



GUJARAT UNIVERSITY
B. Sc. SEMESTER III
BOTANY
AS PER NEP - 2020
EFFECTIVE FROM JUNE 2024

Course Type	Course	Credits	Work Hours/ week	Exam hours	Marks		Total Mark
					Internal	External	
Skill Enhancement course	SEC-BOT 236(T) SOIL ANALYSIS	2	1+2 = 3	2	25	25	50

Skill Enhancement Course (BOTANY)

SEC- BOT - 236

Soil Analysis

Learning objectives:

1. To know the importance of quality of soil.
2. To study the general properties of soil and understand soil resources and soil conservation.
3. To develop awareness about soil quality criteria and standards, and their relation to public health and environment.
4. Know about the methods for the determination of soil quality parameters.

Learning outcomes:

By the end of the course, the students will be able to:

1. Learn how to run accurate soil quality tests and to determine how the parameters relate to each other.
2. Acquire skills in the analysis of soil quality parameters and thus monitoring soil quality.
3. Develop research ideas about in the field of analytical Botany.



Unit 1: Understanding Soil as a Factor

- Edaphic factor: Importance of soil, Effect of soil on plants
- Origin and Development of soil, soil profile
- Soil composition, Soil texture
- Soil soil, soil holding capacity
- Soil pollution- causes and effects and remedies
- Electrical conductivity of soils
- Soil erosion
- Soil conservation

Unit 2: Practical based on Unit 1.

- (1) Chart of types of soil
- (2) Chart of Soil profile
- (3) Determination of soil water holding capacity
- (4) Determination of Acidity of soil sample.
- (5) Determination of Alkalinity of soil sample.
- (6) Determination of Electrical conductivity of soil sample.
- (7) Determination of carbonates and bicarbonate of soil sample.
- (8) Determination of pH of soil sample.

References:

- "Principles and Practices of Soil Science" by R.K. Sharma and S.K. Gupta; Kalyani Publishers, 2008, ISBN: 9788127221803
- "Soil and Plant Analysis" by P.K. Gupta; Agrobios (India), 2007, ISBN: 9788177541148
- "Soil Science: An Introduction" by D.K. Das; Kalyani Publishers, 2015, ISBN: 9789327236774
- 'Soil Science and Management', Edward J. Plaster, Cengage Learning, 6th Edition, Year: 2013, ISBN-13: 9780840024329, ISBN-10: 0840024320
- "Fundamentals of Soil Science" by Henry D. Foth: ; John Wiley & Sons, 8th Edition, 1990, ISBN-13: 9780471522799, ISBN-10: 0471522791