



NORTHERN ILLINOIS UNIVERSITY

**College of Liberal Arts
and Sciences**

Department of Geology and Environmental Geosciences

Assessment Plan

Geology and Environmental Geosciences B.S.

Undergraduate Program Assessment Plan

Department of Geology and Environmental Geosciences

Northern Illinois University

Since its inception in 1969, the Northern Illinois University Department of Geology and Environmental Geosciences has continuously evolved and remade itself, always with the intent of better meeting the needs of the students it serves. To continue that tradition, the department continually evaluates the goals for its B.S., M.S. and Ph.D. programs, and regularly conducts formal assessments of those programs. This document describes the plan for undergraduate program assessment in the Department of Geology and Environmental Geosciences. As background for that plan, it first reviews some key aspects of the departmental history, and then lists current characteristics of the department that are significant factors in the design, organization and implementation of assessment procedures.

Timeline of Departmental Evolution

- 1969 • Departments of Geology and Geography formally created from the previous Department of Earth Sciences
- 1970s • programs focus on classic trilogy of geology, geochemistry and geophysics
- 1972 • department creates summer field course in geologic mapping
- 1980s • programs expand their scope to include environmental subjects such as hydrogeology, global climate change, and near-surface geophysics
- 1981 • Ph.D. degree program initiated
- 1990s • programs become increasingly more integrated and cross-disciplinary, with growing emphasis on global phenomena and the Whole Earth System
- 1994 • department creates Secondary School Teacher Certification programs in Physical Science and General Science
- 1997 • department named changed to Department of Geology and Environmental Geosciences
- 2001 • emphases in Geology, Environmental Geosciences and Earth Science Education created in the B.S. program

Important Characteristics of the Current Department

Assessment procedures in the department continually evolve as the department and its programs improve and change. The assessment methods used to evaluate program quality directly depend on the structure and objectives of the current program. In turn, the structure and objectives of the undergraduate program reflect the present educational and research focus of the department faculty, as well as the demographics and academic and professional needs of the student body. As of 2003, the Department of Geology and Environmental Geosciences has the following important characteristics that significantly affect the operation and assessment of the undergraduate program:

- serves approximately 50 majors
- number of majors has increased roughly 40% in the last five years
- majority of majors are transfer students that arrive at NIU as Juniors
- serves approximately 1200 general education students per semester
- three undergraduate advisors (Colin Booth, Patrick Ervin, Mark Fischer), one for each of the program emphases (Environmental Geoscience, Earth Science Education, Geology)
- assessment of the Earth Science Education emphasis is overseen by the University Committee for Initial Teacher Certification (CITC)
- one departmental assessment coordinator (Paul Stoddard)
- comprised of 14 faculty

Departmental Goals for Undergraduate Earth Science Education: Expected Student Outcomes

The principal goal of the department is to provide an exemplary earth science education to all its students. To more clearly define and help achieve this goal, the department has identified and described eight general areas of knowledge and skill in which all students must develop proficiency. These general areas of knowledge and skill, as well as specific expected student outcomes for each area, are described in detail in a formal departmental goals statement titled: Components of an Exemplary Earth Science Education: Undergraduate Program Objectives and Expected Student Outcomes. This document is attached to this report as Appendix 1.

Assessment Methods

The department uses a variety of direct and indirect methods to assess student performance. Table 1 below lists and describes each of the various assessment tools, the person(s) responsible for conducting the assessment, and the times at which the assessments are conducted.

Table 1. Assessment Tools and Procedures

Assessment Tools	Description of Method	Frequency of Assessment	Person(s) Responsible
Core Course GEOL 320 Environments and Life through Time	Instructor completes a summary report detailing student performances. This report characterizes performance in the class, and serves as a baseline for students entering the major.	Annually, at the end of the fall semester.	course instructor
Core Course GEOL 325 Solid Earth Composition	Instructor completes a summary report detailing student performances. This report characterizes performance in the class, and serves as a baseline for students entering the major.	Annually, at the end of the fall semester.	course instructor
Core Course GEOL 330 Global Cycles	Instructor completes a summary report detailing student performances. This report will not only characterize performance in the class, but also assess how well students were prepared upon entering the class.	Annually, at the end of the spring semester.	course instructor
Core Course GEOL 335 Structure and Dynamics of the Earth	Instructor completes a summary report detailing student performances. This report will not only characterize performance in the class, but also assess how well students were prepared upon entering the class.	Annually, at the end of the spring semester.	course instructor
Capstone Course GEOL 477 Field Methods in Environmental Geosciences	Instructor(s) of GEOL 477 complete a summary report detailing overall student performances. This report should strive to identify key areas of weakness, and will serve as a baseline to characterize the knowledge and skill level of students graduating as majors.	End of every summer term.	Instructors of Capstone Course GEOL 477
Capstone Course GEOL 478/479 Geological Field Techniques	Instructor(s) of GEOL 478/479 complete a summary report detailing overall student performances. This report should strive to identify key areas of weakness, and will serve as a baseline to characterize the knowledge and skill level of students graduating as majors.	End of every summer term.	Instructors of Capstone Course GEOL 478/479
Alumni Surveys	Alumni are provided the opportunity to comment on the quality of education, advising, and career counseling they received in the department. They are also able to comment on facilities, faculty, and any other aspect they deem important.	Conducted one, five and nine years after graduation, to coincide with university alumni surveys.	Department Assessment Coordinator
Employer Surveys	Employers of program graduates are asked to evaluate the quality of communication, scientific and technical skills and knowledge displayed by recent program graduates.	Conducted two years after graduation	Department Assessment Coordinator

Table 2 on the following page lists each assessment method currently used by the Department of Geology and Environmental Geosciences, and identifies which expected student outcomes are addressed by each method. Copies of the alumni survey and employer survey currently used by the department are provided in Appendix 2.

Departmental Assessment Structure and Processes

The two charts in Appendix 3 schematically illustrate the structure of the department, its programs, and how and when assessment is carried out in the department. The first chart outlines the basic subdivisions of the department's undergraduate and graduate programs, lists the expected outcomes for each subdivision, and identifies which individuals, committees or panels are involved with assessment of each part of the program. The second chart identifies the three phases of assessment conducted in the department: data collection, data analysis, and program response. Under each of these phases are listed the assessment activities that take place, who is involved with that activity, and when each activity takes place.

Table 2. Correlation of Assessment Methods and Expected Student Outcomes

Expected Student Outcomes	Assessment Method								
	Core Course GEOL 320	Core Course GEOL 325	Core Course GEOL 330	Core Course GEOL 335	Capstone Course GEOL 477	Capstone Course GEOL 478/479	Best Practices	Alumni Survey	Employer Survey
1 Earth Materials									
2 Earth Features									
3 Earth Processes									
4 Interpreting the Geologic Record									
5 Data Collection, Evaluation and Manipulation									
6 Communication									
7 Scientific Analysis									
8 Societal Significance of Geoscience									

Note that the expected student outcomes listed here represent categories of more specific outcomes. Details of each category, including the specific student outcomes for each category, are described in Appendix 1.