

Subject: Physical and Analytical Chemistry

CH- 114 3 rd Semester Pre-req.	Physical & Analytical Chemistry	3CH	
		Theory+Lab (2+1)	
	Nil	Category	Foundation Course
Course Contents as per PEC Guidelines 2023-2024			
<u>Contents:</u> • Kinetic theory of gases • Dalton's law • Henry's law • Raoult's law • Antoine equation • Relative volatility • Surface Phenomena • Adsorption • Catalysis • Enzyme catalysis • Electrochemistry • Fuel cells • Colloidal chemistry • Reaction kinetics and equilibrium. • Introduction to instrumental techniques • Potentiometry, pH-metry • Liquid solid chromatography • High performance liquid chromatography • Ion exchange chromatography • Gas chromatography • Plane chromatography • Spectroscopy, Basics of spectroscopy • UV and visible spectroscopy			
Weekly plan/ Reference Books			
1	Kinetic theory of gases		
2	Dalton's law, Henry's law		
3	Raoult's law, Antoine equation		
4	Relative volatility		
5	Surface Phenomena, Adsorption, Catalysis, Enzyme catalysis		
6	Electrochemistry, Fuel cells		
7	Colloidal chemistry		
8	Reaction kinetics and equilibrium.		

9	Mid Term Exam
10	Introduction to instrumental techniques Potentiometry, pH-metry
11	Liquid solid chromatography
12	High performance liquid chromatography
13	Ion exchange chromatography
14	Gas chromatography
15	Plane chromatography
16	Spectroscopy, Basics of spectroscopy
17	UV and visible spectroscopy
18	End Semester Exam

TEXT AND REFERENCE BOOKS:

- Miessler, G. L., & Tarr, D. A. Inorganic Chemistry. Pearson Education. Upper Saddle River, NJ, 345.
- Khopkar, S. M. Basic concepts of analytical chemistry. New Age International.
- Skoog, D. A., & West, D. M. Fundamentals of analytical chemistry. Holt, Rinehart and Winston.
- Chemistry: The Central Science, 13th Edition, by Theodore E. Brown, H. Eugene LeMay, Bruce E. Bursten, Publisher Pearson, 2014
- Principles of Instrumental Analysis by D.A. Skoog and J.J. Leary, 4th ed., Saunders College Publishing, USA