G101: Introduction to Geology and G201 Physical Geology I

Linn-Benton Community College offers a year-long geology sequence, with courses in physical geology, surface processes, and historical geology. We offer both a majors and non-majors sequence. Most students taking these courses are planning on transferring and pursuing a Bachelor's Degree at Oregon State University, located about 10 miles to the west.

Regardless of which students are enrolled in which courses, I have overarching goals for students:

- To better understand the natural world by making observations, asking questions, and trying to answer these questions about the Earth.
- To have a general knowledge of science and geology so students can make more informed decisions as a contributing member to society.
- To develop and improve life-long skills such as problem solving, critical thinking, oral communication, and group work. I hope these skills learned and/or refined in these classes will carry over into other classes and your personal life.
- To use technology and quantitative skills to solve geologic problems.

I try to facilitate accomplishing these goals by making the class interactive and inquiry based and really trying to make class simulate the scientific process. Long lectures are a rare occurrence, instead I try to get students to make observations and predictions, or solve geologic problems in groups.

In order for this to work, I expect students to do the reading before we begin covering a topic in class. Students complete reading guides that focus on key terms and concepts in chapters that may be used in online reading quizzes. I guess this is my way of "flipping" the classroom, by making students learn new material outside of class, so class time is not devoted to strictly reviewing reading. Of course, many of these overarching goals are hard to measure, but it is good to see that some students transfer as Earth Science majors!

However, since I deal with two specific audiences in these classes, majors and non-majors, their outcomes are slightly different. Since this is often the terminal science class for students taking the non-majors course, I would rather have them focus on understanding how a geoscientist

thinks spatially and temporally, emphasizing rates and scales of geologic processes in lieu of memorizing rock types or chemical formulas of minerals. I hope this population leaves this course with a better appreciation of science, and feels more confident in solving quantitative problems.

The majors audience includes future majors in geology, geography/GISscience, Environmental Sciences, and Fish and Wildlife. While I try to emphasize everything the non-majors would take away from an introductory level course, I also want to prepare these students with skills to be successful in a STEM major and career. This audience is expected to know and identify common rock-forming minerals and earth materials. Additionally, each student completes a research project that culminates in a poster presentation. For instance, in the physical geology course, these students will research a particular region of interest, describe its tectonic setting, and then conduct an earthquake recurrence interval study using real-time data and Excel.

I come from a liberal arts background, and still remember the philosophy of a professor. Paraphrasing, he said that higher education is not about memorizing facts, which you will forget soon enough, but learning how to think, solve problems, and communicate. I aim to instill this in the students I work with.