



## Engineering Chemistry Laboratory

The Engineering Chemistry Laboratory for B.Tech first-year students is a well-equipped facility that provides hands-on experience with modern analytical instruments. It enables students to develop practical skills in fundamental chemical analysis, instrumental techniques, and the synthesis of essential chemical compounds. The laboratory environment is structured to strengthen conceptual understanding while ensuring accuracy and safety in experimental work. Through practical applications, the course deepens students' knowledge of chemical principles and equips them with essential laboratory skills needed in engineering and scientific fields. Students gain experience in calibration, precise measurement, safe chemical handling, data interpretation, and analytical problem-solving, with emphasis on environmental chemistry, water quality analysis, polymer and resin preparation, kinetics, and instrumental methods.

### List of experiments as per AKTU Syllabus

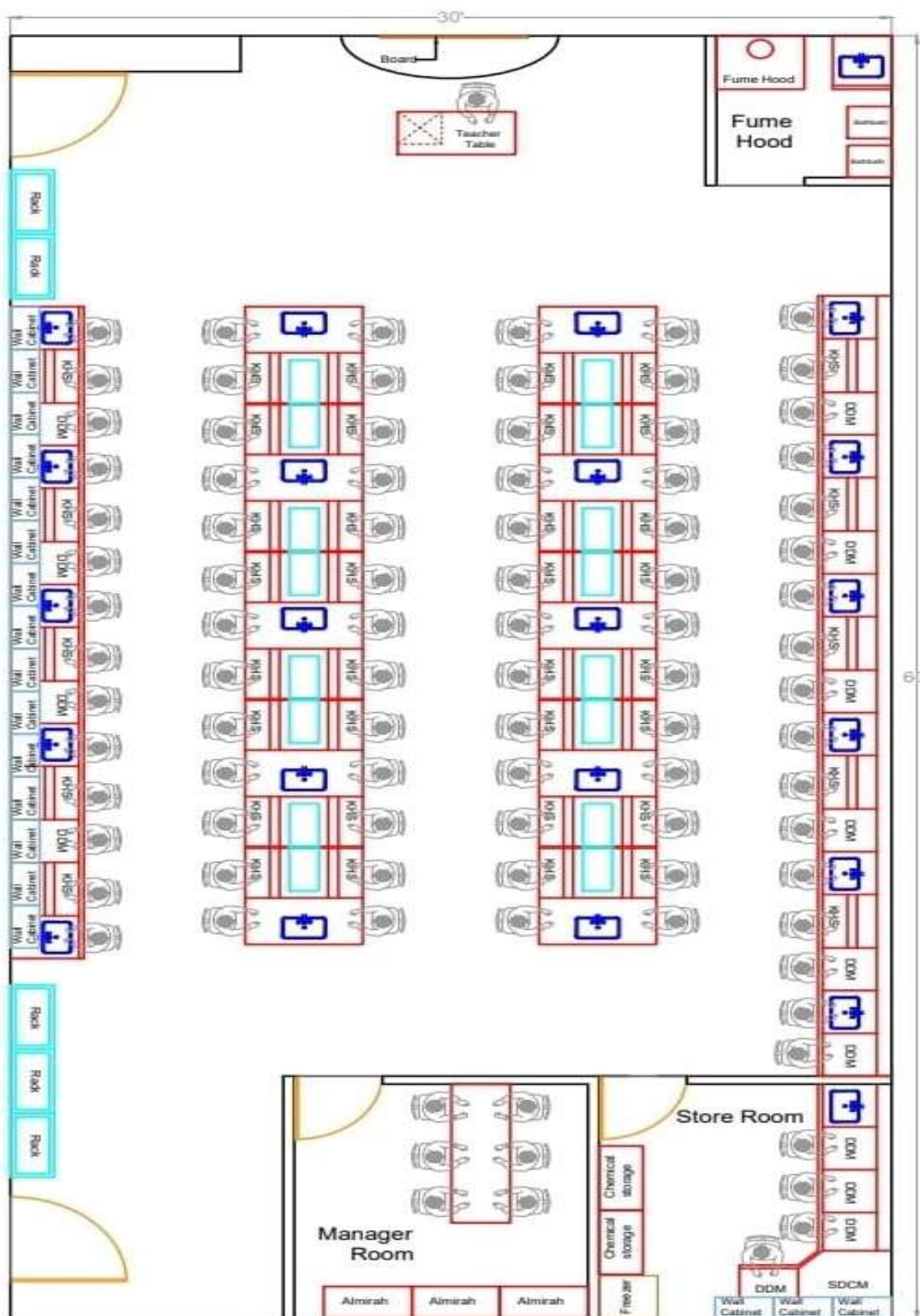
S. No.	Experiments
1.	Calibration of analytical equipment and apparatus and understanding of Laboratory devices.
2.	Determination of Hardness of water sample by EDTA method.
3.	Determination of Alkalinity of water sample.
4.	Determination of pH by titrimetric method.
5.	Determination of surface tension of given liquid.
6.	Determination of viscosity of a given liquid by viscometer.
7.	Determination of the strength of Ferrous ammonium sulfate using external indicator.
8.	Determination of Strength of Potassium Dichromate Using Internal Indicator.
9.	Determination of available chlorine in bleaching powder.
10.	Determination of chloride content in water sample.
11.	Preparation of Phenol formaldehyde (PF) resin.
12.	Preparation of Urea formaldehyde (UF) resin.
13.	Preparation of Adipic acid.
14.	Determination of cell conductance of a solution.
15.	Determination of rate constant of hydrolysis of ester.
16.	Element detection and identification of functional groups in organic compounds.

### Value Added experiments:

S. No.	Experiments
1.	To verify Beer's law using colorimetric method with KCNS as color developing agent.
2.	Project work on analysis of water samples of different areas.



## Lab Layout



## Chemistry Lab