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/BS - Applied Statistics 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))

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:

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))

Project Rubric.pdf (Adobe Acrobat Document)

Measure: Course Grades
Course level Direct - Other

Details/Description:	Overall grades in MA 151, MA 152, MA 253, MA 301, MA 340, MA 341, MA 342
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))

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))

PSLO 2

Outcome: Ability to do statistical analysis
Students will solve challenging problems involving the appropriate design of experiments, the derivation of the statistical properties of estimators, and the implementation of correct methods of statistical inference in order to make valid conclusions from data.

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 340, 341, and 344
Acceptable Target:	70% of all students completing MA 340, 341, and 344 will obtain an average of 2.5 (out of 4) on specified assessment assignments using the Departmental rubric.

Supporting Attachments:

MA 340-Spring 2022-Assessment Data.xlsx (Excel Workbook (Open XML))

MA 344 - F2021 Assessment data-names removed.csv (File)

Project Rubric.pdf (Adobe Acrobat Document)

Measure: Course Grades

Course level Direct - Other

Details/Description:	Overall grades in MA 301, MA 340, MA 341, MA 342, MA 344, MA 345, MA 347
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))

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))

PSLO 3

Outcome: Ability to communicate mathematics
Students will communicate mathematics and statistical results 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:	Specified assignments in MA 346 and MA 348
Acceptable Target:	70% of all students completing MA 346 and MA 348 will obtain an average of 2.5 (out of 4) on specified assessment assignments using the Departmental rubric.

Supporting Attachments:

Project Rubric.pdf (Adobe Acrobat Document)

Measure: Course Grades
Course level Direct - Other

Details/Description:	Overall grades in MA 346, MA 348
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))

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))

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 and perform statistical modeling and analysis of data.

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 MAS 253, MA 340, MA

346, and MA 348

Acceptable Target: 70% of all students completing MA 253, MA 340, MA 346, and MA 348 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))
- MA 340-Spring 2022-Assessment Data.xlsx (Excel Workbook (Open XML))
- Project Rubric.pdf (Adobe Acrobat Document)
- Rubric for MA 253.docx (Word Document (Open XML))

Measure: Course Grades

Course level Direct - Other

Details/Description: Overall grades in MA 253, MA 301, MA 340, MA 341, MA 342, MA 346, MA 348

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))

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))

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), and American Mathematical Society (AMS). Additionally, our Actuarial Science program has the Society of Actuary (SOA) designation “Universities and Colleges with Actuarial Programs” (UCAP). We are the only Kansas institution with an actuarial program that is so recognized. The Department pays close attention to curricular recommendations by these organizations and makes changes accordingly when needed.

The Department has an Actuarial Advisory Board comprised of alumni and area actuaries. The Board meets annually with department faculty. While the main focus of the Board is to discuss trends and changes in the actuarial field, there is significant overlap with the Applied Statistics Specialization. The Board has been a valuable resource for making suggestions for change with this track.

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 SOA exam series and if not, asks for suggestions on change.

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.

Mathematics faculty who regularly teach courses for the Program meet periodically 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 are made available to Department Faculty and discussed at a Department meeting.

Program Assessment Plan Review Cycle

The Program Assessment Plan is reviewed every year. Recent changes to the Assessment Plan were made in FY21 and FY22.

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