EASTERN ILLINOIS UNIVERSITY *report summary form updated: 1/26/2022*

Eight-Year Program Review IBHE Report Summary: see attached Resources page

PROGRAM REVIEW REPORT SUMMARY

1. Eastern Illinois University

2. 13-1316 Science with Teacher Licensure

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5. OVERVIEW

The Science with Teacher Licensure program aims to prepare secondary science teacher candidates to be effective in the classroom, both in term of discipline-specific content knowledge and pedagogical knowledge. This program is housed in four different departments across the College of Liberal Arts and Sciences: Biological Science, Chemistry, Physics, and Geology-Geography.

The University learning goals are reflected in the goals of the program. Students are expected to engage in critical thinking throughout their curriculum. Further, they are expected to learn how to engage their own secondary science students in critical thinking. Through creating thoughtful and effective lesson and unit plans, the Science with Teacher Licensure students are expected to evaluate sources and determine the best reference materials for their classrooms. One of the most important parts of becoming a teacher is to both speak and listen effectively. They must effectively communicate their expectations and deliver content to their students in a clear and understandable way. Our students are also expected to explore and integrate both quantitative and qualitative reasoning within their curriculum and also to incorporate them in their lesson and unit plans. Last, but certainly, not least, the Science with Teacher Licensure students are expected to exercise responsible citizenship, through respecting and acknowledging the contributions of different groups to the body of science knowledge, as well as respecting and appreciating a diverse student body and faculty. Exploring and evaluating ethical and societal issues, as well as evaluating solutions and risks, is required over the course of the program, and particularly with regard to the capstone unit plan in the departmental methods course (BIO/PHS 3400).

Programs similar to this Science with Teacher Licensure program are found around the state. While there is one coordinator for the program, each discipline (Biology, Chemistry, Physics and Earth Science) has a faculty member dedicated to advising within that discipline. The advisor works closely with the coordinator to approve students for student teaching, etc. Our program requires classes in all of the introductory sciences, since candidates can potentially teach any of them once they are licensed. Advanced classes (AP, Honors, etc.) within the discipline can only be taught by candidates who have sought that particular endorsement. In comparing the curriculum to those at other universities around the state, ours has a broader stroke, requiring more science content classes outside the endorsement discipline.

Our graduates are overwhelmingly successful in attaining employment at public schools around Illinois, most being offered positions before finishing their semester of student teaching. Some students also go on to pursue graduate education, either in the content area or in education.

6. MAJOR FINDINGS AND RECOMMENDATIONS

a. Description and assessment of any major changes in the program

1. Changes in the overall discipline or field

As with any major, there are constant small changes to the field. Pedagogical methods evolve, as does the science content the students are expected to learn and teach. Faculty teaching courses in the curriculum must keep abreast of these changes and update their courses from year to year.

2. Student demand

There have been catastrophic consequences impacting the program over the last 8 years. The Illinois State Budget Crisis of June 2015-August 2017 was the first of these disasters. This impacted EIU greatly; the number of course offerings was slashed dramatically. There were fewer summer offerings, fewer sections of everything overall. We saw the university enrollment numbers decrease dramatically due to panic about funding of the university. More recently, the COVID-10 pandemic has impacted the program. Many courses went from being offered face-to-face to being online. Some students thrived while others struggled with this change. We were unable to offer practicum classes as they had been offered in the past, which our candidates going into the schools. The candidates spent very little time in classrooms between Spring 2020 and Spring 2021.

In looking at the IBHE Data Bank since 2015, we seen enrollments in the major take a dive after 2016 (from 28 majors in 2016 to 19 in 2017). Since that time, enrollments have remained steady between 18-21 students. An investigation of the data from EIU's Institutional Research regarding degrees awarded shows oscillating numbers between 2 and 9 during fiscal year 2015 and fiscal year 2021; the average is about 4 degrees awarded over this period.

3. Societal Need

The Bureau of Labor Statistics projects a 5% growth in the area of secondary teachers between 2021 and 2031, which they say is "as fast as average." In the ISBE Supply and Demand Report, the unfilled FTEs for Secondary Science Teachers was 72.8-100.6, which translates to a vacancy rate of 0.4-0.6%. While this is considerably less than Special Education Teachers, it still shows a persistent need for secondary science teachers in Illinois.

As mentioned earlier in this report, our candidates are often offered employment before finishing the semester of student teaching. The Coordinator often gets e-mails from Superintendents and Principals around the state requesting our alumni apply for open positions.

There will always be a need for good secondary science teachers and we have a history of providing them.

4. Institutional Context for Offering the Degree

EIU started out as a normal school; thus, it has a long history of training teachers. The Secondary Science Teacher Licensure students are housed in the science departments within the College of Liberal Arts and Science. Courses within the curriculum are introductory general education science classes, science discipline majors classes that are shared with the teacher licensure candidates, and education/pedagogy classes that are offered through the College of Education. The only class that is unique to the Science Teacher Licensure program is BIO/PHS 3400, which is the science methods class, which is offered once a year in the fall.

The IBHE Cost Study (2019) reports the cost per credit hour for Teacher Education (not just secondary science) at EIU as $364.94 for lower division courses and $429.26 for upper division courses. These numbers are comparable for credits in Geology-Geography, Physics, Life Science, and Chemistry at EIU.

5. Other Elements Appropriate to the Discipline in Question

The curriculum of the Science Teacher with Licensure program is packed! This makes it difficult for students to get through in 4 years. Sometimes courses are not offered every semester and certainly EIU doesn't offer nearly as many courses in the summer as it did 10 years ago. This means sometimes students have to wait a semester or so to get a class. If they earn less than a C, the student much retake the class. In addition, during this 8 year period, the edTPA was required and then suspended, both of which have presented challenges.

PAGE 2, IF NECESSARY: 6. MAJOR FINDINGS AND RECOMMENDATIONS

b. Description of major findings and recommendations, including evidence of learning outcomes and identification of opportunities for program improvement

To assess **content knowledge and pedagogical knowledge** for Science with Teacher Licensure students, the program tracks 1)passing scores (240) on the Illinois State Content test, which is required for Licensure, 2) GPAs (must be maintained at 2.65 or better according to IBHE)., 3) scores of at least 75% on the Unit Plan for BIO/PHS 3400 Science Methods, and 4) at least 70% on the lesson plans that accompany the Unit Plan in BIO/PHS 3400. All of these metrics are being met at an acceptable rate. All have met the GPA and Content Test requirement. Over 80% percent of students in BIO/PHS 3400 since 2017 have earned at least a C on the unit plan. Of the 5 students who did not: two students never turned in the unit plan, failed the class, and switched majors (this was at the height of the pandemic in 2020) and three earned a D or F on the unit plan. Ninety-two percent earned at least 70% on the lesson plans.

To assess **laboratory safety knowledge,** students must: 1) "Meet Expectations" or better on the Student Teaching Safety Addendum rubric (scored by their cooperating teacher during student teaching), 2) score at least a C on the safety module assignment in BIO/PHS 3400, OR earn at least a C on the safety exam in BIO/PHS 3400. All Science with Teacher Licensure students have met the expectations under this assessment category.

To assess their **performance/impact in the classroom during student teaching,** students must : either 1) pass the edTPA assessment, OR 2) achieve an "Acceptable" score with regard to each standard assessed in the P-12 Science Impact Assignment. For edTPA, scoring information is available from January 2017. This assessment was used until the pandemic hit and student teaching was impacted in Spring 2020. The majority of the students passed on the first try. However, some students had to submit multiple times. Some were unable to pass, even after resubmittal. Sixteen out of twenty students (80%) passed on their first submittal. Four students did not pass on the first try. Only one of those students ultimately continued on and resubmitted, got a passing score and was licensed. One student never finished his submittal of the edTPA; he changed career paths and decided not pursue licensure. After a few semesters of not gathering data, due to the suspension of the edTPA requirement, the old P-12 Science Impact assignment was brought back to assess student teacher's impacts in the classroom. In the first semester (Fall 2021) of bringing it back, when students were not trained on the assignment, 1 out of 2 students received Acceptable on the Standards. One student did not use data that was comparable from the formative to the summative assessment and the data could not be interpreted. Subsequent semesters were more successful, as students were told of the assignment ahead of time. One student didn't meet an acceptable rating because her unit for Standard 1 (Content) was inappropriate. That same student was not rated Acceptable on Standard 3 (Inquiry) because her data was not comparable from the formative to summative assessment. Overall, student teachers are being successful and making a positive impact in the classrooms in which they are placed.

To assess their **engagement in critical reflection and participation in professional development activities,** students must 1) show evidence that over the course of their time at EIU they have attended at least one discipline-specific (science) talk/webinar/event and one education-focused talk/webinar/event, in addition to opportunities offered as a part of BIO/PHS 3400, 2) complete reflection papers after both microteaching assignments in BIO/PHS 3400, and 3) Reflection on teaching is evident in the edTPA OR P-12 Science Impact assignment submitted during student teaching. All students have met this criteria at at least the Acceptable Level, one student met it at the Target level.

c. Actions take since the last review

Small changes have been made to the curriculum. The 3 course Intro Biology Sequence (Intro, Zoology, and Botany) has been cut to two courses; this has been a great change, since it is already such a packed curriculum and all Science Teacher Licensure candidates must take this sequence. The requirements for the Earth Science Teacher Licensure curriculum has also changed. The Paleontology course, required for the Earth Science candidates has been cut from the curriculum. That material is now addressed in GEO 2200 History of the Earth. The sequence of pedagogy classes the Science with Teacher Licensure students take through the College of Education has been moved around since the last report. Other specific changes include a suspension of the edTPA during the pandemic (since mid-spring 2020) by the state of Illinois. This means there are a few semesters when assessments related to the edTPA were not gathered. Starting in Fall 2021, an old P-12 Impact assignment that was used up until edTPA became required was reworked and now data from that is used in place of the edTPA. The laboratory safety exam has been replaced by a safety module that each student designs in BIO/PHS 3400.

d. Actions to be taken as a result of the review

The P-12 Science Impact Assignment should be improved and students trained to understand how to do it, if it continues to be used for assessment. This will depend on whether the edTPA requirement is reinstated or not. The rubric for the Unit Plan should probably be revisited and made tighter. It is quite long and thus hard for students to adequately plan for, especially since it is their first time planning for three weeks-worth of lessons. A better way of tracking professional development needs to be instituted; it's been historically hard to track in this program.

Comments from the College Dean:

The B.S. in Science with Teacher Licensure is a multi-disciplinary degree program that prepares undergraduates for certification and licensure as secondary science teachers according to laws and mandates outlined by the State of Illinois, the Illinois State Board of Education and the Illinois Board of Higher Education. The curriculum includes coursework from the Biological Sciences, Chemistry, Geology, Earth Science, and Physics that also prepares students for certification and licensure to teach advanced placement as well as second year secondary science courses within their chosen concentration. The program continues to implement appropriate curricular updates that align with changing state standards. Assessment data indicate that a high percentage of students are meeting learning goal benchmarks related to content and pedagogical knowledge standards. The program continues to serve a key role in preparing secondary level science teachers and program graduates are overwhelmingly successful in attaining employment at schools throughout Illinois. As noted in the report, there will always be a need for well-prepared secondary science teachers and the program has a history of providing them.

VPAA Decision:

- (●) Program in good standing
- ( ) Program flagged for priority review
- ( ) Program enrollment suspended

VPAA Explanation:

Science with Teacher Licensure, B.S.
The summary above outlines the challenges faced by the program to prepare its students for successfully navigating a lengthy curriculum and passing the edTPA (Educative Teacher Performance Assessment) and/or the P-12 Science Impact Assignment. While minor curricular changes were implemented over the review period, more changes to improve the time-to-graduation, pass rate on the licensure exams, and enrollment would be encouraged. It remains unclear whether there are plans in place to find a means to track professional development in the program and to revise the Unit Plan rubric to help students effectively design teaching units.

EASTERN ILLINOIS UNIVERSITY

Resources for Completing the Eight-Year IBHE Program Review Report

Section 5. Overview

This section will focus the review for your reader.

In no more than half a page, please explain your program's mission and its relationship to Eastern's mission (and, if applicable, to the mission of graduate education). Identify similar programs in the state; distinguish your program from them. You also should identify your program's student learningobjectives and career/further education objectives, and summarize significant changes, achievements (byfaculty and students and the program itself), and plans for the future.

Section 6. Major Findings and Recommendations

These are the standard IBHE questions:

a. Description and assessment of any major changes in the program:

(1) changes in the overall discipline or field
(2) student demand
(3) societal needs
(4) institutional context for offering the degree
(5) other elements appropriate to the discipline in question

What, if any, internal or external events have affected your program since the last review? Have enrollments, degree production, costs, student satisfaction, job placement, etc. changed significantly? Has the discipline's governing body approved a new name for the programs it represents; updated/revised curricular requirements; identified new markets; developed new emphases? Have nationwide demographic changes or social policies affected enrollments or requirements for good or for ill?

In addition to the items included in the "Accountability" section of the VPAA website (see the left-hand navigation box at http://castle.eiu.edu/~acaffair/), the resources listed below may help you to respond toitem 6.a:

1. The IBHE Data Bank http://www.ibhe.state.il.us/Data%20Bank/default.htm includes the *Data Book*, which provides statewide discipline-based data on enrollments, degree production, and costs; as well as a variety of other data on statewide enrollments, degree production, credit hour production, and costs.

2. The Institutional Research web page available at https://www.eiu.edu/ir/ houses EIU's Data Books and the IBHE Alumni survey results, as well as a great deal of information about EIU students (ACT scores, degrees awarded, retention rates, etc.)

3. Occupational projections are available from many professional journals and organizations, as well as:

a. the Bureau of Labor Statistics http://stats.bls.gov/
b. ISBE's Educator Supply and Demand Report http://www.isbe.state.il.us/research/htmls/supply_and_demand.htm
c. the Illinois Workforce Information Center http://www.ides.illinois.gov/Pages/Workforce_Information_Center.aspx

4. Staff members in the Office of Institutional Research also are available to aid you in assembling and analyzing administrative data.

b. Description of major findings and recommendations, including evidence of learning outcomes and identification of opportunities for program improvement

While 6.b also asks you to discuss other significant findings, it is basically the assessment section of the program review. As such, the responses here are crucial to your review's success. Departments that cannot demonstrate that their assessment programs meet the established guidelines will be expected to revise those programs within six months of the final review deadline. The IBHE's **assessment guidelines are appended to this document.**

Since your overview already identifies your student learning objectives, focus here on the assessment program and its results. What measures are you using to assess learning? How well are students achieving the objectives identified for them? What are their specific strengths and weaknesses? What changes have you made and will you be making as a result of assessment? Emphasize direct assessment, but mention the indirect measures you are using as well. Support your generalizations with specific data/evidence. And be sure to include feedback from key stakeholders—students, alums, employers, peer reviewers, etc.—since the IBHE requires it.

c. Description of actions taken since the last review, including instructional resources and practices, and curricular

d. Description of actions to be taken as a result of this review, including instructional resources and practices, and curricular

6.c and 6.d are straightforward. However, by this point, you already may have mentioned the most significant actions your department has taken/is planning to take. Do not repeat yourself. Merely refer the reader to a previous section or sections.

Section 7. Outcome

After consultation with the College Dean, the Provost's Office will indicate whether the program will be deemed "in good standing" or "flagged for priority review." The latter category is used to identify programs experiencing serious concerns—significantly low enrollments, high costs, negative accreditation findings, below-average pass rates on statewide exams, below-average employment placement rates, a continuing lack of satisfaction among students or employers, etc. Departments will be asked to examine and address the identified concern(s) and report the results in an interim review, due in 1-3 years.Typically, however, the IBHE program review results in a positive decision, and the next review is due in eight years.