M.S. Academic Assessment Plan
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This is the nineth year of using the assessment rubric that is completed by advisory committee members for M.S. degree candidates following a thesis defense. There were four M.S. graduates during the 2023-24 academic year. Overall, average student outcomes fell into the skill level 3-4 range (proficient to mastery) for all of the assessed measures.

Assessment of M.S. students' critical thinking averaged 3.4, while problem solving was rated 3.6 by committee members, which means that the students developed both critical thinking and problem-solving skills. In the area of critical thinking skills, students were able to clearly state the problem and make interpretations supported by evidence from literature and research and make logical conclusions. For problem solving skills, students were able to construct a problem statement with adequate detail and evidence of relevant contextual factors. They were able to identify multiple approaches for problem solving, comprehend the problem, be sensitive to ethical, logical, historical, consider cultural contexts, and their evaluation of solutions was adequate. Students demonstrated adequate skills to examine the feasibility of a solution, weigh impacts of the solution, and consider needs for further work.

For communication skills, students earned ratings above proficiency at 3.3 for oral communication and 3.6 for written communication skills. For oral communication, students were organized, effective, and credible. They delivered information at an appropriate level that was supported by referencing scientific literature. For written communication, students demonstrated adequate consideration of context, audience, and purpose. Information was appropriate, relevant, focused, and presented with compelling content to explore ideas.

Students rated 3.7 for depth and breadth of demonstrated discipline-related knowledge and 3.8 for conducting independent and original research. Committee members' responses indicate that students understood and applied key concepts and principles and current and relevant literature to their research projects. Students collected, summarized, and analyzed data to demonstrate competency of technical and research related skills relevant to the discipline. Students' research contributed to previous scientific knowledge and understanding.

Recommendations: This is the nineth year of collecting data for the assessment with one student's data collected in 2015-16, six students' data in 2016-17, three students' data collected in 2017-18, none in 2018-19, two in 2020-21, six in the 2021-22 academic year, three in 2022-23, and four in 2023-24. Through the years of assessment, the student scores have consistently averaged in the upper half of the development proficiency levels assessed. As in past years, assessment indicates that students are developing skills and gaining knowledge to perform at adequate to masterful levels. Data indicate that the curriculum and advising are sufficient to prepare most students to succeed in the discipline. Thus, at this time, the department will continue to support graduate learning experiences in discipline-related learning, critical thinking, problem solving, communication of research through multiple media, and opportunities for independent and original research for all students to attain the highest possible skills levels.