

**Vitthalbhai Patel & Rajratna P. T. Patel Science College
(Autonomous)**

(Reaccredited with 'A' Grade by NAAC (CGPA 3.13))

Affiliated to SARDAR PATEL UNIVERSITY

Vallabh Vidyanagar, Gujarat

Syllabus effective from the Academic Year 2024-2025



Course Code (Skill Enhancement Courses)	US02SECHE01	Title of the Course	FUNDAMENTALS OF SOIL CHEMISTRY
Total Credits of the Course	2	Hours per Week	2

Course Objectives:	To make students familiar with: 1. Chemistry as a subject. 2. Fundamentals of soil chemistry.
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Course Content		
Unit	Description	Weightage* (%)
1.	Introduction to Soil Chemistry Importance of soil, soil formation, composition of soil, the soil profile, types of soil, micro and macro plant nutrients. Soil fertility and productivity, techniques for the analysis of soil, soil reaction, determination of total nitrogen in soil, determination of phosphorus in soil, determination of potassium in soil by flame photometry.	50
2.	Analysis of Nutrients Determination of total sulphur in soil, determination of calcium in soil, determination of magnesium in soil, determination of lime and liming material in soil. Mechanical analysis of soil. Determination of total manganese in soil, determination of Fe (II) and Fe (III) in soil, determination of silica in soil, determination of soluble salts in soil, determination of sodium in soil by flame photometry.	50

Teaching-Learning Methodology	Conventional method (classroom blackboard teaching), ICT. Courses for B. Sc. Chemistry programme are delivered through classroom, laboratory work in a challenging, engaging, and inclusive manner that
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	accommodates a variety of learning styles and tools (PowerPoint presentations, audio visual resources, e-resources, seminars, workshops, models).
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Evaluation Pattern		
Sr. No.	Details of the Evaluation	Weightage (%)
1.	Continuous and compression evaluation : Class test/Internal written test 10 Marks (40%), Quiz 05 Marks (20%), Home Assignments 05 Marks (20%), Attendance 05 Marks (20%), (As per SPU Letter No. E-3/2748 dated 02/02/2024) [Total 25 Marks (100%)].	50
2.	Semester End Examination [Total 25 Marks (100%)].	50

Course Outcomes: Having completed this course, the learner will be able to	
1.	Gain the knowledge of soil Chemistry.
2.	Learn about analysis of micronutrients.

Suggested References:	
Sr. No.	References
1.	Environmental Chemistry: H. Kaur, Pragati Prakashan, 2 nd Edition.
2.	Soils in our Environment: Raymond W. Miller, Duane T. Gardiner, Prentice Hall, 8th Edition.

On-line resources to be used if available as reference material
On-line Resources : Google books, INFLIBNET, Google Web
