insight into student achievement of learning outcomes.</li><li>• Clear information about how prior results have shaped current practice, as well as how these findings will help target areas of improvement in technology and assessment.</li><li>• Strong plan for upcoming assessment.</li><li>• Faculty are clearly involved in all steps of the assessment process and take a shared approach to shaping curriculum, teaching, student learning, and success.</li></ul>	

Evaluation Criteria	Exemplary	Mature	Developing	Undeveloped
<p><b>Student Learning Outcomes</b></p>	<p>At least one learning outcome that is aligned with program coursework is assessed this cycle.</p> <p>Learning outcome(s) is specific, measurable, and student-centered.</p> <p>Rationale for assessment of this outcome(s) is made clear (ex: it is part of a standing assessment cycle, a need was identified, etc.)</p> <p>Learning outcome(s) directly link to college, institutional, and/or accreditor goals/standards.</p>	<p>At least one learning outcome that is aligned with program coursework is assessed this cycle.</p> <p>Learning outcome(s) is specific, measurable, and student-centered.</p> <p>Rationale for assessment of this outcome(s) is made clear (ex: it is part of a standing assessment cycle, a need was identified, etc.)</p>	<p>At least one learning outcome that is aligned with program coursework is assessed this cycle.</p> <p>Learning outcomes(s) is measurable.</p>	<p>No learning outcomes are identified for assessment or the outcomes that are identified are not linked to program outcomes aligned with program coursework (e.g. – curriculum map) or are not measurable.</p>
<p><b>Performance Goals &amp; Measures</b></p>	<p>Performance goal identified for each learning outcome is clear and reasonable (ex: based on previous performance data, professional standards, etc.).</p> <p>Identified measures are designed to accurately reflect student learning, including at least one direct measure.</p> <p>Tools used to measure student performance are described and were reviewed for validity or trustworthiness prior to use (note this in the report; attach tools if applicable – ex: rubrics, checklists, exam keys, etc.).</p>	<p>Performance goal identified for each learning outcome is clear and reasonable (ex: based on previous performance data, professional standards, etc.).</p> <p>Identified measures are designed to accurately reflect student learning, including at least one direct measure.</p> <p>Tools or processes for evaluating student performance on measures are described (attach tools if applicable – ex: rubrics, checklists, exam keys, etc.).</p>	<p>Performance goal(s) is identified for each learning outcome.</p> <p>Identified measures (ex: assignments, projects, tests, etc.) are poorly suited to performance goals or are solely indirect measures.</p> <p>Tools or processes for evaluating student performance on measures are not described.</p>	<p>No goals for student performance of learning outcomes is identified, and/or no measures are provided.</p>



<b>Analysis &amp; Results</b>	<p>Data is collected using the measures and tools identified.</p> <p>Results are reported with clear description of quality analysis (e.g., analysis follows accepted statistical or qualitative procedures).</p> <p>Results are shared in relation to performance goals.</p> <p>Results are discussed in relation to college, institutional, and/or accreditor goals/standards.</p>	<p>Data is collected using the measures and tools identified.</p> <p>Results are reported with clear description of analysis (e.g., analysis follows accepted statistical or qualitative procedures).</p> <p>Results are shared in relation to performance goals.</p>	<p>Data is collected using the measures and tools identified.</p> <p>Results are reported with little description of analysis.</p>	<p>No data is being collected.</p> <p>No results are provided.</p>
<b>Sharing &amp; Use of Results for Continuous Improvement</b>	<p>Clear information is provided about sharing and using results to inform practice.</p> <p>Discussion of what was learned from results is provided and connected to plans for sharing and using results to inform practice.</p> <p>A plan for adjusting performance, goals, assessment, and/or program components based on results is outlined.</p>	<p>Clear information is provided about sharing and using results to inform practice.</p> <p>Discussion of what was learned from results is provided and connected to plans for sharing and using results to inform practice.</p>	<p>Limited information is provided about sharing or using results to inform practice.</p> <p>Some discussion of what was learned from results is provided.</p>	<p>No information is provided about sharing or using results to inform practice.</p> <p>No evidence of reflection on results is provided (ex: discussion, conclusions drawn)</p>
<b>Overall Rating</b>	<input checked="" type="checkbox"/> <b>Exemplary</b>	<input type="checkbox"/> <b>Mature</b>	<input type="checkbox"/> <b>Developing</b>	<input type="checkbox"/> <b>Undeveloped</b>