

DEPARTMENT OF CHEMISTRY & BIOCHEMISTRY

2-YR ASSESSMENT REPORT

FOR

BS BIOCHEMISTRY

COVERING 2019-2021

ANNUAL REPORT

Summary and Disclaimer

Institution

I'm submitting this report for the academic year:

2020-2021

Institution Name

Eastern Illinois University

Department Name

Department of Chemistry

Street Address 1

600 Lincoln Avenue

Street Address 2

City

Charleston

State

IL

Zip Code

61920-3099

Department Phone

2175813322

Department Phone Extension

Department Website

<http://www.eiu.edu/eiuchem/>

Chairperson or Head of Department on Record

Are you the chairperson?

I am the Chairperson

If you are NOT the chairperson, please provide the name and email address of your current chairperson.

For the previous academic year, what was the primary method used to deliver content in (majors courses only):

General chemistry lecture?

Hybrid

General chemistry lab?

Hybrid

Organic chemistry lecture?

Face-to-face

Organic chemistry lab?

Hybrid

Upper Level Lecture?

Face-to-face

Upper Level Lab?

Face-to-face

Bachelor's Degrees Awarded in Chemistry

Bachelor's Degrees Awarded in Biochemistry

Certified Chemistry - Gender Identity

Male 3	Female 0
Non-Binary/Third Gender 0	Total 3

Certified Biochemistry - Gender Identity

Male 1	Female 1
Non-Binary/Third Gender 0	Total 2

Certified Chemistry - Visa Status

Domestic/Permanent Residents 3	International 0
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Certified Biochemistry - Visa Status

Domestic/Permanent Residents 2	International 0
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Certified Chemistry - Domestic Students - Race & Ethnicity

Asian American 0	Black/African American 0
Native American/Alaskan Native 0	Pacific Islander/Native Hawaiian 0
Hispanic/Latinx 0	Two or more races/Ethnicity 0
White Non-Hispanic 3	Unknown 0

Data not available from institution

Certified Biochemistry - Domestic Students - Race & Ethnicity

Asian American 0	Black/African American 0
Native American/Alaskan Native 0	Pacific Islander/Native Hawaiian 0
Hispanic/Latinx 0	Two or more races/Ethnicity 0
White Non-Hispanic 2	Unknown 0

Data not available from institution

Non-Certified Chemistry - Gender Identity

Non-Certified Biochemistry - Gender Identity

Male 0	Female 0
Non-Binary/Third Gender 0	Total 0

Male 0	Female 0
Non-Binary/Third Gender 0	Total 0

Non-Certified Chemistry - Visa Status

Domestic/Permanent Resident 0	International 0
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Non-Certified Biochemistry - Visa Status

Domestic/Permanent Resident 0	International 0
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Non-Certified Chemistry - Domestic Students - Race & Ethnicity

Asian American 0	Black/African American 0
Native American/Alaskan Native 0	Pacific Islander/Native Hawaiian 0
Hispanic/Latinx 0	Two or more races/Ethnicity 0
White Non-Hispanic 0	Unknown

Data not available from institution

Non-Certified Biochemistry - Domestic Students - Race & Ethnicity

Asian American 0	Black/African American 0
Native American/Alaskan Native 0	Pacific Islander/Native Hawaiian 0
Hispanic/Latinx 0	Two or more races/Ethnicity 0
White Non-Hispanic 0	Unknown

Data not available from institution

Master's Degrees Awarded in Chemistry

Does your department offer a Master's degree

Doctoral Degrees Awarded in Chemistry

Does your department offer a Ph.D. in

in chemistry?

Yes

No

chemistry?

Yes

No

Master's Degree - Gender Identity

Male

3

Female

2

Non-Binary/Third Gender

0

Total

5

Master's Degree - Visa Status

Domestic/Permanent Resident

0

International

5

Master's Degree - Domestic Students - Race & Ethnicity

Asian American

0

Black/African American

0

Native American/Alaskan Native

0

Pacific Islander/Native Hawaiian

0

Hispanic/Latinx

0

Two or more races/Ethnicity

0

White Non-Hispanic

0

Unknown

Data not available from institution

Please complete for the highest degree offered. If you do not offer a Master's or Doctoral degree in chemistry, please move to the next page.

Full Time Chemistry Graduates - Gender Identity

First Year Chemistry Graduates - Gender Identity

Male	Female
3	6
Non-Binary/Third Gender	Total
0	9

Male	Female
0	3
Non-Binary/Third Gender	Total
0	3

Full Time Chemistry Graduates - Visa Status

Domestic/Permanent Resident	International
2	7

First Year Chemistry Graduates - Visa Status

Domestic/Permanent Resident	International
2	1

Full Time Chemistry Graduates - Domestic Students - Race & Ethnicity

Asian American	Black/ African American
0	0
Native American/ Alaskan Native	Pacific Islander/ Native Hawaiian
0	0
Hispanic/ Latinx	Two or more races/ ethnicity
0	0
White Non-Hispanic	Unknown
2	

Data not available from institution

First Year Chemistry Graduates - Domestic Students - Race & Ethnicity

Asian American	Black/ African American
0	0
Native American/ Alaskan Native	Pacific Islander/ Native Hawaiian
0	0
Hispanic/ Latinx	Two or more races/ ethnicity
0	0
White Non-Hispanic	Unknown
2	

Data not available from institution

Permanent Full Time: Tenured, tenure track, and instructional faculty that have a reasonable expectation of continued employment. Fully dedicated to the department. May participate in teaching, research, service, advising, curricular development, etc.

Permanent Part Time: Tenured, tenure track, and instructional faculty that are full time employees at the institution, but whose appointments are split between departments. This may include deans or other administrators whose tenure home is in the department, but only teach occasionally.

Temporary - Full Time: Typically sabbatical replacements or visiting professors. Wholly dedicated to the department, but who are not considered long term faculty members.

Temporary - Part Time: Adjuncts that teach 1-2 courses as needed. Typically are compensated per course. Do not participate in departmental activities like advising, curricular development, etc.

Faculty

Type Permanent - Part Time	First Name Robert	Last Name Chesnut
Gender Male	Faculty Rank Professor	
Specialization Organic	Email Address rwchesnut@eiu.edu	<input checked="" type="checkbox"/> Has Ph.D ?

Type Permanent - Full Time	First Name Radu	Last Name Semeniuc
Gender Male	Faculty Rank Professor	
Specialization Inorganic	Email Address rsemeniuc@eiu.edu	<input checked="" type="checkbox"/> Has Ph.D ?

Type Permanent - Full Time	First Name Rebecca	Last Name Peebles
Gender Female	Faculty Rank Professor	
Specialization Physical	Email Address rpeebles@eiu.edu	<input checked="" type="checkbox"/> Has Ph.D ?

Type Permanent - Full Time	First Name Gopal	Last Name Periyannan
Gender Male	Faculty Rank Professor	

Specialization

Biochemistry

Email Address

grperiyannan@eiu.edu

 Has Ph.D ?**Type**

Permanent - Full Time

First Name

Edward

Last Name

Treadwell

Gender

Male

Faculty Rank

Professor

Specialization

Organic

Email Address

emtreadwell@eiu.edu

 Has Ph.D ?**Type**

Temporary - Full Time

First Name

Yuhua

Last Name

Lu

Gender

Female

Faculty Rank

Instructional Faculty

Specialization

Organic

Email Address

ylu@eiu.edu

 Has Ph.D ?**Type**

Temporary - Full Time

First Name

Tiffany

Last Name

Pellizzeri

Gender

Female

Faculty Rank

Instructional Faculty

Specialization

Inorganic

Email Address

tmpellizzeri@eiu.edu

 Has Ph.D ?**Type**

Temporary - Full Time

First Name

David

Last Name

Naistat

Gender

Male

Faculty Rank

Instructional Faculty

Specialization

Organic

Email Address

dmnaistat@eiu.edu

 Has Ph.D ?**Type**

Permanent - Full Time

First Name

Zhiqing

Last Name

Yan

Gender

Male

Faculty Rank

Associate Professor

Specialization**Email Address** Has Ph.D ?

Organic

zyan@eiu.edu

Has Ph.D ?

Type

Permanent - Full Time

First Name

Steven

Last Name

Pellizzeri

Gender

Male

Faculty Rank

Assistant Professor

Specialization

Physical

Email Address

spellizzeri@eiu.edu

Has Ph.D ?

Type

Permanent - Full Time

First Name

Michael

Last Name

Beck

Gender

Male

Faculty Rank

Assistant Professor

Specialization

Biochemistry

Email Address

mbeck2@eiu.edu

Has Ph.D ?

Type

Permanent - Full Time

First Name

Hongshan

Last Name

He

Gender

Male

Faculty Rank

Associate Professor

Specialization

Inorganic

Email Address

hhe@eiu.edu

Has Ph.D ?

Type

Permanent - Full Time

First Name

Daniel

Last Name

Sheeran

Gender

Male

Faculty Rank

Associate Professor

Specialization

Chemistry/Science Education

Email Address

djsheeran@eiu.edu

Has Ph.D ?

Type

Permanent - Full Time

First Name

Zhange

Last Name

Feng

Gender

Male

Faculty Rank

Assistant Professor

Specialization

Analytical

Email Address

zfeng@eiu.edu

Has Ph.D ?

Please see the ACS Guidelines for assistance with categorizing courses.

Please enter laboratories as separate courses, even if the lab is coupled to the lecture course. For example, for a 4 credit course that includes both lecture and lab, enter the lecture portion as CHEM123 for 3 credits (lecture), then CHEM123L for 1 credit (lab)

Course Category Foundation Course	<input type="checkbox"/> Is this course taught online?	<input checked="" type="checkbox"/> Is this a laboratory course?
Course Type Analytical Chemistry	Course Number (e.g. CHEM123) 2730L	Course Title Quantitative Analysis Lab
Total Number of Contact Hours per Semester – Class 0	Total Number of Contact Hours per Semester – Lab 60	Course Offered? Yes
Course Enrollment 15		

Course Category Foundation Course	<input type="checkbox"/> Is this course taught online?	<input type="checkbox"/> Is this a laboratory course?
Course Type Analytical Chemistry	Course Number (e.g. CHEM123) 2730	Course Title Quantitative Analysis
Total Number of Contact Hours per Semester – Class 30	Total Number of Contact Hours per Semester – Lab 0	Course Offered? Yes
Course Enrollment 15		

Course Category Foundation Course	<input type="checkbox"/> Is this course taught online?	<input type="checkbox"/> Is this a laboratory course?
Course Type Physical Chemistry	Course Number (e.g. CHEM123) 3915	Course Title Physical Chemistry Lab
Total Number of Contact Hours per Semester – Class 15	Total Number of Contact Hours per Semester – Lab 60	Course Offered? Yes
Course Enrollment 6		

Course Category

Foundation Course

 Is this course taught online? Is this a laboratory course?**Course Type**

Organic Chemistry

Course Number (e.g. CHEM123)

2445

Course Title

Organic Chemistry Laboratory I

Total Number of Contact Hours per Semester – Class

0

Total Number of Contact Hours per Semester – Lab

45

Course Offered?

Yes

Course Enrollment

48

Course Category

Foundation Course

 Is this course taught online? Is this a laboratory course?**Course Type**

Organic Chemistry

Course Number (e.g. CHEM123)

2440

Course Title

Organic Chemistry I

Total Number of Contact Hours per Semester – Class

45

Total Number of Contact Hours per Semester – Lab

0

Course Offered?

Yes

Course Enrollment

46

Course Category

Foundation Course

 Is this course taught online? Is this a laboratory course?**Course Type**

Inorganic Chemistry

Course Number (e.g. CHEM123)

2310

Course Title

Inorganic Chemistry I

Total Number of Contact Hours per Semester – Class

45

Total Number of Contact Hours per Semester – Lab

0

Course Offered?

Yes

Course Enrollment

8

Course Category

Foundation Course

 Is this course taught online? Is this a laboratory course?**Course Type**

Physical Chemistry

Course Number (e.g. CHEM123)

3910

Course Title

Chemical Thermodyn. and Kinetics

Total Number of Contact Hours per Semester – Class

45

Total Number of Contact Hours per Semester – Lab

0

Course Offered?

Yes

Course Enrollment

10

Course Category Foundation Course	<input type="checkbox"/> Is this course taught online?	<input type="checkbox"/> Is this a laboratory course?
Course Type Biochemistry	Course Number (e.g. CHEM123) CHM 3450	Course Title Biochemistry I
Total Number of Contact Hours per Semester – Class 45	Total Number of Contact Hours per Semester – Lab 0	Course Offered? Yes
Course Enrollment 28		

Please see the ACS Guidelines for assistance with categorizing courses.

Please enter laboratories as separate courses, even if the lab is coupled to the lecture course. For example, for a 4 credit course that includes both lecture and lab, enter the lecture portion as CHEM123 for 3 credits (lecture), then CHEM123L for 1 credit (lab)

Course Category In-Depth Course and Research	<input checked="" type="checkbox"/> Is this a laboratory course?	<input type="checkbox"/> Is this course taught online?
Course Type In-Depth	Course Number (e.g. CHEM123) 4400	Course Title Undergraduate Research
Total Number of Contact Hours per Semester – Class 0	Total Number of Contact Hours per Semester – Lab 60	Course Offered Yes
Course Enrollment 6		

Course Category In-Depth Course and Research	<input type="checkbox"/> Is this a laboratory course?	<input type="checkbox"/> Is this course taught online?
Course Type In-Depth	Course Number (e.g. CHEM123) 3920	Course Title Quantum Chemistry
Total Number of Contact Hours per Semester – Class 45	Total Number of Contact Hours per Semester – Lab 0	Course Offered Yes
Course Enrollment 3		

Course Category In-Depth Course and Research	<input checked="" type="checkbox"/> Is this a laboratory course?	<input type="checkbox"/> Is this course taught online?
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Course Type

In-Depth

Course Number (e.g. CHEM123)

2845

Course Title

Organic Chemistry Laboratory II

Total Number of Contact Hours per Semester – Class

0

Total Number of Contact Hours per Semester – Lab

45

Course Offered

Yes

Course Enrollment

25

Course Category

In-Depth Course and Research

 Is this a laboratory course? Is this course taught online?**Course Type**

In-Depth

Course Number (e.g. CHEM123)

2840

Course Title

Organic Chemistry II

Total Number of Contact Hours per Semester – Class

45

Total Number of Contact Hours per Semester – Lab

0

Course Offered

Yes

Course Enrollment

28

Course Category

In-Depth Course and Research

 Is this a laboratory course? Is this course taught online?**Course Type**

In-Depth

Course Number (e.g. CHEM123)

3780L

Course Title

Instrumental Analysis Lab

Total Number of Contact Hours per Semester – Class

0

Total Number of Contact Hours per Semester – Lab

45

Course Offered

Yes

Course Enrollment

8

Course Category

In-Depth Course and Research

 Is this a laboratory course? Is this course taught online?**Course Type**

In-Depth

Course Number (e.g. CHEM123)

3780

Course Title

Instrumental Analysis

Total Number of Contact Hours per Semester – Class

30

Total Number of Contact Hours per Semester – Lab

0

Course Offered

Yes

Course Enrollment

8

Course Category

In-Depth Course and Research

 Is this a laboratory course? Is this course taught online?

Course Type

In-Depth

Course Number (e.g. CHEM123)

4900

Course Title

Inorganic Chemistry II

Total Number of Contact Hours per Semester – Class

45

Total Number of Contact Hours per Semester – Lab

0

Course Offered

Yes

Course Enrollment

7

Course Category

In-Depth Course and Research

 Is this a laboratory course? Is this course taught online?**Course Type**

In-Depth

Course Number (e.g. CHEM123)

4750

Course Title

Environmental Chemistry

Total Number of Contact Hours per Semester – Class

45

Total Number of Contact Hours per Semester – Lab

0

Course Offered

Yes

Course Enrollment

10

Course Category

In-Depth Course and Research

 Is this a laboratory course? Is this course taught online?**Course Type**

In-Depth

Course Number (e.g. CHEM123)

3455

Course Title

Biochemistry Lab

Total Number of Contact Hours per Semester – Class

0

Total Number of Contact Hours per Semester – Lab

60

Course Offered

Yes

Course Enrollment

5

Course Category

In-Depth Course and Research

 Is this a laboratory course? Is this course taught online?**Course Type**

In-Depth

Course Number (e.g. CHEM123)

3460

Course Title

Biochemistry II

Total Number of Contact Hours per Semester – Class

45

Total Number of Contact Hours per Semester – Lab

0

Course Offered

Yes

Course Enrollment

10

Course Category

In-Depth Course and Research

 Is this a laboratory course? Is this course taught online?

Course Type

In-Depth

Course Number (e.g. CHEM123)

CHM 4915

Course Title

Advanced Lab

Total Number of Contact Hours per Semester – Class

15

Total Number of Contact Hours per Semester – Lab

90

Course Offered

Yes

Course Enrollment

5

Course Category

In-Depth Course and Research

 Is this a laboratory course? Is this course taught online?**Course Type**

In-Depth

Course Number (e.g. CHEM123)

4860

Course Title

Advanced Biochemistry

Total Number of Contact Hours per Semester – Class

45

Total Number of Contact Hours per Semester – Lab

0

Course Offered

Yes

Course Enrollment

7

Appendix I. Collected Assessment Data.

Number of BS Biochemistry graduates 2019-2021: 5 (3 in 2019-2020; 2 in 2020-2021)

Part I - Student Learning Outcomes

Learning Goal #1	Program Learning Goal(s) Students understand the fundamental principles and applications in all subdisciplines of chemistry.
How are learners assessed?	a) Final grades in foundation courses (CHM 2310, 2440, 2730, 3450, 3910) as well as in-depth courses (2840, 3460, 3780, 3920 or 4900, 4860) b) Scores on ETS Major Field Test c) Students rate their agreement with statement on exit survey (given last semester attending) d) Alumni rate their agreement with statement on exit survey (given 3 and 8 yrs post-graduation)
What are the expectations?	a) 75% or higher achieving an A or B on first attempt b) scores \geq 50 th percentile each area c) Average response of \leq 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree) d) Average response of \leq 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree)
What were the results?	a) Foundation: 2310 = 60%; 2440 = 100%; 2730 = 40%; 3450 = 100%; 3910 = 100% In-Depth: 2840 = 80%; 3460 = 60%; 3780 = 80%; 3920 / 4900 = 80% (only 1 took 3920, and did not meet goal); 4860 = 100% b) This data not available. The tests are given in-person in the late Spring, so for SP 2020 this was not possible due to COVID. Tests were administered Spring 2021, but results have not been returned yet (backlog at ETS)? Data should be available for 4-yr review. c) Average = 2.00 (n=3) d) Average = 2.00 (n=2)
How are the results shared? How will these results be used?	Results are shared and reviewed first through the assessment committee, and then distributed to the faculty as a whole. Particularly low success rates / scores / ratings will be highlighted and the curriculum / coverage of the courses responsible reviewed to be sure there is not a deficiency in the content / delivery.

Learning Goal #2	Program Learning Goal(s) Students are able to execute experiments in chemistry and biochemistry.
How are learners assessed?	a) Final grades in laboratory courses (CHM 2445, 2730, 2845, 3455, 3780, 3915) b) Final grades in research course (CHM 4400) c) Students rate their agreement with statement on exit survey (given last semester attending) d) Alumni rate their agreement with statement on exit survey (given 3 and 8 yrs post-graduation)
What are the expectations?	a) 75% or higher achieving an A or B on first attempt a) 75% or higher achieving an A or B on first attempt c) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree) d) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree)
What were the results?	a) 2445 = 100%; 2730 = 40%; 2845 = 80%; 3455 = 80%; 3780 = 80%; 3915 = 60% b) 4400 = 100% (cumulative students took 12 semesters of 4400) c) Average = 2.00 (n=3) d) Average = 2.00 (n=2)
How are the results shared? How will these results be used?	Results are shared and reviewed first through the assessment committee, and then distributed to the faculty as a whole. Particularly low success rates / ratings will be highlighted and the curriculum / coverage of the courses responsible reviewed to be sure there is not deficiency in the content / delivery.

Learning Goal #3	Program Learning Goal(s) Students are able to critically analyze data.
How are learners assessed?	a) Rubric scores from instructors on 1 report in CHM 2845, 3455, 3780 and 3915. b) Performance on critical thinking component of Major Field Test (cohort score only) c) Students rate their agreement with statement on exit survey (given last semester attending) d) Alumni rate their agreement with statement on exit survey (given 3 and 8 yrs post-graduation)
What are the expectations?	a) 75% or higher with a score of ≥ 2.5 on 4pt scale a) Mean percentile \geq national mean c) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree) d) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree)
What were the results?	a) 3455: 100% (n=2); 3780: 100% (n=1); 3915: 100% (n=1); no data for CHM 2845 or remaining students in 3455, 3780, or 3915 since took class before assessment plan item included b) This data not available. The tests are given in-person in the late Spring, so for SP 2020 this was not possible due to COVID. Tests were administered Spring 2021, but results have not been returned yet (backlog at ETS)? Data should be available for 4-yr review. c) Average = 2.00 (n=3) d) Average = 2.00 (n=2)
How are the results shared? How will these results be used?	Results are shared and reviewed first through the assessment committee, and then distributed to the faculty as a whole. Particularly low success rates / ratings will be highlighted and the curriculum / coverage of the courses responsible reviewed to be sure there is not a deficiency in the content / delivery.

Learning Goal #4	Program Learning Goal(s) Students are able to utilize computer applications.
How are learners assessed?	a) Rubric scores from instructors on 1 experiment in following areas (courses): spreadsheet / graphing (CHM 2730 & 3915); word processing (CHM 2845, 3780 and 3915); structure drawing (CHM 2845); computational / molecular modeling (CHM 1315, 2845, 3455 and 3915) b) Faculty score on visual presentation item on seminar (CHM 3001 and 4001) evaluation. c) Students rate their agreement with statement on exit survey (given last semester attending) d) Alumni rate their agreement with statement on exit survey (given 3 and 8 yrs post-graduation)
What are the expectations?	a) 75% or higher achieving an A or B on first attempt a) Average response of ≥ 2 on 3 point scale (3 = Outstanding, 1= Should be better) c) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree) d) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree)
What were the results?	a) Spreadsheet/graphing: 3915: 100% (n=1); Word Processing: 3915: 100% (n=1); ; Structure Drawing: ; Comput/Modeling: 3455 was not able to do this due to COVID; 3915: 100% (n=1); no data for CHM 2730 or 2845 or remaining students in 3455, 3780, or 3915 since took class before assessment plan item included b) Average = 2.53 (n=10); both 3001 and 4001 every individual ≥ 2 c) Average = 2.00 (n=3) d) Average = 2.00 (n=2)
How are the results shared? How will these results be used?	Results are shared and reviewed first through the assessment committee, and then distributed to the faculty as a whole. Particularly low success rates / ratings will be highlighted and the curriculum / coverage of the courses responsible reviewed to be sure there is not a deficiency in the content / delivery.

Learning Goal #5	Program Learning Goal(s) Students can properly use chemical information and database sources.
How are learners assessed?	a) Rubric scores from instructors on following topics (courses): SciFinder / journal databases (CHM 2845, 3450, 3500); Protein Data Base (CHM 3450, 3500) b) Faculty score on sources item on seminar (CHM 3001 and 4001) evaluation. c) Students rate their agreement with statement on exit survey (given last semester attending) d) Alumni rate their agreement with statement on exit survey (given 3 and 8 yrs post-graduation)
What are the expectations?	a) 75% or higher achieving an A or B on first attempt b) Average response of ≥ 2 on 3 point scale (3 = Outstanding, 1= Should be better) c) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree) d) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree)
What were the results?	a) no data since students took class before assessment plan item included b) Average = 2.44 (n=10); both 3001 and 4001 9 out of 10 had ≥ 2 c) Average = 1.33 (n=3) d) Average = 2.00 (n=2)
How are the results shared? How will these results be used?	Results are shared and reviewed first through the assessment committee, and then distributed to the faculty as a whole. Particularly low success rates / ratings will be highlighted and the curriculum / coverage of the courses responsible reviewed to be sure there is not a deficiency in the content / delivery.

Learning Goal #6	Program Learning Goal(s) Students will generate and contribute to the process of expanding new knowledge and data in the field.
How are learners assessed?	<ul style="list-style-type: none"> a) Participation in CHM 4400 Undergraduate Research. b) Participation in summer research experiences. c) Authors on published abstracts for presentations or posters at external meetings d) Students rate their agreement with statement on exit survey (given last semester attending) e) Alumni rate their agreement with statement on exit survey (given 3 and 8 yrs post-graduation)
What are the expectations?	<ul style="list-style-type: none"> a) At least 70% of majors completing 1 semester; at least 50% of majors completing more than 1 semester. b) At least 15% of majors involved in a summer experience. c) At least 50% of students listed on at least 1 abstract. d) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree) e) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree)
What were the results?	<ul style="list-style-type: none"> a) Completion of 1 semester = 80%; completion of >1 semester = 100% b) 20% (1/5) – Keiter Fellowship @ EIU. It should be noted that 3 other students did a study abroad experience (one of which took chemistry courses during this time). Doing a study abroad over the summer can preclude participating in summer research experience. c) Average = 1.67 (n=3) d) Average = 2.00 (n=2)
How are the results shared? How will these results be used?	Results are shared and reviewed first through the assessment committee, and then distributed to the faculty as a whole. Particularly low success rates / ratings will be highlighted and the curriculum / coverage of the courses responsible reviewed to be sure there is not a deficiency in the content / delivery.

Learning Goal #7	Program Learning Goal(s) Students will communicate effectively in speaking and writing.
How are learners assessed?	a) (Speaking) Faculty score on organization, delivery, and visual aid items on seminar (CHM 3001 and 4001) evaluation b) (Writing) Faculty score on abstract item on seminar (CHM 3001 and 4001) evaluation c) (Writing) Rubric scores from instructors on 1 experiment in courses: 2845, 3455, 3780, and 3915 d) (Speaking) Published results from speech rubrics in CMN1310G and EIU4XXX. e) (Writing) Faculty rubric scores submitted on EWPs. f) Students rate their agreement with statement on exit survey (given last semester attending) g) Alumni rate their agreement with statement on exit survey (given 3 and 8 yrs post-graduation)
What are the expectations?	a) Average response of ≥ 2 on 3pt scale (3 = Outstanding, 1= Should be better) b) Average response of ≥ 2 on 3pt scale (3 = Outstanding, 1= Should be better) c) 75% of students obtain score of ≥ 2.5 on 4pt scale d) Average of > 3.2 in CMN1310G and ≥ 3.6 in EIU4XXX. e) Average of > 3.3 . f) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree) g) Average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree)
What were the results?	a) Organization: Average = 2.61; Delivery: Average = 2.47; Visual aid: Average = 2.58 (n=10 all 3); for all but Delivery 3001 and 4001 every individual ≥ 2 ; Delivery 9 out of 10 had ≥ 2 b) Average = 2.58 (n=10); both 3001 and 4001 every individual ≥ 2 c) 3455: 100% (n=2); 3780: 100% (n=1); 3915: 100% (n=1); no data for CHM 2845 or remaining students in 3455, 3780, or 3915 since took class before assessment plan item included d) Both AY 100%, with AY20: 3.75; AY 21: 3.59 e) No data since students submitted before assessment plan item included f) Speaking: Average = 2.00 (n=3); Writing: Average = 1.67 (n=3) g) Speaking: Average = 1.50 (n=2); Writing: Average = 1.50 (n=2)
How are the results shared? How will these results be used?	Results are shared and reviewed first through the assessment committee, and then distributed to the faculty as a whole. Particularly low success rates / ratings will be highlighted and the curriculum / coverage of the courses responsible reviewed to be sure there is not a deficiency in the content / delivery.

Learning Goal #8	Program Learning Goal(s) Students will be aware of practiced in working safely
How are learners assessed?	a) Completion of CHM 3500 Intro to Chemical Research b) Students rate their agreement with statement on exit survey (given last semester attending) c) Alumni rate their agreement with statement on exit survey (given 3 and 8 yrs post-graduation)
What are the expectations?	a) 100% of students complete b) average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree) c) average response of ≤ 3 on 5pt scale (1 = Strongly Agree; 5 = Strongly Disagree)
What were the results?	a) 3500 = 100% b) Average = 1.67 (n=3) c) Average = 1.0 (n=2)
How are the results shared? How will these results be used?	A Results are shared and reviewed first through the assessment committee, and then distributed to the faculty as a whole. Particularly low success rates / ratings will be highlighted and the curriculum / coverage of the courses responsible reviewed to be sure there is not a deficiency in the content / delivery.

Summary and comments:

Since it's inception in 2018, the BS Biochemistry has been a very popular and strong major in the Department of Chemistry and Biochemistry, with a current total of 31 majors. This is comparable to the number of BS Chemistry majors. This report then would include the first cohort of native students to complete the degree, as well as some transfer students. The number in this cohort is a bit low, but we do see periodic fluctuations in our number of majors and these years represent a trough in that trend.

One area for improvement would be increasing the response rate for the alumni survey; for this report the return rate was ~23%. We had moved from having paper-only surveys to including a Qualtrics online survey that could be filled out, and surprisingly had about an even split in the number of respondents between the two methods. Going forward, the research mentors of alumni will also reach out to the students and ask them to complete the survey. The results from both surveys are mostly positive and encouraging.

There are a number of gaps in the data for this report – some of them are due to the overarching nature of the assessment items, where measures from freshman to senior courses are included. As some of these items came after the students had taken the courses (for instance, this cohort took Gen Chem as far back as 2014 and no later than 2016), the data was not collected. We also have some COVID-related gaps, including exit surveys and interviews (given during the Spring) as well as with MFT scoring, as well as the pandemic affecting presentation and publication opportunities.

With regard to specific items

- SLO 1 item a (success rate foundation and in-depth courses). The 2000 level courses (especially CHM 2730) represent a significant step up in difficulty and expectations compared to the 1000 level courses, which can be not as challenging to students, depending on the quality of the HS they came from. Additionally, we haven't collected / looked at data like this before, so we are not sure if these numbers are outside the norm. Finally, CHM 2730 is a combined lecture-lab course, and as this is the analytical course, part of the lab grade is based on determining the correct concentration of unknowns, which requires good lab skills. It sometimes takes students a bit of time to develop these (even though usually there is a make-up lab to account for one bad lab).
- Overall the SLOs related to data analysis / lab abilities (3 and 4), 5(c) (properly use chemical information and database sources), and 7 (communication) are all very high, which is welcome to see.

CLAS Deans' comments on B.S. in Biochemistry report

Reviewer: Mike Cornebise

1. SLOs are clear and follow ACS accreditation guidelines. The information gleaned will allow the department to demonstrate student attainment of accreditation standards while at the same time allowing the program to make any necessary curricular adjustments.

Overall, the plan appears ready for data collection. Let us know if we can assist with program assessment as you begin the process. The next report is due in fall of 2023.