Geoscience Online Learning Initiative

The Geoscience Online Learning Initiative (GOLI) is an initiative by the American Geosciences Institute, started in cooperation with the American Institute of Professional Geologists, to provide a platform for asynchronous, life-long learning and continuing education opportunities in the geosciences. The long-term vision for GOLI is to provide a platform for geoscience societies to host asynchronous learning modules for use in both professional continuing education and to help students be better prepared for entering the geoscience workforce. AGI is interested in providing this platform with the hope that Member Societies will create a transparent marketplace for learning opportunities and CEUs/micro-credentials that are transferrable across the entire profession. The GOLI platform offers the following types of courses:

**GOLI live webinar courses** provide up to date information on technical and applied geoscience topics and are taught by a range of experts from across the geosciences. Attendees earn Continuing Education Units (CEUs) upon the completion of the webinar course.

**GOLI asynchronous online courses** provide learners with the flexibility to actively self-pace their progress, since asynchronous courses do not have a set schedule like traditional academic semester-based courses. Brought to you via the Open edX Learning Management System (LMS), learners are able to browse course descriptions, enroll in specific courses, access content, and complete any course completely free of charge. All learners who complete online courses offered through the GOLI platform with a passing grade of 70% or higher are eligible to purchase Continuing Education Units (CEUs) for a nominal charge.

**Have an idea for GOLI content?** We'd love to have you as a contributor! To submit your GOLI webinar or course idea, please fill out the GOLI Proposal Submission Form and a board of reviewers will evaluate your proposal. We look forward to hearing your ideas!

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Professional Geologist Licensure Requirements and the ASBOG National Geology License Examinations
The purpose of professional licensing is to ensure a minimum level of competency for practitioners in a given field in order to protect the public. Having a license to practice geology is a requirement in the majority of United States, Canada and several other countries. In contrast to other professions, a disconnect has developed between applied geologists and academia. Professional licensing requirements are a fact of life for applied geologists.

Polishing Your Writing Skills for State Government Agency Careers

This course provides insight into the professional and technical writing skills that are needed by geoscience students pursuing careers in state government agencies. Speakers explore the skills that are developed during students’ undergraduate and graduate academic training, discuss the types of written products that are developed by geoscientists in state agencies, and provide tips for improving and expanding writing skills.

Understanding Professional Geologist License Requirements: California 2019

This course focuses on the qualification requirements to get a Professional Geologist (PG) license in California and upcoming changes that applicants should understand. It will also provide an overview of the California laws and regulations that govern the practice of geology. Knowledge of California’s Geologist and Geophysicist Act along with the accompanying regulations is one of the responsibilities that is part of being a licensed professional.
Telling your Geoscience Story with Story Maps

Course Type: GOLI Online Course
Organization: American Geosciences Institute
CEUs: 0.10
View Course

Communicating results of geoscience investigations to a diverse set of audiences will grow in importance in our 21st century world. Story maps are web mapping applications that provide geoscientists with the ability to combine 2D and 3D maps, audio, video, photographs, and narrative that can be shared with research colleagues, or the general public, and embedded in web pages and online presentation tools. This course will quickly give you the knowledge, skills, and confidence to make your own maps for telling your own story.

Well Re-Development in New England

Course Type: GOLI Online Course
Organization: American Institute of Professional Geologists
CEUs: 0.50
View Course

This course is designed to provide water utility personnel, engineers, hydrogeologists, regulatory officials, and other interested persons an understanding about the sand and gravel and bedrock aquifers in New England, how and why well performance declines over time, and information about available options for rehabilitating these wells.

Best Practices in Mineral Resource Estimation and Reporting

Course Type: GOLI Online Course
Organization: American Institute of Professional Geologists
CEUs: 0.20
Construction of a computerized model to estimate mineral resources is a common practice in mineral exploration projects and mining operations. Many times a technical report is done as per international reporting standards such as NI-43-101 or JORC to meet the requirement of certain stock exchanges in the world. In all these standards, there are certain minimum suggested requirements that have to be met for reporting mineral resources and reserves. The standards are not and cannot be prescriptive.

The Lower Cretaceous of Texas

Course Type: GOLI Online Course
Organization: American Institute of Professional Geologists
CEUs: 1.00

We will go on a tour of some selected outcrops of the Cretaceous System of central Texas. This general area constitutes one of the best exposures of Cretaceous strata anywhere around the globe. In the course, we will emphasize various aspects of the development, stratigraphy, sedimentology, structure, and paleontology of these Cretaceous units. It is also our aim to provide you with additional historical and geographical data that will make this virtual field tour interesting and informative.

Preparing our Workforce: Hosting Career Discussions

Course Type: GOLI Online Course
Organization: American Geosciences Institute
CEUs: 0.25

This course is designed to help faculty and non-academic professionals host career discussions with students. The course provides learners with specific career-related content, materials, and well-tested tools that will help in facilitating geoscience career discussions and presentations. The course will cover three main sections:
Ocean Acidification Impacts on Fisheries

Course Type: GOLI Online Course
Organization: American Geosciences Institute
CEUs: 0.10
View Course

As the amount of atmospheric carbon dioxide has increased over recent history, so has the acidity of oceans worldwide. The changing acidity of the ocean has many ecological and economic impacts, one of the most serious being its effects on marine life and fisheries. The impact of ocean acidification is intensified in colder bodies of water such as those off the coast of New England, a region with a large fisheries sector.

Well Logs and Log Analysis for New Hires

Course Type: GOLI Online Course
Organization: American Institute of Professional Geologists
CEUs: 1.00
View Course

The two most basic tools used in petroleum exploration and production are well logs and seismic data. Their integration is essential to enhance the probability of success of exploratory and development ventures. In this module we concentrate on the subject of well logs. Although we always hope for success when we drill wells, we can learn valuable information from dry holes also. So, let's see what we can ascertain from well logs.

The Development of Geoscience-related Ethics Codes

Course Type: GOLI Online Course
Organization: American Institute of Professional Geologists
This course focuses on the adoption of and changes in geoscience-related ethics codes over the years. Many geological and related engineering professional associations were founded in the 19th and early 20th centuries but ethics codes were generally not adopted until after WWII. The AAPG Code of Ethics was the first code and was adopted in 1924. Codes have changed over the years for a variety of reasons as has their organization. There are common principles in the codes like honesty, integrity, transparency, etc.

Tracking the Global Supply of Critical Materials

Course Type: GOLI Online Course
Organization: American Geosciences Institute
CEUs: 0.10

No country in the world produces all of the mineral resources necessary for modern society. International trade plays a critical role in providing these raw materials, forming a global network of production, export, import, and use. This network must continuously adapt to national and international developments in science, technology, politics, and economics. As a result, information on the global flow of raw materials plays a fundamental role in improving national and international resilience to potential supply disruptions and market changes.

Desalination as a Source of Fresh Water

Course Type: GOLI Online Course
Organization: American Geosciences Institute
CEUs: 0.10

Fresh water is an increasingly scarce resource in an increasingly populous and water-intensive world. Maintaining an adequate supply of fresh water both nationally and globally will be one of the largest challenges of the 21st century. Desalination of salty water, from both the ocean and the ground, represents a huge potential source of fresh water. The development of this resource requires a combination of geoscience, engineering, waste management, policy, and community outreach and participation.
Water as One Resource

Course Type: GOLI Online Course  
Organization: American Geosciences Institute  
CEUs: 0.10

This course provides an overview of how groundwater and surface water interact, what the implications of these interactions on water resources are, and how water can be more effectively managed if an understanding of these interactions is incorporated. The course presenters are Ken Bradbury from the Wisconsin Geological and Natural History Survey, William A. Alley from the National Groundwater Association, and Thomas Harter from the University of California, Davis.

Techniques for Developing High Resolution LNAPL Conceptual Site Models

Course Type: GOLI Online Course  
Organization: American Institute of Professional Geologists  
CEUs: 0.20

This course is intended for geologists involved in Light Non-Aqueous Phase Liquid (LNAPL) assessment and remediation. This course provides information on the development of high resolution conceptual site models that can be used to guarantee the project goals are met. The class will cover advantages of a high resolution LNAPL Conceptual Site Model (LCSM); design and implementation of a high resolution investigation field program; case studies and end uses of a high resolution LCSM. The course presenter is Roger Lamb.

State Responses to Induced Earthquakes

Course Type: GOLI Online Course  
Organization: American Geosciences Institute
The surge in recent years of earthquake activity associated with some oil and gas operations, most notably in Oklahoma, has spurred a range of actions and responses from state geoscientists and regulators. States have taken measures to monitor these earthquakes and moderate the activities that may be causing them, particularly the deep underground injection of large volumes of wastewater. Many states with extensive oil and gas operations but little or no increased earthquake activity have also adopted practices to prevent and prepare for potential induced earthquakes in their area.

**Professionalism and Geoethics: Creating a Workplace Environment Where Everyone Can Succeed**

**Course Type:** GOLI Online Course  
**Organization:** American Institute of Professional Geologists  
**CEUs:** 0.10  
**View Course**

This course introduces topics that contribute to workplace "climate" (e.g., microaggressions, implicit bias, empowering bystanders) and provides suggestions for personal and institutional actions that can be taken to ensure that everyone can succeed in the workplace environment. The course presenter is David W. Mogk, Professor of Geology at Montana State University.

**Planning for Coastal Storm and Erosion Hazards**

**Course Type:** GOLI Online Course  
**Organization:** American Geosciences Institute  
**CEUs:** 0.10  
**View Course**

Coastal hazards are a widespread challenge that cost millions (and sometimes billions) of dollars in the U.S. every year due to property loss and spending on mitigation measures. Based on the most recent U.S. Census, over 39% of the U.S. population lives in areas that may undergo significant coastal flooding during a 100-year flood event. Additionally, six of the ten most expensive weather-related disasters in U.S. history have been caused by coastal storms.
Making Produced Water More Productive

Course Type: GOLI Online Course  
Organization: American Geosciences Institute  
CEUs: 0.10  

View Course

Geoscience is essential to our understanding and management of produced water, an inevitable byproduct of oil and gas development. This course provides a scientific and regulatory background of produced water, how it is commonly disposed, what opportunities exist for the re-use of produced water, and what the environmental and regulatory challenges for re-using produced waters are.

The course presenters are Kyle Murray from the Oklahoma Geological Survey, Jeri Sullivan Graham from the Los Alamos National Laboratory, and Holly Pearen from the Environmental Defense Fund.

Induced Seismicity in the Mid-Continent

Course Type: GOLI Online Course  
Organization: American Geosciences Institute  
CEUs: 0.10  

View Course

This course provides information about induced seismic activity in the United States, specifically in the mid-continent. It includes information on mitigation planning, the state of seismic monitoring at the state level, and the challenges in communicating the science of the issue to the public and decision-makers.

The course presenters are Bill Ellsworth from the U.S. Geological Survey, Austin Holland from the Oklahoma Geological Survey, and Rex Buchanan from the Kansas Geological Survey.