

Annual Academic Assessment Report

MS / Biological Engineering June 4, 2024

The following summarize the assessment measures used for this report. The results pertaining to the academic year (AY) 2023-2024 are presented and analyzed with regard to student learning outcomes.

1. *Graduating student cumulative GPA*: SLO-1
2. *Annual graduate student academic reviews and progress reports*: SLO-1
3. *Number of publications and conference*: SLO-4
4. *Proposal defense – MS thesis proposal*: SLO-2 and 4
5. *Final examination – MS thesis defense*: SLO-3 and 4
6. *Exit reviews*: all outcomes

1. Cumulative GPA

MS: SLO-1 – Progress toward the degree and preparation of conducting thesis research (*i.e.*, academic progress)

Table 1 provides the cumulative GPA for a student graduating with MS degree in AY 2023 – 2024. The metric for success is for 100% students to achieve at least 3.0 cumulative GPA. According to the data in **Table 1**, we have achieved the stated criterion.

Table 1. Cumulative GPA for graduating BENG students for 2023 – 2024.

| Student Count | Degree | Graduating Term | Cumulative GPA |
|---------------|--------|-----------------|----------------|
| 1 | BENGMS | Summer 2023 | 3.464 |

2. Annual Graduate Student Academic Reviews and Progress Reports

MS: SLO-1 – Progress toward the degree and preparation of conducting thesis research (*i.e.*, academic progress)

Table 2 provides the results from the annual graduate student academic reviews and progress reports of BENG MS students for Fall 2023 – Spring 2024. Note that there **are 5 additional MS students** in CEMB (1), ENDY (2), FDSC (1) and MSEN (1) whose annual reviews were done through the interdisciplinary program.

This form, administered by the UA Graduate School, provides for a rating of satisfactory or unsatisfactory. The metric for success is 100% of students to achieve a “satisfactory” outcome. According to the data in **Table 2**, all students achieved “satisfactory” outcomes. Hence, there appears to be no issues or concerns through review of this measure.

Table 2. Annual graduate student academic reviews and progress reports for 2023 – 2024.

| Academic Year | Number “Satisfactory” | Number “Unsatisfactory” |
|---------------|-----------------------|-------------------------|
| 2023 – 2024 | 2 | 0 |

3. Number of Publications and Conference Presentations

MS: SLO-4 – Communicate effectively (oral)

Table 3 provides the number of peer-reviewed publications and conference presentations for all students in MS program in AY 2023-2024. The metric for success is for 100% of students to present at least once in international/national/state conferences and meetings before their graduations. Our single MS graduate in AY 2023-2024 presented one presentation in an international/national/state conference and meeting and published two peer-reviewed articles. Our continuing students are making solid progress on both fronts as well.

Table 3. Number of publications and conference presentations for BENG students for 2023 – 2024.

| Student Count | Degree | Graduating Term | Number of Peer-Reviewed Publications | Number of Conference Presentations |
|---------------|--------|-----------------|--------------------------------------|------------------------------------|
| 1 | MS | Summer 2023 | 2 | 1 |
| 2 | MS | Spring 2025 | 0 | 2 |
| 3 | MS | Spring 2025 | 0 | 0 |

4. Proposal Defense

MS: SLO-2 & 4 – Plan thesis research which meets high academic standards and constitutes a significant contribution to Biological Engineering (*i.e.*, understanding of field and contribution to new knowledge); communicate effectively (oral and writing)

We did not have any MS students complete a proposal defense in AY 2023-2024.

5. Final Examination: MS Thesis Defense

MS: SLO-3 & 4 – Write a thesis which meets high academic standards and constitutes a significant contribution to Biological Engineering (*i.e.*, understanding of field and contribution to new knowledge); communicate effectively (oral and writing)

Table 4 provides the students’ performances in MS thesis defense in 2023-2024. Our single MS graduate scored an average score of 3 or less and passed the examination. Hence, there appears to be no issues or concerns through review of this measure. However, improvements will be made for timely collections of rubrics by working with faculty.

Table 4. Performance of students in MS thesis defense for 2023 – 2024.

| Student Count | Degree | Result | Evaluation Score (Average) |
|----------------------|---------------|---------------|-----------------------------------|
| 1 | MS | Pass | 1 |

6. Exit Review

MS: All outcomes

The student was interviewed by the BAEG Department Head after completing the MS degree. The student indicated a positive experience in the program and that the learning objectives were met. The student indicated that increased numbers of students and opportunities for networking would have been beneficial. The student was complimentary of the courses in the department and the faculty interactions during completion of the degree.

7. Conclusion

Based on the given assessment measures, it appears that SLOs were met by the BENG graduate program at MS levels for AY 2023 – 2024. Future assessments will be strengthened through the timely implementation of the evaluation rubrics as well as the graduate student exit reviews.

8. Program Changes

Two new MS programs, *i.e.*, MSBE with non-thesis option and accelerated MSBE, were created to increase graduate student population and submitted for approval on September 11, 2023. The MSBE with non-thesis option is to provide more options to graduate applicants and recruit more students with industry career paths and non-traditional students. The Accelerated MSBE is to retain high-achieving BSBE students and provide them with an accelerated schedule to obtain their MSBE degree. If approved, the new programs will be offered from Fall 2024.

9. Assessment Process Changes

Faculty will discuss consequential assessment process changes for the timely implementation and completion of the required assessments during faculty meetings.