



# Shri Vaishnav Vidyapeeth Vishwavidyalaya, Indore

## Shri Vaishnav Institute of Agriculture

### Generic Elective Course, I semester

TEACHING & EVALUATION SCHEME									
Course Code	Course Name	Theory			Practical		Credits		
		END SEM University Exam	Mid term exam	Teachers Assessment	END SEM University Exam	Teachers Assessment	L	P	Total
AGGE101	Fundamentals of Soil	60	20	20	00	00	4	0	4

Legends: L - Lecture; P - Practical; C-Credit;

\*Teacher Assessment shall be based on following components: Quiz / Assignment / Project / Participation in Class,

**Course Objective:** To introduce students from all backgrounds to the fundamentals of soil science, its role in sustaining life, and its importance in agriculture, environment, and climate.

**Course Outcomes:** This course promotes soil awareness through interactive approaches.

#### Unit 1: Soil – A Natural Body

- What is soil? – Basic definitions and concepts
- Pedological vs. Edaphological views of soil
- Soil formation: Parent rocks and minerals, Weathering process, Factors influencing soil formation (climate, organisms, relief, parent material, time)
- Soil profile and horizons
- Basic physical properties of soil: Texture, structure, density, porosity. Soil colour, consistence, and plasticity

#### Unit 2: Soil Types, Soil Water, Air & Temperature

- Introduction to soil classification (basic concepts)
- Major soil types of India (e.g., alluvial, black, red soils)
- Soil water: Water retention and movement, Water availability to plants
- Soil air: Composition and role in plant/root health
- Soil temperature: Sources and movement of heat in soil, Effect on seed germination and plant growth

#### Unit 3: Soil Organic Matter and Soil Life

- Composition and importance of soil organic matter
- Role of organic matter in soil structure and fertility
- Soil organisms: Microorganisms Macro-organisms and their Beneficial and harmful effects.

#### Unit 4: Soil Pollution and Management

- Causes of soil pollution: Excessive use of pesticides, fertilizers, industrial waste
- Behaviour of pollutants in soil
- Effects on soil health, food safety, and ecosystems
- Basic soil pollution prevention and control methods
- Importance of sustainable soil management

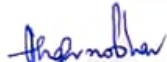


**Unit 5: Soil Awareness and Sustainability**

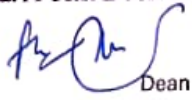
- Soils and Sustainable Development Goals (SDGs)
- Soil in climate change: carbon sequestration
- Soils and food security
- Role of citizens in protecting soil (composting, afforestation, responsible consumption)

**References:**


- Indian society of soil science (ISSS). Fundamentals of Soil Science. ICAR Publication, New Delhi.
- Brady, N. C. & Well, R. R. The Nature and Properties of soil.
- A.K. Saha. A Text Book of soil Physics. Kalyani Publication, New Delhi.

  
(Prof. Vinod Dhar)

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