

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 results. Thus, no major changes have been made to our assessment practices.

The Math Department has a strong connection with area high school math teachers through our CEP Program. The Department seeks suggestions from these instructors regarding our course offerings and for advice on recruiting new majors. Through these individual conversations, the Department is confident that our curriculum is satisfactory.

In AY21, the Department made several curricular changes to the degree. The exit interviews conducted this year solidified that the students found these changes to be helpful.

Finding per Measure

BA/BE/BS -Secondary Math Education 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, algebra, and geometry.

▼ **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: MA 151 assignments

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 140, MA 151, MA 152, MA 253, MA 204, MA 207, MA 230, MA 301, MA 367, MA 381

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

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: Exceeded

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 PSLO 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.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

▼ **Measure:** Professional Credential Exam
Program level Direct - Exam

Details/Description: Student take the Math Subject Praxis
Acceptable Target: 100% of Washburn math majors taking the Math Subject Praxis Assessment exam will pass.

Supporting Attachments:

 Praxis Scores.docx (Word Document (Open XML))

Findings for Professional Credential Exam

No Findings Added

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.
Results :	Acceptable Target Achievement: Exceeded
Recommendations:	
Reflections/Notes:	Next year we will put more effort into getting graduating students to complete the survey.

▼ **Measure:** Course Assignment *Course level Direct - Exam*

Details/Description:	Select final exam problems in MA 207, MA 354, MA 367, and MA 371
Acceptable Target:	70% of all students completing MA 207, MA 354, MA 367, and MA 371 will obtain an average of 2.5 (out of 4) on select final exam 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: 80% of MA 207 students and 77% of MA 354 students earned at least a 2.5/4 average on the assessment problems. MA 367 and MA 371 were 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 207, MA 301, MA 354, MA 367, MA 371, and MA 380

Acceptable Target: 70% of all students completing the respective courses will obtain a grade of 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: All courses had at least 70% of students earning a 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 PSLO 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 student 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.

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: Assignments in MA 316, MA 317, and MA 318

Acceptable Target: 70% of all students completing MA 316, MA 317,

and MA 318 will receive an 80% on the associated rubric for this course.

Supporting Attachments:

 Data for 316.317.318.docx (Word Document (Open XML))

 MA 316.317.318 Communication Rubric.docx (Word Document (Open XML))

Findings for Course Assignment

Summary of Findings: 100% of students earned a 2.5/4 or higher on the assessment assignment.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

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

Details/Description: Assignments in MA 354, MA 367, and MA 371

Acceptable Target: 70% of all students completing MA 354, MA 367, and MA 371 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-354-F21-Assessment Data-names removed.xlsx (Excel Workbook (Open XML))

Findings for Course Assignment

Summary of Findings: 100% of students in MA 354 has at least 2.5/4 average on the assessment assignments. MA 367 and MA 371 were 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 316, MA 317, MA 318, MA 354, MA 367, MA 371, MA 388, ED 385, RD 484

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

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 all 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 PSLO 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 student 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 received at least a 2.5/4 on the 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 assignments in MA 253
Acceptable Target:	70% of all students completing MA 253 will obtain an average of 2.5 (out of 4) on specified assessment assignments using the Departmental rubric.

Supporting Attachments:

 MA 253 F21 and SP22.xlsx (Excel Workbook (Open XML))

 Rubric for MA 253.docx (Word Document (Open XML))

Findings for Course Assignment

Summary of Findings:	91% of students in MA 253 received at least a 2.5/4 average on the assessment assignments.
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Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

▼ **Measure:** Course Grades

Course level Direct - Other

Details/Description: Overall course grades in MA 140, MA 253, MA 301, 381

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

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 course 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 PSLO 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 student mentioned this as a concern.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

PSLO 5

Outcome: Apply appropriate mathematical practices and tools

Students will apply appropriate mathematical practices and tools, including the use of technology, to teaching mathematical concepts, thinking, and content appropriate for secondary students.

▼ **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: Assignments in MA 316, MA 317, and MA 318

Acceptable Target: 70% of all students completing MA 316, MA 317, and MA 318 will receive an 80% on the associated rubric for this course.

Supporting Attachments:

[Data for 316.317.318.docx \(Word Document \(Open XML\)\)](#)

[MA 316.317.318 Rubric for lesson presentation.docx \(Word Document \(Open XML\)\)](#)

Findings for Course Assignment

Summary of Findings: 100% of students earned at least an 80% using the rubric on the associated assignment.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

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

Details/Description: Overall course grades in MA316, MA 317, MA 318, ED 363, ED 400, ED 402, ED 405, ED 410

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

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: All courses had at least 70% of students earning a 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 PSLO 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:** Performance Assessment
Program level Direct - Portfolio

Details/Description: Teaching Performance Portfolio

Acceptable Target: 100% of Washburn math majors completing ED 410 will receive a 70% on their Teaching Performance Portfolio

Supporting Attachments:

 ED 410 Portfolio Scores.docx (Word Document (Open XML))

Findings for Performance Assessment

Summary of Findings: 100% of students received at least a 70% on their portfolio.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

▼ **Measure:** Professional Credential Exam *Program level Direct - Exam*

Details/Description: Student take the Math Subject Praxis

Acceptable Target: 100% of Washburn math majors taking the Math Subject Praxis Assessment exam will pass.

Supporting Attachments:

 Praxis Scores.docx (Word Document (Open XML))

Findings for Professional Credential Exam

Summary of Findings: One student took the Praxis exam. This student passed.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

PSLO 6

Outcome: Ability to work collaboratively

Students will work collaboratively and persistently with peers to solve mathematics problems to develop learner-centered instruction.

▼ **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: Assignments in MA 204
Acceptable Target: 70% of all students completing 204 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 204-Spring 2022-Assessment Data-names removed.xlsx (Excel Workbook (Open XML))

Findings for Course Assignment

Summary of Findings: 75% of students earned an average of 2.5/4 or higher.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

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

Details/Description: Overall course grades in MA204, MA380, ED 363,

ED 410

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

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: All courses had at least 70% of students earning a 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 PSLO 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:** Performance Assessment

Program level Direct - Portfolio

Details/Description: Teaching Performance Portfolio

Acceptable Target: 100% of Washburn math majors completing ED 410 will receive a 70% on their Teaching Performance Portfolio

Supporting Attachments:

 ED 410 Portfolio Scores.docx (Word Document (Open XML))

Findings for Performance Assessment

Summary of Findings: All students got at least a 70% on their portfolio.

Results : Acceptable Target Achievement: Met

Recommendations:

Reflections/Notes:

Overall Recommendations

In the exit interviews, students commented on a desire to have more teaching practice in a high school setting. The Math Department will take this coming year to examine our course offerings. We will keep in mind this suggestion as we do our review.

Overall Reflection

All measures were met or exceeded for this cycle. The Department is satisfied with our results and our assessment methods.

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 address the PSLOs.

The Department conducts exit interviews for its graduating seniors. These 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.

Several former students teach high school math in the Topeka area and are instructors of our CEP courses. Department faculty have regular interactions with these former students.

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 Department organizes a Secondary Education Advisory Board. This Board is comprised of area high school math teachers, particularly CEP instructors. The Board is made aware of the PSLOs for the degree and asked for feedback. The Board is also made aware of course degree requirements and course content. Members of the Department have maintained individual interactions with Board members throughout the year.

Through our multiple Concurrent Enrollment Program course offerings, our faculty have become acquainted with several Shawnee County high school math teachers. This has provided a venue for several informal discussions about secondary math education and our program at Washburn University.

The Mathematics Department believes that the American Mathematical Society, the Mathematical Association of America, the National Council of Teachers of Mathematics, and the Kansas Department of Education 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 CTCL 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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