

Chapter 1: Basic definitions

1. Topography

Topography (from the Greek topos = place and graphein = to draw) is the science of measuring and representing on a plan or map the shapes and details visible on the ground, whether natural (such as relief and hydrography) or artificial (such as buildings, roads, etc.). Its purpose is to determine the position and altitude of any point located in a given area, whether it is the size of a continent, a country, a field or a street.

2. Landforms

Relief is the strong vertical variation of a solid surface, either positively, as a projection, or negatively, as a depression. This word is often used to describe the shape of the Earth's lithosphere.

- *Plain*: A relatively flat surface with an altitude difference of less than 50 metres. Here, rivers flow slowly through valleys flush with the relief, describing sinuosities (curves) known as meanders.

- *Plateau*: Flat or undulating surface, with rivers flowing at the bottom of deep U-shaped or V-shaped valleys, at an average altitude (+/- 50/200m to 4000m).

- *Mountains*: rugged, irregular surface, high altitude (over 500m), steep slopes and significant differences in level between peaks and valley bottoms.

- Young mountains have sharp, high peaks.
- Old or ancient mountains have planed summits, worn by erosion.

3. Geomorphology

Geomorphology (from the Greek gêo, earth; morphê, form; logos, study) is the science of describing and explaining the Earth's relief, both continental and submarine.

Often confused with geology, geomorphology is a scientific discipline in its own right, whose object of research is all of the planet's landforms.

Geomorphology is the study of landforms and landform evolution. The topic traditionally has been studied both qualitatively, which is the description of landforms, and quantitatively,

which is process-based and describes forces acting on Earth's surface to produce landforms and landform change.

Geomorphology lies at the interface between geography and the earth sciences, and plays an important role in regional and landscape planning procedures, as well as in the prevention of natural hazards and the exploration of natural resources.

The main aim of geomorphological analysis is to understand how landforms came into being and how they have changed over time. In other words, to identify the processes responsible for landform formation or morphogenesis.

4. Orders of magnitude of the relief of the earth's crust

Crust” describes the outermost shell of a terrestrial planet. Our planet's thin, 40-kilometer (25-mile) deep, crust—just 1% of Earth's mass—contains all known life in the universe. Earth has three layers: the crust, the mantle, and the core. The crust is made of solid rock and minerals.



Figure 1. Badlands : Touzline- Oum el Bouaghi Algeria.

Photo taken by the author January 2018