



ARSD College, University of Delhi

Model Course Handout/Lesson Plan

Course Name : B.Sc. (H) Chemistry- Lab						
Semester	Course Code	Course Title	Lecture (L)	Tutorial (T)	Practical (P)	Credit (C)
VI	INDUSTRIAL CHEMISTRY –DSE-4	Molecules of Life	0	0	4	2
Teacher/Instructor(s)		1. Dr. Bhaskara Nand Pant 2. Dr. Jaya Tpmar				
Session		2022-2023 (even semester)				

Course Objective:

The objective of this course is to deliver information about biochemically significant features of the chemistry of carbohydrates, proteins, enzymes, nucleic acids and lipids, using suitable examples. This includes classification, reaction chemistry and biological importance of these biomolecules. This course extends the knowledge gained from synthetic organic chemistry to chemistry of biomolecules. Key emphasis is placed on understanding the structural principles that govern reactivity/physical /biological properties of biomolecules as opposed to learning structural detail.

Outcome of the course:

- Learn and demonstrate how the structure of biomolecules determines their chemical properties, reactivity and biological uses.
- Gain an insight into mechanism of enzyme action and inhibition.
- Understand biological processes like replication, transcription and translation.
- Demonstrate an understanding of metabolic pathways, their inter-relationship, regulation and energy production from biochemical processes.

List of Experiments:

Details of the Lab Course		
S. No.	Name of Experiment	Contact Hours
1	Separation of amino acids by paper chromatography	4
2	Study of titration curve of glycine and determination of its isoelectric point	8
3	Estimation of proteins by Lowry's method	8
4	Action of salivary amylase on starch	8
5	Effect of temperature on the action of salivary amylase on starch.	4
6	To determine the saponification value of an oil/fat	4
7	To determine the iodine value of an oil/fat	4
8	Qualitative tests for carbohydrates- Molisch test Barfoed's reagent test, rapid furfural test, Tollen's test and Fehling solution test	8
9	Qualitative tests for proteins	4
10	Extraction of DNA from onion/cauliflower	4
10	Mock Test	4
Total		60
Suggested Books:		
Sl. No.	Name of Authors/Books/Publishers	Year of Publication/Reprint
1	Furniss, B.S.; Hannaford, A.J.; Smith, P.W.G.; Tatchell, A.R. Vogel's Textbook of Practical Organic Chemistry , Pearson	2012
2	Manual of Biochemistry Workshop , Department of Chemistry, University of Delhi.	2012

Evaluation Scheme:

No.	Component	Duration	Marks
1.	Internal Assessment		25
	• Quiz/Viva		
	• Observation & Record		
	• Attendance		
	• Model Exam		
2.	End Semester Examination	6 hr	25
			Total Marks 50