

Type	Course Code	Name of Course	L	T	P	Credit
DP	NCHC506	Instrumental Methods of Analysis	0	0	3	1.5

#### Course Objective

- To introduce the students to different analytical equipment/instruments that are useful for carrying out research in different areas in chemical engineering

#### Learning Outcomes

- Students will be proficient in using instrumental techniques in chemical engineering.

Unit No.	Broad Topics	Description of Experiments
1.	<b>Analytical instruments/equipment</b>	Studies on <b>UV-vis spectrometry</b> .
2.		Particle size distribution measurements using <b>Zeta Sizer</b> .
3.		Particle size distribution measurements using <b>Particle size Analyzer</b> .
4.		Detection of functional groups using <b>FTIR Analysis</b> .
5.		Size reduction studies using <b>Planetary ball mill</b>
6.	<b>Flow characterization &amp; wettability</b>	Rheometric analysis of fluids using <b>Rheometer</b>
7.		Contact angle measurements techniques using <b>Goniometer</b>
8.	<b>Optical instruments</b>	Surface characterization using <b>Optical Microscopy</b>
9.		Refractive index measurement using <b>Refractometer</b>
10.	<b>Elemental analysis</b>	Ultimate analysis of solid fuel using <b>CHNS analyzer</b>
	<b>Total Contact hours: 42</b>	