Environmental and Chemical Sciences-CHPH [ECCH]

Cycles included in this report:
Jun 1, 2024 to May 31, 2025

Program Name: Environmental and Chemical Sciences-CHPH [ECCH]

Reporting Cycle: Jun 1, 2024 to May 31, 2025

1 Is this program offered via Distance Learning?

2 Is this program offered at an off-site location?

No

2.1 If yes to previous, provide addresses for each location where 50% or more of program credits may be earned.

3 Example of Program Improvement

2020-2021:
The program gained a graduate student who is helping with research interests of the department and hopefully will help recruit more students

2021-2022:
The program improved its recruiting efforts by going to gradfest and career expo on campus to help increase enrollment.

2022-2023:
The program improved it's enrollment from two students up to five currently (one graduating in Spring 2023). The department also has several previous students preparing for the GRE and enrollment could grow as high seven students in the upcoming Fall 2023 term.

2023-2024:
Department one graduate student defended master thesis this year. Department is working on recruiting more graduate students.

2024-2025:
Two graduate students are graduating this year.

4 Program Highlights from the Reporting Year

2020-2021:
Program starting to see mentored students going into the master's program.

2021-2022:
Program has seen continued mentorship from Dr. Vaughan with both graduate students and seen some recruiting events from the department and college level at career fairs hosted by the university. Ms. Amy Reed is especially doing well with presentations and has the potential to work on continued research with Dr. Vaughan and Dr. Merchant.

2022-2023:
Several of the graduate students have become active as mentors to undergraduate students, especially during research hours with faculty who are involved in using the instrumentation around the department.

2023-2024:
Department had master thesis defense after five years. Presented graduate student research at ACS conference.

2024-2025:
Two graduate students are graduating this year.

5 Program Mission

The chemistry concentration of the Master of Science in Environmental & Chemical Sciences program seeks to (a) provide students with advanced expertise in the theoretical and technical aspects of chemistry, (b) while exposing students to selected areas of expertise in Environmental Science, (c) promote (i) academic inquiry, (ii) the exchange of knowledge, and (iii) the advancement of knowledge through scientific research and/or other scholarly activities, (iv) development of communication skills (oral, verbal and technological), (d) prepare students for (i) immediate employment in scientific fields, (ii) entry into doctoral level programs or professional school (in medicine, dentistry, pharmacy, etc.), and (iii) careers in teaching, and (e) prepare students for the ethical and scientific issues they may face in the workplace.

6 Institutional Mission Reference

The program's mission closely parallels that of the University in the provision of educational opportunities to students seeking a M.S. degree in Environmental & Chemical Sciences with a concentration in chemistry. The degree is offered in conjunction with the School of Agricultural Sciences. We conduct faculty-led research leading to publications in peer-reviewed journals and presentations at regional, national and international scientific meetings. We also interface many of our research efforts with faculty from other departments on campus, with faculty from other universities across the state and around the world, and with state and local industries. Rigorous and versatile programs of study and research together with local Internships, encouragement, and support for quality student opportunities (pre- and post-graduation) support core values of academic excellence, student success, and University-community alliances.

7 Assessment and Benchmark CHEM 526, 610, and/or 631 Project Reports

Assessment: CHEM 526, 610, and/or 631 project reports (whichever course is offered that academic year). The assessment of research reports had been done by the respective graduate faculty at the end of each semester. It is a continuous process until the student is ready for the final report. The final reports are examined by a committee, and the student presents a seminar on the research findings and faces questions both on the research topic as well as general chemical knowledge. Once a student fulfills all these requirements, he or she is deemed fit to receive the degree.

Benchmark: Will be established after sufficient data is collected.

7.1 Data

Academic Year	Students scoring 80% or higher					
	CHEM 526		CHEM 610		CHEM 631	
	#	%	#	%	#	%
2019-2020	0	—	0	—	0	—
2020-2021	0	—	0	—	0	—
2021-2022	0	—	0	—	0	—
2022-2023	—	—	2	100%	—	—
2023-2024	0	—	0	—	0	—
2024-2025	0	—	0	—	0	—

7.1.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:
None of the courses offered. The program currently only has 2 students in it.

2021-2022:
The courses weren't offered during this cycle, however 100% of students enrolled in CHEM 613 and 641 scored 80% or higher on all project reports. Data for CHEM 610 will be collected after Fall 2022.

2022-2023:
Both student's enrolled in CHEM 610 (Selected Topics in Biochemistry) score 80% or higher on all project reports. We will gather more data after offering the CHEM 631 class in the Fall of 2023. To continuously improve, the department may want to include a wider variety of courses offered throughout the master's program, since the course rotation is on a 2-year schedule.

2023-2024:
None of these courses were offered in 2023-2024. We are planning to offer CHEM 610 in the 2024-2025 academic year.

2024-2025:
None of these courses were offered in 2024-2025.

8 Assessment and Benchmark CHEM 526, 610, and/or 631 Presentations

Assessment: CHEM 526, 610, and/or 631 presentation scores (whichever course is offered that academic year).

Benchmark: Will be established after three years of data collection.

8.1 Data

Academic Year	Students scoring 80% or higher					
	CHEM 526		CHEM 610		CHEM 631	
	#	%	#	%	#	%
2019-2020	0	—	0	—	0	—
2020-2021	0	—	0	—	0	—
2021-2022	0	—	0	—	0	—
2022-2023	—	—	2	100%	—	—
2023-2024	0	—	0	—	0	—
2024-2025	0	—	0	—	0	—

8.1.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:
The courses have not been offered. This is due to the program enrollment being at 2 students. Need to re-evaluate benchmarks.

2021-2022:
The courses weren't offered during this cycle, however 100% of the students enrolled in CHEM 613 and 641 scored above 80% on all presentations. Data for CHEM 610 will be compiled after Fall 2022 semester.

2022-2023:
Both student's enrolled in CHEM 610 (Selected Topics in Biochemistry) score 80% or higher on all presentations. We will gather more data after offering the CHEM 631 class in the Fall of 2023. To continuously improve, the department may want to include a wider variety of courses offered throughout the master's program, since the course rotation is on a 2-year schedule.

2023-2024:
None of these courses were offered in 2023-2024. We are planning to offer CHEM 610 in the 2024-2025 academic year.

2024-2025:
None of these courses were offered in 2024-2025.

9 Assessment and Benchmark CHEM 690 Report Scores

Assessment: CHEM 690 report on research project including experimental and literature components. We require the students to participate in presenting their research findings at departmental, local, regional, and national symposiums.

Benchmark: 80% of program graduates will score 80% or higher on their submitted research reports each semester.

9.1 Data

Academic Year	Students that met or exceeded 80%	
	#	%
2019-2020	1/1*	100%
2020-2021	1/1*	100%
2021-2022	—	—
2022-2023	5/5	100%
2023-2024	—	—
2024-2025	2/2	100%

* No presentations done due to the COVID-19 pandemic.

9.1.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:
The benchmark was met, however due to the pandemic presentations were not allowed.

2021-2022:
The benchmark wasn't met because the course wasn't offered and will not be offered until Spring 2023.

2022-2023:
The benchmark was met this year. To continuously improve it is suggested that the department gather more data and see if enrollment in the course will be constant.

2023-2024:
CHEM 690 was not offered in the 2023-2024 academic year.

2024-2025:
The benchmark was met this year.

10 Assessment and Benchmark CHEM 695 Seminar

Assessment: Seminar on research project will demonstrate students' communication skills and knowledge of chemical principles. All the students must present their research findings to the faculty of the department in the form of a seminar. In that seminar, the students will be asked several questions to defend their research. Faculty assess the quality of the answers and research findings and make suggestions for further improvement.

Benchmark: 80% of program graduates will score 80% or higher on their written critiques of seminar speakers in CHEM 695 each semester.

10.1 Data

Academic Year	Students that met or exceeded 80%	
	#	%
2019-2020	1/1*	100%
2020-2021	1/1*	100%
2021-2022	—	—
2022-2023	1/1	100%
2023-2024	2/2	100%
2024-2025	2/2	100%

*Layout and requirements adjusted due to the COVID-19 pandemic and aftermath of hurricanes.

10.1.1 Analysis of Data and Plan for Continuous Improvement

2020-2021:
The seminar had to make adjustments due the COVID-19 pandemic.

2021-2022:
The benchmark wasn't met because the course wasn't offered this cycle. It will be offered in Fall 2022.

2022-2023:
The benchmark was met. It is suggested to have a minimum enrollment in the course for the benchmark to be met such as three students.

2023-2023:
The benchmark of 80% or above was met; however, only two students were registered.

2024-2025:
The benchmark was met this year.