Program B.S. in Geology
Assessment Coordinator for the program Dave Kreamer
Department(s) or Interdisciplinary Council Responsible for the Program Geoscience
Five-Year Implementation Dates (2012-2017)

1. Student Learning Outcomes for the program.

By the end of the Geology program students will be able to demonstrate the ability to:

1. Identify common rock-forming minerals in hand specimen and thin section.
2. Identify major rock types and will be able to describe the conditions under which each of them formed.
3. Identify the common types of invertebrate and vertebrate fossils, their approximate age, and the environments in which they lived.
4. Recognize, in the field, various types of geologic structures, and be able to use these to reconstruct the structural history of a region.
5. Describe the major processes that determine the characteristics of the earth's surface, and be able to examine a landscape and interpret its geomorphic history.
6. Describe the plate-tectonic history of the earth (when various supercontinents assembled and fragmented), the relationship between plate tectonic processes and mountain building, and the types of data that are used to reconstruct the position of a particular plate in the geologic past.
7. Describe the regional stratigraphic framework of the Southern Nevada region; they will also be able to go into a new region that has a well-exposed stratigraphic record, and reconstruct the sedimentological history of the region.
8. Describe the chemical characteristics of various types of rocks, environmental pollutants, and to describe various ways that stable and radiogenic isotopes are used to address various types of research questions in geology.
9. Describe the historical development of the field of geology, including the contributions of such persons as James Hutton, A. G. Werner, Charles Lyell, Charles Darwin, Alfred Wegner, Charles Walcott, J. Tuzo Wilson, Florence Bascom, Katia Krofft, Mary Leakey, Inge Lehmann, Arthur Holmes, N.L. Bowen, James Dwight Dana, Wm. Morris Davis, Mary Anning, Marie Tharp, Harry Fielding Reid, and Chester Longwell.
10. Be facile in computer applications in geology including spatial and imagery analysis applications, quantitative skills, and express themselves well in oral and written reports.
11. Apply the techniques of at least two specializations within the field of geology (e.g., geophysics, hydrogeology, GIS, geochronology, petroleum geology) to the solution of appropriate research or applied problems.
12. Able to demonstrate the ability to function independently, collaboratively, and ethically with others in the profession as colleagues and supervisors.
13. Demonstrate the ability to enter a new field area, construct a geologic map on a topographic base, interpret the geologic history of the area, and write a professional quality report on the geology of the area. This learning objective comprises the Capstone experience for this degree program and is fulfilled through the summer field geology course. Many other learning outcomes for this degree program are also reinforced through this capstone experience (For instance, outcomes 1-6, and 12).

14. Demonstrate the ability to recognize, formulate, employ, and interpret the scientific methodology through the completion of a research project requiring the submission of a research paper and/or a presentation of one's findings.

2. Curriculum Alignment of Student Learning Outcomes. Where is the information introduced, enriched, and/or reinforced in the courses required in the program?

Student Learning Outcome I=Introduced, E= Enriched, R= Reinforced

Courses in the Program (Required and Electives)	1	2	3	4	5	6	7	8	9	10	11	12	13
ENG 101, 102										**I**			
ENG 231 or 232										**E**			
Multicultural and International												**I**	
MATH 181, and Math 182, Stat 152, 491, or CS 119										**I**			
ENG 405B, 407B, 407A, or 407a										**I**			
GEOL 100, 101 or GEOG 103	**I**	**I**		**I**	**I**	**I**	**I**	**I**	**I**	**I**	**I**	**I**	**I**
GEOL 102	**E**	**E**	**I**	**E**	**E**	**E**	**E**		**E**		**E**	**E**	**I**
GEOL 220	**R**	**E**						**E**			**E**	**E**	
GEOL 333		**R**			**E**		**E**				**E**	**E**	
GEOL 341		**E**		**E**	**E**	**E**					**E**	**E**	**E**
GEOL 348	**R**	**R**	**R**	**R**	**R**		**E**			**R**	**E**	**E**	**E**
GEOL 427	**E**	**R**			**R**	**R**					**R**	**R**	
GEOL 462		**R**			**R**		**R**				**R**	**R**	
CHEM 121/121L and 122/122L								**E**					
PHY 151/151L and 152/152L, or PHY 180/180L and 181/181L						**E**							
Geology/ Geography Electives 9 credits must be 300 level or above, 30 credits	**E/ R**	**E/ R**	**E/ R**	**E/ R**	**E/ R**	**E/ R**	**E/ R**	**E/ R**	**E/ R**	**E/ R**	**R**	**R**	**E/ R**
Capstone Field Geology GEOL 370	**R**	**R**	**R**	**R**	**R**	**R**				**R**	**R**	**R**	**R**