Fall 2016

Mathematics Discipline 5-Year Assessment Plan 2016-2021

Mathematics Discipline

UNIVERSITY OF MINNESOTA MORRIS	**University of Minnesota, Morris** **Academic Program Assessment Plan**

Academic Program: Mathematics

Academic Division: Science and Mathematics

Program Contact:

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In the space below, list your Program Student Learning Outcomes (PSLOs):

The mathematics curriculum is designed to:

1. provide students with the basic knowledge and skills to make mathematical contributions to modern society,
2. help students develop competence in problem-solving, mathematical techniques and methods, and quantitative literacy,
3. sharpen students' mathematical intuition and abstract reasoning,
4. encourage and stimulate the type of independent and critical thinking required for research beyond the confines of the textbook, and
5. enable students to do in-depth and independent mathematics-related research projects that require students to integrate their mathematical knowledge from different areas, and to enhance their communication skills by way of written reports and oral presentations.

The curriculum prepares students to enter graduate school, pursue careers in applied mathematics, or teach mathematics.

Enter Academic Program Name:				
Program Student Learning Outcome(s) to be assessed	**How will you measure the outcome?**	**Where will the data be collected and by whom?**	**When will the data be collected?**	**Overlap with CSLOs?* If yes, which CSLO?**
2016-17 **PSLO 5**. enable students to do in-depth and independent mathematics-related research projects that require students to integrate their mathematical knowledge from different areas, and to enhance their communication skills by way of written reports and oral presentations. **PSLO 3.** sharpen students' mathematical intuition and abstract reasoning. **PSLO 2.** help students develop competence in problem-solving, mathematical techniques and methods, and quantitative reasoning	**PSLO 5.** outcomes are measured using rubrics for oral presentation and written paper. Results from all participating instructors will be shared with Discipline Assessment Coordinator who will create final report and summary of Faculty Meeting when all presentations are complete. Data Collection: • Whom: Discipline Assessment Coordinator • Where: During students' oral presentations each faculty assesses each student's oral presentation • When: Fall 2016 & Spring 2017 **PSLO 3.** outcome is measured using a rubric. Results from all participating instructors will be shared with Discipline Assessment Coordinator who will create final report. Data Collection: • Whom & Where: Course Instructor Math 3221 Real Analysis I • When: Fall 2016 **PSLO 2.** outcome is measured using a rubric. Results from all participating instructors will be shared with Discipline Assessment Coordinator who will create final report. Data Collection: • Whom & Where: Course Instructor Math 1021 Survey of Calculus • When: Spring 2017			**PSLO 5.** Main CSLOs CSLO-1b. In-depth study in a particular field: its schools of thought, advanced theories, language, and methods of inquiry CSLO-2d-1: Written CSLO-2d-3: Oral communication **PSLO 3.** Main CSLOs CSLO-1b. In-depth study in a particular field: its schools of thought, advanced theories, language, and methods of inquiry CSLO-4b. Application of knowledge, skills, and responsibilities to new settings and progressively more complex problems **PSLO 2.** Main CSLOs CSLO-1a. Core studies in the liberal arts: arts, histories, humanities, languages, mathematics, sciences, and social sciences CSLO-2b. Critical thinking and problem-solving CSLO-2e. Quantitative literacy

2017-18 **PSLO 5.** enable students to do in-depth and independent mathematics-related research projects that require students to integrate their mathematical knowledge from different areas, and to enhance their communication skills by way of written reports and oral presentations. **PSLO 3.** sharpen students' mathematical intuition and abstract reasoning.	**PSLO 5.** outcomes are measured using rubrics for oral presentation and written paper. Results from all participating instructors will be shared with Discipline Assessment Coordinator who will create final report and summary of Faculty Meeting when all presentations are complete. Data Collection: • Whom: Discipline Assessment Coordinator • Where: During students' oral presentations each faculty assesses each student's oral presentation • When: Fall 2017 & Spring 2018 **PSLO 3.** outcome is measured using a rubric. Results from all participating instructors will be shared with Discipline Assessment Coordinator who will create final report. Data Collection: • Whom & Where: Course Instructor Math 3221 Real Analysis I • When: Fall 2017	**PSLO 5.** Main CSLOs **PSLO 3.** Main CSLOs See above.
2018-19 **PSLO 5.** enable students to do in-depth and independent mathematics-related research projects that require students to integrate their mathematical knowledge from different areas, and to enhance their communication skills by way of written reports and oral presentations. **PSLO 4.** encourage and stimulate the type of independent and critical thinking required for research beyond the confines of the textbook.	**PSLO 5.** outcomes are measured using rubrics for oral presentation and written paper. Results from all participating instructors will be shared with Discipline Assessment Coordinator who will create final report and summary of Faculty Meeting when all presentations are complete. Data Collection: • Whom: Discipline Assessment Coordinator • Where: During students' oral presentations each faculty assesses each student's oral presentation • When: Fall 2018 & Spring 2019 **PSLO 4.** outcome is measured using a rubric. Results from all participating instructors will be shared with Discipline Assessment Coordinator who will create final report. Data Collection: • Whom & Where: Course Instructor Math 2401 Differential Equations, or any course with an in-depth collaborative course project • When: Fall 2017	**PSLO 5.** Main CSLOs See above. **PSLO 4.** Main CSLOs CSLO-2b. Critical thinking and problem-solving CSLO-2d-1: Written CSLO-2g. Collaboration CSLO-4c. Skills for sustained learning and personal development

2019-20 **PSLO 5.** enable students to do in-depth and independent mathematics-related research projects that require students to integrate their mathematical knowledge from different areas, and to enhance their communication skills by way of written reports and oral presentations. **PSLO 4.** encourage and stimulate the type of independent and critical thinking required for research beyond the confines of the textbook.	**PSLO 5.** outcomes are measured using rubrics for oral presentation and written paper. Results from all participating instructors will be shared with Discipline Assessment Coordinator who will create final report and summary of Faculty Meeting when all presentations are complete. Data Collection: • Whom: Discipline Assessment Coordinator • Where: During students' oral presentations each faculty assesses each student's oral presentation • When: Fall 2019 & Spring 2020 **PSLO 4.** outcome is measured using a rubric. Results from all participating instructors will be shared with Discipline Assessment Coordinator who will create final report. Data Collection: • Whom & Where: Course Instructor Math 2401 Differential Equations, or any course with an in-depth collaborative course project • When: Fall 2019	**PSLO 5.** Main CSLOs **PSLO 4.** Main CSLOs See above.
2020-21 **PSLO 5.** enable students to do in-depth and independent mathematics-related research projects that require students to integrate their mathematical knowledge from different areas, and to enhance their communication skills by way of written reports and oral presentations. **PSLO 1.** provide students with the basic knowledge and skills to make mathematical contributions to modern society.	**PSLO 5.** outcomes are measured using rubrics for oral presentation and written paper. Results from all participating instructors will be shared with Discipline Assessment Coordinator who will create final report and summary of Faculty Meeting when all presentations are complete. Data Collection: • Whom: Discipline Assessment Coordinator • Where: During students' oral presentations each faculty assesses each student's oral presentation • When: Fall 2016 & Spring 2017 **PSLO 1.** outcome is measured using a rubric. Results from all participating instructors will be shared with Discipline Assessment Coordinator who will create final report. Data Collection: • Whom & Where: Course Instructor(s) Math 1001 Excursions in Math • When: Fall 2019	**PSLO 5.** Main CSLOs See above. **PSLO 1.** Main CSLOs CSLO-1a. Core studies in the liberal arts: arts, histories, humanities, languages, mathematics, sciences, and social sciences CSLO-2b. Critical thinking and problem-solving CSLO-2e. Quantitative literacy

*Your PSLOs need not overlap with CSLOs, but if your PSLO does reinforce or overlap with a CSLO, please report that information.

Please report any other planned assessment for your academic program in the space below:

We will continue to track the effectiveness of the math placement exam.