

**FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)**  
**DEPARTMENT OF CHEMISTRY**  
**COURSE CURRICULUM**

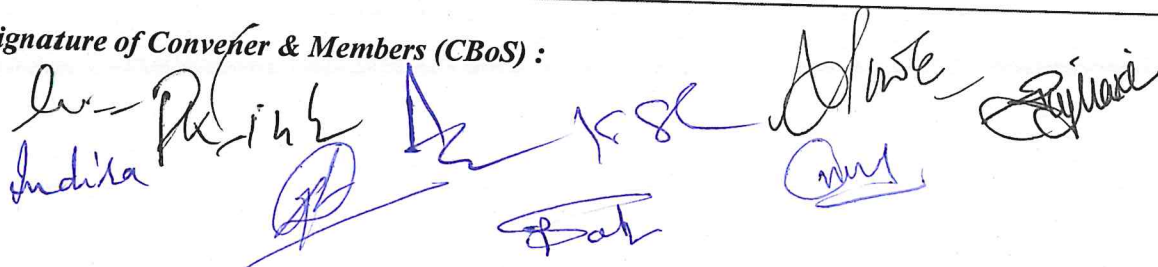
<b>PART- A: Introduction</b>			
Program: Bachelor in Science (Certificate / Diploma / Degree)		Semester - II	Session: 2024-2025
1	Course Code	CHGE-02P	
2	Course Title	Chemistry Lab. Course-II	
3	Course Type	GE	
4	Pre-requisite (if, any)	<i>As per Program</i>	
5	Course Learning Outcomes (CLO)	<ul style="list-style-type: none"> <li>➤ <i>Demonstrating and using common glassware for accurate measurements</i></li> <li>➤ <i>Studying the functional group analysis organic compounds</i></li> <li>➤ <i>Determining melting points to assess compound purity and employing distillation and sublimation techniques to establish boiling points</i></li> <li>➤ <i>Equipping with essential skills in measuring liquid surface tension and solution viscosity</i></li> </ul>	
6	Credit Value	1 Credits	<i>Credit =30 Hours Laboratory or Field learning/Training</i>
7	Total Marks	Max. Marks: 50	Min Passing Marks: 20

**PART -B: Content of the Course**

Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)

Module	Topics (Course contents)	No. of Period
Lab./Field Training/ Experiment Contents of Course	<p><b>Basic Laboratory Techniques</b>                      Demonstration of Laboratory Glassware and Equipment, Calibration of Thermometer : 80-82°C (Naphthalene), 113.5°-114°C (Acetanilide), 132.5°C - 133°C (Urea), 100°C (Distilled Water)</p> <p><b>Functional group Analysis of Organic Compounds</b>, Detection of elements (N, S, and halogens) and functional groups</p> <p><b>Physical chemistry</b>                      Surface tension measurements: Determine the surface tension by (i) drop number (ii) drop weight method. Surface tension composition curve for a binary liquid mixture.</p> <p>Viscosity measurement using Ostwald's viscometer, Determination of viscosity of aqueous solutions of (i) sugar (ii) ethanol at room temperature.                      Study of the variation of viscosity of sucrose solution with the concentration of solute. Viscosity Composition curve for a binary liquid mixture</p>	<b>30</b>
Keywords	<i>Basic laboratory techniques, Equipments, Calibration, Melting points, Qualitative analysis, Physical chemistry, Surface tension, Viscosity</i>	

**Signature of Conveñer & Members (CBoS) :**



## PART-C: Learning Resources

### Text Books, Reference Books and Others

#### Textbooks Recommended:

1. Ahluwalia, V. K., Dhingra, S., & Gulati, A. (N.D.). *College Practical Chemistry*. University Press.
2. Khosla, B. D., Garg, V. C., & Gulati, A. (2011). *Senior Practical Physical Chemistry*. R. Chand & Co.

#### Reference Books Recommended:

1. Garland, C. W., Nibler, J. W., & Shoemaker, D. P. (2003). *Experiments in Physical Chemistry* (8th Ed.). McGraw-Hill.
2. Mendham, J. (2009). *Vogel's Quantitative Chemical Analysis* (6th Ed.). Pearson Education.
3. Mann, F. G., & Saunders, B. C. (2009). *Practical Organic Chemistry*. Pearson Education.
4. Furniss, B. S., Hannaford, A. J., Smith, P. W. G., & Tatchell, A. R. (2012). *Practical Organic Chemistry* (5th Ed.). Pearson Education.

#### Online Resources-

- <http://heecontent.upsdc.gov.in/Home.aspx>
- <https://nptel.ac.in/courses/104/106/104106096/>
- <http://heecontent.upsdc.gov.in/Home.aspx>
- <https://nptel.ac.in/courses/104/106/104106096/>
- <https://www2.chemistry.msu.edu/faculty/reusch/VirtTxtml/introl.htm>
- <https://nptel.ac.in/courses/104/103/104103071/W>

#### Online Resources-

- e-Resources / e-books and e-learning portals

## PART -D: Assessment and Evaluation

### Suggested Continuous Evaluation Methods:




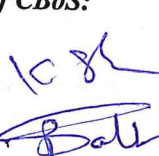


Maximum Marks: 50 Marks

Continuous Internal Assessment (CIA): 15 Marks

End Semester Exam (ESE): 35 Marks

<b>Continuous Internal Assessment (CIA):</b> (By Course Teacher)	Internal Test / Quiz-(2): 10 & 10	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks
	Assignment/Seminar +Attendance - 05 Total Marks - 15	
<b>End Semester Exam (ESE):</b>	<b>Laboratory / Field Skill Performance: On spot Assessment</b>	
	D. Performed the Task based on lab. work - 20 Marks	Managed by Course teacher as per lab. status
	E. Spotting based on tools & technology (written) - 10 Marks F. Viva-voce (based on principle/technology) - 05 Marks	

Name and Signature of Convener & Members of CBoS:

Signature of Convener:   
Signature of Member 1:   
Signature of Member 2:   
Signature of Member 3:   
Signature of Member 4:   
Signature of Member 5:   
Signature of Member 6: 