



Course Description

GLY1100L | Historical Geology Laboratory | 1.00 credits

A laboratory course designed to accompany GLY1100 in the study of the History of the Earth. The student will learn the fundamentals of fossil identification, evolution, calculation of radiometric dates, interpretation of the stratigraphic record, and the role of plate tectonics in the evolution of life.

Course Competencies

Competency 1: The student will demonstrate the ability to identify and interpret fossils, including understanding their significance in the context of evolutionary processes and the historical development of life on Earth. This competency encompasses the application of principles of paleontology to analyze and interpret fossil evidence within the framework of the Earth's history by:

1. Analyzing and comparing fossil evidence, demonstrating a keen understanding of its significance in the context of evolutionary processes and the historical development of life on Earth. This outcome emphasizes the student's ability to critically examine and draw comparisons between different fossil specimens to enrich their understanding of evolutionary patterns.
2. Integrating multiple sources of fossil data to construct a cohesive narrative of the Earth's biological evolution.
3. Contributing to the broader understanding of the historical development of life on Earth.

Learning Outcomes:

1. Critical thinking
2. Cultural / Global Perspective
3. Information Literacy

Competency 2: The student will interpret the stratigraphic record, calculate radiometric dates, and apply quantitative methods to determine the age of geological materials and stratigraphic layers, as well as analyze the geological record to understand the temporal and spatial distribution of Earth's history by:

1. Calculating radiometric dates and validating the accuracy of the derived geological ages. This outcome emphasizes applying quantitative methods to ensure the precision and reliability of radiometric dating techniques in determining the age of geological materials.
2. Interpreting the stratigraphic record and correlating geological layers to understand Earth's history's temporal and spatial distribution. This outcome highlights the student's capacity to analyze and establish connections between stratigraphic layers, elucidating geological events' historical sequence and spatial arrangement.
3. Integrating geological interpretations to form a cohesive narrative of Earth's geological evolution.

Learning Outcomes:

1. Critical thinking
2. Information Literacy
3. Numbers / Data

Competency 3: The student will integrate the concepts of plate tectonics with the evolution of life, demonstrating an understanding of the dynamic interplay between Earth's tectonic processes and the evolutionary history of organisms. This competency encompasses the ability to synthesize knowledge of plate tectonics and biological evolution to explain the relationships between geological phenomena and the development of life forms over time by:

1. Explaining the complex relationships between geological phenomena and the development of life forms over time. This outcome emphasizes the ability to integrate and communicate the interconnectedness of tectonic processes and evolution.
2. Analyzing geological phenomena and interpreting organisms' evolutionary history within the plate tectonics framework. This outcome highlights the student's capacity to critically analyze geological data and interpret its implications for the evolutionary development of life on Earth.
3. Understanding of plate tectonics and biological evolution, evaluating the impact of tectonic processes on the evolutionary trajectories of life forms. This outcome underscores the student's ability to apply theoretical knowledge to real-world scenarios and evaluate the influence of tectonic dynamics on the biological evolution of organisms.

Learning Outcomes:

1. Communication
2. Critical thinking
3. Cultural / Global Perspective