Integrated Bachelors & Masters Programmes
B.Sc. Chemistry, Semester I

Course Code	IS01CCHE51	Title of the Course	Chemistry-I
Total Credits of the Course	2	Hours per Week	2 hrs

Course Objectives:	1. To get inside the terminology used for definition of Acid-base using different concept/theories. 2. To familiar with colloidal system and their properties including stability. 3. To get acquainted with the term catalysts and their role in various chemical reactions. 4. To understand and familiarize with the nomenclature, preparation and reactions of the alkanes, alkenes, alkynes, alcohol, phenols, ethers and amines. 5. To familiarize towards the reactivity and specific applications of the above organic compounds.

Course Content		
Unit	Description	Weightage* (%)
1.	**Acid-Base Equilibria :** Acid-Base Theories: Arrhenius theory, The Lowry-Bronsted concept, Strength of acids and bases, The pH scale, Weak acids and bases, Salts of weak acids and bases, Buffer Solutions. **Colloids :** Preparation and purification of colloids, lyophobic and lyophilic colloids, general properties : Electrical, optical, sedimentation, Brownian motion, Schulze Hardy valency rule, stability of colloids.	50
2.	**Catalysis:** Concept of catalyst and Catalytical Reactions. **Organic Compounds - I** **Alkanes, Alkenes, Alkynes, Alcohols, Phenols, Ethers and Amines:** Trivial/ IUPAC nomenclatures, physical properties, preparation, reactivity and specific applications.	50

Teaching-Learning Methodologies	Blended approach of the class room teaching (conventional as well as ICT based) along with seminar/tutorials/PPT presentations/allotment and evaluation of assignments etc.

Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage
1.	Internal Written / Practical Examination (As per CBCS R.6.8.3)	15%
2.	Internal Continuous Assessment in the form of Practical, Viva-voce, Quizzes, Seminars, Assignments, Attendance (As per CBCS R.6.8.3)	15%
3.	University Examination	70%

Course Outcomes: Having completed this course, the student will be able to	
1.	Understand the acid-base system based on various approach/theories
2.	Learn about the fundamental of Colloids and their properties and applications
3.	Get inside about the concept of catalyst and their applications
4.	Write IUPAC names of organic compounds covered in this course
5.	Know the reactivity of organic compounds intended in this course
6.	To write synthesis of organic compounds included in the course
7.	To write reactions of organic compounds with different reagents taught in the course

Suggested References:	
Sr. No.	References
1.	Gary D. Christian, Analytical Chemistry, Wiley India Ltd., Sixth Edition, 2007
2.	P.W. Atkins and Julio de Paula, Elements of Physical Chemistry, Oxofrd University Press, 1992
3.	G. M. Barrow, Physical Chemistry, TATA MCGRAW-HILL, 2007.
4.	K. L. Kapoor, Text Book of Physical Chemistry, MACMILLAN, 2006
5.	R. I. Masel, Chemical Kinetics & Catalysis, Wiley-Interscience; 1st Edition, 2001
6.	Gurdeep Raj, Advanced Physical Chemistry, Goel Publishing House, Meeruth, 2019.

7.	R. T. Morrison, R. N. Boyd, S. K. Bhattacharjee, Organic Chemistry, 7th edition, Pearson publication, 2011.
8.	J. McMurry, E. Simanek, Fundamentals of organic chemistry, 6th edition, Thomson Brooks/Cole, 2007.
9.	J. McMurry, Organic Chemistry, 5th edition, Brooks/Cole, 2000.
10.	T. N. Sorrell, Organic Chemistry, 1st edition, Viva books, 2004.
11.	B. Mehta, M. Mehta, Organic Chemistry, PHI Learning, 2012.

On-line resources to be used if available as reference material
On-line Resources: https://swayam.gov.in/

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