SAINT LOUIS UNIVERSITY.

Program Assessment: *Annual Report*

Program(s): Biomedical Engineering

Department: Biomedical Engineering

College/School: Parks College of Engineering, Aviation and Technology

Date: June 15, 2018

Primary Assessment Contact: J. Gary Bledsoe, Ph.D., Professor and Chair of Biomedical Engineering

1. Which program student learning outcomes were assessed in this annual assessment cycle?

   Outcomes 2 and 3 were assessed in this annual cycle. Because our ABET accreditation cycle requires outcomes to be assigned to courses, each year of a 3 year cycle (2 cycles per ABET review) we look at a different set of courses, this year the courses that were common to both the ABET and University assessment processes were BME4950 and BME4960, which are the capstone courses. Outcomes 2 and 3 map to these two courses.

2. What data/artifacts of student learning were collected for each assessed outcome? Were Madrid student artifacts included?

   BME artifacts include specific homework, quiz and exam questions, specific sections of reports from projects, oral presentations, poster presentations and prototypes of student's designs. We also have extensive student survey data, but survey data is not included in this report.

3. How did you analyze the assessment data? What was the process? Who was involved?
   NOTE: If you used rubrics as part of your analysis, please include them in an appendix.

   Faculty review the artifacts and assign scores, generally 0-100 and reflecting the degree to which each artifact corresponds to the desired response. Artifact scores are converted to the letters A, B and C according to our rubric, where an A corresponds to greater than 80% of the artifacts received a passing score (>70%), B corresponds to greater than 60% of the artifacts received a passing score, and C corresponds to less than 60% of the artifacts received a passing score.

4. What did you learn from the data? Summarize the major findings of your analysis for each assessed outcome.
   NOTE: If necessary, include any tables, charts, or graphs in an appendix.

   Outcome 2) Graduates will be able to function on multi-disciplinary teams. This outcome is assessed via the Final Design Review document from BME4950 and the poster presentation from BME4960. The Final Design Review document is developed by a team of students working toward a specific medical device design. In this cycle, 100% of the artifacts received scores greater than 85% (required to be greater than 70%), and this corresponds to a Level-A assessment finding. Also, 100% of the artifacts from BME4960 received scores greater than 89%, and this corresponds to a Level-A assessment finding. Our data suggests that the students are exceeding the desired level of performance with respect to outcome 2. No changes are planned at this time.

   Outcome 3) Graduates will demonstrate an understanding of professional and ethical responsibility. This outcome is assessed via and Ethics paper in BME4950 and the "Market, Social, Ethical" section of the Final

Semester Report in BME4960. In this cycle, 100% of the artifacts in BME4950 received scores greater than 90%, corresponding to a Level-A finding. Also, 100% of the artifacts from BME4960 received scores greater than 90%, corresponding to a Level-A finding. Our data suggest that the students are exceeding the desired level of performance with respect to outcome 3. No changes a planned at this time.

5. How did your analysis inform meaningful change? How did you *use the analyzed data to make or implement recommendations for change* in pedagogy, curriculum design, or your assessment plan?

Neither pedagogy nor curriculum was changed as a result of our assessment processes; however, we see a need to move to a performance indicator based process to better align all our assessment processes. We plan to begin to use performance indicator based rubrics for future assessment processes.

6. Did you follow up ("close the loop") on past assessment work? If so, what did you learn? *(For example, has that curriculum change you made two years ago manifested in improved student learning today, as evidenced in your recent assessment data and analysis?)*

This is the first year of the first cycle of University assessment, so we have not yet compared data from past cycles.

IMPORTANT: Please submit any revised/updated assessment plans to the University Assessment Coordinator along with this report.