



# ARSD College, University of Delhi

## Model Course Handout/Lesson Plan

<b>Course Name : B.Sc. (H) Chemistry, Section-A</b>						
Semester	Course Code	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Credit (C)
1	217201110 2	Organic Chemistry I: Basic concepts of Aliphatic hydrocarbons	0	0	2	1
Teacher/Instructor(s)		Dr. Naorem Premjit Singh, Dr. Anju Bajaj				
Session		2022-23				

### Course Description:

The core course Organic Chemistry I is designed in a manner that it forms a cardinal part of the learning of organic chemistry for the subsequent semesters. The course is infused with the recapitulation of fundamental concepts of organic chemistry and the introduction of the concept of visualizing the organic molecules in a three-dimensional space. To establish the applications of these concepts, the functional groups-alkanes, alkenes, alkynes are introduced. The constitution of the course strongly aids in the paramount learning of the concepts and their applications.

### Course Learning Outcomes:

- Understand and explain the electronic displacements and reactive intermediates and their applications in basic concepts.
- Formulate the mechanistic route of organic reactions by recalling and correlating the fundamental concepts.
- Identify and comprehend mechanism for free radical substitution, electrophilic addition, nucleophilic substitution and elimination reactions.
- Understand the fundamental concepts of stereochemistry.
- Understand and suitably use the chemistry of hydrocarbons

### List of Experiments:

1. Calibration of a thermometer and determination of the melting points of the organic compounds using any one of the following methods-Kjeldahl method, electrically heated melting point apparatus and BODMEL).
2. Concept of melting point and mixed melting point.
3. Concept of recrystallisation using alcohol/water/alcohol-water systems (Any two).
4. Determination of boiling point of liquid compounds (boiling point lower than and more than 100 °C by distillation, capillary method and BODMEL method)
5. Separation of a mixture of two amino acids/sugars by radial/ascending paper chromatography.
6. Separation of a mixture of o-and p-nitrophenol or o-and p-aminophenol by thin layer chromatography (TLC).
7. Detection of extra elements

Details of the Lab Course		
Session	Name of Experiment	Contact Hours
1	Calibration of a thermometer and determination of the melting points of the organic compounds using any one of the following methods-Kjeldahl method, electrically heated melting point apparatus and BODMEL). Concept of melting and mixed melting point	8
2	Concept of re-crystallization and re-crystallization using alcohol/water/alcohol-water systems (Any two)	4
3	Determination of boiling point of liquid compounds (boiling point lower than and more than 100 °C by distillation, capillary method and BODMEL method)	4
4	Separation of a mixture of two amino acids/sugars by radial/ascending paper chromatography.	4
5	Separation of a mixture of o-and p-nitrophenol or o-and p-aminophenol by thin layer chromatography (TLC).	4
6	Detection of extra elements	6
<b>Total</b>		<b>30</b>

**Suggested Books:**

Sl. No.	Name of Authors/Books/Publishers	Year of Publication/Reprint
1.	Mann, F. G., Saunders, B. C. (2009), Practical Organic Chemistry, 4 <sup>th</sup> Edition, Pearson Education.	2009
2.	Ahluwalia, V. K., Dhingra, S. (2004), Comprehensive Practical Organic Chemistry: Qualitative Analysis, University Press.	2004
3.	Furniss, B. S., Hannaford, A. J., Smith, P.W.G.; Tatchell, A. R (2004), Vogel's Textbook of Practical Organic Chemistry, Pearson.	2004
4.	Leonard, J., Lygo, B., Procter, G. (2013) Advanced Practical Organic Chemistry, 3rd Edition, CRC Press.	2013
5.	Pasricha, S., Chaudhary, A. (2021), Practical Organic Chemistry: Volume-I, I K International Publishing house Pvt. Ltd, New Delhi	2021

**Evaluation Scheme:**

No.	Component	Duration	Marks
1.	Internal Assessment		25
	• Quiz/Viva		
	• Observation & Record		
	• Attendance		
	• Model Exam		
2.	End Semester Examination	5 hrs	25