ARIZONA WESTERN COLLEGE
SYLLABUS

GLG 101 INTRODUCTION TO GEOLOGY 1 (Physical)
Credit Hours: 4 Lec 3 Lab 3
SUN# GLG 1101

General Education Course: G (global awareness)

PREREQUISITE: None

COURSE DESCRIPTION
Fundamental physical principles of the earth: the structure of its interior and crust, its rocks and minerals, and the processes affecting these features such as volcanoes, earthquakes, mountain formation, and erosion.

1. COURSE GOAL
Understand the physical, chemical, and biological inter-relationships that exist on the Earth.

2. OUTCOMES
Upon satisfactory completion of this course, students will be able to:
2.01 know the difference between a scientific hypothesis and scientific theory.
2.02 use geologic principles to determine relative dating.
2.03 take the ratio of parent isotope and daughter product, the half-life constant, and the equation for absolute time and determine the age of the mineral or rock.
2.04 understand the relevance of the magnetic field to life on Earth.
2.05 read a topographic map using contours, scale, and cardinal direction.
2.06 calculate gradients and measure horizontal distances from a topographic map.
2.07 articulate the source of plate motion.
2.08 describe the directions of motion for a divergent, convergent, and transform boundary.
2.09 recognize tectonic features such as trench, rift valley, volcanic arc, transform fault, etc.
2.10 know the types of evidence used to support early ideas of the continental drift hypothesis
2.11 differentiate between dissolved, suspended, and bed load transport in streams.
2.12 identify patterns of stream erosion and deposition.
2.13 identify the components of a groundwater system and create a simple groundwater flow map.
2.14 explain greenhouse gases, albedo, sea ice, ocean currents, and their interrelationships.
2.15 describe the mineral physical properties used in mineral identification.
2.16 using the given weight in air and volume displacement in water calculate density
2.17 explain igneous rock textures and mafic color index.
2.18 recognize the different types of plutons and volcanoes.
2.19 describe how weathering and erosion relate to the formation of sedimentary rocks.
2.20 recognize different sedimentary structures and depositional environments.
2.21 correctly identify foliated and non-foliated metamorphic rocks.
2.22 describe the agents of contact, hydrothermal, regional, and shock metamorphism.
2.23 compare and contrast the different types of seismic waves.
2.24 explain how an earthquake epicenter is located.
2.25 contrast the different scales used to measure earthquakes.

3. AWC GENERAL EDUCATION (GE) OUTCOMES
3.1 COMMUNICATION
- Write effectively and intelligently for a range of purposes and audiences in the English language (e.g., informing, persuading, advancing an argument, expressing, creating, etc.)
- Provide writing that presents a clear, specific thesis and awareness of audience
- Fully develops examples to support thesis in logical, coherent manner demonstrates original

thinking, depth of analysis, and comprehension of material used and that shows high proficiency in standard English grammar, spelling, and punctuation

3.2 QUANTITATIVE ANALYSIS

- Identify and extract relevant data from given mathematical or contextual situations
- Select known models or develop appropriate models that organize the data into tables or spreadsheets (with or without technology); graphical representations (with or without technology); symbolic/equation format
- Obtain correct mathematical results and state those results with appropriate qualifiers and use the results to: determine whether they are realistic in terms of original data/problem; determine whether the mathematical model/representation of data is appropriate; describe trends in a table, graph, or formula and make predications based on these trends; draw qualitative conclusions in written form; apply them to real world problems.

3.3 SCIENTIFIC LITERACY

- Distinguish between a scientific hypothesis and scientific theory
- Describe the scientific method as a process
- Utilize data to communicate and apply an understanding of scientific logic and/or quantitative reasoning
- Analyze an article in popular literature that pertains to science and interpret the findings in terms of public policy, personal experience, or daily life

3.4 CIVIC DISCOURSE

Study of a scientific discipline that includes ecological and environmental interrelationships.

4. METHODS OF INSTRUCTION

Lecture and demonstration
Field trips
Audio-visual and multi-media aids
Laboratory exercises

5. LEARNING ACTIVITIES
   - 5.1 Reading assignments will be given to the students in the text and outside materials
   - 5.2 The subject matter will be discussed by the instructor and students with appropriate audio-visual and multi-media aids
   - 5.3 The student will be involved in mineral and rock identification, preparing and interpreting maps and diagrams, and studying geologic problems
   - 5.4 Both required and optional field trips are conducted. A field trip report will be part of the writing component
   - 5.5 The student will prepare a brief (500 – 1000 word), typed paper on the field trip aspect of the geology discussed to demonstrate the ability to collect, coordinate, and communicate in writing the concepts and ideas of the subject. The report will include a draft copy for peer/instructor review and a final draft.

6. EVALUATION
   - 6.1 Laboratory exercises
   - 6.2 Field trip reports
   - 6.3 Mineral rock identification
   - 6.4 Quizzes
   - 6.5 Exams

7. STUDENT RESPONSIBILITIES
   - 7.1 Under AWC Policy, students are expected to attend every session of class in which they are enrolled.
   - 7.2 If a student is unable to attend the course or must drop the course for any reason, it will be the responsibility of the student to withdraw from the course. Students who are not attending as of the 45th day of the course may be withdrawn by the instructor. If the student does not withdraw from the course and fails to complete the requirements of the course, the student will receive a failing grade.
   - 7.3 Americans with Disabilities Act Accommodations: Arizona Western College provides academic accommodations to students with disabilities through AccessABILITY Resource Services (ARS). ARS provides reasonable and appropriate accommodations to students who have documented disabilities. It is the responsibility of the student to make the ARS Coordinator aware of the need for accommodation in the classroom prior to the beginning of the semester. Students should follow up with their instructors once the semester begins. To make an appointment call the ARS

front desk at (928) 344-7674 or ARS Coordinator at (928) 344-7629, in the College Community Center (3C) building, next to Advising.

7.4 Academic Integrity: Any student participating in acts of academic dishonesty—including, but not limited to, copying the work of other students, using unauthorized "crib notes", plagiarism, stealing tests, or forging an instructor's signature—will be subject to the procedures and consequences outlined in AWC's Student Code of Conduct.

7.5 Texts and Notebooks: Students are required to obtain the class materials for the course.

7.6 Arizona Western College students are expected to attend every class session in which they are enrolled. To comply with Federal Financial Aid regulations (34 CFR 668.21), Arizona Western College (AWC) has established an Attendance Verification process for "No Show" reporting during the first 10 days of each semester.

Students who have enrolled but have never attended class may be issued a "No Show" (NS) grade by the professor or instructor and receive a final grade of "NS" on their official academic record. An NS grade may result in a student losing their federal financial aid.

For online classes, *student attendance in an online class is defined as the following* (FSA Handbook, 2012, 5-90):

- Submitting an academic assignment
- Taking an exam, an interactive tutorial or computer-assisted instruction
- Attending a study group that is assigned by the school
- Participating in an online discussion about academic matters
- Initiating contact with a faculty member to ask a question about the academic subject studied in the course