

**2023-2024 FALL SEMESTER CHEMICAL ENGINEERING.
CHEM 213 ANALYTICAL CHEMISTRY LAB. PROGRAM**

Week		DENEYİN ADI	
1	3 rd OCT	General Information and Informing the Student	
2	10 th OCT	Analysis of Group I Cations	QUALITATIVE ANALYSIS
3	17 th OCT	Analysis of Group II Cations	
4	24 th OCT	Analysis of Group III Cations	
5	31 th OCT	Analysis of Group IV-V Cations	
6	7 th NOV	General Cation Analysis	
7	14 th NOV	MAKE UP	
8	21 th NOV	Acid Base Titrations-Determination of Acetic acid in Vinegar.	
9	28 st NOV	Precipitation Titrations-Chloride Determination by Volhard Method	
10	5 th DEC	Complexometric Titrations-Determination of Hardness of Water with EDTA	
11	12 th DEC	Redox titrations-Ca(II) Determination by Redox Titration with KMnO ₄	
12	19 th DEC	Iodometric Titration-Copper(II) Determination	
13	26 th DEC	MAKE-UP	
14	2 nd JAN	MAKE UP	
15	10 th JAN	MAKE UP	

RULES TO BE APPLIED IN THE LABORATORY

- 1- It is imperative to wear a lab coat. A student without a lab coat will not be allowed to enter the laboratory.
- 2- Before starting the experiment every week, a quiz will be taken from the relevant experiment.
- 3- You need to get 40 points from the experiment. Those who take notes below 40 points are considered unsuccessful in that experiment. Up to 3 experiments can be compensated. The student who fails to compensate for the larger number of attempts is deemed unsuccessful. Failed experiments are repeated in *the make-up week*.
- 4- Laboratory passing grade is found by adding **60% of the average of the experimental grade and 40% of the average grade of the examination grade**.
- 5- Overall grade is calculated by taking 60% of the laboratory grade and 40% of the final exam grade.
- 6- In Qualitative Analysis, the experimental grade is calculated as follows:

$$[(\text{Number of Cations Found Correctly}) / (\text{Number of Cations Given} + \text{Number of Cations Incorrect})] \times 100$$

In Quantitative Analysis, the experimental grade is calculated as follows:

$$\{ 100 - [\% \text{ Error} \times (100 - 40)] / \text{Compensation Limit} \}.$$

(Compensation limit is determined separately for each experiment)

Prof. Dr. Recai İNAM

MATERIALS TO BE SUPPLIED BY STUDENTS

- 1- 10 Centrifuge tubes
- 2- 10 pieces of 15 cm test tube
- 3- Label
- 4- Tube brush
- 5- 2 pieces plastic or glass dropper
- 6 - 3 cm long platinum wire (optionally 2 or 3 people can take joint)
- 7- Pens and spatula
- 8- Glass bag
- 9- Cleaning cloth as a group, detergent, optional gloves
- 10- 3 pieces glass bottle with dropper
- 11- Blue band filter paper (to be taken class)
- 12- PUAR (as a group)
- 13- Blue and Red Litmus paper (individual package)

NOTE

- For calculations in the experiment, all students must bring calculators.
- Always keep the laboratory sheets with you.