

SYLLABUS  
PART I  
EDISON COMMUNITY COLLEGE  
GLG 121S PHYSICAL GEOLOGY  
4 CREDIT HOURS

**COURSE DESCRIPTION**

Introduction to the physical and chemical processes that have produced the Earth, its minerals and rocks, and landforms that result from constructional and erosional activities. Three hours lecture and two hours of lab each week. Lab fee.

**COURSE GOALS**

The students will:

Bloom's Level		Gen Ed Outcomes
2	1. Describe the chemical and physical composition of the lithosphere, asthenosphere, and core of the earth.	2, 6
4	2. Given several conditions necessary for the formation of certain minerals and a list of minerals found in a particular area, infer the environmental conditions that probably existed in that particular area.	6
1	3. Identify igneous, sedimentary, and metamorphic rocks when given samples or descriptions.	2, 6
3	4. Given information derived from igneous rocks (texture, color, and mineral content), determine: (1) the relative depth of formation; (2) whether the rock was originally molten; (3) and the conditions under which the rock could have formed.	2, 6
3	5. Given information derived from sedimentary and metamorphic rocks, determine the conditions under which these rocks could have formed.	6
2	6. Summarize relationships among areas of earthquake activity, mountain regions, ocean trenches, island arcs, and volcanoes.	2, 6
3	7. Given all pertinent data, demonstrate the ability to locate the epicenter of an earthquake.	6
2	8. Interpret profile maps, graphs, and illustrations showing the mechanism of plate tectonics.	6
3	9. Relate the plate tectonic theory to the spreading ocean basins and to the formation of constructional continental landforms.	6
2	10. Given a description or illustration of a degradational change in a feature of the earth, predict the change agent that most likely produced the alteration.	6
3	11. Given an erosional agent (flowing water, wind, and glaciers), relate the effects of gravity and kinetic energy to the erosion of different types of material.	2, 6
3	12. Relate the development of mature soils from unweathered rock to: (1) the passing of time; (2) movement of minerals and organic colloids; (3) depth of formation.	2, 6
3	13. Given all pertinent data, construct a topographic map and identify features and degradational processes from topographic maps.	2, 3, 6
3	14. Demonstrate an ability to classify landscapes due to their degree of degradation as: (1) youthful; (2) mature; (3) old age, (4) a peneplane.	2, 6

2	15. Explain the geomorphological model in which the earth's landscape is in dynamic equilibrium between constructional forces and degradational processes.	6
---	--	---

#### CORE VALUES

The Core Values are a set of principles that guide in creating educational programs and environments at Edison. They include communication, ethics, critical thinking, human diversity, inquiry/respect for learning, and interpersonal skills/teamwork. The goals, objectives, and activities in this course will introduce/reinforce these Core Values whenever appropriate.

#### TOPIC OUTLINE

1. Mineral identification and description
2. Rock identification and description
3. Seismic and volcanic activity
4. Plate tectonics and ocean basin evolution
5. Crustal deformation and the construction of continents
6. Chemical and physical weathering
7. Erosion and landscape evolution
8. Topographic map construction and map reading
9. Stereographic photo analysis of landforms
10. Dynamic equilibrium of the earth's surface