Program-Level Assessment: Annual Report

Program Name (no acronyms): Mathematics	Department: Mathematics and Statistics
Degree or Certificate Level: BA / BS	College/School: College of Arts and Sciences
Date (Month/Year): September 2022	Assessment Contact: Anneke Bart
In what year was the data upon which this report is based collected? AY 2021-22	
In what year was the program's assessment plan most recently reviewed/updated? AY 2020-2021	
Is this program accredit22	No

1. Student Learning Outcomes

Which of the program's student learning outcomes were assessed in this annual assessment cycle? (

MATH/STAT 1300 Elementary Statistics with Computers (new in the assessment cycle) MATH 1510 Calculus 1 MATH 1520 Calculus 2 MATH 2530 Calculus 3 MATH 2660 Principles of Mathematics MATH 3120 Introduction to Linear Algebra MATH 3550 Differential Equations STAT 3850 Foundation of Statistics	

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** (please do not just refer to the assessment plan).

The assessed problems for each section are evaluated by the faculty member responsible for the section and each student is given a score on a 0-3 scale. The typical rubric for this evaluation is given below, although instructors have some flexibility to alter the rubric as necessary. In any case, each student is given a rating on a 0-1-2-3 scale.

Rubric for Final Exam Problem Assessment

3 – Student shows a mastery of the relevant material.
2 – Student shows competence, but not complete mastery of the material.
1 – Student shows a limited understanding of the material.
0 – Student shows no understanding of the material.

Students who achieve a “2” or “3” are deemed to have shown competence for the program learning outcome being assessed with respect to the chosen problem.

Instructors tabulate the scores for their section(s) and complete a form summarizing their findings and providing some background information about the assessment measure used. The completed forms are submitted via Google Forms iTd( )Tj8 (i)7.2 (eTw 2.75512.739 07 (g)]TJ0.003 Tw 4.210.283 0]TJ0.0(e)-5.9 6 (r)3.4 (es)1.u(th)5.l (a)2.3 (t(g)2.6wa f)10. (ti)7

to PLO #2, which involves the ability to write and understand both direct and indirect methods of proof. The data for STAT 3850 is related to PLO #1 and PLO #4, which involves the ability to implement statistical algorithms.
The 1818 program also falls under the Saint Louis University program. The result are being reported separately because the information may feed into different reports and because we wanted to see if there were any differences in student performance.
Results from 2020/21 and 2019/20 have been included for comparison.

Course	**0**	**1**	**2**	**3**	**# students**	**% 2 or 3 scores**	***2020/21 results***	***2019/20 results***
STAT 1100 - SLU					112	74%		

MATH/STAT 1300 -

Comparison of large (capped at 50 students) versus small (capped at 30 students) class size

Please note that for Calculus II, one of the large sections includes the assessment of6 (th)5.2 (e a)2.7 (s)12.13.6 (th)w 3.717 0 T

Corse	0	1	2	3	#tudents	% 2 or 3 scores

Another issue is the drop rates in the courses. If we compensate for the number of students who dropped (estimated from the overall ratio of those respective sections over the academic year), and hence can be seen as not mastering the student learning outcomes we obtain the following set:

	W	0	1	2	3	Total	% 2 or 3 scores
MATH 1510- Calculus I -							

Tableau Data indicates that pre-pandemic (Fall 2015 – Fall2019) the DFW rate for Calculus I was 18.5% and for Calculus II the DFW rate was 26.3%.

The data suggest that our students may benefit from smaller classes in Calculus I, while the faculty assigned in Calculus II may have the larger impact. Increasing success and learning in Calculus I may have a positive trickle-down effect in Calculus II. It is not clear we have the resources to put a plan like this in action.

III. Courses to pay attention to in the future

We want to pay attention to Calculus I and II because of the impact on students. These are multi-section high enrollment courses.
MATH 2660 Principles of MATH. The outcomes are below 60% success (scores of 2 and 3)

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