**Department of Mining**

**Faculty of Earth Sciences**

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**-Annaba –**

**Module: English Language Level: first year (L1)**

**Lesson 01: Overview of mining 2024 / 2025**

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**Overview of Mining**

**Definition :**

Mining refers to the process of extracting valuable minerals or other geological materials from the earth, typically from sources such as ore bodies, lodes, veins, reefs, or placer deposits. These deposits yield mineral commodities that are economically significant for miners. The ores obtained through mining can include metals, coal, oil shale, gemstones, limestone, chalk, dimension stone, rock salt, potash, gravel, and clay. Mining is essential for acquiring materials that cannot be produced through agricultural methods or feasibly synthesized in a laboratory or factory. In a broader context, mining also encompasses the extraction of non-renewable resources like petroleum, natural gas, and even water.

**History of Mining :**

The earliestknown mine for a specific mineral is coal from southern Africa, appearing worked 40,000 to 20,000 years ago. But mining did not become a significant industry until more advanced civilizations developed 10,000 to 7,000 years ago. In early times, the only metals available were those found in a metallic state in nature. The most abundant was copper. But, gold, silver, and mercury were also found and prized. The application of fire to mined materials became a technological breakthrough and proved to be one of the critical advancements of civilization. In fact, excavated elements transformed themselves by the application of heat. As a result, pottery hardened to last more than a season. Especially relevant, metalscouldbemelted and formed into objects.

**Mining Today**

The General Mining Act of 1872 was pivotal in establishing and sustaining our current level of civilization. Without the framework it provided to incentivize prospectors and miners, our lives today would likely be very different. The industrial strength derived from mined resources played a crucial role in winning several wars and in the construction of railroads, highways, bridges, and cities.

As we look to the future, mined resources will continue to be essential. The rise of electronics has heightened the demand for copper, the first metal utilized by humans. Additionally, the development of green energy resources—such as wind, solar, and geothermal—requires significant amounts of mined materials, including lightweight aluminum and specialized alloys for new technologies.

However, it is clear that updates to the Mining Act of 1872 are necessary to ensure that mining aligns with the needs of our growing population. We must not overlook or underestimate the importance of mining history and the lessons it offers for modern life.

**Types of Mining**

1. **Surface Mining** :
   * **Open-Pit Mining** : Involves digging large holes in the ground to extract minerals near the surface.
   * **Strip Mining** : Involves removing layers of soil and rock to access minerals, primarily used for coal.
   * **Quarrying**: Focuses on extracting stone, gravel, and other construction materials.

2- **Underground Mining** :

* Used for deeper mineral deposits. Techniques include shaft mining and room-and-pillar mining, which involve tunneling into the earth.

3- **Placer Mining** :

* Involves extracting valuable minerals from riverbeds or sediments, commonly used for gold and gemstones.