SAINT LOUIS UNIVERSITY.

Program-Level Assessment: Annual Report

Program Name (no acronyms): Software Engineering	Department: Computer Science
Degree or Certificate Level: Master of Science	College/School: Arts and Sciences
Date (Month/Year): August 30, 2021	Assessment Contact: Outgoing: Jacob Sukhodolsky Incoming: David Ferry (david.ferry@slu.edu)

In what year was the data upon which this report is based collected?

In what year was the program's assessment plan most recently reviewed/updated? 2018

1. Student Learning Outcomes

Which of the program's student learning outcomes were assessed in this annual assessment cycle? (Please list the full, complete learning outcome statements and not just numbers, e.g., Outcomes 1 and 2.)

In AY20-21 we implemented the CS-BA and CS-BS assessment programs as a trial run and evaluation of our assessment methodology. Due to unexpected medical leave, the response to the COVID pandemic, and the retirement of the assessment committee chair, assessment data has not yet been collected for the MS-SE program. The assessment process for the BA/BS programs was completed, and produced a variety of possible improvements for the MS-SE assessment program as well. Please see those program assessment reports for more details.

2. Assessment Methods: Artifacts of Student Learning

Which artifacts of student learning were used to determine if students achieved the outcome(s)? Please describe and identify the course(s) in which these artifacts were collected. Clarify if any such courses were offered a) online, b) at the Madrid campus, or c) at any other off-campus location.

N/A

3. Assessment Methods: Evaluation Process

What process was used to evaluate the artifacts of student learning, and by whom? Please identify the tools(s) (e.g., a rubric) used in the process and **include them in/with this report document** (do not just refer to the assessment plan).

N/A

4. Data/Results

What were the results of the assessment of the learning outcome(s)? Please be specific. Does achievement differ by teaching modality (e.g., online vs. face-to-face) or on-ground location (e.g., STL campus, Madrid campus, other off-campus site)?

N/A

5. Findings: Interpretations & Conclusions

What have you learned from these results? What does the data tell you?

The AY20-21 BS/BA data was discussed at the CS Department faculty retreat on August 18, 2021. The incoming Assessment Committee chair (David Ferry) and the outgoing assessment committee members reviewed the previous year's data via Zoom meeting the previous May, and the incoming chair produced a report for the faculty at large.

6. Closing the Loop: Dissemination and Use of Current Assessment Findings

A. When and how did your program faculty share and discuss these results and findings from this cycle of assessment?

Although not a product of specific assessment findings, the CS faculty ratified, submitted, and had approved a major revision to our curriculum in AY20-21. Our two required Systems courses – CSCI 2400 Computer Architecture and CSCI 3500 Operating Systems – have been replaced with two new courses – CSCI 2500 Computer Organization and Systems and CSCI 2510 Principles of Computing Systems. These will be taught for the first time in AY22-23. Operating Systems will continue to be offered as an upper-level elective. This demonstrates continued diligence in keeping our curriculum relevant and current in a fast-moving field.

Second, the incoming assessment committee chair has been granted a course release with the goal of enacting the existing assessment plan as well as implementing improvements.

With respect to the assessment plan, the current plan has not generated assessment data that is obviously robust and meaningful. The current assessment plan will be continued for AY21-22, but the assessment committee will seek to revise the existing plan. Several revisions were proposed during the faculty retreat, and the committee will consider these as well as others.

In an effort to make assessment scores less subjective and more comparable over time, it was suggested that we pursue an assessment strategy that occurs outside of regular coursework. This could take the form of a standardized test or other extracurricular assessment at regular intervals, such as at the end of sophomore and senior year.

To make scores less subjective and more comparable over time, and also reduce faculty workload in assessment, it was suggested that we could identify automatic tools to help gather assessment data from existing coursework. There are tools such as code quality analyzers, linters, call graph analyzers, etc. that are specific to our field and could automatically produce quantitative scores relevant to the rubric.

To make scores less subjective and more comparable over time, it was suggested that we fix just one or two courses for each PLO so that each PLO would always be assessed at approximately the same place in our students' programs.

It was suggested that we could identify nonacademic measures of student success to incorporate in our assessment. These would include measures such as student job placement rates, alumni surveys to find what skills they find useful in their employment, external sources of achievement data to compare our students against, etc.

The next courses to be assessed under the current plan are offered primarily in the spring. The incoming assessment committee will spend the Fall semester considering proposed revisions and writing rubrics for the assessment of the learning outcomes applicable to MS-AI. In the Spring the committee will ensure that assessments are conducted, collect data, and analyze the data.

B. How specifically have you decided to use these findings to improve teaching and learning in your program? For example, perhaps you've initiated one or more of the following:

Changes to the Curriculum or Pedagogies	• Course content • Teaching techniques • Improvements in technology • Prerequisites	• Course sequence • New courses • Deletion of courses • Changes in frequency or scheduling of course offerings
Changes to the Assessment Plan	• Student learning outcomes • Artifacts of student learning • Evaluation process	• Evaluation tools (e.g., rubrics) • Data collection methods • Frequency of data collection

Please describe the actions you are taking as a result of these findings.

Please see CS-BS and CS-BA assessment reports.

If no changes are being made, please explain why.

7. Closing the Loop: Review of Previous Assessment Findings and Changes

A. What is at least one change your program has implemented in recent years as a result of assessment data?

Due to unexpected medical leave, the response to the COVID pandemic, and the retirement of the assessment committee chair, assessment data has not yet been collected for the MS-SE program.

B. How has this change/have these changes been assessed?

N/A

C. What were the findings of the assessment?

N/A

D. How do you plan to (continue to) use this information moving forward?

N/A

IMPORTANT: Please submit any assessment tools (e.g., rubrics) with this report as separate attachments or copied and pasted into this Word document. Please do not just refer to the assessment plan; the report should serve as a stand-alone document.