

**SARDAR PATEL UNIVERSITY**  
**Programme & Subject: M.Sc (Earth Science)**  
**Semester: III**  
**Syllabus with Effect from: June - 2014**

<b>Paper Code: PT03CESC05</b>	<b>Total Credit: 4</b>
<b>Title Of Paper: Experimental Methods - IV</b>	

<b>Unit</b>	<b>Description in Detail</b>	<b>Weightage (%)</b>
Any Eight of the following		
	Determine the aerosol optical depth (AOD) and compare with satellite data.	
	Measure the solar irradiance data at 500 nm wavelength using Sunphotometer, compute the aerosol optical depth using Beer Lambert law and compare the AOD data with MODIS satellite	
	Determine the angstrom exponent from the spectral aerosol optical depth. Measure the solar irradiance data at different wavelengths using Sunphotometer, compute the aerosol optical depth using Beer Lambert law, and determine the angstrom exponent for inferring aerosol size information	
	Exercise on plotting of major earthquake zones of the world Fault plane solution and characterization of earthquakes	
	To find out dissolved Oxygen in the different water samples.	
	Biological Oxygen Demand –Using the To identify the relationship between the dissolved oxygen in the water and its ability to support aquatic life	
	Exercise on different concentrations of metal salts using spectrophotometer.	
	Introduction to different instruments related to seismic studies	
	Deciphering of hydro geological boundaries on water table contour maps	
	Angle of isolations – to identify the relationship between temperature and angle of insolation and how this effect the seasons	
	Problems on radial flow to a well in confined and unconfined aquifers	
	Interpretation of geologic structures from surface geological maps and reconstruction of structural developments through different time planes	
	Atmospheric Pressure and Temperature- To identify the relationship between atmospheric temperature and pressure near surface of the Earth	
	Using the math skills to analyze data about the planets in the solar system	
	Biomes of the World – To identify the locations, climate characteristics and productivity associated with the major biomes of the world	

**Basic Text & Reference Books:-**

- Lab manual: Science of Earth Systems, Stephen D. Butz, Thomson Delmar Learning
- Vogel's, Textbook of Quantitative Chemical Analysis, J Mendham, R. C. Denney, J. D. Barnes, M. J. K. Thomas, Pearson Education
- Exercises in Sedimentology, Gerald M. Friedman and Kenneth G. Johnson. Wiley, New York
- A Practical Approach to Sedimentology, Roy Lindhome, The George Washington University , Washington.

