Shivaji University, Kolhapur

B. A. / B. A. B. Ed. Part – II

Geography

Semester III

VSC I: Soil Analysis (Practical) As Per NEP 2020 (2.0)

Name of the Programme	**:**	B. A. / B. A. B. Ed. (Geography)
Class	**:**	B. A. / B. A. B. Ed.-II
Year of Implementation	**:**	Revised Syllabus will be implemented from June, 2025 onwards.
Semester	**:**	III
Name of Vertical Group	**:**	VSC
Course Code	**:**	**BAU0325VSP322C01**
Course Title	**:**	**Soil Analysis (Practical)**
Total Credit	**:**	02
Workload	**:**	Practical 02 credit (02 X 30 = 60 hours in semester)
Duration	**:**	The course shall be a full time course
Medium of instruction	**:**	Marathi / English
Eligibility of Admission	**:**	As per eligibility criteria prescribed by the University
Examination Pattern	**:**	Practical for50 Marks, The pattern of examination will be Semester End Examination with Assessment/Evaluation.

Preamble:

Soil is a fundamental natural resource that plays a crucial role in sustaining life of the Earth. Understanding its composition, structure, and various physical, chemical, and biological properties are essential for effective applications for land use, management and sustainability. Soil analysis is an interdisciplinary field of study that integrates aspects of geography, chemistry, biology, geography, geology, and environmental science. It provides valuable information on soil health, fertility, and suitability for various agricultural and ecological applications.

This syllabus aims to equip students with a comprehensive understanding of the principles and practices involved in soil analysis. Through both theoretical learning and hands-on laboratory experience, students will gain the necessary skills to assess soil quality, preparation and interpret soil testing results, and apply these findings in real-world scenarios such as agriculture, land reclamation, and environmental monitoring.

General Objectives of the Course:

The general objectives of the Soil Analysis course are as to provide students with a solid foundation in soil science, focusing on the principles, techniques, and applications of soil analysis. By the end of the course, students would be able to:

1. To understand the concept of soil and its formation.
2. To acquire the proper techniques for soil sample collection.
3. To gain practical knowledge of soil analysis particularly physical properties of soil.
4. To gain practical knowledge of soil analysis particularly chemical properties of soil.

Course Outcomes:

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

1. The students will possess a comprehensive understanding of Soil Properties and Their Significance.
2. They will demonstrate proficiency in correctly collect soil samples from various areas and prepare them for laboratory analysis.
3. Practically the students will be performing scientific analyzer of soils.
4. The students will be apply soil analysis data to overcome real-world problems related to soil fertility, erosion control, land reclamation, and sustainable agriculture.

Scheme of Teaching and Examination:

(The Scheme of teaching and examination should be given as applicable to the course / paper concerned)

B. A. / B. A. B. Ed. part –II

Sr. No.	Subjects/Course & Credit	Practical Hours per week				Examination scheme (Marks)		
		L	T	P	Total	Practical	Term Work	Total (Semester)
1	Soil Analysis - 2	04	---	04	04	50	--	50

Scheme of Examination:

- The examination shall be conducted at the end of each Semester.
- The Practical paper shall carry 50 marks.
- The evaluation of the performance of the student in practical papers shall be on the basis of semester practical examination of 50 marks.
- Question Paper will be set in the view of the / in accordance with the entire syllabus and preferably covering each Module of syllabi.

Standard of Passing:

(As prescribed under rules & regulation for each diploma / degree / program)

Nature of Question Paper and Scheme of Marking:

(As per rules & regulation of Shivaji University)

Modules: Soil Analysis (Practical)				
Module No.	**Module Name**	**Sub-module**	**No. of hours & Marks**	**Credit**
1	**Physical Analysis of Soil**	**Introduction to soil** 1.1 Definition of soil and importance of soil analysis 1.2 Process of Soil formation 1.3 Physical properties of soils **Practical Exercise:** **Physical Analysis of Soil** a) Soil sampling b) Draw a cross section c) Soil Structure by observation d) Porosity e) Colour f) Temperature	30 (20)	01
2	**Chemical Analysis of Soil**	2.1 Chemical Properties of Soils 2.2 Importance of Chemical Properties of Soils in Relation to Crops **Practical Exercise:** **Chemical Analysis of Soil** a) pH b) Electric conductivity c) Nitrogen (N) d) Phosphorus (P) e) Potassium (K)	30 (20)	01
3	**Journal & Viva Voce**		(10)	

Note :

1. Figures in the bracket indicate weightage of marks to concern module.
2. Use of stencils, log tables, computer and calculator is allowed.

2. Journal should be completed and duly certified by practical in-charge and Head of the Department.

Suggested Readings

1. Backman, H.O and Brady, N.C.(1960.)The Nature and Properties of Soils, Mc Millan NewYork.
2. Bennet, Hugh H.: Soil Conservation, McGraw Hill, New York .
3. Bunting, B.T.(1973) The Geography of Soils, Hutchinson, London.
4.Carter, M.R.(1993): Soil Sampling and Method of Analysis.Ed Canadian Soc. Soil Sci. Lewis Publisher, USA.823
5. Chairas, D. D., Reganold, J. P., and Owen, O. S., (2002): National Resource Conservation and Management for a Sustainable Feture, 8th edition, Prentice Hall, Englewood Cliffs.
6. Clarke G.R.(1957) Study of the Soil in the Field, Oxford University Press, Oxford.
7. Daji, J. A., (1970): A Text Book of Soil Science, Asia Publishing House, Londaon.
8. Foth H.D. and Turk, L.M.(9172) Fundamentals of Soil science, John Wiley, New York.
9. Ghosh, A.B.(1983): Soil and Water Testing Methods, A Laboratory Manual,IARI, New Delhi.
10. Gupta P.K. (2004): Methods in Environmental Analysis Water Soil and Air,Agrobios.
11. GovindaRajan, S.V. and Gopala Rao, H.G.(9178) Studies on Soils of India Vikas, New Delhi.
12. MathurNeeru, (2012): Soils, Rajat Publications, New Delhi-02 (India).
13. Mc. Bride, M.B.(1999)Environmental Chemistry of Soils, Oxford University Press, New York.
14. Morgan, R. P. C., (1995): Soil Erosion and Conservation, 2nd edition, Longman, London.
15. Nye, P.H. and Greene, D.J.(1960)The Soil under Shifting Cultivation Commonwealth Bureau of Soil Science, Technical Communication, No. 51; Harpender, England.
16. Plaster, E. J., (2009): Soil Science and Management, Cengage Learning, Boston.
17. Raychoudhuri, S.P., (1958): Soils of India, ICAR, New Delhi.
18. Russell, Sir Edward J.:(1961) Soil Conditions and Plant Growth, Wiley, New York.