A. DEFINITION OF DISCIPLINE AND PROFESSION

Geology is the study of the Earth, Earth processes and issues associated with the interconnection between society and the Earth. Geologists apply their knowledge to: manage resource utilization (water, minerals and fuels); predict and mitigate hazards (earthquakes, volcanoes, landslides, tsunamis and floods); manage natural and anthropomorphic environment issues (erosion, water contamination, waste disposal); and learn how to anticipate and adjust to environmental and global changes.

B. PHILOSOPHY OF ASSESSMENT PROGRAM

The Department of Geology continually assesses its academic program for the expressed purpose of maintaining and improving the quality of the educational experience we provide our students. Assessment materials are not collected for comparative purposes with other departments, and are solely utilized to evaluate progress of the Department.

C. ACADEMIC GOALS FOR STUDENT OUTCOMES AND ASSESSMENT

The goal of our program is to produce capable, resourceful and engaged graduates that possess both the comprehensive and technical knowledge necessary to excel in professional earth science employment, graduate school or a related vocation.

D. LEARNING GOALS AND EXPECTED OUTCOMES OF A GEOLOGY MAJOR

Learning goal A. A comprehensive understanding of geology within the natural world and its connection to society.

Expected outcomes -- Students will be able to:

1. Describe common rocks, minerals and fossils.
   [110, 115, 312, 313, 320, 365, 418]

2. Use and interpret topographic maps, geological maps, air photos, geographic information systems (GIS) data, and geological cross sections.
   [110, 115, 312, 330, 345, 418, 420, 445, 468, 470, 471, Geog 335]

3. Acquire a comprehensive knowledge of surficial and internal Earth processes and their principles.
   [110, 115, 313, 320, 330, 345, 365, 418, 420]

4. Use observations to characterize earth processes and solve geologic problems
5. Understand the origin and consumption of natural resources and the hydrologic system and the impact of human interactions with these systems.
[110, 115, 118, 301, 308, 315, 365, 416]

_Assessment Methods:_
Curricular connections
Capstone Experience
Employer Surveys
Alumni Surveys
Exit Interviews

**Learning goal B.** Ability to critically evaluate and analyze scientific data to solve geological problems and accurately report results

Expected outcomes – Students will be able to:
1. Read and evaluate geological papers and formulate further research problems.
   [312, 313, 320, 330, 345, 365, 418, 420]
2. Conduct geological mapping and construct an internally consistent geological map.
   [418, 470, 471]
3. Use mathematics and computational methods to analyze scientific and geological data.
   [313, 315, 330, 365, 416, 445, 470, 471]
4. Write a coherent and accurate geological history of an outcrop based on personal observations and mapping.
   [312, 320, 330, 418, 470, 471]
5. **Insert emphasis-specific writing outcome here.** See end of this document.

_Assessment method:_
Curricular connections
Capstone Experience
Classroom and Professional Presentations

**Learning goal C.** Preparation for the diversity of opportunities in and beyond the ever-changing field of Earth Sciences.
Expected outcomes – Students will be able to:

1. Independently evaluate and pursue career opportunities in the Earth Sciences
   [301, 315, 330, 345, 365, 416, 418, 420, 445, 470, 471]
2. Fulfill requirements for certification as a professional geologist and/or hydrogeologist.
   [all upper-division courses]
3. Prepare for success in graduate school.
   [312, 313, 315, 320, 330, 345, 416, 418, 420, 445, 470, 471]

Assessment methods:
Exit interviews
Certification
Internships
Graduate School Acceptance of Majors
Professional Employment

Learning outcomes specific to each emphasis under Learning Goal B

Comprehensive General Geology Emphasis – Skill outcome 5
5. Evaluate geological processes and produce a technical report of a geological study site.