

2021-2022 Assessment Cycle

## Assessment Findings

### Program Assessment Accomplishments

The Mathematics Department assessed our PSLOs with assignments in several courses. The Department also conducted exit interviews with its graduating students. During departmental meetings, the Department faculty discussed our assessment plan and results. The prior year's assessment report, collected data, and feedback from the Assessment Committee were made available to the faculty. The Mathematics Department was satisfied with last year's assessment activities and with assessments from our courses. Thus, no major changes have been made to our assessment practices

### Finding per Measure

#### BA/BS-Pure Math Outcome Set

##### PSLO 1

#### Outcome: Ability to solve a variety of problems in mathematics

Students will solve a variety of problems in mathematics including calculus, probability and statistics, and linear algebra.

▼ **Measure:** Anonymous portion of Exit Interview  
*Program level Indirect - Survey*

Details/Description:	Anonymous portion of Senior exit interviews
Acceptable Target:	70% of the students responding to the anonymous portion of the exit interview will indicate "Good", "Very Good", or "Excellent" on questions related to this PSLO.

#### Supporting Attachments:

 2021-2022 Compiled Anonymous responses.docx (Word Document (Open XML))

### Findings for Anonymous portion of Exit Interview

Summary of Findings:	The Department was disappointed that only 2 graduating students returned this survey. However, the results were in line with our measure in that 100% of the respondents indicating "Excellent", "Very Good", or "Good" on the associated questions. Thus, the measure was exceeded.
Results :	Acceptable Target Achievement: Exceeded
Recommendations:	
Reflections/Notes:	Next year we will put more effort into getting our graduating students to complete the survey.

### ▼ **Measure:** Course Assignment *Course level Direct - Student Artifact*

Details/Description:	Specified assignments in MA 151
Acceptable Target:	70% of all students completing MA 151 will obtain an average of 2.5 (out of 4) on specified assessment assignments using the Departmental rubric.

#### Supporting Attachments:

 Assignment Rubric (Adobe Acrobat Document)

 MA-151-Spring 2022-Assessment Data-names removed.xlsx (Excel Workbook (Open XML))

 MA-151-F21-Assessment Data-names removed.xlsx (Excel Workbook (Open XML))

## Findings for Course Assignment

**Summary of Findings:** For Fall 2021 and Spring 2022, 75% and 88% of students respectively earned an average of at least 2.5/4 on the associated assignments.

**Results :** Acceptable Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

### ▼ **Measure:** Course Grades *Course level Direct - Other*

**Details/Description:** Overall course grades in MA 151, MA 152, MA 253, MA 207, MA 301, MA 340, MA 341, MA 346

**Acceptable Target:** 70% of all students completing the respective courses will obtain a C or better in the course.

**Supporting Attachments:**

 Final Grade Dist Comp SP 22.xlsx (Excel Workbook (Open XML))

 Final Grade Dist FA 21.xlsx (Excel Workbook (Open XML))

## Findings for Course Grades

**Summary of Findings:** The only courses that did not hit the target were MA 253 in Spring 22, where 67% of the class obtained a C or higher, and MA 152 in Fall 21, where 63% of the class obtained a C or higher. However, for the entire academic year, 83.3% of MA 253 and 90% of MA 152 students obtained a C or higher in the course. Thus, the objective is considered to be met.

**Results :** Acceptable Target Achievement: Met

Recommendations:  
Reflections/Notes:

▼ **Measure:** Exit Interviews  
*Program level Indirect - Interview*

Details/Description:	Senior exit interviews
Acceptable Target:	No more than 20% of the students responding will mention this as a concern during their free-response exit interview.

Supporting Attachments:

 2021-2022 Compiled responses.docx (Word Document (Open XML))

Findings for Exit Interviews

Summary of Findings:	One student commented that they wished there were more application problems. However, this was less than 20% of the responses.
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Results :	Acceptable Target Achievement: Met
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Recommendations:  
Reflections/Notes:

PSLO 2

**Outcome: Ability to write mathematical proofs**

Students will write mathematical proofs and solve challenging problems both pure and applied.

▼ **Measure:** Anonymous portion of Exit Interview

*Program level Indirect - Survey*

Details/Description:	Anonymous portion of Senior exit interviews
Acceptable Target:	70% of the students responding to the anonymous portion of the exit interview will indicate "Good", "Very Good", or "Excellent" on questions related to this PSLO.

Supporting Attachments:

 2021-2022 Compiled Anonymous responses.docx (Word Document (Open XML))

Findings for Anonymous portion of Exit Interview

Summary of Findings:	The Department was disappointed that only 2 graduating students returned this survey. However, the results were in line with our measure in that 100% of the respondents indicating "Excellent", "Very Good", or "Good" on the associated questions. Thus, the measure was exceeded.
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Results :	Acceptable Target Achievement: Exceeded
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Recommendations:

Reflections/Notes:	Next year we will put more effort into getting our graduating students to complete the survey.
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▼ **Measure:** Course Assignment

*Course level Direct - Exam*

Details/Description: Specified final exam problems in MA 207, MA 354, MA 371 and MA 372

Acceptable Target: 70% of all students completing MA 207, MA 354, MA 371, and MA 372 will have an average of 2.5 (out of 4) on select final exam proof problems using the Departmental rubric.

Supporting Attachments:

 Assignment Rubric (Adobe Acrobat Document)

 MA 207-Spring 2022-Assessment Data--names removed.xlsx (Excel Workbook (Open XML))

 MA-354-F21-Assessment Data-names removed.xlsx (Excel Workbook (Open XML))

Findings for Course Assignment

Summary of Findings: MA 207 had 80% of students score a 2.5 or higher on average. MA 354 had 77% of students earn a 2.5 or higher on average. MA 371 and MA 372 were not offered in AY21-22.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

▼ **Measure:** Course Grades  
*Course level Direct - Other*

Details/Description: Overall course grades in MA 207, MA 301, MA 340, MA 341, MA 346, MA 344, MA 354, MA 371, MA 372, MA 380

Acceptable Target: 70% of all students completing the respective courses will obtain a C or better in the course.

Supporting Attachments:

[Final Grade Dist Comp SP 22.xlsx \(Excel Workbook \(Open XML\)\)](#)

[Final Grade Dist FA 21.xlsx \(Excel Workbook \(Open XML\)\)](#)

Findings for Course Grades

Summary of Findings: At least 70% of students in these courses earned a grade of C or higher.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

▼ **Measure:** Exit Interviews  
*Program level Indirect - Interview*

Details/Description: Senior exit interviews

Acceptable Target: No more than 20% of the students responding will mention this as a concern during their free-response exit interview.

Supporting Attachments:

[2021-2022 Compiled responses.docx \(Word Document \(Open XML\)\)](#)

Findings for Exit Interviews

Summary of Findings: No students mentioned this as a concern.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

### PSLO 3

#### **Outcome: Ability to communicate mathematics**

Students will communicate mathematics both orally and in writing.

- ▼ **Measure:** Anonymous portion of Exit Interview  
*Program level Indirect - Survey*

Details/Description:	Anonymous portion of Senior exit interviews
Acceptable Target:	70% of the students responding to the anonymous portion of the exit interview will indicate "Good", "Very Good", or "Excellent" on questions related to this PSLO.

#### Supporting Attachments:

 2021-2022 Compiled Anonymous responses.docx (Word Document (Open XML))

#### Findings for Anonymous portion of Exit Interview

Summary of Findings:	The Department was disappointed that only 2 graduating students returned this survey. However, the results were in line with our measure in that 100% of the respondents indicating "Excellent", "Very Good", or "Good" on the associated questions. Thus, the measure was exceeded.
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Results :	Acceptable Target Achievement: Exceeded
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Recommendations:

Reflections/Notes:

Next year we will put more effort into getting our graduating students to complete the survey.

▼ **Measure:** Course Assignment  
*Course level Direct - Student Artifact*

Details/Description:

Specified assessment assignments in MA 354 and MA 371

Acceptable Target:

70% of all students completing MA 354 and MA 371 will have an average of 2.5 (out of 4) on specified assessment assignments using the Departmental rubric.

Supporting Attachments:

 Assignment Rubric (Adobe Acrobat Document)

 MA-354-F21-Assessment Data.xlsx (Excel Workbook (Open XML))

### Findings for Course Assignment

Summary of Findings:

MA 354 had 100% of students earn an average of 2.5/4 or higher on the communication assessments. MA 371 was not offered in AY 21-22.

Results :

Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

▼ **Measure:** Course Grades  
*Course level Direct - Other*

Details/Description: Overall course grades in MA 354, MA 371, MA 388

Acceptable Target: 70% of all students completing the respective courses will obtain a C or better in the course. 70% of students completing MA 388 will receive credit for the course.

Supporting Attachments:

 Final Grade Dist Comp SP 22.xlsx (Excel Workbook (Open XML))

 Final Grade Dist FA 21.xlsx (Excel Workbook (Open XML))

Findings for Course Grades

Summary of Findings: At least 70% of students in these courses earned a grade of C or higher.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

▼ **Measure:** Exit Interviews  
*Program level Indirect - Interview*

Details/Description: Senior exit interviews

Acceptable Target: No more than 20% of the students responding will mention this as a concern during their free-response exit interview.

Supporting Attachments:

 2021-2022 Compiled responses.docx (Word Document (Open XML))

### Findings for Exit Interviews

Summary of Findings: No students mentioned this as a concern.  
Results : Acceptable Target Achievement: Met  
Recommendations:  
Reflections/Notes:

▼ **Measure:** Project Evaluation  
*Course level Direct - Student Artifact*

Details/Description: Capstone project  
Acceptable Target: 70% of all students completing MA 388 will receive a 2.5 (out of 4) on their semester-long project, which includes a written report and oral presentation, using the Departmental rubric.

#### Supporting Attachments:

 Assignment Rubric (Adobe Acrobat Document)

 MA 388 Assessment F21.xlsx (Excel Workbook (Open XML))

### Findings for Project Evaluation

Summary of Findings: 100% of students earned a 2.5/4 or higher on their MA 388 project.  
Results : Acceptable Target Achievement: Met  
Recommendations:  
Reflections/Notes:

PSLO 4

**Outcome: Ability to identify and utilize appropriate practices and tools**

Students will identify and utilize the appropriate practices and tools, including the use of technology, to solve mathematics problems.

▼ **Measure:** Anonymous portion of Exit Interview  
*Program level Indirect - Survey*

Details/Description:	Anonymous portion of Senior exit interviews
Acceptable Target:	70% of the students responding to the anonymous portion of the exit interview will indicate "Good", "Very Good", or "Excellent" on questions related to this PSLO.

Supporting Attachments:

 2021-2022 Compiled Anonymous responses.docx (Word Document (Open XML))

Findings for Anonymous portion of Exit Interview

Summary of Findings:	The Department was disappointed that only 2 graduating students returned this survey. However, the results were in line with our measure in that 100% of the respondents indicating "Excellent", "Very Good", or "Good" on the associated questions. Thus, the measure was exceeded.
Results :	Acceptable Target Achievement: Exceeded
Recommendations:	
Reflections/Notes:	Next year we will put more effort into getting our graduating students to complete

the survey.

▼ **Measure:** Course Assignment  
*Course level Direct - Student Artifact*

**Details/Description:** Specified assessment assignments in MA 253, MA 340, MA 341, and MA 346

**Acceptable Target:** 70% of all students completing MA 253, MA 340, MA 341, and MA 346 will obtain a score of 2.5 (out of 4) on their courses' respective projects using the Departmental rubric.

**Supporting Attachments:**

[📎 MA 253 F21 and SP22.xlsx \(Excel Workbook \(Open XML\)\)](#)

[📎 MA 340-Spring 2022-Assessment Data.xlsx \(Excel Workbook \(Open XML\)\)](#)

[📎 Rubric for MA 253.docx \(Word Document \(Open XML\)\)](#)

**Findings for Course Assignment**

**Summary of Findings:** 91% of MA 253 students and 71.4% of MA 340 students earned at least a 2.5/4 average on the assessment assignments. MA 341 and MA 346 were not offered.

**Results :** Acceptable Target Achievement: Met

**Recommendations:**

**Reflections/Notes:**

▼ **Measure:** Course Grades  
*Course level Direct - Other*

Details/Description: Overall course grades in MA 253, MA 301, MA 340, MA 341, MA 346

Acceptable Target: 70% of all students completing the respective courses will obtain a C or better in the course.

Supporting Attachments:

 Final Grade Dist Comp SP 22.xlsx (Excel Workbook (Open XML))

 Final Grade Dist FA 21.xlsx (Excel Workbook (Open XML))

Findings for Course Grades

Summary of Findings: The only courses that did not hit the target was MA 253 in Spring 22, where 67% of the class obtained a C or higher. However, for the entire academic year, 83.3% of MA 253 students obtained a C or higher in the course. Thus, the objective is considered to be met.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

▼ **Measure:** Exit Interviews  
*Program level Indirect - Interview*

Details/Description: Senior exit interviews

Acceptable Target: No more than 20% of the students responding will mention this as a concern during their free-response exit interview.

### Supporting Attachments:

 2021-2022 Compiled responses.docx (Word Document (Open XML))

### Findings for Exit Interviews

Summary of Findings: No students mentioned this as a concern.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

### Overall Recommendations

On our exit interviews, there were some comments about two faculty being unprepared and/or disorganized. The Chair has communicated this to the faculty and suggested some specific CTEL events for them to attend.

### Overall Reflection

All measures were either met or exceeded. The Department is satisfied with our assessment practices and results.

### Faculty Collaboration

Faculty teaching a Program course list assessed PSLOs, measures of assessment, and aggregate results on their syllabi.

Several faculty participate in conducting senior exit interviews.

Many of our Program courses are taught by the same instructor each time the course is offered. These instructors use results to make any necessary changes to their course(s).

Assessment data for courses that are taught by multiple faculty are shared with the respective faculty. These faculty then discuss results together and decide what, if any changes, should be made.

Faculty who teach a prerequisite course to another program course share assessment data with the instructor(s) of the subsequent course(s). This gives the faculty of the subsequent course(s) the opportunity to make any necessary adjustments.

Assessment data is posted on the S drive for any interested math faculty member to review. Each fall an Assessment report on our annual findings is given at a faculty department meeting.

### **Communication & Collaboration with Students**

Course syllabi list the PSLOs, the measures used to assess them, and aggregate results from previous semesters indicating if the measures have been satisfied. Faculty also are asked to indicate to students which specific assignments are addressing PSLOs.

The exit interviews give students the opportunity to voice concerns and/or offer suggestions for changes to the Program. Each student is interviewed separately by two different Mathematics faculty members. Several math faculty participate in the interview process. The overall results are compiled into a single file and placed on the S drive for all Mathematics faculty to view. The exit interview contains an anonymous portion. Questions on the anonymous portion reflect the PSLOs.

### **Communication & Collaboration with External Stakeholders**

Our newsletter, "Slice of Pi", keeps our alumni, former faculty, benefactors, and other friends of the Department informed of our annual accomplishments and activities.

The Mathematics Department believes that the American Mathematical Society, the Mathematical Association of America, and the National Council of Teachers of Mathematics are important stakeholders in our program. We continue to monitor changes and suggestions made by these organizations. Faculty members regularly attend and/or present at regional and national conferences. Two Department members are on the Executive Committee for the Kansas MAA. In addition, a Department member serves on the MAA National Committee on Undergraduate Programs in Mathematics. These service roles allow our Department to not only monitor, but also to drive, curriculum changes for this degree.

### **Communication & Collaboration with University**

Several member so of the Department attended CTET events. The Department Assessment Liaison and Department Chair communicated with other liaisons/Chairs in the College of Arts and Sciences, particularly with the Natural Sciences Division.

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