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Final Report about Marine Geology

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INTRODUCTION

In this course I was study about different aspects of marine Geology, Basically marine Geology is define as Geology is the study of the Earth. This scientific study includes how the Earth was formed, how the Earth has changed since it was formed, that materials that make up the earth, and understanding the processes that act on it. Marine Geology focuses these studies in areas affected by our oceans. These are the deep ocean floor, the shallower slopes and shelves that surround the continents, and especially the coasts which include beaches, estuaries, rivers, and large lakes. I was studied rocks to learn about the materials that make up our Earth. The distribution and properties of these rocks give clues as to how they got there and the processes involved. Why study these things? The materials that we take out of the earth (oil, gas, metals, and other minerals) are vital to our way of life. Understanding where and how much of these resources we had is important in planning our future. Earthquakes, volcanoes, landslides, and hurricanes affect many of us at any moment. Understanding these processes will help to prepare for these events.

In first week I was study about Origin of the earth, ocean and Atmosphere in which I was learn Nebular theory, hypothesis structure of earth and Moon, Geochemical composition of earth and marine Geology, interaction of atmosphere to the marine environment and major in first week I was learn about chemical composition of the enrich in silicates and in outer planet are composed of gas.

In second week I was learn about earth ocean and different types of ocean and there features like (Pacific ocean, Atlantic ocean, Indian ocean and Arctic ocean) and second study about method and instruments (sounding, Deep sea drilling, sub miscible remotely operated vehicle, autonomous vehicle and Stellate) and also

study about seafloor features like (Abyssal plain, Continental Arcs, Submarine canyons, Turbidities, Graded bedding, island, coral reef and Atolls).

In Third week I was study about Principle of Uniformitarianism (types of geological time scale), second study about determine the different relative ages (Principle of original Horizontal, Principle of superposition, Principle of cross cutting relations fault, Principle of Fossil Succession),Third determine the absolute age by radiometric dating, Fourth unconformity, Fifth geologic correlation and last Sixth standard geologic time scale.

In fourth week I was study about Geological cycle (Atmosphere, Hydrosphere, Geosphere and Biosphere).In atmosphere earth is the layer of gases, commonly known as air, that surrounds the planet Earth and is retained by Earth's gravity. The atmosphere of Earth protects life on Earth by creating pressure allowing for liquid water to exist on the Earth's surface, absorbing ultraviolet solar radiation, warming the surface through heat retention (greenhouse effect), and reducing temperature extremes between day and night (the diurnal temperature variation). The abundance of water on Earth is a unique feature that distinguishes our "blue planet" from others in the solar system. Approximately 70.8 percent of the Earth is covered by water and only 29.2 percent is *terra firma*. The hydrosphere plays a key role in the development and sustenance of life. It is thought that the earliest living organisms probably emerged in a watery soup. In addition, each human life begins in the watery environment of its mother's womb, our cells and tissues are mostly water, and most of the chemical reactions that are part of life's processes take place in water.In biosphere s historically and most commonly defined as that part of the Earth in which living organisms exist. As such, it is viewed as a place or supporting stratum that overlaps with the inner portion of the atmosphere, the upper part of the geosphere, and almost all of the hydrosphere. The biosphere

harmoniously interrelates with the other major spheres of the earth (lithosphere, hydrosphere, and atmosphere), and as small as the biosphere is, living organisms greatly impact each of these spheres, as seen in the various biogeochemical cycles (oxygen cycle, water cycle, carbon cycle, nitrogen cycle, etc.). So integral are the interactions of living organisms and their environment, that some view the entire Earth as a living organism.

In Fifth week I was studied about earth structure and geological structure earth crust, mantle and core and according to mechanical properties study about lithosphere, Asthenosphere, Mesosphere, outer core and inner core and Geological structure like Stress (composition stress, tensional stress and shear stress), strain (elastic ,plastic and Brittle) plastic deformation structure by brittle deformation (joints ,column joints faults)

In sixth week I was studied about plate tectonics basically is define as a theory explaining the structure of the earth's crust and many associated phenomena as resulting from the interaction of rigid lithospheric plates that move slowly over the underlying mantle and study about types Divergent plate or divergent plate boundary (also known as a constructive boundary or an extensional boundary) is a linear feature that exists between two tectonic plates that are moving away from each other, Convergent plate also known as a destructive Plate boundary, is a region of active deformation where two or more tectonic plates or fragments of the lithosphere are near the end of their life cycle, Transform boundaries are places where plates slide sideways past each other. At transform boundaries lithosphere is neither created nor destroyed. Many transform boundaries are found on the sea floor, where they connect segments of diverging mid-ocean ridges. California's San Andreas fault is a transform boundary and For much of the last quarter century, the leading theory of the driving

force behind tectonic plate motions envisaged large scale convection currents in the upper mantle which are transmitted through the asthenosphere.

In last I was study about earthquake and volcanic eruption and hydrothermal vents basically hydrothermal vents define as A venting black smoker emits jets of particle-laden fluids. The particles are predominantly very fine-grained sulfide minerals formed when the hot hydrothermal fluids mix with near-freezing seawater. These minerals solidify as they cool, forming chimney-like structures. “Black smokers” are chimneys formed from deposits of iron sulfide, which is black. “White smokers” are chimneys formed from deposits of barium, calcium, and silicon, which are white. And a part from that studied about method, importance and mechanism.