



South Central College

# GEOG 101 Introduction to Physical Geography

## Course Outcome Summary

### Course Information

<b>Description</b>	This course is an introduction to physical geography that systematically examines the spatial patterns and interrelationships among physical elements at the earth's surface. Students will study the earth's physical environment, its systems, and the physical processes that drive them through study of weather, climate, natural vegetation, soil, and landforms. However, these topics are not just discussed independently since the course concentrates on understanding the integration of these areas of the natural world. Geography focuses on human activities, and so the course will highlight some of the basic interactions between human activity and the natural environment. Current issues will be discussed and a scientific foundation provided for understanding global warming and other critical environmental issues. (MNTC 3 & 10; Pre-requisite: Accuplacer Reading Comprehension Score of 78 or above or completion of READ 0090)
<b>Total Credits</b>	3
<b>Total Hours</b>	64

### Types of Instruction

Instruction Type	Credits/Hours
Lecture	2
Lab	1

### Pre/Corequisites

Accuplacer Reading Comprehension Score of 78 or above or completion of READ0090

### Institutional Core Competencies

Civic Engagement and Social Responsibility - Students will be able to demonstrate the ability to engage in the social responsibilities expected of a community member.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

### Course Competencies

1. **Demonstrate the tools geographers use in physical geography.**

### **Learning Objectives**

Use maps to describe physical geographic locations.  
Describe map projections, scales, types of grid lines, and symbols.  
Be aware of the key elements of Geographic Information Systems.  
Explain how Remote Sensing is used in physical geography.

## **2. Define the Earth's global energy balance.**

### **Learning Objectives**

Describe the characteristics of solar energy and solar radiation.  
Define insolation and how it varies around the globe and throughout the year.  
Explain sensible heat and latent heat the transfer of heat in the atmosphere.  
Illustrate the importance of the Energy Balance in relation to global climate change.

## **3. Describe how surface and air temperature impacts local environments.**

### **Learning Objectives**

Be aware of the temperature structure of the atmosphere.  
Compare urban and rural surface temperature characteristics; explain human causes of these differences.  
Explain the Greenhouse Effect.

## **4. Explain the types of atmospheric moisture and precipitation.**

### **Learning Objectives**

Distinguish between the different types of humidity measurements.  
Demonstrate an understanding of the adiabatic process for dry and moist air.  
List the common cloud formations.  
Describe the characteristics of severe weather, to include thunderstorms, hurricanes, and tornadoes.

## **5. Distinguish between weather systems and global climate systems.**

### **Learning Objectives**

Explain air pressure and pressure gradients.  
Demonstrate an understanding of global wind patterns and the coriolis effect.  
Outline the winds aloft patterns and the impact of jet streams on the environment.  
Describe how ocean currents impact global weather patterns, including El Nino  
Be able to classify air masses, cyclones, and fronts.  
Summarize the Koppen Climate Classification System.

## **6. Identify the materials that make up the Earth and outline plate tectonics processes.**

### **Learning Objectives**

Discuss the nature of soil, to include structure, minerals, and the soil-water balance.  
Classify igneous, metamorphic, and sedimentary rocks; discuss how they change over a geologic time scale.  
Explain plate tectonics and its impact on the lithosphere.

## **7. Comprehend the impacts of volcanic and tectonic landforms.**

### **Learning Objectives**

Exhibit knowledge of volcanic formation and identify the types of volcanos.  
Explain faults and rifts in relation to plate tectonics; discuss impact of earthquakes on the environment.

## **8. Explain the progression of weathering and mass wasting on the Earth's surface.**

### **Learning Objectives**

Discuss weathering caused by frost, ice, chemicals, and other processes.  
Characterize the key factors that cause mass wasting, such as mudflows and landslides.

## **9. Show awareness of fresh water sources and how it is a scarce resource.**

### **Learning Objectives**

Discuss the water table and current ground water management problems.  
Illustrate surface water flow and drainage systems; include a discussion on the impact of urbanization on surface water flow.  
Examine the world's largest fresh water lakes, to include the Great Lakes.  
State the various methods fresh water becomes polluted.

**10. Demonstrate an understanding of how landforms are made by running water, waves, wind, and ice.**

**Learning Objectives**

Explain how fluvial landscapes are formed and explain how running water changes them over time.

Describe the impact of waves on coastlines; also discuss the influence of tides on wave action.

Provide examples of wind action on the earth, to include types of dunes, wind storms, and erosion by wind.

Discuss glacier formation and recent decline in the number and size of glaciers.

Investigate the Ice Age, to include possible causes and the its impact on landforms.

**SCC Accessibility Statement**

South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need accommodations for access to this class, contact the Academic Support Center to request and discuss accommodations. North Mankato: Room B-132, (507) 389-7222; Faribault: Room A-116, (507) 332-7222.

Additional information and forms can be found at: [www.southcentral.edu/disability](http://www.southcentral.edu/disability)

This material can be made available in alternative formats by contacting the Academic Support Center at 507-389-7222.