

### **CBE AOL Closing the Loop Form**

Program: MS Economics Date: 9/03/20

Learning Goal: 4. Students who graduate will be effective data analysts with the ability to use advanced software.

Learning Objective: 4A. Students who graduate will estimate models informed by economic theory using specialized software for data analysis.

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#### Closing-the-Loop

1. Review Learning Objective (LO) assessment data in the current Assessment Report.
2. Review previous LO assessment data and improvement actions taken since then in the AOL Summary Report.
3. Document below the effectiveness of past improvement actions in improving student learning or the AOL process (this is what is known as "closing-the-loop").

Spring 2017 results document that 98 percent of students met expectations for this Learning Objective. In Spring 2019, 100 percent met expectations. This suggests that our program continues to meet expectations for this Learning Objective. The Learning Objective is assessed in ECON 688 and ECON 693 (co-requisites), which were heavily modified when the MS Economics program was modified during the University's conversion from quarters to semesters. In particular, the pair of courses require students to complete five smaller empirical assignments rather than one larger empirical paper. The fifth assignment gives students similar freedom to choose their topic that the single assignment under the original course did. However, students now have experience implementing a wider array of empirical techniques using specialized software.

4. Document below your evaluation of current LO assessment data compared to the benchmark and the need for new improvement actions. Consider not just the overall average LO score but also score on individual traits shown in the Assessment Report and derived from the LO rubric.

A more detailed analysis of the data reveals that 100 percent of students met or exceeded expectations for the four traits (Knowledge & Skills in Data Analysis, Graphs & Figures, Use of Methods & Software, and Technical Competence). In addition to the changes listed above, we also changed the programming language students use from Stata to R beginning in Fall 2019. Given this recent change, coupled with the larger change beginning in Spring 2019 to the structure of assessment, we do not believe additional improvement actions are required. Nonetheless, we make one proposal below that involves the creation of a class that would teach programming in R. This course could include modules on producing Graphs & Figures in addition to building technical competence.

\* The assessment report overall score shows 75% which is an error. It should say 100%.

\*\* Consider raising the performance target to 80% of students meeting or exceeding expectations.

5. Record below a list of recommended course-level or programmatic actions to improve student learning or the AOL process.
  - a. Sort the list from most recommended to least.
  - b. Given our mature AOL system, ideas should not be limited to just AOL system improvements.

- c. For each improvement action proposal, list the project leader, timeline to completion, required resources, expected ease of implementation (hard, medium, easy), and expected impact on student learning (low, medium, high).
- d. You may use ease of implementation and impact on student learning to rank improvements.
- e. There is no guarantee that improvement ideas will be approved. They need to be reviewed by the program director, curriculum committee and dean.

Creation of a required programming class for the MS Economics program, "Computational Methods for Economists," that would introduce computer programming in R with an emphasis on data collection and management. This would support students' use of specialized software for data analysis in both ECON 610 and ECON 688/693.

\*Consider raising the performance target to 80% of students meeting or exceeding expectations.