School of Pharmacy / School of Pharmacy (English)

2024 - 2025 Academic Year

ANALYTICAL CHEMISTRY PRACTICE I

Syllabus

Course Description					
Name	**Code**	**Semester**	**T+A Hour**	**Credit**	**ECTS**
ANALYTICAL CHEMISTRY PRACTICE I	PHA2113079	Fall Semester	0+3	1,5	3

Prerequisites Courses	GENEL KİMYA
Recommended Elective Courses	
Language of Instruction	English
Course Level	First Cycle (Bachelor's Degree)
Course Type	Required
Course Coordinator	Assist.Prof. Sema KOYUTÜRK
Name of Lecturer(s)	Assist.Prof. Sema KOYUTÜRK
Assistant(s)	Research assistants of faculty
Aim	To teach the reactions of anions and cations and their properties and to make the students gain skills of systematic qualitativechemical analysis in laboratory.
Course Content	This course contains; Group I cations and their systematic analysis (HCl group cations),Group II cations and their systematic analysis (H2S group cations),Group II cations and their systematic analysis (H2S group cations),Group III cations and their systematic analysis [(NH4)2S group cations],Group III cations and their systematic analysis [(NH4)2S group cations],The groups IV and V cations and their systematic analysis [(NH4)2CO3group cations],Groups IV and V cations and their systematic analysis [(NH4)2CO3 groupcations],Systematic analysis of group I-V cations (All the group cations),Systematic analysis of group I-V cations (All the group cations),Systematic analysis of group I-V cations (All the group cations),Group I anions and their systematic analysis [Ca(NO3)2 group anions],Groups II and III anions and their systematic analysis [Ba(NO3)2 and Zn(NO3)2 group anions],Groups IV and V anions and their systematic analysis (AgNO3 and solublegroup anions),Systematic analysis of anions and cations in the an unknown solid sample.

Course Learning Outcomes	**Teaching Methods**	**Assessment Methods**
1. Students will be able to discuss HCl group cations and their systematic analysis.	12, 14, 17, 9	A, D, E, G, H
1.1. Explains this group cations and their chemical properties.	12, 14, 17, 9	A, D, E, G, H
1.2. Interprets the recognition reactions of cations in this group.	12, 14, 17, 9	A, D, E, G, H
2. To be able to discuss H2S group cations (group II) and their systematic analysis.	12, 14, 17, 9	A, D, E, G, H
2.1. Explains this group cations and chemical properties.	12, 14, 17, 9	A, D, E, G, H
2.2. Interprets the recognition reactions of cations in this group.	12, 14, 17, 9	A, D, E, G, H
3. To be able to discuss (NH4)2S group cations (group III) and their systematic analysis.	12, 14, 17, 9	A, D, E, G, H
3.1. Explains this group cations and chemical properties.	12, 14, 17, 9	A, D, E, G, H
3.2. Interprets the recognition reactions of cations in this group.	12, 14, 17, 9	A, D, E, G, H
4. To be able to discuss (NH4)2CO3 group cations (group IV) and their systematic analysis.	12, 14, 17, 9	A, D, E, G, H
4.1. Explains this group cations and chemical properties.	12, 14, 17, 9	A, D, E, G, H
4.2. Interprets the recognition reactions of cations in this group	12, 14, 17, 9	A, D, E, G, H
5. To be able to discuss soluble group cations (group V) and their systematic analysis.	12, 14, 17, 9	A, D, E, G, H
5.1. Explains this group cations and chemical properties.	12, 14, 17, 9	A, D, E, G, H
5.2. Interprets the recognition reactions of cations in this group.	12, 14, 17, 9	A, D, E, G, H
6. To be able to discuss Ca(NO3)2 group anions (group I) and their systematic analysis.	12, 14, 17, 9	A, D, E, G, H
6.1. Explains this group anions and chemical properties	12, 14, 17, 9	A, D, E, G, H
6.2. Interprets the recognition reactions of anions in this group	12, 14, 17, 9	A, D, E, G, H
7. To be able to discuss Ba(NO3)2 group anions (group II) and their systematic analysis.	12, 14, 17, 9	A, D, E, G, H
7.1. Explains this group anions and chemical properties	12, 14, 17, 9	A, D, E, G, H
7.2. Interprets the recognition reactions of anions in this group	12, 14, 17, 9	A, D, E, G, H
8. To be able to discuss Zn(NO3)2 group anions (group III) and their systematic analysis.	12, 14, 17, 9	A, D, E, G, H
8.1. Explains this group anions and chemical properties.	12, 14, 17, 9	A, D, E, G, H
8.2. Interprets the recognition reactions of anions in this group.	12, 14, 17, 9	A, D, E, G, H
9. To be able to discuss AgNO3 group anions (group IV) and their systematic analysis	12, 14, 17, 9	A, D, E, G, H
9.1. Explains this group anions and chemical properties	12, 14, 17, 9	A, D, E, G, H
9.2. Interprets the recognition reactions of anions in this group.	12, 14, 17, 9	A, D, E, G, H
10. To be able to discuss soluble group anions (group V) and their systematic analysis.	12, 14, 17, 9	A, D, E, G, H
10.1. Explains this group anions and chemical properties.	12, 14, 17, 9	A, D, E, G, H
10.2. Interprets the recognition reactions of anions in this group.	12, 14, 17, 9	A, D, E, G, H

Teaching Methods	12: Problem Solving Method, 14: Self Study Method, 17: Experimental Technique, 9: Lecture Method
Assessment Methods	A: Traditional Written Exam, D: Oral Exam, E: Homework, G: Quiz, H: Performance Task

Lecture Schedule

Sequence	**Topics**	**Preliminary Preparation**
1	Group I cations and their systematic analysis (HCl group cations)	1,2
2	Group II cations and their systematic analysis (H2S group cations)	1,2
3	Group II cations and their systematic analysis (H2S group cations)	1,2
4	Group III cations and their systematic analysis [(NH4)2S group cations]	1,2
5	Group III cations and their systematic analysis [(NH4)2S group cations]	1,2
6	The groups IV and V cations and their systematic analysis [(NH4)2CO3group cations]	1,2
7	Groups IV and V cations and their systematic analysis [(NH4)2CO3 groupcations]	1,2
8	Systematic analysis of group I-V cations (All the group cations)	1,2

School of Pharmacy / School of Pharmacy (English)

2024 - 2025 Academic Year

ANALYTICAL CHEMISTRY PRACTICE I

Syllabus

Lecture Schedule		
Sequence	**Topics**	**Preliminary Preparation**
9	Systematic analysis of group I-V cations (All the group cations)	1,2
10	Systematic analysis of group I-V cations (All the group cations)	1,2
11	Group I anions and their systematic analysis [Ca(NO3)2 group anions]	1,2
12	Groups II and III anions and their systematic analysis [Ba(NO3)2 and Zn(NO3)2 group anions]	1,2
13	Groups IV and V anions and their systematic analysis (AgNO3 and solublegroup anions)	1,2
14	Systematic analysis of anions and cations in the an unknown solid sample	1,2

Evaluation Methods	**Weight(%)**
Midterm Exam	60
General Exam	40

Resources
[1] Aydın, A. O., Analitik Kimya Lab.- I Ders Notu, Sakarya, 2010. [2] Gündüz, T., Yarı-Mikro Kalitatif Analiz Laboratuvar Kitabı, Gazi Kitabevi, Ankara, 2005.