

Name of Faculty	:	Faculty of Science
Name of Program	:	Master of Science
Course Code	:	2MSO05
Course Title	:	Practical - I (Organic chemistry and Inorganic Chemistry)
Type of Course	:	Basic Science
Year of Introduction	:	2023-24

Prerequisite	:	Basic practical knowledge of Inorganic and organic chemistry.
Course Objective	:	Chemistry Practicals provide students to learn about synthesis, separation, purification and identification of organic as well as Inorganic compound. It develops the ability to correlate the chemical and physical properties of elements and their compounds.
Course Outcomes	:	At the end of this course, students will be able to:
	CO1	Analyze separation, purification and identification of ternary mixtures by Chemical and physical methods
	CO2	Get awareness about laboratory safety and handling of chemicals
	CO3	Apply knowledge to develop method for qualitative identification elements from the mixture having applications in industry and research.
	CO4	Understand importance of metal complexes and green methods for the synthesis.

Teaching and Examination Scheme

Teaching Scheme (Contact Hours)			Credits	Examination Marks				
L	T	P		Theory Marks		Practical Marks		Total Marks
			C	SEE	CIA	SEE	CIA	
0	0	8	4	-	-	70	30	100

Legends: L-Lecture; T-Tutorial/Teacher Guided Theory Practice; P – Practical, C – Credit, SEE – Semester End Examination, CIA - Continuous Internal Assessment (It consists of Assignments/Seminars/Presentations/MCQ Tests, etc.)

NOTE: This specification table shall be treated as a general guideline for the students and the teachers. The actual distribution of marks in the question paper may vary slightly from above table

Suggested List of Experiments/Tutorials

Sr. No.	Name of Experiment/Tutorial	Teaching Hours	Mapping With COs
	Part A: Organic Chemistry Practical Qualitative analysis and Separation of given unknown organic mixture (S+S+S) as well as (L+L+L) (in case of liquid separation by physical and chemical method both permitted)		
1	Acid+Base+Phenol	04	CO1 CO2 CO3
2	(Acid + Acid + Neutral)	04	
3	(Acid + Base + Acid)	04	
4	(Acid + Base + Base)	04	
5	(Base + Base + Neutral)	04	
6	(Acid + Neutral + Neutral)	04	
7	(Neutral + Base + Neutral)	04	
8	(Acid + Phenol + Acid)	04	
9	(Phenol + Base + Phenol)	04	
10	(Phenol + Phenol + Neutral)	04	
11	(Phenol + Neutral + Neutral)	04	
12	(Acid + Base + Phenol)	04	
	Part B: Inorganic Chemistry Practical Preparation and determination of purity of double and complex salts. At least ten preparations should be done.		
1	To Prepare Tetraamine copper sulphate from copper sulphate.	04	CO3 CO4
2	To Prepare Tri(thiourea) cuprous sulphate from cuprous sulphate.	04	
3	To Prepare Tri(thiourea) cuprous chloride from cuprous sulphate.	04	
4	To Prepare Hexaaminenickel(II) chloride from Nickel Chloride.	04	
5	To Prepare Potassium trioxalatochromate(III) from Potassium dichromate.	04	
6	To Prepare Potassium trioxalato Aluminate from Aluminum Sulphate.	04	
7	To Prepare Hexa(thiourea) plumbus nitrate from Lead Nitrate.	04	
8	To Prepare Hexaamino cobaltic chloride from CoCl_2 and NH_4Cl .	04	
9	To Prepare Prussian Blue from Iron and Potassium ferrocyanide.	04	
10	To Prepare Penta thiourea dicuprous nitrate.	04	

Suggested Distribution of Theory Marks Using Bloom's Taxonomy						
Level	Remembrance	Understanding	Application	Analyse	Evaluate	Create
Weightage	25	25	25	25	-	-

Major Equipment/ Instruments and Software Required

Sr. No.	Name of Major Equipment/ Instruments and Software
1	Fusion tube
2	Theil's tube
3	Capillary
4	Weighing Balance
5	Measuring cylinder
6	Conical flask
7	Glass rod
8	Beaker
9	Test tubes
10	Funnel
11	Test tube stand
12	China dish

Suggested Learning Websites

Sr. No.	Name of Website
1	: https://vlab.amrita.edu/index.php?sub=2&brch=191&sim=345&cnt=1
3	: https://vlab.amrita.edu/index.php?sub=2&brch=191&sim=344&cnt=1

Reference Books

Sr. No.	Name of Reference Books
1	A text book of practical organic chemistry - A. I. Vogel
2	An Advance Course in practical Chemistry, A K. Nad, B. Mahapatra and A. Ghoshal.
3	A handbook of quantitative and qualitative analysis - H. T. Clarke
4	Comprehensive Practical Organic Chemistry: Preparations and Quantitative Analysis V K Ahluwalia
5	Practical organic Chemistry - Mann and Saunders.
6	An Advanced Course in Practical Chemistry
7	Advanced Practical Inorganic Chemistry
8	Vogel's Textbook of Quantitative Chemical Analysis
9	An Advanced Course in Practical Chemistry