Academic Program:			Date:	
Author(s):				
Verify that each of the following documents is correct and current on the ISU Assessment Results Webpage by marking with an "X." Please submit any updated documents and/or corrections as soon as possible to Kelley Woods-Johnson, Assessment & Accreditation Coordinator at kelley.woods-johnson@indstate.edu.			_X_ Learning Outcomes _X_ Curriculum Map _X_ Assessment Plan	
Is this program offered on-campus AND distance? If "Yes," reported data should include students of both, disaggregated.			___ Yes _X_ No ___ Hybrid	

Student Learning Outcomes Assessment Expand table cells as necessary to accommodate requested information.

Learning Outcome(s) Assessed Include actual outcome language; enter one per line, add lines as needed	Assessment Strategies Used			Established Benchmark for Proficiency	Actual Student Performance Relative to Benchmark	Prior Results for Comparison (if applicable)
	Course	**Assignment/Activity**	**Evaluation Tool** i.e. rubric, exam key, preceptor evaluation, etc.			
Objective 1: Students will learn to use and construct mathematical proofs. G4, G5 Outcome 1.1: Students will construct direct proofs. Outcome 1.2: Students will construct proofs by contradiction. Outcome 1.3: Students will construct proofs by induction. Outcome 1.4: Students will construct examples and counterexamples.	MATH 510,512,513	Problems on homework, quiz, or exam		80% of the students completing the course with a grade of B or higher	There were 60 students who enrolled in these courses. 70% of the students completed the course with a grade of B or higher	
Objective 2: Students will communicate mathematics effectively.	MATH 695	Student interview with course professor.		80% of the students completing and passing	There were 23 students who enrolled in MATH 695.	

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Updated July 2022

Outcome 2.1: Students will state mathematical results accurately for a research problem. G4, G5 Outcome 2.2: Students will conduct an independent investigation of their own problems. G4, G5 Outcome 2.3: Students will make an oral presentation of their own research report that is accessible to their peers. G1 Outcome 2.4: Students will make a detailed written report of their research. G1, G2				the course with a grade of B or higher	96% of the students completed the course with a grade of B or higher	
Objective 3: Students will demonstrate that they are ready to use their mathematical skills in a post-master's position. Outcome 3.1: Students will be polled after graduation to determine whether they planned to pursue further studies, had an offer of employment, etc. G1, G2	N/A	Students fill out a poll in their last semester	Poll	At least 70% of students seek demonstrable career advancement	35% seek promotion at current job 26% seek a new job 17% seek a PhD Total: 78%	
Objective 3: Students will demonstrate that they are ready to use their mathematical skills in a post-master's position.	All MATH courses	Grade point average in mathematics and related coursework			Average GPA: 3.56	

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Outcome 3.2: Students will demonstrate mastery of mathematics and related content that will allow them to pursue careers utilizing their knowledge. G1, G2						

Student Success Activities

Use the "Academic Chair" tab in Blue Reports to view your program's data related to retention, persistence, time to/rates of graduation, etc., as applicable (undergraduate v. graduate). Share reflections and activities of program faculty in the table below. Consider curricular, pedagogical, advising, co-curricular, and student support efforts.

Describe current student success activities that are working well.	Our program has completed the transition to being fully online, with most faculty completing (or in the process of completing) OICC. In the past year we have introduced more flexibility to the MS degree requirements to enable non-traditional students more flexibility in completing our degree without compromising outcomes. To aid the transition, a checklist for degree requirements has been produced and distributed to students. The advisement load is being distributed more evenly, and new efforts have been made to communicate deadlines for registration for classes, selection of research projects, application to graduate, etc. more clearly. The graduate program continues to adapt to the large influx of students. As we learn about our student body through surveys and advising interaction, we continue to update and introduce course offerings that would be helpful. A major recent change has been the successful introduction of the MA program which is geared more specifically toward educators. For many students, this program is a perfect fit for their interests.
Based on Blue Reports data and review of current activities, what are the primary areas to focus on improving next year?	The enrollment in our graduate program (currently ~65 students) has tripled since fall 2018, and so a major goal is to maintain or even expand this level of enrollment. To improve enrollment, there is a preliminary effort to collaborate with the physics department to allow students to pursue a MS in mathematics with an emphasis in mathematical physics.

If you don't have a Blue Reports account, you can request one using the webpage link, or your Department Chair, Associate Dean, or College Assessment Director can assist you.

Continuous Quality Improvement

Describe primary insights gained from analysis of findings.	The average years to completion for the MS degree has increased from 1.9 in 2018 to 3.1 in 2021. This reflects the fact that the number of fulltime students has decreased

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What was learned? What questions did it raise? How does current performance compare to past (if applicable), and how might any prior action plans have influenced performance?	from 7 to 2, but the number of parttime students has increased from 9 to 38. Another change has been that the percentage of credit hours completed has gone from 100% to 84%. The graduate faculty is in the process of updating the course/prerequisite descriptions for existing courses, so it is hoped that this will increase the percentage from 84% to 90%.
What findings-based actions are planned to maintain strong performance and/or improve student learning and success?	Due to the introduction of the MA degree, the number of students entering the MS program has gone down a little. Our goal in the next year is to adjust the course offerings and program marketing to make the program more attractive, for instance by emphasizing the faculty strengths in fields such as data science, machine learning, and mathematical physics. As faculty gain experience in student advising, it is also hoped that there will be an increase in the number of publications that students are producing in collaboration with professors. To facilitate this, we plan to launch an online research seminar for the department so that the remote learners can have a better idea of the research areas of the various faculty members.
What learning outcomes will your assessment plan focus on next year, and what changes, if any, are planned to improve assessment strategies and yield stronger data?	We are in the process of improving our measurement of outcomes to get a better "before and after" picture. Specifically, we will collect more precise data on the student's employment information upon admission as well as following up with students a year or so after graduation to obtain actual outcomes. This data can also aid with admissions, since a number of our students have gone on to work at high profile companies and study at well-established universities.
Describe faculty involvement in this assessment, and how will findings be shared with faculty/stakeholders (as applicable)?	This information will be communicated to the MS graduate admissions committee so that they can make more informed decisions. It will also be communicated to the graduate faculty which meets at least once a semester, and regularly engages in robust dialog on student outcomes and retention.

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The purpose of SOAS Report evaluation is to promote high quality academic program assessment that results in relevant, useful, and accurate data about student learning outcome achievement that faculty can use in planning for and monitoring efforts toward continuous improvement. Faculty are encouraged to incorporate feedback they find useful into assessment practices, and resources are available to support assessment development.

Evaluation Key: <u>Exemplary</u>=Meets all standards, exceeds some; <u>Mature</u>=Meets all/most standards, no serious concerns; <u>Developing</u>=Meets some standards, multiple recommendations for improvement; <u>Undeveloped</u>=Meets few/no standards, serious concerns noted; <u>Cannot Evaluate</u>=Missing information prevents evaluation

Component of Practice	Areas of Exemplary Practice	Standards of Practice Highlighted practices were clear in the SOASR	Recommendations for Improvement (serious concerns highlighted)	Evaluation Relative to Standards
Learning Outcomes Strong learning outcomes use language that focuses on what students will achieve and can be measured to demonstrate achievement.	LO is mapped to the CGPS Graduate Student Learning Outcomes, evidencing alignment with ISU standards for graduate education.	At least one outcome is assessed this cycle Outcome(s) is specific as to what students will be able to know/do as a result of their learning Outcome(s) is measurable Outcome(s) is consistent across modes of delivery (if applicable)		Exemplary
Assessment Strategies Strong assessment strategies are designed to produce data of high enough quality to be useful to faculty trying to understanding student learning outcome achievement, uncover potential issues, and determine next steps to support continuous improvement. They do not rise to the rigor of research methods, though they may draw on some related tenants and strategies.		Assessment measure(s) is designed for precise alignment to designated outcome(s) *–they could be, but the benchmark for proficiency indicates they are not being used in this manner; see notes* Overall assessment strategy relies primarily on direct assessment measure(s) *–they could be, but the benchmark for proficiency indicates they are not being used in this manner; see notes* Indirect assessment measure(s) is included to provide supplemental perspectives Assessment data comes from multiple sources, either within a significant course or across the curriculum Assessment measures include rich and/or relevant displays of student learning (i.e. experiential learning, intensive writing, problem-based learning, licensure exams, etc.) Tools for evaluating student achievement are clearly described when necessary (i.e. rubrics, exam alignment key, preceptor evaluation, etc.)	Course grades and GPA typically serve as indirect measures at best, since they often include measures unrelated to the outcome for which it serves as data (e.g., other learning outcomes, attendance, tardiness, missing work, etc.). For Objective 1, the course grade makes it hard to determine if students are proficient in all of these skills, or if they can hide lack of proficiency in the average score. For Objective 2, using the score on the interview with the professor rather than the course grade would provide a more accurate, direct measure. Since Objective 3 is quite broad to mathematical mastery, it may be sufficient, particularly when care is taken to reduce irrelevant scoring in the course grade that provides the data. If this is of concern, a more direct measure, such as a comprehensive exam at the end of the program, may be a better direct measure.	Developing

Results & Analysis Clear depiction of results and strong analysis pairs with strong assessment strategies to allow faculty to determine appropriate interpretation of data and use of findings. Use of student achievement data rather than anecdotes, comparison to thresholds of proficiency, and thoughtful use of disaggregation to uncover potential group differences that might exist are all good practices.		The threshold for proficiency for each outcome is clearly stated relative to the measure/evaluation tool used The threshold for proficiency reflects reasonably high expectations for the program Actual student performance data on assessment measures is shared relative to the stated threshold for proficiency and (when applicable) the evaluation tool used Thoughtful discussion of faculty insights gained from findings is included When appropriate, student performance data is disaggregated by group, without identifying any specific student (ex: on-campus & distance cohorts in a program offering both forms of delivery) When applicable, missing data or significant limitations to how data may be interpreted or applied are described	The results are directly affected by the selection of more indirect assessment strategies, as detailed above.	Developing
Continuous Improvement Assessment is about sharing and use of results to celebrate strong performance and improve in intentional ways. Assessment for continuous improvement includes engaging multiple faculty in assessment, comparing prior results to current results to examine our interventions, using findings to plan for the future, and sharing what we have learned.		Multiple program faculty are involved in the assessment process Plans for maintaining strong performance and/or improving student learning are clearly driven by assessment findings Plans for maintaining strong performance and/or improving student learning are within reasonable purview of program faculty If data from prior assessments is provided, reflection on changes over time and the possible impact any prior interventions is discussed A commitment to ongoing assessment is demonstrated in clear plans for upcoming assessment Assessment findings are shared with program faculty and any applicable stakeholders	Continuous improvement focus leans heavily on recruitment and post-graduation factors with little detail about maintaining strong student learning mastery or refining assessment for the purposes of understanding mastery. It's good to include student success in these plans, but be sure to include more analysis of student learning mastery that goes beyond composite measures such as GPA and overall course grades.	Developing

Contact Kelley Woods-Johnson at kelley.woods-johnson@indstate.edu or x7975 with questions or for support.