



Engineering [MEng] [ENGR]

Cycles included in this report:

Jun 1, 2023 to May 31, 2024

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Program Name: Engineering [MEng] [ENGR]**Reporting Cycle: Jun 1, 2023 to May 31, 2024****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**

2019-2020:

Engineering master's students showing interest in presenting at conferences at the regional level. Difficulties with presenting and recruiting for graduate program due to COVID-19 pandemic.

2020-2021:

Engineering master's students showing interest in presenting at conferences at the regional level. Difficulties with presenting and recruiting for graduate program due the COVID -19 pandemic continuing and the hurricanes hitting campus.

2021-2022:

The master's in engineering program needs to be re-evaluated to see if enrollment is high enough to maintain a course rotation.

2022-2023:

New department head is evaluating the master's in engineering program and developing plans to improve enrollment in graduate students, which includes setting a target of securing \$600,000 of research funds. Since students showing interest in joining the program are international students, providing student support through tuition and stipend assistance will be key in growing enrollment in the program. The department head is also working closely with IT to publish more details on department research activities through the website, social media, and newsletter publications for more outreach. Will update and collect all the categories in terms of data collection for 2023-2024 academic year.

2023-2024:

New Graduate ME-CPEN concentration is developed and will be offered starting Fall 2024. To support the graduate CPEN program new graduate courses are developed,

- CPEN-575 DevOp
- CPEN-660. Adv. Digital design w/ VHDL & FPGA
- CPEN-674 Cybersecurity Operation I
- CPEN-675 Cybersecurity Operation II

4 Program Highlights from the Reporting Year

2019-2020:

No highlights due to COVID-19 Pandemic.

2020-2021:

No highlights due to hurricanes Delta and Laura.

2021-2022:

Students in the program are helping lead and mentor other students (especially undergraduate students) through coursework.

2022-2023:

No highlights for this calendar year.

2023-2024:

Added Masters in Engineering - Computer Engineering Concentration - will be effective from Fall 2024

Files: See list of attachments to view. (Requires Adobe Reader or compatible viewer).

Graduate Program-Report-2018-19

5 Program Mission

The Department of Engineering and Computer Science provides an education in chemical, civil, electrical, and mechanical engineering that is professionally focused and practice-oriented within a student friendly environment. The department prepares our students to practice engineering, focusing on the industrial needs of the region by meeting the needs of traditional and non-traditional students through close contact with the faculty, the staff, and local industrial engineers and managers. The department maintains an up-to-date curriculum that fosters interdisciplinary teamwork, scholarly development, cooperation with regional industry, and engineering ethics.

6 Institutional Mission Reference

The program mission supports the University mission by fostering student success, academic excellence, and university-community alliances. In the program mission, student success and academic excellence are promoted by a professionally focused and practice-oriented student friendly environment, maintaining an up-to-date curriculum. The University mission is also accomplished by the close cooperation with regional industry.

7 Assessment and Benchmark CHEN 620, CIEN 535, ELEN 555, and MEEN551 Coursework Instruments: A 5-point rubric to determine the average SLOs on, quizzes, exams, and projects.

Assessment: To measure the ability to apply knowledge of mathematics, science, and engineering in the following courses: CHEN 620, CIEN 535, ELEN 555, and MEEN 551.

Benchmark: An average score of 3.20/5.00 is the desired benchmark.

Prior to 2017-2018, the benchmark was 3.00 on a 5-point scale.

Prior to 2016-2017, the benchmark was 2.00 on a 3-point scale.

Outcome Links

Content Knowledge [Program]

An ability to apply knowledge of mathematics, science, and engineering.

7.1 Data

Academic Year	Average Score			
	CHEN 620	CIEN 534	ELEN 555	MEEN 551
2018-2019	4.0	4.7	3.73	4.5
2019-2020	—	—	3.94	—
2020-2021	—	—	3.92	—
2021-2022	—	5.0	3.77	—
2022-2023	—	—	—	—
2023-2024	—	4.8	—	—

7.1.1 Analysis of Data and Plan for Continuous Improvement

2019-2020:

In the 2019-20 academic year, the only course that had any data collected for it was ELEN 555. Due to enrollment in the graduate program and turnover in faculty, as well as the start of the COVID-19 pandemic some of the data may not have been collected.

2020-2021:

In the 2020-2021 academic year, ELEN 555 was again the only graduate course offered. This is due to enrollment in the graduate program being low and the continuation of COVID-19 pandemic and multiple hurricanes hitting the campus.

2021-2022:

The benchmark was met. However, the number of graduate students involved in these courses are very limited so the department may need to change to an assessment that looks at only 600-level graduate courses to get more descriptive statistic.

2022-2023:

Due to very low enrollment in graduate students, no data was collected this year.

2023-2024:

The graduate student in Civil Engineering was tasked with preparing an advanced review of a paper on sustainable water supply networks for the pipeline design and analysis class. The student conducted a thorough review and analysis of a complex topic and explicitly applied engineering knowledge from the review to the subjects covered in the class.

8 Assessment and Benchmark CHEN 620, CIEN 535, ELEN 650, and MEEN 551 Coursework

Instrument: A 5-point rubric to determine the averages on quizzes, exams, and projects.

Assessment: To measure the ability to identify, formulate, and solve engineering problems in the following courses: will be decided.

Benchmark: An average score of 3.25/5.00 is the desired benchmark.

Outcome Links

Solving Engineering Problems [Program]

An ability to identify, formulate, and solve engineering problems.

8.1 Data

Academic Year	Average Score			
	CHEN 620	CIEN 535	ELEN 650	MEEN 551
2018-2019	4.0	4.7	4.2	4.5
2019-2020	—	—	—	—
2020-2021	—	—	—	—
2021-2022	—	5.0	—	—
2022-2023	—	—	—	—
2023-2024	—	4.8	—	—

8.1.1 Analysis of Data and Plan for Continuous Improvement

2019-2020:

The only graduate course that was taught in this assessment was CHEN 620 which was an independent study for a student to be able to graduate. All other courses didn't gather data for graduate data.

2020-2021:

No data was collected for any of the graduate courses in this assessment.

2021-2022:

The only course that collected data was Pipeline Design (CIEN 534). The students far exceeded the benchmark.

2022-2023:

No data was collected this year.

2023-2024:

The graduate student in Civil Engineering was tasked with preparing an advanced review of a paper on sustainable water supply networks for the pipeline design and analysis class. The student conducted a thorough review and analysis of a complex topic and explicitly applied engineering knowledge from the review to the subjects covered in the class.

9 Assessment and Benchmark Research

Assessment: Conduct Independent Research in Master Thesis.

Benchmark: An average score of 3.50/5.00 is the desired benchmark score. Establish the benchmark next cycle involving literature search.

Outcome Links

Engineering Research Evaluation [Program]

An ability to identify and evaluate engineering and scientific research.

9.1 Data

Academic Year	Overall average for all PCs
2016-2017	3.50/5.00
2017-2018	4.40/5.00
2018-2019	4.80/5.00
2019-2020	—
2020-2021	—
2021-2022	—
2022-2023	—
2023-2024	4.90/5.00

9.1.1 Analysis of Data and Plan for Continuous Improvement

2019-2020:

No data was collected on thesis students.

2020-2021:

No data was collected on thesis students.

2021-2022:

No data was collected on thesis students.

2022-2023:

No data was collected on thesis students.

2023-2024:

Only one student graduated with thesis requirements, and the student far exceeded the master's requirements. The graduate student was tasked with preparing an advanced review of a paper on sustainable water supply networks for the pipeline design and analysis class. The student conducted a thorough review and analysis of a complex topic and explicitly applied engineering knowledge from the review to the subjects covered in the class.

Due to very low enrollment, assessments were not conducted for the three concentrations within the master's program for 2023-2024. The department has introduced merit-based scholarships for students who qualify for the program, starting in Fall 2024. We have seen an improvement in enrollment this fall compared to previous years. Assessments will be conducted in Fall 2024 and Spring 2025, as we expect three to five master's students to graduate during this period. Based on the assessments obtained this year, program improvement plans will be developed and reported in the 2024-2025 cycle.