

**Shikshan Prasarak Sanstha's
Padmabhushan Vasantodada Patil Mahavidyalaya,
Kavathe Mahankal.**

DEPARTMENT OF CHEMISTRY

Career Oriented Course in

“Soil and Water Analysis”

(2022-23)

Padmabhushan Vasantodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

Report on Career Oriented Course in “Soil and Water Analysis”

Title	Career Oriented Course in “Soil and Water Analysis”
Duration	17 th October 2022 to 7 th February 2023
Organizer	Department of Chemistry, P.V.P. Mahavidyalaya Kavathe Mahankal
Funding	--
BOS / Faculty	Asso. Prof. S. V. Patil Asso. Prof. Dr. G. D. Kore Assi. Prof. A. A. Kamble Mrs. P. B. Patil Mr. T. P. Shinde
Coordinator	Assi. Prof. A. A. Kamble
Background	Now a day’s analysis of soil and water has high importance in the field of agriculture. For that, students must have some knowledge of soil and water quality parameters so this course is intended.
Objective	<ol style="list-style-type: none">1. To acquire basic knowledge about soil and water2. To support accurate analysis and water of soil affect to improve crop yield and health.3. To provide adequate practical and basic knowledge, accurate analysis of soil and water4. To generate skills of handling Laboratory Equipment’s.5. To learn different techniques of sampling of soil and water.
Outcomes	<ol style="list-style-type: none">1. To have some basic knowledge of basic knowledge of soil and water analysis.2. To handle the laboratory equipment’s required for soil analysis.3. To manage the sampling of different soil and water samples.4. To analyse the different parameters of soil and water
Conclusion	Students got sufficient knowledge about soil and water parameters. Course creates interest in students for analyzing various water and soil samples. thus this course is fruitful and motivational for participated students.

Padmabhushan Vasantrodada Patil Mahavidyalaya, Kavathe Mahankal.


DEPARTMENT OF CHEMISTRY

Report on Career Oriented Course in "Soil and Water Analysis"

Brief Summary

Sr. No.	Organizing department	Department of Statistics		
		Male	Female	Total
1	Type of Activity	Career Oriented Course in "Soil and Water Analysis"		
2	Duration of Activity	17 th October 2022 to 7 th February 2023		
3	Venue	Chemistry Lab, Department of Chemistry		
4	Participation			
	Students	Male	Female	Total
	B. Sc. III	50	31	81
5	Result	A-Grade	B-Grade	Total
	B. Sc. III	81	00	81


Coordinator


Acting Principal
Padmabhushan Vasantrodada Patil
Mahavidyalaya, Kavathe Mahankal, Dist-Sangli.


Head
Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K. Mahankal, Dist-Sangli

INDEX

Sr. No.	Content
1.	Permission Letter
2.	Notice for enrollment
3.	Brochure
4.	Board of studies
5.	Objectives
	Duration
	Eligibility of the student
	Outcomes
	Evaluation method
6.	Syllabus
7.	Timetable
8.	Notice for starting the course
9.	List of students and attendance
10.	Notice for examination
11.	Theory Paper
12.	Practical question paper
13.	Photos
14.	Result
15.	Certificate
16.	One page report
17.	Summary

Application

From,
Head,
Department of Chemistry
P. V. P. College, Kavathe Mahankal,
Dist. Sangli, Maharashtra 416405
Date: 16/09/2022

To,
The Principal,
Padmabhushan Vasantrodada Patil Mahavidyalaya,
Kavathe Mahankal, Dist. Sangli,
Maharashtra 416405

Subject: Seeking a permission to start the career-oriented course in "Soil and Water analysis".

Respected sir,

As per your guidelines we are going to start a career oriented course in "Soil and Water analysis" in Department of Chemistry for our college students. This course will be of 30 hours and will be completed during October 2022 to January 2023. The course will be definitely very beneficiary for students.

I request you to give permission to start the above course in the Department.

Thanking you.

Permission sanctioned

[Handwritten Signature]

Acting Principal

Padmabhushan Vasantrodada Patil
Mahavidyalaya, Kavathe Mahankal, Dist. Sangli.



Yours faithfully,

[Handwritten Signature]

Head

Department Of Chemistry
P. V. P. Mahavidyalaya,
K. Mahankal, Dist. Sangli

Padmabhushan Vasantrodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

Date: 03-10-2022

NOTICE

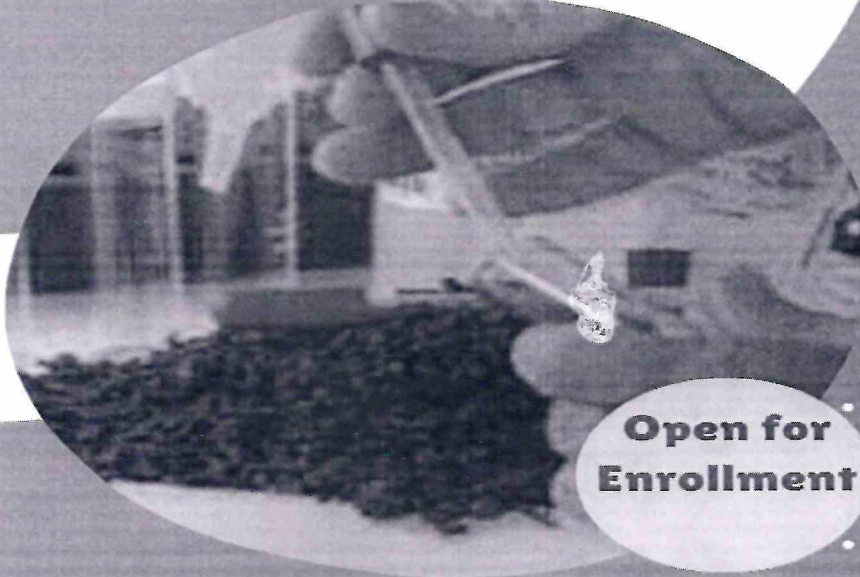
All the students in P. V. P. college, Kavathe Mahankal are informed that, Department of Chemistry is going to start the career-oriented course in "Soil and Water analysis". The interested students are requested to enroll up to 10th October, 2022.



**Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K. Mahankal, Dist-Sangli**

BROCHURE

Shikshan Prasarak Sanstha's
Padmabhushan Vasanttraodada Patil
Mahavidyalaya, Kavathe Mahankal



**Open for
Enrollment**

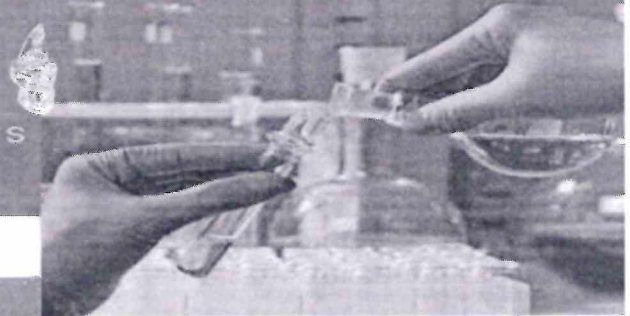
DEPARTMENT OF CHEMISTRY

CAREER ORIENTED COURSE IN
"SOIL AND WATER ANALYSIS"

Starting from 16 october

JOIN NOW

- Well equipped labs
- Experienced teachers
- Free certificate








Padmabhushan Vasantodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

Soil and Water analysis

Board of Studies

Sr. No.	Name	Designation	Signature
1.	Asso. Prof. S. V. Patil	President	
2.	Asso. Prof. Dr. G. D. Kore	Member	
3.	Assi. Prof. A. A. Kamble	Member	
4.	Mrs. P. B. Patil	Member	
5.	Mr. T. P. Shinde	Member	

Padmabhushan Vasantrodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

Soil and Water analysis

Aims and Objectives

During the certificate course of 'Soil, Water Analysis' a candidate is trained on professional skill, professional knowledge and Employability skill related to job role.

The objectives of Soil- Water Analysis are

1. To acquire basic knowledge about soil and water
2. To support accurate analysis and water of soil affect to improve crop yield and health.
3. To provide adequate practical and basic knowledge, accurate analysis of soil and water
4. To generate skills of handling Laboratory Equipment's.
5. To learn different techniques of sampling of soil and water.
6. To study the effect of excessive use of fertilizers and irrigation resulted in the salting of soil.
7. To study excessive amount of iron, fluorides, nitrates, TDS in the water contain.

Duration:

The course will be completed in 45 hours (3 months).

Eligibility of the student:

1. The student must have the basic knowledge of chemistry.
2. Student must have passed H. Sc. Examination.
3. Student studying in institute for B.Sc.

Course outcomes:

By the end of this course students are expected,

1. To have some basic knowledge of basic knowledge of soil and water analysis.
2. To handle the laboratory equipment's required for soil analysis.
3. To manage the sampling of different soil and water samples.
4. To analyse the different parameters of soil and water

Evaluation Method:

All the students will be continuously evaluated by,

1. Internal evaluation	10 M
2. Home Assignments	10 M
3. Theory examination	40 M
4. Practical examination	30 M
5. Oral	10 M

100 M

- Nature of Theory question paper.

Q-1. 20 Multiple choice question. (40 marks)

- Nature of practical Examination.

During Practical examination student have to perform two practical one from water analysis and one from soil analysis. Examination will be of five hours. Oral examination is conducted during practical exam.

Grades: A grade= above 60, B grade = above 50, C grade = above 40

Certification: A certificate will be issued on successful completion of the course.

Padmabhushan Vasantrodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

Soil and Water analysis

Syllabus

Theory Paper

[Total periods: 20]

Unit – I Introduction and formation of soil

5L

Definition of Soil, Concept of Lithosphere, Soil as a natural body, Soil Components: Air, Water, inorganic and organic solids, Formation of Soil, Factors of Soil Formation: Parent Material, Organic, Climatic, And Topographic.

Unit – II Properties of soil

5L

A) Physical properties: - Soil Separates, Texture, Aggregation and Structure, Temperature, Color, Properties of Soil Mixture, Pore Space, Bulk Density, Particle Density, Aeration and Drainage, Compaction, Surface area, Soil water relationships.
B) Chemical Properties: - Morphology of Colloids, Chemistry of Clays, Ionic Exchange, Acidity, Alkalinity, pH, Salinity, Reactions in Liming and Acidification.

Unit-III: Importance of Water Analysis

4L

Introduction to Hydrology: Water resources, Different ecosystem of Hydrology, Riverine, Estuarine, and marine, Status of water quality in India.

Unit-IV: Water Quality Parameters

6L

Water quality parameters and their interaction- physical and chemical Characteristics - turbidity, color, temperature, taste, acidity, alkalinity, CO₂, hardness, P^H. EC, TDS, Total Dissolved Solid (TDS), COD, BOD, DO,

REFERENCES:

1. Backman, H.O and Brady, N.C. (1960.). The Nature and Properties of Soils, McMillan, New York.
2. Bennet, Hugh H.: Soil Conservation, McGraw Hill, New York.
3. Foth H.D. and Turk, L. M. (1972) Fundamentals of Soil science, John Wiley, New York.
4. Mc. Bride, M. B. (1999) Environmental Chemistry of Soils, Oxford University Press, New York.
5. Govinda Rajan, S.V. and Gopala R. H. G. (1978) Studies on Soils of India Vikas, New Delhi.
6. Raychoudhuri, S. P. (1958) Soils of India, ICAR, New Delhi.

7. Russell, Sir Edward J.:(1961) Soil Conditions and Plant Growth, Wiley, New York.
8. The Chemical Analysis of Water, Hunt D.T.E., Royal Society of Chemistry, ISBN: 9780851867977
9. Water Analysis, Fresenius, Wilhelm, Quentin, Karl E., Schneider, Wilhelm, Springer, ISBN 978-3-642- 72610-1.
10. Chemistry and Water, Ahuja Satinder, Elsevier Science Publishing Co Inc, ISBN: 9780128093306.
11. Standard Analytical Procedures for Water Analysis, Hydrology Project, Government of India and Netherland, 1999.
12. Drinking Water Chemistry, Hauser Barbara, Taylor & Francis Ltd, ISBN: 9781138475311.

Practical Course (Any 10)

25 hours

1. Field Visit and Sampling of Soil Analysis.
2. Determination of water holding Capacity of Soil.
3. Determination of Moisture Content of Soil.
4. Determination of pH of Soil.
5. Determination of Electrical Conductivity of Soil.
6. Determination of Hardness of Water
7. Determination of Alkalinity of Water
8. Determination of Acidity of Water
9. Determination of pH and Conductivity of Water of Water
10. Determination of Chloride Content of Water
11. Determination of Total Solids present in Water
12. Determination of Total Dissolved Solids (TDS) present in Water
13. Determination of Free Carbon Dioxide in Water
14. Determination of Chemical Oxygen Demand (COD) of Water

REFERENCES:

1. Soil Analysis Handbook of Reference Methods, CRC Press; first edition, 20 December 1999.
2. Soil Testing and Analysis, Oxford Book Company, ISBN: 9789380179575, 9789380179575.

3. Fundamentals of Soil Science 2nd Edition by Tolanur S., CBS PUBLICATION, October 2017.
4. Principles and Methods of Soil Analysis, Edgar Richards, Franklin Classics, 2018.
5. Soil sampling and methods of analysis, M.R. Carter, CRC Press, 1993. 6. Water Analysis, Wanklyn James Alfred, Biblio Life, ISBN: 9781103755882.
7. Handbook Of Water Analysis 3rd Edition by Nollet, Taylor and Francis, ISBN:9781439889640, 2013.
8. The Chemical Analysis of Water, Hunt D.T.E., Royal Society of Chemistry, ISBN: 9780851867977.
9. Water Analysis, Fresenius, Wilhelm, Quentin, Karl E., Schneider, Wilhelm, Springer, ISBN 978-3-642- 72610-1.
10. PRACTICAL MANUAL OF WATER ANALYSIS, Priyanka Singh, ISBN-10: 9789384502294

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DEPARTMENT OF CHEMISTRY

Soil and Water analysis Course

TIME TABLE

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Theory/ Practical	Theory	Theory	Theory	Theory	Practical	Practical
Lecturer	SVP	GDK	AAK	TPS	PBP	AAK

- The time of theory lectures will be 9:30 am to 10:30 am in chemistry lecture hall
- The time for practical will be 8:30 am to 11: 00 am in chemistry laboratory no. 1
- This lecture schedule is followed from 17th October to 5th November in first semester and 9th January to 21th January in second semester


Course Coordinator


Head

Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K.Mahankal,Dist-Sangli

Padmabhushan Vasantrodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

Soil and Water analysis

Date:15-10-2022

NOTICE

All the enrolled students are informed that, the lectures and practical's of the course will be started from **17th October** as per timetable. All the lectures will be conducted in chemistry department lecture hall. All the practical's will be conducted in chemistry laboratory no. 1 of department of chemistry.


Course Coordinator


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Department Of Chemistry
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K.Mahankal,Dist-Sangli

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DEPARTMENT OF CHEMISTRY

Soil and Water analysis

NOTICE

30/01/2023

All the enrolled students are informed that, the timetable for theory examination and practical examination of the course in "Soil and Water analysis" is as below,

Examination	Date	Time	Venue
Theory	06/02/2023	9:00am to 11:00am	Lecture hall
Practical	07/02/2023	9:00am to 4:00pm	Laboratory no. 1


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DEPARTMENT OF CHEMISTRY

Soil and Water analysis

Theory Examination

Date:06/02/2023

Time: 9:00am to 11:00am

Marks: 40

Name: _____

Instructions: 1) All questions are compulsory

2) All question carries equal marks

Que. 1. Choose the correct alternative and make a tick mark to right answer.

1. Phosphorus uptake in alkali soil in the form of _____

- (A) H_2PO_4^- (B) HPO_4^{2-} (C) PO_4^{3-} (D) H_3PO_4

2. Which fertilizer produce acidity in soil

- (A) Ammonium sulfate (B) Sodium nitrate
(C) Calcium ammonium nitrate (D) Calcium nitrate

3. Soil colloidal particle shows the phenomena

- (A) Plasticity (B) Adhesion and cohesion
(C) Flocculation (D) All of the above

4. Thiourea is type of fertilizer

- (A) Slow release (B) Nitrification inhibitors
(C) Natural nitrification (D) Artificial nitrification

5. Quantity of soil to be taken for texture analysis

- (A) 10g (B) 20g (C) 30g (D) 40g

6. Which genera of bacteria found maximum in soil?

- (A) Azotobacter (B) Pseudomonas
(C) Bacillus (D) All of the above

7. Rain water is

- (A) Basic (B) Acidic (C) Neutral (D) All of the above

8. Hardness of water is due to salts of
(A) Calcium (B) Magnesium (C) Iron (D) both a & b
9. BOD stands for..... Oxygen Demand
(A) Bottle (B) Biological (C) Botanical (D) both a & b
10. The maximum permissible limit for fluoride content in water is
(A) 1.5 mg/lit (B) 5 mg/lit (C) 0.5 mg/lit (D) 10 mg/lit
11. Mathemoglobinemia disease in infants is caused due to
(A) chlorides (B) sulphates (C) Nitrates (D) all of these
12. Blue baby disease found in infants is due to excessive In drinking water
(A) chlorides (B) sulphates (C) Nitrates (D) Carbonates
13. A 25 ml sample was diluted to 250ml with odorless distilled water of so that odour of sample no longer perceivable what was threshold odor number
(A) 11 (B) 10 (C) 25 (D) 05
14. Which characteristic of water is measured by using Nessler tube
(A) Colour (B) taste (C) Dirt (D) specific conductivity
15. The most common cause of acidity in water is
(A) Nitrogen (B) Sodium Hydroxide (C) Carbon dioxide (D) calcium
16. Which of the following types of pipes is not commonly used in water supply schemes
(A) steel pipes (B) cement concrete pipes (C) Wrought iron pipes (D) PVC pipes
17. in water treatment plants the most used coagulant is
(A) alum (B) chlorine (C) bleaching powder (D) lime
18. Which out of the following does not help in disinfecting the water
(A) chlorine tablets (B) boiling (C) filtering (D) alums
19. Zero hardness of water is achieved by
(A) lime soda process (B) excess lime treatment
(C) ion exchange method (D) using excess alum dosage
20. Which of the following parameter is used to determine quality of water
(A) colour (B) odor (C) taste (D) all of these

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DEPARTMENT OF CHEMISTRY

Soil and Water analysis

Practical Examination

Date:07/02/2023

Time: 9:00am to 04:00am

Marks: 30

Instructions: 1) All questions are compulsory

2) Each question carries 15 marks.

Q1. Perform tick marked practical in given time 15

- a. Determination of Moisture Content of Soil.
- b. Determination of pH of Soil.
- c. Determination of Electrical Conductivity of Soil.
- d. Determination of water holding Capacity of Soil.

Q2. Perform tick marked practical in given time 15

- a. Determination of Hardness of Water
- b. Determination of Alkalinity of Water
- c. Determination of Acidity of Water
- d. Determination of pH and Conductivity of Water of Water
- e. Determination of Chloride Content of Water

Padmabhushan Vasanttraodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

Soil and Water Analysis

RESULT

Sr. no	NAME OF STUDENT	I. E.	H. A.	THEO RY	PRACT ICAL	ORAL	TOTAL	GRAD E
1	Attar Tahir Gulab	8	8	30	24	6	76	A
2	Avasare Girish Pandurang	9	8	32	24	6	79	A
3	Bhat Mane Manoj Vijay	7	8	34	25	5	79	A
4	Bhosale Prakash Sudhakar	8	8	32	26	7	81	A
5	Bhosale Rohan Yashwant	6	9	34	24	6	79	A
6	Bhosale Rushikesh Anil	9	8	34	23	7	81	A
7	Bhosale Sharaddha Dattatraya	9	8	32	26	8	83	A
8	Bhosale Sweta Abaso	8	7	34	24	8	81	A
9	Bhosale Tejas Dhairshell	9	8	30	23	7	77	A
10	Chandanshive Snehal Jitendra	7	9	28	25	6	75	A
11	Chavan Akshay Maruti	9	8	26	25	7	75	A
12	Chavan Komal Anil	8	7	26	26	8	75	A
13	Chavan Mohan Sanjay	7	8	28	23	7	73	A
14	Chavan Pranali Pravin	8	7	34	25	6	80	A
15	Chavan Sanket Ramesh	9	8	26	24	7	74	A
16	Chavan Subhash Balvant	7	9	32	24	8	80	A
17	Chougule Priyanka Bapuso	8	8	34	23	6	79	A
18	Desai Raturaj Appa	9	9	30	22	7	77	A
19	Devkate Komal	7	8	30	21	8	74	A
20	Firme Prathamesh Anil	7	9	34	23	6	79	A
21	Gherade Avinash Vilas	8	8	34	21	7	78	A
22	Gherade Yuvraj Vasant	9	9	34	24	6	82	A
23	Gidde Aishwarya Dilip	8	8	32	21	7	76	A
24	Gorad Sagar Sambhaji	7	9	32	25	6	79	A
25	Gujale Rohit Sanjay	9	8	36	25	7	85	A
26	Hajare Pooja Annaso	7	9	34	26	6	82	A
27	Hankare Amol Jaysing	8	8	32	24	7	79	A
28	Hubale Priyanka Prakash	9	8	34	25	6	82	A
29	Hunmane Ganesh Sambhaji	8	8	32	27	7	82	A
30	Imade Monika Vilas	7	9	34	24	6	80	A
31	Jadhav Neha Rajiv	8	8	32	23	7	78	A

69	Patole Aditya Anil	8	8	32	23	7	78	A
70	Phonde Supriya Mayappa	7	9	28	25	6	75	A
71	Salunkhe Aishwarya Popat	9	8	26	25	7	75	A
72	Salunkhe Pratiksha Mohan	8	7	26	26	8	75	A
73	Salunkhe Rutuja Bapu	8	8	32	21	7	76	A
74	Shinde Pragati Pandit	7	9	32	25	6	79	A
75	Shingade Sanjay Govind	9	8	36	25	7	85	A
76	Suryawanshi Raturaj Yuvraj	8	7	26	26	8	75	A
77	Sutar Nikita Nivrutti	8	8	32	21	7	76	A
78	Thokale Prashik Dattatraya	7	9	32	25	6	79	A
79	Thombare Vikram babao	9	8	36	25	7	85	A
80	Waghmare Pratik Annaso	8	7	26	26	8	75	A
81	Waghmare Shubham Suresh	8	8	32	21	7	76	A


Course Coordinator


Head
Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K. Mahankal, Dist-Sangli

Padmabhushan Vasantraodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

Soil and Water Analysis

THEORY LECTURE/ PRACTICAL ATTENDANCE

Sr.no	NAME OF STUDENT	Date														
		17 oct	18 oct	19 oct	20 oct	21 oct	22 oct	24 oct	25 oct	26 oct	27 oct	28 oct	29 oct	31 oct	1 Nov	2 Nov
1	Attar Tahir Gulab	TG Attar	TG Attar	TG Attar	TG Attar	TG Attar	TG Attar	TG Attar	Ab	TG Attar	TG Attar	TG Attar	Ab	TG Attar	TG Attar	TG Attar
2	Avasare Girish Pandurang	GA Vasare	Ab	GA Vasare	GA Vasare	GA Vasare	GA Vasare	GA Vasare	GA Vasare	GA Vasare	GA Vasare	GA Vasare	GA Vasare	GA Vasare	Ab	GA Vasare
3	Bhat Mane Manoj Vijay	MV Bhat	MV Bhat	Ab	MV Bhat	MV Bhat	MV Bhat	Ab	MV Bhat	MV Bhat	MV Bhat	MV Bhat	MV Bhat	MV Bhat	MV Bhat	MV Bhat
4	Bhosale Prakash Sudhakar	PBhosale	PBhosale	PBhosale	PBhosale	Ab	PBhosale	PBhosale	PBhosale	PBhosale	Ab	PBhosale	PBhosale	PBhosale	PBhosale	Ab
5	Bhosale Rohan Yashwant	RYBhosale	Ab	RYBhosale	RYBhosale	RYBhosale	RYBhosale	RYBhosale	RYBhosale	RYBhosale	RYBhosale	Ab	RYBhosale	RYBhosale	RYBhosale	RYBhosale
6	Bhosale Rushikesh Anil	ABhosale	ABhosale	Ab	ABhosale	ABhosale	ABhosale	ABhosale	ABhosale	Ab	ABhosale	ABhosale	ABhosale	ABhosale	ABhosale	ABhosale
7	Bhosale Sharaddha Dattatraya	BSD	BSD	BSD	BSD	BSD	Ab	BSD	BSD	BSD	BSD	BSD	BSD	Ab	BSD	BSD

80	Waghmare Pratik Annaso	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
81	Waghmare Shubham Suresh	Pass	Pass	Pass	Pass	Ab	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass


Course Coordinator


Head

Head
Department Of Chemistry
P. V. P. Mahavidyalaya,
K. Mahankal, Dist-Sangli

Padmabhushan Vasantraodada Patil Mahavidyalaya, Kavathe Mahankal.

DEPARTMENT OF CHEMISTRY

Soil and Water Analysis

THEORY LECTURE/ PRACTICAL ATTENDANCE

Sr.n o	NAME OF STUDENT	Date														
		2 Nov	4 Nov	5 Nov	9 Jan	10 Jan	11 Jan	12 Jan	13 Jan	14 Jan	16 Jan	17 Jan	18 Jan	19 Jan	20 Jan	21 Jan
1	Attar Tahir Gulab	TCATter	TCATter	TCATter	TCATter	TCATter	TCATter	TCATter	TCATter	TCATter	TCATter	TCATter	TCATter	TCATter	TCATter	TCATter
2	Avasare Girish Pandurang	Ab	GPAUSare	GPAUSare	GPAUSare	Ab	GPAUSare	GPAUSare	GPAUSare	GPAUSare	GPAUSare	Ab	GPAUSare	GPAUSare	GPAUSare	GPAUSare
3	Bhat Mane Manoj Vijay	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat	M.V.Bhat
4	Bhosale Prakash Sudhakar	Pobhosale	Pobhosale	Pobhosale	Pobhosale	Pobhosale	Pobhosale	Ab	Pobhosale	Pobhosale	Pobhosale	Ab	Pobhosale	Pobhosale	Pobhosale	Pobhosale
5	Bhosale Rohan Yashwant	Ab	Rybhosale	Rybhosale	Rybhosale	Rybhosale	Rybhosale	Rybhosale	Rybhosale	Rybhosale	Rybhosale	Rybhosale	Rybhosale	Rybhosale	Rybhosale	Rybhosale
6	Bhosale Rushikesh Anil	ABseal	ABseal	ABseal	Ab	ABseal	ABseal	ABseal	ABseal	ABseal	Ab	ABseal	ABseal	ABseal	ABseal	ABseal
7	Bhosale Sharaddha Dattatraya	PBD.	Ab	PBD.	PBD.	PBD.	PBD.	PBD.	PBD.	PBD.	PBD.	PBD.	PBD.	Ab	PBD.	PBD.

80	Waghmare Pratik Annaso	Pass	Ab	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass
81	Waghmare Shubham Suresh	Pass	Pass	Pass	Pass	Pass	Ab	Pass	Pass	Pass	Pass	Pass	Ab	Pass	Pass	Pass


Course Coordinator


Head
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Shikshan Prasarak Sanstha's
Padmabhushan Vasantodada Patil Mahavidyalaya



Kavathe Mahankal, Sangli
Affiliated to Shivaji University, Kolhapur



Department of Chemistry

Career Oriented Course in

“Soil and Water Analysis”

This is to certify that Mr./Miss Attar Tahir Gulabhas participated actively and completed successfully the short term course “A Certificate Course in Soil and Water Analysis” organized and arranged by the department of Chemistry.

Mr. Kamble A .A.
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Department of Chemistry
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