

*Science College/New&Renewable Energy Dep.*

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*Analytical Chemistry*

*1<sup>st</sup> Class*

## *General Introduction*

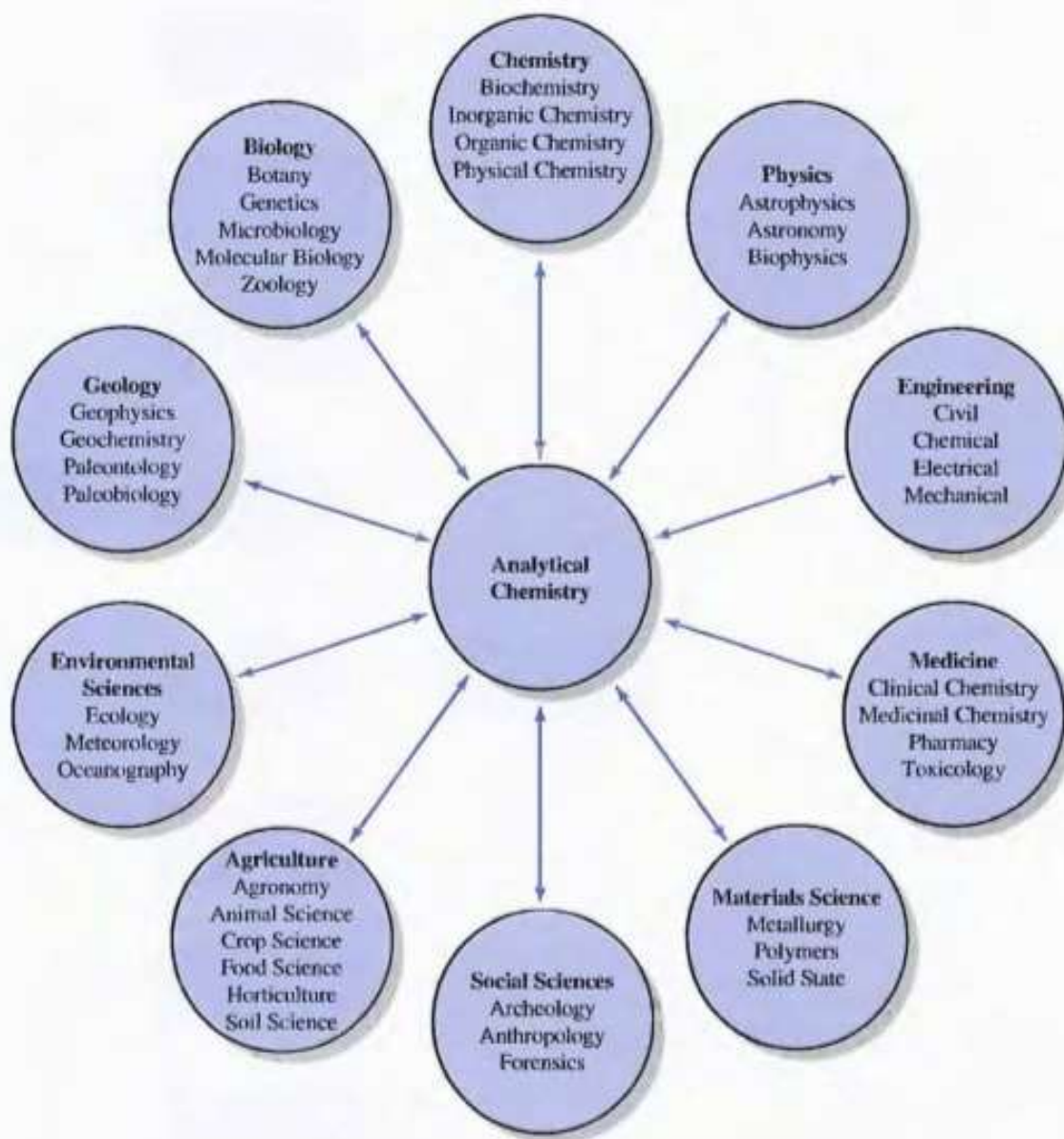
### *Define Chemistry:*

Chemistry is the science which deals with materials (elements or compounds) and their reactions.

### *Classified the Chemistry:*

- 1. Analytical chemistry:* is the science which deal with the analysis of substances qualitatively and quantitatively.
- 2. Biochemistry:* interest with studying the bio compounds which exist inside the living organisms.
- 3. Organic chemistry:* studying of carbon compounds and their reactions.
- 4. Inorganic chemistry:* studying of all elements in periodic table except carbon.
- 5. Physical chemistry:* deals with physical properties substances during reaction such as: heat, solubility, and conductivity...etc.
- 6. Industrial chemistry:* this branch deals with manufacturing of materials and their use in our life.

# Analytical Chemistry



**Figure 1-1** The relationship between analytical chemistry, other branches of chemistry, and the other sciences. The central location of analytical chemistry in the diagram signifies its importance and the breadth of its interactions with many other disciplines.

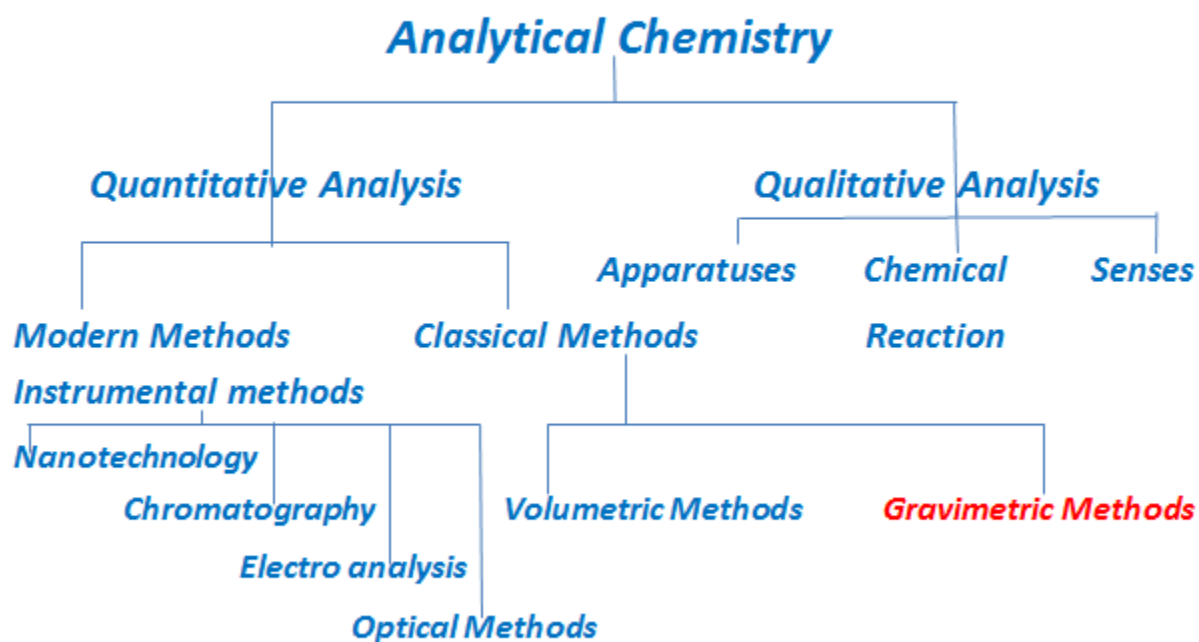
## *Define Analytical Chemistry*

Is a branch of chemistry science which defined as the means that are detected elements and materials and the method of separated and know the compounds of those substances in a mixture of them in addition to determined of those components quantitatively.

## *Classification of Analytical Chemistry*

The following scheme for the classification of analytical chemistry.

### **Classification of Analytical Chemistry**



- Analytical chemistry deals with separating, identifying, and quantifying the relative amounts of the components of an analyte.
- *Analyte* : the thing to analyzed; the component(s) of a sample that are to be determined.

### *Steps of Analysis:*

1. The aim of analysis (determination, identification, separation)
2. Select the analysis method (which depends on: Accuracy in analysis, time, amount of sample to be determined.
3. Prepare the sample.
4. Using separation technique if it's necessary.
5. Analysis.
6. Results and discussion.

### *Solutions*

A homogeneous mixture of two or more of substances.

That is mean: overlapping molecules or ions of solute between molecules or ions of solvent, the product called *Solution*.

$$\text{Solution} = \text{Solute} + \text{Solvent}$$

