

2021-2022 Assessment Cycle

Assessment Plan

Mission Statement

The mission of the Department of Mathematics and Statistics is to ensure all mathematics majors obtain a comprehensive knowledge of mathematics in terms of content, problem solving, analytical skills, and abstract mathematical reasoning. All mathematics majors will be able to communicate their skills and knowledge effectively and will be able to make appropriate choices regarding the method of solution and presentation of problems. We are committed to providing high-quality instruction at all levels, in our developmental, lower division, General Education, and upper-division courses. Further, the department is committed to providing service to the community and our profession in a variety of ways, including a number of on-campus programs for grade 6-16 learners, professional consultations, involvement in professional organizations, and other outreach activities.

Measures

BA/BEEd/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))

▼ **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))

▼ **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))

▼ **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))

▼ **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))

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))

▼ **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))

▼ **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))

▼ **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))

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))

▼ **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))

▼ **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))

▼ **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))

▼ **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))

▼ **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))

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))

▼ **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))

▼ **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))

▼ **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))

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))

XML))

▼ **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))

▼ **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))

▼ **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))

▼ **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))

▼ **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))

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))

▼ **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)

▼ **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))

▼ **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))

▼ **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))

Analysis and Reporting Calendar

In previous years, we collected data and analyzed the PSLOs on a rotating every other year basis. This year, we are analyzing all of the PSLOs. This is because the Education Department requested the information for all PSLOs for our Secondary Education track. Since there is overlap with that track and this track, we have decided to analyze all PSLOs for this track as well.

Stakeholder Involvement

Departmental members actively participate in local, regional, and national professional organizations. Departmental members are involved in the Mathematical Association of America (MAA), American Statistical Association (ASA), the National Council of Teachers of Mathematics (NCTM), the Kansas Association of Teachers of Mathematics (KATM), the Northeast Kansas Association of Teachers of Mathematics (NEKATM), and American Mathematical Society (AMS). The Department pays close attention to curricular recommendations by these organizations and makes changes accordingly when needed.

The Department works with the Education Department to ensure that our program meets the requirements of the Kansas Department of Education.

The Mathematics Department contacts all graduating seniors to schedule exit interviews. Interview questions ask students for feedback on requirements for the major and if there are any suggestions for change. Exit interview questions also ask students if our program adequately prepared them for the Praxis exam and if not, asks for suggestions on change.

Through the CEP program, Department faculty are in regular contact with area high school mathematics teachers, many of whom are Washburn alumni. Department faculty use this opportunity to discuss changes in secondary mathematics and how the Department could or should make corresponding changes to its program.

Mathematics faculty closely monitor requirements for licensure by the Kansas Department of Education and make curriculum changes accordingly if needed.

Mathematics faculty who regularly teach courses for the Program meet to review and, if necessary, change the Program Assessment Plan. Instructors of courses in the Program are responsible for collecting, analyzing and reporting data to the Department Assessment Liaison. Results of the Assessments will be made available to Department Faculty and discussed at a Department meeting. Additional meetings to specifically address Assessment results will be held if needed.

The Department stays in contact with our alumni through our newsletter, Slice of Pi. The newsletter reports on student and faculty accomplishments.

The syllabi for math courses in the major state the learning outcomes satisfied by the course, the assessment measures for the course, and aggregate data indicating whether the measures had been satisfied in previous semesters.

Program Assessment Plan Review Cycle

The Program Assessment Plan is reviewed every year. Recent changes to the Assessment Plan have been made in FY19 and FY 22

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