5.1 Depreciation

Intended Learning Outcomes

At the end of the lesson, the student shall be able to:

1. Explain what is a depreciation and the different types of methods.
2. Apply the formulas/equations to solve word problems involving depreciation.

What is DEPRECIATION?

Depreciation is defined as the decrease in the value of property due to the passage of time.

Depreciation must always be included in the cost of production of any product or the rendering of any service where equipment is used for the following reasons:

- To provide for the replacement of the equipment either at the end of its physical or economic life or at the time when its operation no longer results in a satisfactory profit.
- To provide for the maintenance of capital to replace the decrease in the value of equipment caused by physical or functional causes.

Types of Depreciation

Physical Depreciation

- due to the lessening of the physical ability of a property to produce results. Its common causes are deterioration and wear. Deterioration due to the effects of various chemical and mechanical factors on the materials composing the property. Wear and Tear due to abrasion, friction between moving parts of equipment, impact vibration or fatigue of the materials in the property, it is determined by use rather than by age.

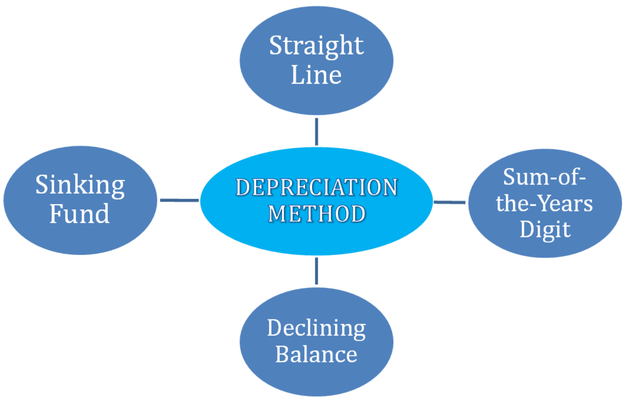
Functional Depreciation

- due to the lessening in the demand for the function which the property was designed to render. Its common causes are inadequacy, changes in styles, population counter shift, saturation of markets or more efficient machines are produced.

Terminologies

- **Depreciation Cost**
  - depends upon the physical or economic life of the equipment and its first cost.
  - amount/cost that is deducted from the cost of the equipment at any time.
- **Physical Life of an Equipment**
  - is the length of time during which it is capable of performing the function for which it was designed and manufactured.
- **Economic Life of an Equipment**
  - is the length of time during which it will operate at a satisfactory profit.
- **First Cost of Any Property**
  - includes the original purchase price, freight and transportation charges to the site, installation expenses, initial taxes, and permits to operate, and all other expenses needed to put the equipment into operation.
- **Amount to be Recovered**
  - the difference between the first cost and the salvage or scrap value of the equipment.
- **Salvage Value (Second Hand Value)**
  - defined to be the amount for which the equipment or machine can be sold at second hand.
- **Scrap Value (Junk Value)**
  - the amount of the equipment that can be sold for, when disposed of as junk.

Depreciation Methods



Requirements for a Depreciation Method:

1. Payments to the depreciation fund should be equal to the loss in value due to depreciation.
2. The method should be simple.
3. Prior to its adoption, approval of the method should be secured from the Bureau of Internal Revenue.
4. To be satisfactory, the actual value of the equipment should at all times, be equal to the book value. It will be necessary from time to time to check the actual value against the book value and in case the two values are not in agreement, adjustments should be made.

Reference: *Engineering Economics* by Hipolito Sta. Maria