

UNIVERSITY OF MADRAS
M.Sc. DEGREE PROGRAMME IN CHEMISTRY
SYLLABUS WITH EFFECT FROM 2023-2024

Title of the Course	ORGANIC CHEMISTRY PRACTICAL						
Paper No.	Core III						
Category	Core	Year	I	Credits	4	Course Code	424C1C
		Semester	I				
Instructional hours per week	Lecture	Tutorial	Lab Practice		Total		
	-	1	4		5		
Prerequisites	Basic concepts of organic chemistry						
Objectives of the course	<p>To understand the concept of separation, qualitative analysis and preparation of organic compounds.</p> <p>To develop analytical skill in the handling of chemical reagents for separation of binary and ternary organic mixtures.</p> <p>To analyze the separated organic components systematically and derivatize them suitably.</p> <p>To construct suitable experimental setup for the organic preparations involving two stages.</p> <p>To experiment different purification and drying techniques for the compound processing.</p>						
Course Outline	UNIT-I: Separation and analysis:						
	<p style="text-align: center;">A. Two component mixtures. B. Three component mixtures.</p>						
	<p>UNIT-II: Estimations:</p> <p>a) Estimation of Phenol (bromination)</p> <p>b) Estimation of Aniline (bromination)</p> <p>c) Estimation of Ethyl methyl ketone (iodimetry)</p> <p>d) Estimation of Glucose (redox)</p> <p>e) Estimation of Ascorbic acid (iodimetry)</p> <p>f) Estimation of Aromatic nitro groups (reduction)</p> <p>g) Estimation of Glycine (acidimetry)</p> <p>h) Estimation of Formalin (iodimetry)</p> <p>i) Estimation of Acetyl group in ester (alkalimetry)</p> <p>j) Estimation of Hydroxyl group (acetylation)</p> <p>k) Estimation of Amino group (acetylation)</p>						
UNIT-III: Two stage preparations:							
<p>a) <i>p</i>-Bromoacetanilide from aniline</p> <p>b) <i>p</i>-Nitroaniline from acetanilide</p> <p>c) 1,3,5-Tribromobenzene from aniline</p> <p>d) Acetyl salicylic acid from methyl salicylate</p> <p>e) Benzilic acid from benzoin</p> <p>f) <i>m</i>-Nitroaniline from nitrobenzene</p> <p>g) <i>m</i>-Nitrobenzoic acid from methyl benzoate</p>							
Extended Professional Component (is a part of internal component only, not to be included)	<p>Questions related to the above topics, from various competitive examinations UPSC / TRB / NET/ UGC-CSIR / GATE /TNPSC others to be solved (To be discussed during the Tutorial hours)</p>						

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in the external examination question paper)	
Skills acquired from this course	Knowledge, Problem solving, Analytical ability, Professional Competency, Professional Communication and Transferable skills.
Recommended Text	<ol style="list-style-type: none"> 1. N. S. Gnanapragasam and G. Ramamurthy, Organic Chemistry – Lab Manual, S. Viswanathan Co. Pvt. Ltd, 2009. 2. J. N. Gurtu and R. Kapoor, Advanced Experimental Chemistry, S. Chand and Co., 2011. 3. Raj K. Bansal, Laboratory Manual of Organic Chemistry, Wiley Eastern Limited.
Reference Books	<ol style="list-style-type: none"> 1. Vogel's Text book of Practical Organic Chemistry, 5th Ed, ELBS/Longman, England, 2003. 2. Mann and Saunders, Laboratory Manual of Organic Chemistry.
Website and e-learning source	https://bit.ly/3tMt2YQ
<p>Course Learning Outcomes (for Mapping with POs and PSOs) Students will be able:</p> <p>CO1: To recall the basic principles of organic separation, qualitative analysis and preparation.</p> <p>CO2: To explain the method of separation and analysis of separated organic mixtures and convert them as derivatives by suitable preparation method.</p> <p>CO3: To determine the characteristics of separation of organic compounds by various chemical reactions.</p> <p>CO4: To develop strategies to separate, analyze and prepare organic compounds.</p> <p>CO5: To formulate a method of separation, analysis of organic mixtures and design suitable procedure for organic preparations.</p>	

CO-PO Mapping (Course Articulation Matrix)

	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO 1	S	S	S	S	M	S	S	S	S	M
CO 2	M	S	S	S	S	M	S	S	S	S
CO 3	S	S	M	S	S	S	S	M	S	S
CO 4	M	S	S	S	S	M	S	S	S	S
CO 5	M	S	M	S	S	M	S	M	S	S

3 – Strong, 2 – Medium, 1 – Low

Level of Correlation between PSO's and CO's

CO / PO	PSO1	PSO2	PSO3	PSO4	PSO5
CO1	3	3	3	3	3
CO2	3	3	3	3	3
CO3	3	3	3	3	3
CO4	3	3	3	3	3
CO5	3	3	3	3	3
Weightage	15	15	15	15	15
Weighted percentage of Course Contribution to Pos	3.0	3.0	3.0	3.0	3.0

3 – Strong, 2 – Medium, 1 – Low