

Department of Earth Sciences and Science Education

MAJOR PROGRAM ASSESSMENT PLAN: Earth Sciences (0737) and Geology (0727)

Student Learning Outcome	Courses Associated with the Outcome *	Activities Resulting in the Outcome	Assessment Measures/Criteria/Rubrics **	Timetable (5-yr. cycle)
Demonstrate knowledge of fundamental concepts and principles of in Earth Sciences and Geology	GES 101, 102, 103, 111, 131, 303, 307, 308	Examinations and discussions on tectonics, surficial processes, Earth history, the fossil record, Earth materials and Earth's relation to the Solar System	Course exams, laboratories	2008-2009
Demonstrate ability to work as part of a team and to communicate results	GES 303, 307, 308	Data collection, analysis and synthesis laboratories, topic research and oral presentations	Laboratory reports, oral presentations	2008-2009
Demonstrate ability to work independently	GES 103, 303, 307, 308	Laboratory assignments, final project presentations in 303 and 308, term paper	Laboratory reports, term paper, oral presentations	2009-2010
Demonstrate critical thinking skills in environmental and other disciplines of geology	GES 101, 103	Position topics on examinations	Examinations	2009-2010
Demonstrate proficiency in scientific writing	GES 303, 308	Laboratory notebooks, term paper and presentation of the topic	Notebooks, term paper	2010-2011
Demonstrate ability to analyze and interpret quantitative data	GES 103, 307, 308	Map, table, graph and computer model laboratories	Laboratory reports, oral presentations	2010-2011
Demonstrate proficiency in appropriate computer hardware and software in the geological sciences	GES 131, 303, 308	Problem solving laboratories using geological data provided and retrieved from various sources	Laboratory reports	2011-2012
Demonstrate proficiency in locating and evaluating geological literature	GES 303, 307, 308	Research of topics including a term paper in GES 308, and oral reports	Oral presentations and term paper	2011-2012
Demonstrate ability to represent geological data	GES 103, 303, 307, 308	Presented analysis and interpretation of quantitative data appropriate methods	Laboratory reports and oral presentations	2012-2013
Demonstrate ability to collect quality field and laboratory data, including sampling	GES 307, 308	Laboratories in the collection of data in the field and in the laboratory using appropriate techniques and strategies	Laboratory reports, field reports	2012-2013

* Course titles: GES 101 – Introductory Geology; GES 102 – Historical Geology; GES 103 – Introductory Geology Laboratory; GES 111 – Oceanography; GES 131 – Introductory Astronomy; GES 303 – Mineralogy and Petrology; GES 307 – Geomorphology; GES 308 – Structural Geology

** Assessment based upon 20% of the student products for each course, ranked according to a 4-point rubric by the department Undergraduate Committee.