M.S.T. in Geology Academic Assessment Plan

College of Liberal Arts and Sciences
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Office of the Provost

University of Florida

Institutional Assessment

Continuous Quality Enhancement

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Academic Assessment Plan for M.S.T. in Geology

College of Liberal Arts and Sciences

A. Mission

Our principal mission is : 1) to support the University's strategic goal of becoming a top ten public university by continuing to produce highly regarded geoscience research and continuing to develop a Ph.D. program that will train the next generation of Earth scientists, particularly interdisciplinary scientists' 2) to fulfill our land-grant mission by providing quality B.S. and M.S. educational programs that provide the most efficient route to licensure as a Professional Geologist; and 3) to attract and to educate greater numbers of pre- and in-service teachers through our B.A. and M.S.T. programs.

We educate students broadly in Earth Sciences, leading them to understand the history of our planet, its resources and their sustainability, the marine and terrestrial environments, and current and past global climate change. Our students are prepared to enter the workforce or to continue on to post-graduate research and academic careers in the U.S. and throughout the world.

College

The College of Liberal Arts and Sciences constitutes the intellectual core of the University. Its principal mission is to lead the academic quest to understand our place in the universe, and to help shape our society and environment. The College pledges to ensure equitable access for all of its constituencies, drawing strength from our rich heritage of racial, ethnic and gender diversity. Through teaching, research and service, members of the College continually expand knowledge and best practices in fundamental questions in the arts, humanities, social sciences, and natural sciences and mathematics. At the graduate level, students master a specialized body of knowledge and pursue original research under the guidance of outstanding faculty.

University

It is the mission of the University of Florida to offer broad-based, exclusive public education, leading-edge research, and service to the citizens of Florida, the nation, and the world. The fusion of these three endeavors stimulates a remarkable intellectual vitality and generates a synthesis that promises to be the university's greatest strength.

The university maintains its dedication to excellent teaching and researching by creating a strong and flexible foundation for higher education in the 21st century. The university welcomes the full exploration of our intellectual boundaries and supports our faculty and students in the creation of new knowledge and the pursuit of new ideas.

Teaching is a fundamental purpose of this university at both the undergraduate and graduate levels. Research and scholarship are integral to the education process and to the expansion of our understanding of the natural world, the intellect, and the senses. Service reflects the university's obligation to share the benefits of its research and knowledge for the public good.

Shared Mission

We seek to produce educators with a deep knowledge of Earth Science content and pedagogic practices. Our diverse graduates will be skilled professionals, trained to think independently and to live up to the highest ethical standards, positioning them to become effective educators and leaders in their field.

B. Student Learning Outcomes and Assessment Measures

SLO Type	Student Learning Outcome	Assessment Method	Degree Delivery
Knowledge	Students articulate orally and in writing the results and applications of their scholarship, demonstrating a proficiency in the basic concepts, theories, and observational findings related to Earth materials and processes, as they pertain to educational standards established at the state or national level.	Oral and written presentation of educationally based research project	Campus
Skills	Students will create, select and implement: (1) specific learning goals, (2) appropriate pedagogy and instructional materials and (3) evaluation strategies aligned with goals, using knowledge of subject matter, learners and classroom management.	Oral and written presentation of educationally based research project	Campus
Professional Behavior	Students will conduct research and teach in an ethical and responsible manner	Supervisory committee evaluations; attend a department Responsible Conduct of Research (RCR) orientation session	Campus

C. Research

The cornerstone of a M.S.T. degree is the completion of an educationally based research project, in which the graduate student documents the ability to evaluate geosciences-education content and

curricula regarding pedagogy, teaching methods and developmentally appropriate instructional materials. Prior to starting their first semester, each student and Graduate Coordinator will meet; if necessary, members of the Graduate Committee and any other faculty requested by the Chair may also be present, to discuss his/her preparation, interests, and goals for graduate education. Advice will be given on curriculum and general procedures, including the requirement to complete a minor in Education. The Graduate Committee will also be available as needed during the semester in an advisory role. Additional guidance will be provided to the student by the supervisory committee before the start of the second year of studies. During the first semester, students will identify a potential research project in consultation with appropriate faculty in the department and will provide the Graduate Committee a tentative project title and a list of potential Supervisory Committee members. One of the committee members must be from the College of Education. The student will write a prospectus outlining the hypothesis, goals, and research plans for the project; this prospectus needs to be approved by the Graduate Committee before the end of the second semester.

Students are trained in conducting research and best educational practices by completing formal coursework as part of their minor, through interactions with their supervisory committee, laboratory managers, , and their peers. Students are required to hold annual meetings with their supervisory committee, at which they present their project goals, plans/methods, and results to date. Committee members will provide written feedback to the students using a joint committee report as well as individually completed rubric forms that assess the student's accomplishments and scientific development. Students provide end-of semester self-evaluations to the Graduate Coordinator to apprise them of their progress in coursework, education project and service accomplishments during the previous term and their plans for the upcoming term. The Graduate Coordinator provides feedback on these evaluations and discusses future plans and objectives with the students.

Finally, to facilitate presentation of their project at academic conferences, we fund M.S.T. students for a portion of travel to one conference.

D. Assessment Timeline

Program M.S.T. in Geology College of Liberal Arts and Sciences

Assessment SLOs	Assessment 1	Assessment 2	Assessment 3
Knowledge			
SLO 1	Oral and written presentation of research at supervisory committee meetings		
Skills			
SLO 2	Oral presentation of their educationally based research project		
Professional Behavior			
Conducting research in an ethical and responsible manner	Annual Supervisory committee meeting	Complete Responsible Conduct of Research (RCR) orientation session	

E. Assessment Cycle

Assessment Cycle for:
Program M.S.T. in Geology College of Liberal Arts and Sciences
Analysis and Interpretation: May-June
Dissemination: Completed by September 30
Program Modifications: Completed by following May 15

Year SLOs	10-11	11-12	12-13	13-14	14-15	15-16
Content Knowledge						
SLO 1			X	X	X	X
Skills						
SLO 2			X	X	X	X
Professional Behavior						
SLO 3			X	X	X	X

Note: Data collection for these assessments will begin in the 2012-13 academic year. We did not collect data in prior years.

F. Measurement Tools

The measurement tools involve a combination of methods.

Students demonstrate the **knowledge** SLO - comprehension of basic concepts, theories, and observational findings related to Earth materials and processes as they pertain to the student's research emphasis and to educational standards established at the state or national level-through four mechanisms: completion of a minor degree in Education; annual supervisory committee meetings; oral defense of the project; successful completion of written project report. Students hold annual meetings with the supervisory committee, at which time they present specific goals for their supervised teaching assignment, project goals, plans/methods, and any results to date, and students are evaluated with a formal rubric (see Appendix A for an example) that assesses satisfactory completion, as determined by each examining supervisory committee member. Final project defenses are assessed as: pass, conditional pass, or fail. These evaluations will be by the students' advisor and thesis supervisory committee members.

Students demonstrate the **skills** SLO by evaluation of two components: their submitted geosciences- education related project; and classroom teaching. They demonstrate research skills during an oral exam as determined by their supervisory committee following agreed upon criteria. They demonstrate teaching skills during an in-class evaluation conducted by a supervisory committee member. Successful completion of these skills also is assessed through annual supervisory committee meetings where students are evaluated by the supervisory committee members using a formal rubric.

The student's ability to demonstrate professional attributes in the **professional behavior** SLO is determined by evaluation of their classroom teaching as noted on the students' annually supervisory committee report. Completion of a department (or appropriate substitute) Responsible Conduct of Research (RCR) orientation session is assessed by presence or absence as noted on the students' annual supervisory committee report.

G. Assessment Oversight

Here, list the names and contact information of those who oversee the assessment process in your program. Add or delete rows as needed.

Name	Department Affiliation	Email Address	Phone Number
John Jaeger (2012-2013)	Geological Sciences	jmjaeger@ufl.edu	846-1381
Ray Russo (2013-	Geological Sciences	rrusso@ufl.edu	392-6766

Appendix A . M.S.T Supervisory Committee Report Rubric

Supervisory Committee Meeting Rubric Evaluation

Student Name: _____ Date: _____

Evaluation/Guidance	Satisfactory Progress	Unsatisfactory Progress	Comments
1. **Problem Definition**: Has stated the research problem clearly, providing motivation for undertaking their education project			
2. **Literature and Previous Work:**Demonstrates sound knowledge of literature in the area, of science education and appropriate pedagogy			
3. Impact of Proposed Project Demonstrates the potential value of approach to the education project in advancing knowledge within the area of study			
4. Solution Plan: Has applied sound state-of-the-field research methods/pedagogy tools to solving the defined problem and has described the methods/tools effectively			
5. Quality of Oral Communication: Communicates research results clearly and professionally in oral form			
6. Ability to Participate in Discussion of Education Objectives and Outcomes: Is student actively engaged in collaborative discussion with committee members			
7. Broader Impacts: Demonstrates awareness of broader implications of the proposed research such as social, economic, technical, ethical, etc. aspects.			
8. Teaching Ability: Demonstrates productive classroom management; the ability to effectively communicate with students; to provide constructive assessment and feedback of student work.			