ST. JOSEPH’S COLLEGE FOR WOMEN (AUTONOMOUS) VISAKHAPATNAM

B.SC.(HONORS) AGRICULTURE AND RURAL DEVELOPMENT WITH SINGLE MAJOR

# II SEMESTER AGRICULTURE AND RURAL DEVELOPMENT Time: 30hrs/week

AGRD121P (1)  **FUNDAMENTALS OF SOIL SCIENCE** Marks:50

w.e.f AK 2023-2024 (Admitted batch) **PRACTICAL** **SYLLABUS**

**OBJECTIVES:**

* To identify the different types of soils and its properties
* To know about the weathering and its types
* To identify the role of nitrogen fixation, phosphorous and organic matter in enhancing the soil fertility.

**COURSE OUTCOMES:**

**CO1:** Classify rocks, minerals and soils and explain various aspects of soil.

**CO2**: Discuss about the soil profile, structure, density and its properties.

**CO3:** Discuss the importance of nitrogen fixation, role of phosphorous and organic matter in enhancing soil fertility.

**CO4**: Discuss on soil colloids and its general properties in detail.

**CO5:** Learn classification of soils, soil taxonomy and groups of soils in India.

**EXPERIMENTS:**

1. Methods of chemical analysis, principles, techniques and calculations   **(2Hrs.)**

2. Study of soil sampling tools, collection of representative soil sample, its Processing and storage.   **(4Hrs.)**

3. Description of soil profile in the field.   **(2Hrs.)**

4. Studies of capillary rise phenomenon of water in soil column and water movement in soil.   **(2Hrs.)**

5. Determination of texture by feel method.   **(4Hrs.)**

6. Determination of mechanical composition of soil using Bouyoucos Hydrometer.**(2Hrs.)**

7. Determination of bulk density and particle density of soil and porosity.   **(4Hrs.)**

8. Determination of soil moisture content by gravimetric method.      **(2Hrs.)**

9. Determination of infiltration rate.   **(2Hrs.)**

10. Determination of soil strength by cone penetrometer. **(2Hrs.)**

11. Aggregate analysis by wet sieving method. **(2Hrs.)**

12. Determination of soil pH & EC of soil. **(2Hrs.)**

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