

# Mathematics Bachelor's of Science

## Assessment Report 2021-22

### I. SUMMARY OF ASSESSMENT

#### BS ASSESSMENT

##### A. BS Program Learning Outcomes (PLO)

Students graduating with a BS degree in Mathematics will be able to:

<i>PLO 1</i>	Apply the definitions, techniques and theorems of mathematics. (ILO Thinking and Reasoning: Quantitative Reasoning.)
<i>PLO 2</i>	Use mathematics to understand, explain and/or solve problems beyond a particular course.
<i>PLO 3</i>	Creatively conjecture and rigorously write, analyze and critique proofs.
<i>PLO 4</i>	Communicate mathematics effectively. (ILO Communication: Oral Communication.)

##### B. Program Learning Outcome(S) Assessed

<i>PLO 4</i>	Communicate mathematics effectively. (ILO Communication: Oral Communication.)
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##### C. Summary of Assessment Process

**Instrument(s):** The department used videos of students presenting proofs and a rubric. The rubric was used to score the videos in the areas of readability, validity and fluency.

**Sampling Procedure:** the department when we created our long-term assessment plan. The videos were chosen as the best way to assess PLO 4.



**Main Findings:** This year most students performed well at all three levels, yet there was still only half of the students who mastered communicating proofs with fluency. The department needs to find ways to increase performance in fluency of communication.

**Recommendations for Program Improvement:** The department needs to work on setting and disseminating to instructors and students the need to practice oral communication of mathematics for each course and how to include validity and fluency practice throughout the coursework.

**Next Step(s) for Closing the Loop:** Since there have been four

- 6. Assessment activity: Two typical final exam questions will be chosen by the mathematics assessment committee and scored using a rubric.**
- 7. Assessment Instrument: Applying Mathematics Rubric**
- 8. How data will be reported: Quantitative**
- 9. Responsible person(s) Math Assessment Committee**
- 10. Time (which semester(s)): Spring 2023**
- 11. Ways of closing the loop: Data will be reported in the Mathematics Department Annual Report and discussed in faculty meetings to continuously improve the program.**

## Appendix A - Rubric

### CSU East Bay Mathematics, BS AY 2021-22

#### PLO 4 RVF Rubric Readability, Validity, Fluency

	Missing (0)	Emerging (1)	Developing (2)	Mastering (3)
Readability	Informal or non-mathematical language is used. There is misuse of notation/symbols.	Some improper mathematical language or notation is used.	Mostly proper mathematical language and notation is used.	Proper mathematical language and notation is used.

