DEPARTMENT OF CHEMISTRY				*CLASS: I M.Sc. Chemistry*				
Sem	**Course Type**	**Course Code**	**Course Title**	**Credits**	**Contact Hours/week**	**CIA**	**Ext**	**Total**
I	Major Practical	21P1CMP2	Inorganic Semi Micro Qualitative Analysis	2	4	40	60	100

Nature of Course				
Knowledge and skill			Employability oriented	
Skill oriented	✓		Entrepreneurship oriented	

Objectives:*The objective of this course is to make the student*

(i) To encourage more hands-on training to post graduate students by adding more individualized practical exercises

(ii) To demonstrate basic laboratory technique of Inorganic qualitative analysis

(iii) To develop the intellectual and psychomotor skills of the students by imparting knowledge in qualitative analysis of Inorganic compounds

Inorganic Qualitative Analysis

• Qualitative analysis of a mixture containing four cations of which two will be a less familiar.
• Semi micro methods using the conventional scheme with hydrogen sulphide will be adopted.
• FAMILIAR CATIONS TO BE STUDIED: Pb, Cu, Cd, Bi, Fe, Al, Ni, Co, Mn, Zn, Ba, Sr, Ca, Mg.
• LESS FAMILIAR CATIONS TO BE STUDIED: W, Se, Te, Mo, CE, Ti, V, U, Re, Th, Li

Books for reference:

1. Vogel Text Book of Qualitative Chemical Analysis, 5th edn. ELBS/Longman England, 1989
2. V. V. Ramanujam. Inorganic Semi micro qualitative analysis, National publishing company, Madras, 1974

Web resources:

1. http://www.federica.unina.it/agraria/analytical-chemistry/volumetric-analysis/
2. http://www.rbmcollege.ac.in/sites/default/files/files/reading%20material/inorganic-qualitative-analysis.pdf
3. https://pubs.acs.org/doi/abs/10.1021/ed033p417.2
4. https://www.nature.com/articles/147559b0

Pedagogy: Demonstration and practical session.

Rationale for Nature of the course

The basic knowledge and concept of reactions and mechanisms in qualitative analysis. Systematic analysis of cations in each group and their similar properties can be observed.

Activities having direct bearing on Skill development / Employability / Entrepreneurship

To understand the qualitative general group analysis to predict in which each group of cations are present in it. Characteristics test for each cation can be studied in which students are identified and inferred the familiar and less familiar cations and check the purity of a sample.

Course outcomes: After complete successful of this course, the student will be able

CLOs	CLO statement	Knowledge level
CLO1	Demonstrate the basic laboratory techniques of qualitative analysis of Inorganic salts containing four cations.	Up to K2
CLO2	To design the basic laboratory techniques of salt analysis	Up to K3
CLO3	Develop the skills for doing systematically analyse the general group cations and their individual separation of cations.	Up to K3
CLO4	Interpret the analytical data.	Up to K4
CLO5	To communicate the finding	Up to K2

PLO and CLO Mapping

CLOs	PLO 1	PLO 2	PLO 3	PLO 4	PLO 5
CLO1	1	3		1	2
CLO2	1	3	2	1	2
CLO3	1	3	2	1	2
CLO4	1	3	2	1	2
CLO5	1	3	2	1	2

3-Advance application; 2-Intermediate level; 1-Basic level

Evaluation

Continuous Internal Assessment : 40 Marks
External Assessment : 60 Marks
Total : 100 Marks

Formative Assessment:

Components for CIA	Marks
Internal Test	20
Observation/Record	10
Continuous class assessment	10
Total	**40**

Summative Assessment:

CLOs	CLO statement	Knowledge level	Marks
CLO-1	Demonstrate the basic laboratory techniques of qualitative analysis of Inorganic salts containing four cations.	Up to K2	**10**
CLO-2	To design the basic laboratory techniques of salt analysis	Up to K3	**10**
CLO-3	Develop the skills for doing systematically analyse the general group cations and their individual separation of cations.	Up to K3	**15**
CLO-4	Interpret the analytical data.	Up to K4	**20**
CLO-5	To communicate the finding	Up to K2	**5**
	Total Marks		**60**

Name of the Course Designer

- Dr. P. Prasanna