



NORTHERN ILLINOIS UNIVERSITY

## College of Liberal Arts and Sciences

*Department of Geology and Environmental Geosciences*

**Major: Geology**

**Degree: Ph.D.**

**Date Revised: October, 2013**

### **Student Learning Outcomes and proposed Methods for collecting data (from assessment plan/status report)**

<b>Student Learning Outcomes</b>		<b>Methods of Assessment</b>
1	Students are expected to develop and demonstrate unique geoscientific skills and knowledge of their chosen sub-discipline, and to impart this knowledge to others, including non-specialists.	<ul style="list-style-type: none"><li>• Annual progress report (1-2)</li><li>• Teaching Evaluations (1,4,5)</li><li>• Candidacy Exam (1-4)</li><li>• Colloquium (1-4)</li><li>• Dissertation defense (1-5)</li><li>• Employer survey (1-4)</li><li>• Alumni survey (1-5)</li></ul>
2	Students must be able to accurately collect and synthesize field and laboratory observations or data. They must be able to assess the data quality, recognize sources of data error and bias, and demonstrate basic proficiency with computer programs used to organize, manipulate, analyze and present data.	
3	Scientific analysis is higher-order critical thinking and creative reasoning that requires students to apply their knowledge and skills in novel ways. Students who can effectively perform this critical thinking will be able to devise original research plans, formulate testable scientific hypotheses, develop multiple working hypotheses to interpret scientific data and observations, assess the quality and accuracy of scientific reporting in the modern media, and assess the approach and results of their own research, as well as the research of others.	
4	Students will be able to conduct literature research, summarize the work of others, write technical summaries of research, prepare public presentations, and explain technical information to general audiences, including primary and secondary school students and teachers.	
5	Students will be able to recognize, describe and explain short- and long-term environmental issues and risks faced by humans and induced by human activities. In addition, they will be able to explain the ways that geoscience contributes to society, including natural hazard assessment, water and mineral resource management, energy resource exploration and utilization, waste management, environmental protection, environmental and climate change, and education.	

