

University of Salahaddin
College of science
Chemistry Department

Course Outline

Practical Analytical Chemistry

1st Stage (2021-2022)

Dr Hunar Yasin Muhammad

Yearly Outline

1	-Introduction to analytical chemistry & general chemistry lab. safety
2	Classification of the Metal Ions (Cations) & Qualitative analysis of silver group
3	Qualitative analysis of calcium group
4	- Introduction of primary standard material and its properties. - Types of titration
5	-Preparation of solution from solid substance
6	Preparation of solution from liquid substance
7	Preparation and standardization of hydrochloric acid (HCl) by using standard sodium carbonate (Na ₂ CO ₃)
8	-Preparation and standardization of sodium hydroxide (NaOH) by using standardized hydrochloric acid (HCl)
9	Preparation and standardization of acetic acid solution (CH ₃ COOH) by using standardized sodium hydroxide (NaOH)
10	Determination of (NaOH+Na ₂ CO ₃) in a mixture using standard HCl.
11	Determination of Acetic Acid in Vinegar
12	Determination of total Acid in fruit juice (Apple)
13	Precipitation titration
14	Standardization of silver nitrate (AgNO ₃) solution and determination of chloride ion (Cl ⁻) using potassium chromate as indicator (Mohr method)
15	Formation of a colored complex (the Volhard method).
16	Oxidation-Reduction titration
17	Preparation and standardization of KMnO ₄ solution by standard sodium oxalate (Na ₂ C ₂ O ₄)
18	Determination of ferrous iron using a standard K ₂ Cr ₂ O ₇ solution.
19	Preparation and standardization of Ethylene Diamine Tetra Acetic Acid (EDTA) and Determination of Zinc Ion using Complexometric Titration.
20	Application of EDTA determination. Determination of hardness of water sample.