Chapter 7 (pp. 188 – pp. 217)

Regolith – A loose layer of broken rock and mineral fragments that covers most of Earth's Surface
Soil – uppermost layer of regolith, which can support plants
Mechanical Weathering – The breakdown of rock into solid fragments by physical processes that do not change the rock chemical composition.
- freezing of water
- formation of salt crystals
- penetration of plant roots
- abrasion

Chemical Weathering – The decomposition of rocks and minerals by chemical and biochemical reactions.
- slightly acidic water
- ion exchange
- hydrolysis

Joints – A fracture in a rock, along with no appreciable movement has occurred
Dissolution – separation of a material into ions in solution by a solvent such ass water or acid
Clay – A family of hydrous aluminosilicate minerals; also, tiny mineral particles of any kind that have physical properties like those of clay minerals.
Sand – A sediment made of relatively coarse mineral grains
Humus – partially decayed organic matter in soil
Soil Profile – The sequence of soil horizons from the surface down to the underlying bedrock.
Erosion – the wearing away of bedrock and transport is loosened particles by a fluid, such as water
Bed load – sediment that is moved along the bottom of a stream
Saltation – A mechanism of sediment transport in which particles move forward in a series of short jumps along arc-shaped paths
Suspended load – Sediment that is carried in suspension by a flowing stream of water or wind
Glacier – A semi-permanent or perennially frozen body of ice, consisting largely of recrystalized snow, that moves under the pull of gravity.
Mass Wasting – The downslope movement of regolith and/or bedrock masses due to the pull of gravity
Slope Failure – The failing, slumping, or sliding of relatively coherent masses of rock
Flow – Any mass-wasting process that involves a flowing motion of regolith containing water and/or air within its pores.
Factor of Safety (FS) – The balance between destabilizing forces (shear stress) and stabilizing forces (shear strength) on a slope. The ratio of strength to stress. If >1, stable, if <1 unstable.
Creep - Imperceptibly slow downslope granular flow of regolith
Weathering – The chemical and physical breakdown of rock exposed to air, moisture, and living organisms
Soil Horizon – One of a succession of zones or layers within a soil profile, each with distinct physical, chemical, and biologic characteristics

Hoodoos – multicoloured rock spires in Utah's Bryce Canyon national park
Fractures – cracks
Pore – small spaces between mineral grains
Sheet Jointing – large curved slabs of rock peel off from the surface of a uniformly textured igneous rock.
Frost Wedging – repeated freezing and thawing of water that penetrated joints
Root Wedging - Tree growing in a crack, to gradually widen it over time
Monadocks – or inselbergs, mountains standing alone.
Arkose - sedimentary rock
Anthropogenic – human generated
Acid rain – rain water interacts with human made sulfur and nitrogen compounds, creating acid rain
Calcite – calcium carbonate
Dolomite – calcium magnesium carbonate
Oxidation – a reaction between minerals and oxygen dissolved in water
Limonite – insoluble yellowish hydrous material formed with oxidized iron.
Pyrolusite – insoluble black mineral formed with manganese
Silt – sediment with grain sizes between sand and clay
O Horizon – Accumulation of organic matters
A Horizon – Dark in colour, where the humus is present (topsoil)
E Horizon – Grayish in colour, contains little humus
B Horizon – Reddish in colour, presence of iron oxides
C Horizon - Deepest, parent rock (subsoil)
Hard-pan – (caliche) hard layer of precipitates
Viscosity – characteristics of flow
Laminar Flow – parallel layers
Turbulent Flow – erratic and complex
Dissolved Load – Soluble materials contained within turbulent waters
Fall – sudden vertical, or nearly vertical, drop of rock fragments or debris
Slides – Involve rapid displacement of a mass of rock or sediment in a straight line down a steep or slippery slope
Slump – rotational movement of rock and regolith, downward and outward movement along a curved surface
Slurry Flows – occur when the regolith is saturated with water
Solifluction - wet, slow flow
Mudflow – wet, fast flow
Debris avalanche – dry, fast flow
Granular Flow – Flowing regolith that is not water saturated
Destabilizing forces - pushing downhill, linked to shear stress
Stabilizing forces – holding the material in place (resisting forces), linked to shear strength
Cohesive Strength – the main resisting factor to shear strength

Chapter 8 (pp. 218 – pp. 247)

Clastic Sediment – Sediment formed from fragmented rock and mineral debris produced by weathering and erosion
Chemical Sediment – Sediment formed by the precipitation of minerals dissolved in lakewater, riverwater, or seawater.
Biogenic Sediment – Sediment that is primarily composed of plant and animal remains or that precipitates as a result of biologic processes.
Deposition – The laying down of sediment
Delta – A sedimentary deposit, commonly triangle-shaped, that forms where a stream enters a standing body of water.
Eolian Sediment – Sediment that is carried and deposited by wind.
Estuary – A semi-enclosed body of coastal water, in which fresh water mixes with seawater
Evaporite – A rock formed by the evaporation of lakewater or seawater, followed by lithification of the resulting salt deposit
Turbidity Currents – A turbulent, gravity-driven flow consisting of a mixture of sediment and water, which conveys sediment from the continental shelf to the deep sea (underwater landslides)
Lithification – The group of processes by which loose sediment is transformed into sedimentary rock
Bedding – The layered arrangement of strata in a body of sediment or sedimentary rock.
Bedding Surface – The top or bottom surface of a rock stratum or bed.
Compaction – Reduction of pore space in a sediment as a result of the weight of the overlying sediment.
Cementation – The process in which substances dissolved in pore water precipitate out and form a matrix in which grains of sediment are joined together
Recrystallization – The formation of new crystalline mineral grains from old ones
Conglomerate – Clastic sedimentary rocks with large fragments in a finer-grained matrix
Sandstone – Medium-grained clastic sedimentary rock in which the clasts are typically, but not necessarily, dominated by quartz grains
Mudstone – A group of very fine-grained, non-fissile sedimentary rock types with differing proportions of silt- and clay-sized particles.
Shale – Very fine-grained fissile or laminated sedimentary rock, consisting primarily of silt – or clay-sized particles; a fissile is mudstone.
Banded Iron Formation – A type of chemical sedimentary rock rich in iron minerals and silica
Limestone – A sedimentary rock that consists primarily of the mineral calcite
Peat – A biogenic sediment formed from the accumulation and compaction of plant remains
Coal – A combustible rock formed from the lithification of plant-rich sediment
Rift Valley – A linear, fault-bounded valley along a divergent plate boundary or spreading center

Carbonate Platform – top floor of an underwater skyscraper
Precipitated – look up later
Deposited – look up later
Clasts – individual grains of mineral or fragments of rock
Volcaniclastic Sediment – classic sediment in which all of the clasts are volcanic in origin
Pyroclasts – fragments that are hot when they are formed
Bombs – large pyroclast
Lapilli – medium pyroclast
Ash – smallest pyroclast
Alluvial Fan – when sediment ranges from coarse and poorly sorted gravel upstream to well-sorted sand downstream
Playas – seasonal lakes
Till – sediment that consists of a random mixture of particles, depending on what glacier ice has passed overtop of
Eolian – processes related to the winds
Loess – yellow-brown silt, windblown dust transported from desert surfaces, glacial sediment, and glacial stream deposits at times of ice-sheet retreat
Reef – wave resistant structure built from the skeletons of marine invertebrates
Turbidite – The graded layer of sediment deposited by turbidity currents.
Calcareous ooze – made of calcium carbonate, biogenic sediment made from tiny sea creatures
Siliceous ooze – made of silica-secreting organisms, similar to quartz in mineral structure
Graded bed – The coarse clasts are concentrated at the bottom, grading up to the finest clasts at the top
Cross bedding – the thick strata of sandstone contain many thin beds that are inclined with respect to the stratum in which they occur.
Diagenesis – the low-temperature, low-pressure changes that happen to sediment after deposition
Matrix – The finer-grained material surrounding larger clasts
Breccia – If clasts are angular, instead of round, the rock is called breccia.
Mudrock – another name for mudstone (contains siltstone, mudstone, claystone)
Fissile – splits into sheet-like fragments
Evaporite – deposits formed from the evaporation of water
Dolostone – a rock resulting from the mineral dolomite (carbonite mineral containing magnesium and calcium)
Chert – biogenic rock containing tiny particles of quartz
Coalification – lithification specific to the creation of coal (lithification of peat)
Texture – size shape and arrangement of particles
Sedimentary Facies – changes of in the character of sediment from one environment to another
Accretionary Wedges – wedge-shaped accumulation of volcaniclastic sediment
Melange - chaotic mix of volcaniclastic sediments, fragments of oceanic lithosphere, and rock metamorphized under the low-temperature, high-press conditions of the subduction zone
Ophiolites – The fragments of oceanic lithosphere in a melange
Recrystallisation – formation of new minerals from old ones

Additional terms

Carbonic acid – as rainwater falls through the sky, it dissolved atmospheric CO_2
debris flow – When a rapid slurry flow is transporting particles larger than sand
Gypsum – A common evaporite mineral used to make plasterboard (drywall)
Halite – A common evaporite mineral, chemically known as sodium chloride
Hematite – Weathering of iron-bearing minerals produces this iron oxide
Pedocal – Type of soil rich in calcium carbonate and other soluble minerals
Quartz – common mineral resistant to chemical weathering
Ripple marks – Along with mud cracks, animal tracks, and evaporate casts are all examples of bedding plane features.
Rounded – clasts with worn down edges
Sorting – the variability of the size of grain
Varve – seasonal variation of the sediment deposited on the bottom of a lake in Canada may produce Varve