

Ventura College Sabbatical Leave Project – Fall 2020
GEOS: A Physical Geology Lab Manual for California Community Colleges
Submitted by Chloe Branciforte
Geosciences Department

Instructor's Status: Full-Time, tenured

Hire Date: August 2014

Previous Leaves: 0

Sabbatical Taken: Fall 2020

I. SUMMARY OF THE PROJECT:

GEOS: A Physical Geology Lab Manual for California Community Colleges is an Open Educational Resource (OER) for physical geology lab. This new manual was produced with additional support from the Academic Senate for California Community Colleges (ASCCC) Open Educational Resources Initiative (OERI) and can be used in any modality by community colleges within California or beyond. This manual can be locally accessed on OneDrive, or more broadly using [LibreText](#), and [Canvas Commons](#).

II. COMPONENTS OF THE PROJECT:

- a) **Curriculum Development:** Lab content and activities were adapted, rewritten, or designed to be used by California Community Colleges for Physical Geology Laboratory (C-ID, [GEOL 100L](#) or [GEOL 101](#)). The following course objectives for [C-ID GEOL 100L](#) were used during the construction of this manual.
1. Practically apply the principles of the scientific method.
 2. Demonstrate a conceptual understanding of fundamental concepts, principles, and interactions of Earth's systems applicable to the Geological Sciences.
 3. Demonstrate an understanding of the Earth through the identification and evaluation of physical mineral samples.
 4. Demonstrate an understanding of the Earth through the identification and evaluation of physical igneous, sedimentary, and metamorphic rock samples.
 5. Demonstrate an ability to communicate complex course concepts effectively in writing and diagrams.
 6. Demonstrate the ability to read and interpret topographic and geologic maps and answer questions pertaining to geologic processes.
- b) **Lab Activities:** *GEOS: A Physical Geology Lab Manual for California Community Colleges* is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License ([CC-BY-SA](#)) unless otherwise noted. Most of the imagery, including diagrams, graphs, tables, images, video, and maps were located or developed to ensure they match this license. Each of the twenty chapters contain background content, and lab activities. Each chapter contains California specific research and case studies which were used to increase student engagement and improve comprehension and critical thinking skills.
- c) **Student Access:** *GEOS: A Physical Geology Lab Manual for California Community Colleges* is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License ([CC-BY-](#)

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[SA](#)) unless otherwise noted. The manual can be printed or shared locally using OneDrive, and is available online, using Canvas or [LibreText](#). Content remains current, inclusive, and meets our student's diverse needs.

- d) **Department Access:** The lab manual has been shared via OneDrive with local faculty and can be accessed on Canvas Commons and LibreText by anyone teaching an introductory physical geology lab course.

III. IMPACTS OF THE PROJECT:

a) Impacts of the project to Students

Most students need a physical science lab requirement to graduate and the expansion to hybrid and online geology labs provided additional physical science lab opportunities for those students who want to earn a completely online degree. Additionally, thanks to CARES funds we were also able to develop free lab kits which complement the manual. These kits provide students access to additional materials necessary for lab, including rock and mineral specimens. The time students spend outside of class appears more productive, and they are better able to identify the various rocks and minerals samples. Overall, students have responded positively to our no-cost OER and lab kits.

b) Impacts of the project to Faculty and Geoscience Department

The manual, and lab kits, provide consistency across lab sections, which has improved overall student success and retention. Having this resource available during the pandemic has been incredibly helpful, and with access both through OneDrive and online (Canvas and LibreText), it is being used in districts outside of VCCCD, including within LACCCD and throughout the state.

c) Impacts of the project to VCCCD and Ventura College

With a no-cost lab manual, and free lab kits, students appear more likely to register, and remain enrolled, in the geology labs. Although, the pandemic forced expansion to hybrid and online geology labs, the plan was always to move in this direction. The Geology Program will continue to offer hybrid labs and hopes to eventually provide fully online labs for those students earning online degrees.

IV. FUTURE OF THE PROJECT:

GEOS: A Physical Geology Lab Manual for California Community Colleges will continue to be updated to include better imagery, and reflect new research and information, including California specific content and activities. Lastly, the Geology Program will need to consider handling the complicated logistics of providing kits to non-local students.