Student Learning Outcomes and Learning Goals - Geology Major

- Provide a high-quality undergraduate education that combines transdisciplinary problem- and process- oriented, and quantitative approaches to the Earth Sciences.
  - Develop highly competent geoscience students prepared to analyze and comprehend the linkages among Earth system components and their physical and social context
    - Each graduate will demonstrate the ability to apply knowledge, concepts and techniques from complementary disciplines to solve problems
    - Each graduate will employ accepted laboratory and field techniques, protocols, and safety procedures
    - Each graduate will demonstrate the ability to read, construct, and comprehend thematic maps as well as derive conceptual perspectives from existing maps
    - Students will demonstrate the appropriate use of quantitative data through graphs, spreadsheets, and statistical analysis
  - Students will learn the fundamental concepts of geology
    - Each graduate will demonstrate an understanding of plate tectonic theory and be able to describe how it operates
    - Each graduate will demonstrate an understanding of the geologic time scale and the timing of major events in Earth history
    - Each graduate will demonstrate the ability to identify and characterize important earth materials, and to interpret the physical, chemical and biological processes by which they formed
    - Each graduate will demonstrate an understanding of the history, causes, and effects of global climate change
    - Each graduate will demonstrate an understanding of evolutionary theory and its evidence in the fossil record
    - Each graduate will demonstrate an understanding of the internal structure of Earth
    - Each graduate will demonstrate an understanding of the hydrologic cycle
  - Educating our students about Earth's natural systems, its resources, and the impact of humans on the planet
    - Applying geoscience knowledge to address problems affecting human society, locally and globally
    - Each graduate will demonstrate the ability to make informed, scientifically-based decisions regarding environmental issues, resource exploration and extraction, and anthropogenic affects on the natural world
  - Develop and communicate new knowledge to the broader community through fundamental research that uses emergent technologies
    - Each graduate will deliver oral presentations, demonstrating the ability to effectively communicate discipline-specific concepts
    - Each graduate will write scholarly papers using acceptable format and organization with citations to appropriate literature
    - Students will deliver presentations making appropriate use of visual or electronic media