

University of Puerto Rico at Mayaguez (UPRM)
Department of Geology
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Geology Department Plan for the Assessment of Student Learning

**Approved by the Faculty of the Geology Department
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Our Commitment: *We at the University of Puerto Rico – Mayaguez will regularly and continuously assess student learning in each area of general education and in each academic program, and will use that information for improving all programs.*

I. Introduction

The University of Puerto Rico at Mayaguez (UPRM) is committed to continually review the institution's effectiveness. UPRM recognizes that excellent institutions are self-reflective and continually seeking to improve. The Department of Geology at UPRM follows this commitment and promotes the assessment of its program as part of a continuous process to achieve its mission and vision. It will eventually result in the development of new courses that respond to societal needs, providing the students with the knowledge needed to improve their learning and the faculty with the tools that will help in the planning of more effective instruction. The assessment of student learning is the most important of the components within the department's assessment plan. An assessment committee consisting of three faculty members is in charge of the formal assessment process. The assessment coordinator, with the help of this committee, is responsible for developing and carrying out the assessment plan. The Geology Department Assessment Plan has been developed based on the Institutional and the Departmental visions and missions.

II. Purpose of Assessment

The fundamental purpose of assessing student learning in the Geology Department is to improve the quality of our program through a continuous revision of its educational objectives, curriculum, and program outcomes. A secondary purpose of this assessment is accountability; demonstrating to the accrediting agencies, governing bodies, constituencies, and other interested parties that we are effective in achieving the goals of our strategic plan. Our efforts will help with the institutional responsibility for producing, reporting, interpreting, and explaining learning outcomes.

This academic assessment ensures that our departmental reviews contribute in a fundamentally important way to the attainment of the Institution's Mission. Along with the purpose in the UPRM assessment plan, we will assure that ***the assessment of student learning in the Geology Department must demonstrate that our students have knowledge, skills, and competencies consistent with institutional goals and that at graduation have achieved appropriate higher education goals.***

III. Purpose of this Plan

The main purpose of this plan is to guide the Department of Geology in the development of student learning outcomes assessment processes and continuous quality improvement programs. This plan is focused in the development and implementation of several assessment processes based on goals and objectives stated in our strategic plan. It is intended to be a source of guidance without constraining experimentation or alternate approaches that may be developed in the future by the faculty.

The institutional approach for the assessment of student learning gives us the opportunity to take responsibility for our own plan and for those closest to the students to make decisions about what students should be learning. Therefore, the assessment of student learning at the Geology Department is primarily course-embedded and faculty experience-based.

The choice of instruments/tools and assessment activities are grounded on the capabilities, idiosyncrasies, and in the teaching approach of earth sciences. The Geology Department assessment Plan follows a format similar to the institutional assessment plan, but the content of such plan, the learning outcomes, and the means used to evaluate/assess them are specific to our discipline based on the vision and mission of our Department.

IV. Geology Department Vision

The Geology Department of the University of Puerto Rico at Mayaguez seeks to provide the highest levels of education through continuous revision and expansion of our educational, research, and outreach programs in order to produce well-trained, competent, academic and professional geoscientists capable of responding to societal needs.

V. Geology Department Mission

The Geology Department will develop in each student, critical thinking, enthusiasm, initiative and the necessary skills to become lifelong students of Earth Sciences. Emphasis will be placed on learning basic concepts and techniques through research, in an environment that promotes the development of professionals with social, cultural and humanistic sensibility as well as profound ethical values. In this way, the department will contribute to the enrichment of science and society through the creation and dissemination of new knowledge through scientific research. The specific objectives of the Geology Department are:

1. Prepare students for professional positions in industry and government and for careers in academic research and teaching.
2. Increase awareness of Earth and Environmental Sciences in liberal arts, education, and other science majors.
3. Educate engineers in the geological concepts integral to competent engineering practices.
4. Establish the Department of Geology as the center for research in Caribbean Earth and Environmental Sciences.
5. Develop a greater awareness of Earth Sciences in the general public through outreach programs.

VI. UPRM Vision

“Transform UPRM into a leader institution of higher education in Puerto Rico and the American hemisphere, responding to the needs of a modern society, in a dynamic and global environment, in the continuous search for truth, knowledge, justice and peace.” (as stated in the Institutional Plan for the Assessment of Student Learning, Approved by the UPRM Administrative Board on August 28, 2003; Certification No: 03-04-180)

VII. UPRM Mission

“Within the philosophical framework established by the University of Puerto Rico Act, the Mayaguez campus directs its efforts towards the development of educated, cultured citizens, capable of critical thinking, and professionally qualified in the fields of agricultural, social, and natural sciences, engineering, humanities and business administration. They should be able to contribute in an efficient manner to the cultural, social, and economic development of the Puerto Rican and international community. This process is aimed at endowing our alumni with a strong technical and professional background and to instill a strong commitment to Puerto Rico and our hemisphere. Our alumni should have the necessary skills and knowledge to participate effectively in the search for solutions to the problems facing us, to promote the enrichment of the arts and culture, the development and transfer of technology as well as to uphold the essential attitudes and values of a democratic society.” (as stated in the Institutional Plan for the Assessment of Student Learning, Approved by the UPRM Administrative Board on August 28, 2003; Certification No: 03-04-180)

VIII. Geology Student Profile

The Geology Department Program aims to develop graduates with the following skills and values, as well as with proficiency in several scientific concepts. The geology student profile includes, but is not limited, to the following:

A. Skills and Values

- Critical thinking and problem solving skills through the scientific method
- Team working skills
- Communication skills in Spanish and English
- Computer literacy and its scientific applications
- Knowledge of up-to-date scientific tools and techniques
- Awareness of contemporary scientific issues
- Awareness of ethical implications in science
- Ability to learn by him/herself (lifelong learners)

B. Scientific Concepts (based on curriculum)

- Paleontology
- Crystallography
- Mineralogy
- Geomorphology
- Structural Geology
- Petrology
- Sedimentology
- Stratigraphy
- Field Geology

C. Other Geology Concepts (depending on electives taken)

- Plate Tectonics
- Geophysics
- Seismology
- Sequence Stratigraphy
- Volcanology
- Hydrogeology
- Geochemistry
- Environmental Geology
- Engineering Geology
- Geology of Puerto Rico
- Carbonates
- Remote Sensing
- Geographic Information Systems
- Planetary Geology
- Marine Geology

IX. Geology Department Program Outcomes

At graduation the students that meet the graduating student profile will have:

- Proficiency in a range of basic Earth Sciences concepts
- Ability to apply scientific technology and the scientific method to solve problems
- Computer literacy, problem solving, math reasoning skills, critical thinking, ability to judge scientific validity, able to write and speak effectively
- Up-to-date knowledge of scientific technology in Earth Sciences
- Ethical values
- Research experience and skills
- Interest in life-long learning

The Faculty involved in student assessment procedures will have:

- Assessment training and awareness of its importance
- Improved teaching/learning methods
- Capacity to teach up-to-date courses
- Potential to disseminate assessment outcomes

X. Assessment Strategies

The Geology Departmental Assessment Plan has been designed to evaluate how the Geology curriculum, research, outreach, and other activities complement each other to achieve the graduating student profile. For this, the assessment will be conducted at several levels. The following activities are proposed:

ASSESSMENT TOOLS	TIMING (PERSON RESPONSIBLE)
Course Assessment	
Exams, Quizzes, Homework, Projects	Throughout each semester (Professors/Instructors)
Laboratory Reports	During most Laboratory Courses (Lab Instructors)
Written Report Assessment	Whenever required in Laboratories or Lectures (Professors/Instructors)
Oral Presentation Assessment	Whenever required in Laboratories or Lectures (Professors/Instructors)
Teamwork Assessment Form	At end of any semester where work is performed in groups (Professors/Instructors)
Student's Evaluation of Teaching Assistants (Geology Dep. Form)	At end of every Laboratory or Course (All students)
Professor's (Coordinator) evaluation of Teaching Assistants	At end of every Laboratory or Course (All students)
Student's Evaluation of Teaching (UPRM Form)	After 10 weeks of each semester (All students)
Teaching Assistants Assessment of Laboratory Coordinator/Professor	Yearly (Teaching Assistants)
Course Portfolio	Core courses (Faculty teaching the course)
Other assessment projects to be determined during this plan period	Yearly (Every interested Professor)
Program Assessment	
Statistics of Students Metrics	Yearly (Director and Assessment Coordinator)
Student Profile Assessment Form	Every year (Professors and Students)
Undergraduate Research Assessment Form (Student Version)	At completion of research experience (Student)
Undergraduate Research Assessment Form (Mentor Version)	At completion of research experience (Mentor)
Field Geology Assessment Form (Student Version)	At end of course (All students)
Field Geology Assessment Form (Professor Version)	At end of course (Professor)
Other assessment projects to be determined during this plan period	Yearly (Every interested Professor)
Post Graduation	
Exit Interview	Yearly (Director and Assessment Coordinator)
Assessment of Geology Curriculum	After graduation (UPRM Geology Alumni)
Alumni Assessment Form	After graduation (Contractors / Major Professors)
Other assessment projects to be determined during this plan period	Yearly (Every interested Professor)

XII. Period of the Plan

The proposed activities of this plan will be developed in a 4-years period. Therefore, this plan will be revised again in 2018.