Student Outcomes Assessment and Success Report AY2017-18 ***Completed reports due from the dean to the Assessment Office via Blackboard by October 15. Deans, assessment coordinators, and/or department chairs set their own internal deadlines for material review and request for refinement if not suitably addressing questions.***

Unit/Program Name: Earth & Quaternary Sciences M.S. Program **Contact Name(s) and Email(s)** Jeffery Stone, jeffery.stone@indstate.edu

Part 1a: Summary of Assessment Activities

a. What learning outcomes did you assess this past year? **If this is a graduate program, identify the Graduate Student Learning Outcome each outcome aligns with.**	**b. (1) What assignments or activities did you use to determine how well your students attained the outcome? (2) In what course or other required experience did the assessment occur?**	**c. What were your expectations for student performance?**	**d. What were the actual data/results?**	**e. What changes or improvements were made or will be made in response to these assessment results or feedback from previous year's report?**
1. Students demonstrate professional communication proficiencies	Our students are expected to demonstrate their ability to communicate professional by reading, discussing, and presenting upon primary literature in their core classes, especially ENVI-588 and ENVI-571, as well as many of their elective courses. In addition the students must defend their thesis proposal and ultimately their thesis to complete the degree and pass it. Most graduate students also present at least one poster or oral presentation as a professional scientific meeting. Students also are regularly expected to write research papers for their courses and complete their degree with a written thesis.	We evaluate the performance of our students within each class based on the merits of their communication. Our expectation is that they would develop strong communication skills and ultimately will be capable of presenting and defending complex scientific concepts within the public sphere in a manner that would allow non-experts to understand. Students must get a grade of B or higher to pass all graduate level courses. We expect roughly 60% of our students to present at national scientific meetings.	Within courses, students showed a strong progression toward better communication skills – particularly speaking and writing skills. We assessed these skills on a case-by-case basis for thesis writing and presentations, all of our students must reach a high level of professional communication skills to successfully pass their defenses. 90% of our graduate students have given at least one presentation at a scientific meeting in the past year. Most of our MS graduate students have presented at multiple scientific meetings.	Each year our faculty work toward providing high-quality feedback for each student, particularly with writing and speaking skills. The core courses have been revised somewhat since the previous year, particularly Research Methods (ENVI-588) to facilitate a deeper level of feedback to students enrolled in the course. Additionally, we have implemented a new self-evaluation approach for graduate students that allows us to better track their publications, presentations, and grant writing deliverables.
2. Students engage in and meaningfully contribute to diverse and complex communities and professional environments	Our MS graduate students are an integral part of our department's educational practices and research. Our MS graduate students actively	In ENVI-690, our students are required to engage in discussions with guest seminar speakers as core component of the course	100% MS students enrolled in ENVI-690 in the last year passed the course with a grade of B or better, having engaged with numerous	No feedback was given for this category in prior years, but our ENVI-690 MS students, in the past year, were more actively engaged

	engage undergraduate student researchers and faculty as collaborators on research activities and engage in substantial department-based educational outreach activities.	(included in the grading metric for this course). Additionally, we expect all of our MS students to engage in at least 1 outreach activity, such as Science Night at the Museum, Homecoming, or other departmental outreach events.	scientific guest speakers. Additionally a large fraction of our MS students have collaborated with undergraduate and faculty members on their own research activities in a professional environment.	in the selection process for the spring seminar. Additionally, each year we encourage graduate students to engage in interaction with undergraduate researchers to enhance undergraduate experiences and the educational community.
3. Students recognize and act on professional and ethical challenges that arise in their field or discipline	In ENVI-588 (a core course for our MS program) students regularly discuss research ethics and are required to pass CITI training for responsible conduct in research.	Our expectation is that all MS students will complete and pass the CITI responsible research conduct training.	100% of our MS students completed and passed CITI training in the prior year.	The ENVI-588 course is adjusted a little each year to provide new examples.
4. Students achieve mastery of the knowledge required in their discipline or profession	Our MS students achieve mastery of their chosen discipline through completion of elective 500 and 600 level courses in our program. These courses are catered toward their individual research disciplines.	We expect our MS students to pass each of their elective courses with a grade of B or better to display their mastery of disciplinary topics. All students must maintain an average of 3.0 or better to remain enrolled in the MS program.	100% of our MS students in the past year have maintained an average of 3.0 or better within their 500 and 600 level courses.	No feedback has been given for this category in the prior year. These practices are standard assessments of student disciplinary mastery throughout educational institutions in the US.
5. Students achieve mastery of the skills (including using appropriate tools) required in their discipline or profession	MS students have research projects that allow them to become proficient in the primary tools, such as statistics, GIS, or instrumental use. These research practices are evaluated in their thesis research courses (ENVI-699) and the defenses of their thesis (or presentations of their research at national meetings).	We expect our students to complete independent research projects and get satisfactory scores for their thesis research (ENVI-699) courses. Additionally, students must successfully defend their thesis proposals and finished thesis before their thesis committee, which directly assesses their mastery of their discipline. Non-thesis students still accomplish this by presenting their research at national meetings.	All of our MS students in the past year successfully defended their proposals and theses. Additionally all of our MS students have successfully completed their ENVI-699 courses with satisfactory grades.	No feedback has been given for this category in the prior year. These practices are standard assessments of student disciplinary mastery throughout educational institutions in the US.

Part 1b: Continuous Quality Improvement

In no more than one page, summarize 1) the discoveries assessment has enabled you to make about student learning (a. What specifically do students know and do well—and less well? b. What evidence can you provide that learning is improving?); 2) what your assessment plan will focus on in the coming year; and 3) how will this information be shared with other stakeholders?

Because of the nature of graduate programs, where students enrolled in the program rarely specialize in the same sub-disciplines, what is being asked in this section, with respect to student specific components of learning regarding what students know well or less well cannot be very accurately represented. In other words, students specializing in diatom paleoecology aren't going to have the same accrued knowledge as students specializing in phosphorus geochemistry; one should not expect them to have the same knowledge. Despite this sort of difficulty, some fundamental elements do cross disciplines. Our students are, as a whole, learning to become more proficient at writing effectively, speaking in public, engaging in outreach, and other primary tools required across the board as scientists. Evidence of this is available in the quality of their writing and in the iterative processes of composing their thesis and presenting their research in public forums. For a similar reason, it is challenging to provide a simple measurable metric that learning is improving for our students; however, in the past year, our MS students have successfully defended their research and have progressively improved with respect to the output of publications and presentations. We've also seen a gradual improvement in collaboration with undergraduate researchers, showcased by undergraduate student presentations at national scientific meetings. In the coming year, we plan to develop some more consistent metrics for measuring the quality of our student learning and potentially develop post-graduate survey.

Part 2a: Summary of Student Success Activities

Based on the results of your assessment of student learning outcomes from Part 1 above, reflect on how this data will impact student success within your unit/program.

a. What goals/objectives were established this past year to aid student performance, retention, persistence, and completion?	**b. What primary action steps were taken to make progress on each goal and who was responsible?**	**c. What data informs progress on each goal?**	**d. What were some accomplishments or achievements for each goal and/or challenges confronted?**	**e. Please indicate goals that are continuing and any goals that will replace a previous goal. Any additional goals can also be added on a new line.**
1. This year we focused on providing our graduate students with a better sense of what is expected to complete their graduate coursework	Graduate Program of Study documents in our programs are required to be updated by students every semester (monitored by GPD and Student Administrative Assistant)	Students must submit the forms to the Student Administrative Assistant within the first month of the semester	First year MS students are sometimes unsure of their planned elective courses in the first semester	This goal is a continuing one – we've updated our program's approach to require students to complete this each semester, where it was previously monitored only once each year.
2. We focused on improving communication of	In the Fall semester, we held a required day-long meeting with all graduate students	Students are required to fill out a self-survey which explains their overall progress	Students largely completed the self-survey, which assesses their project and	This is a continuing goal. In subsequent years we intend to expand the self-survey,

departmental policies and program procedures	where Administrative Assistants, the Department Chair, and the GPD met with the students; in this meeting we discussed departmental expectation of student progress within each program	with respect to courses completed, research objectives completed, and research products completed (including grants applied to, grants funded, publications and presentations, and outreach activities).	provides them with clear targets for each semester.	including requiring an additional step where the student's MS advisor must sign the form to ensure that advisors are also informed of student progress in our program.
3.				

Notes

a. These goals could be program/department wide but may also be focused on specific sub-populations of interest (e.g., service course student performance, transfer students, part-time students, students of a particular class year, students of color, etc.).

c. Retention and completion data, D/F/drop rates, credit hour productivity (defined as credit hour enrollment at start of term versus credit hours earned at end of term) are common data examples. See Blue Reports database (access from Linda Ferguson in Institutional Research) or the Office of Institutional Research for ideas.

Part 2b: Continuous Quality Improvement

In no more than one page, summarize 1) the discoveries that attention to student performance, retention, persistence, and completion has enabled you to make about program/department systems, processes, and norms as it effects students; and 2) how this will positively impact student success, including with regard to the readiness of students for graduate study or a career?

As with the section 1b above, the questions asked in Part 2b are, unfortunately, not extremely relevant to graduate student success, as they appear to be written mostly for undergraduate education. For example, graduate students do not typically include part-time students, transfer students, and do not take service courses. Similarly, in the past year we have not had any graduate students leave the program and we have not had any graduate students struggling substantially with student performance; these are very rare occurrences in our MS graduate program. Completion is sometimes a real graduate student concern, as students often fail to complete their research and defend in the typical 2-year MS program and we have made some changes to the way that we convey or expectations and communicate our departmental policies. Included in this is the two changes described above – our MS program requires students to submit a Program of Study detailing their course progress each semester and we have also developed an independent self-survey for students to complete that provides them with expectations and a timeline for progress while they are enrolled in our MS program. This self-survey uses a 'checkpoint' system where students indicate their progress on each of the steps toward completion of the program and this is compared against our expectations of a typical MS student timeline toward completion. In this timeline, we have placed important milestones, such as formation of a thesis committee, completion of core courses and electives, defending their thesis proposal, and submission of other important forms. This checkpoint system was developed by the GPD (Stone) and the Student Administrative Assistant (Walters) as a guideline for progress. We feel that providing students with this guideline for completion will ensure that our graduate students are more aware of what their progress is and should lead to better success at staying on target to complete the program in a timely fashion. One issue that we observed from our implementation of this procedure from last year is that the MS student advisors aren't always as informed of student progress or expected timelines and we are working to revise the self-survey for next year to ensure that the student's advisor is also required to review and sign the self-survey before it is submitted. These attempts for improving student success are mostly related to keeping students on-track for timely completion and improving time-management or planning skills.

Dear Jeffery,

Thank you so much for sharing your assessment process and findings for AY 2017-18 with the Assessment and Student Success Councils. You will find a comprehensive synthesis of the feedback compiled by both groups below. It is understood that some of the feedback might encompass practices that you already engage in but that are not documented in this report. As the purpose of this evaluation is focused on recognizing great work and helping faculty improve assessment practice, it is not necessary to retroactively add documentation. Please feel free to let me know if you have any questions or if there is any way I can assist you in further developing assessment in your program.

This report will be shared with the Associate Dean(s) and Dean of your college and summarized findings will be shared as composite college/institutional data with the President's Office and the Provost's team.

Sincerely,

Kelley (x7975)

<table>
<tr><th colspan="2">Program: Earth & Quaternary Sciences MS</th></tr>
<tr><td colspan="2">Assessment Practice Overall Rating: Developing (1.31/3.00)
Student Success Practice Overall Rating (notes below in blue): Developing (1.69/3.00)</td></tr>
<tr><th>Strengths</th><th>Recommendations</th></tr>
<tr><td>• Good use of Graduate Student Learning Outcomes.
• Clear indication that some outcomes can/do align with work in specific courses.
• Excellent strategy of revising courses to provide deeper feedback to students to facilitate ongoing learning.
• Great suggestion that you will try to develop consistent quality metrics for the coming year, as well as an indirect measure like a post-graduate survey.
• Self-survey is a good idea for graduate-level students.
• Good use of a checkpoint system to monitor student progress.</td><td>• Make sure to list your program student learning outcomes that align with the GSLOs listed. They are the more critical unit of analysis in understanding student learning in your program. The alignment with the GSLOs helps to show that your program meets expectations of CGPS.
• It is clear from the narrative in the table that this program is thoughtfully designed to achieve the learning outcomes set forth, but the annual assessment of learning outcomes needs to be more specifically documented and executed. For Part 1a, column b – list the specific assignments/tests/activities and the specific courses they occur in that will be used for assessment of student learning. There can be more than one per outcome, but the assignment should be specifically tailored or able to be specifically evaluated in relation to the specific outcome for assessment. For example, final course grades or thesis pass rates may be too broad to accurately represent student learning on one specific outcome; however, parts of these grades (one assignment in the class, one section of the thesis, etc) are probably applicable.
• Be clear about the evaluative tools used to measure student learning on the assignments you decide to use. Tests usually are evaluated with a key, papers and presentations with a checklist or</td></tr>
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	rubric, etc. Being specific about this also allows you to be specific about whether it's just a section of the test (certain questions) or section of the rubric (one criteria of several used for evaluation) that correspond with specific learning outcomes. • The concern about balancing broad v. specific tailoring in this program with potentially many different specialties is noted; however, assessment plans can be built with flexibility to address this variation by focusing on core coursework and established program learning outcomes. • Good note of the iterative process of thesis revision as a reflection of ongoing learning. Consider how you might document student performance at different iterations of the thesis process (draft, proposal defense, draft, oral defense, for example) to show learning demonstrated over time. • **Could integrate more specific consideration of career options into the self-surveys and what they are doing each semester to help students reach these goals.**

Assessment Scoring Rubric is included below. Student Success Scoring Rubric is included on the last page for reference only.
Score was calculated on a 0 (undeveloped), 1 (developing), 2 (mature), 3 (exemplary) scale.

Student Outcomes Assessment & Success Report Rubric
Office of Assessment & Accreditation, Indiana State University

Unit/Program: Earth & Quaternary Sciences MS
Evaluation Date: Fall 2018

Evaluation Criteria	Exemplary	Mature	Developing	Undeveloped
Student Learning Outcomes	At least one learning outcome that is aligned with program coursework is assessed this cycle. Learning outcome(s) is specific, measureable, and student-centered. Rationale for assessment of this outcome(s) is made clear (ex: it is part of a standing assessment cycle, a need was identified, etc.) Learning outcome(s) directly link to college, institutional, and/or accreditor goals/standards.	At least one learning outcome that is aligned with program coursework is assessed this cycle. Learning outcome(s) is specific, measureable, and student-centered. Rationale for assessment of this outcome(s) is made clear (ex: it is part of a standing assessment cycle, a need was identified, etc.)	At least one learning outcome that is aligned with program coursework is assessed this cycle. Learning outcomes(s) is measurable.	No learning outcomes are identified for assessment or the outcomes that are identified are not linked to program outcomes aligned with program coursework (e.g. – curriculum map) or are not measurable.
Performance Goals & Measures	Performance goal identified for each learning outcome is clear and reasonable (ex: based on previous performance data, professional standards, etc.). Identified measures are designed to accurately reflect student learning, including at least one direct measure. Tools used to measure student performance are described and were reviewed for validity or trustworthiness prior to use (note this in the report; attach tools if applicable – ex: rubrics, checklists, exam keys, etc.).	Performance goal identified for each learning outcome is clear and reasonable (ex: based on previous performance data, professional standards, etc.). Identified measures are designed to accurately reflect student learning, including at least one direct measure. Tools or processes for evaluating student performance on measures are described (attach tools if applicable – ex: rubrics, checklists, exam keys, etc.).	Performance goal(s) is identified for each learning outcome. Identified measures (ex: assignments, projects, tests, etc.) are poorly suited to performance goals or are solely indirect measures. Tools or processes for evaluating student performance on measures are not described.	No goals for student performance of learning outcomes is identified, and/or no measures are provided.

Analysis & Results	Data is collected using the measures and tools identified. Results are reported with clear description of quality analysis (e.g., analysis follows accepted statistical or qualitative procedures). Results are shared in relation to performance goals. Results are discussed in relation to college, institutional, and/or accreditor goals/standards.	Data is collected using the measures and tools identified. Results are reported with clear description of analysis (e.g., analysis follows accepted statistical or qualitative procedures). Results are shared in relation to performance goals.	Data is collected using the measures and tools identified. Results are reported with little description of analysis.	No data is being collected. No results are provided.
Sharing & Use of Results for Continuous Improvement	Clear information is provided about sharing and using results to inform practice. Discussion of what was learned from results is provided and connected to plans for sharing and using results to inform practice. A plan for adjusting performance, goals, assessment, and/or program components based on results is outlined.	Clear information is provided about sharing and using results to inform practice. Discussion of what was learned from results is provided and connected to plans for sharing and using results to inform practice.	Limited information is provided about sharing or using results to inform practice. Some discussion of what was learned from results is provided.	No information is provided about sharing or using results to inform practice. No evidence of reflection on results is provided (ex: discussion, conclusions drawn)
Overall Rating	□ **Exemplary**	□ **Mature**	**X Developing**	□ **Undeveloped**

Student Success Activities Report Rubric (Part 2 of Student Outcomes Assessment Report)**Unit/Program:**
Office of Student Success/Office of Assessment & Accreditation Evaluation Date:

Evaluation Criteria	0 Undeveloped	1 Developing	2 Mature	3 Exemplary
Goals/ Objectives	No goals/objectives are identified.	Goals/objectives are poorly suited to addressing student performance, retention, persistence, and/or completion. Goals/objectives may also be modest at best such that little effort is required.	Goals/objectives are generally clear and reasonably well suited to addressing student performance, retention, persistence, and/or completion. Goals/objectives are also generally at least moderately aggressive such that appropriate effort is required.	Goals/objectives are all clear and well suited to addressing student performance, retention, persistence, and/or completion. Goals/objectives are also at least moderately aggressive in all cases such that appropriate effort is required.
Action Steps	No action steps are identified.	Action steps are weak, underdeveloped, and/or poorly suited to making progress on goals/objectives. No person(s) or group(s) indicated who will be responsible for the actions.	Action steps are generally clear and reasonably well suited to making progress on goals/objectives. Person(s) or group(s) responsible for the actions are indicated in most cases.	Action steps are all clear and well suited to making progress on goals/objectives Person(s) or group(s) responsible for each action are indicated, ideally with a timeline.
Data that Informs Progress on Each Goal/Objective	No data, quantitative or qualitative, is identified.	Data to inform progress are poorly suited to measure progress on goals/objectives.	Data to inform progress are generally well suited to measure progress on goals/objectives.	Data to inform progress are all well suited to measure progress on goals/objectives.
Assessment of Outcomes and Continuous Improvement	For goals/objectives in place the prior year, no reflection provided on achievements/challenges, sharing results, and/or plans for improvement or change based on results. No reflection on outcome assessment plan for continuous improvement provided for new goals/objectives.	For goals/objectives in place the prior year, modest at best reflection provided (and/or is vague or of questionable connection to results) on achievements/challenges, sharing results, and/or plans for improvement or change based on results. Modest at best reflection on assessment plan for continuous improvement provided for new goals/objectives.	For goals/objectives in place the prior year, generally appropriate reflection provided (and is reasonably well connected to results) on achievements/ challenges, sharing results, and/or plans for improvement or change based on results. Reasonable reflection on assessment plan for continuous improvement provided for new goals/objectives.	For goals/objectives in place the prior year, strong reflection is provided in all cases (and is well connected to results) on achievements/challenges, sharing results, and/or plans for improvement or change based on results. Well-developed reflection on assessment plan for continuous improvement provided for new goals/objectives.
Overall Rating	□ **Undeveloped**	□ **Developing**	□ **Mature**	□ **Exemplary**