



S.A.S. GOVERNMENT DEGREE COLLEGE
NARAYANAPURAM, WEST GODAVARI DISTRICT-534406
(AFFILIATED TO ADIKAVI NANNAYA UNIVERSITY, RAJAMAHENDRAVARAM)
Phone: 08818 252189, E-mail: narayanapuram.jkc@gmail.com



DEPARTMENT OF CHEMISTRY
CERTIFICATE COURSE IN SOIL ANALYSIS

Course co-ordinator
Dr.V.DURGA PRAVEENA,
Lecturer in Chemistry



ACADEMIC YEAR 2019-20

CERTIFICATE COURSE AT A GLANCE

- TITLE OF THE COURSE: SOIL ANALYSIS
- LEVEL OF THE COURSE: UG
- NAME OF THE CO-ORDINATOR: DR.V.DURGA PRAVEENA
- DURATION OF THE COURSE: 30 HOURS
- DATE OF COMMENCEMENT : 22.07.2019
- DATE OF CLOSURE: 26.08.2019
- TIME OF CONDUCT OF THE CLASSES: 5:00 PM – 6:00 PM
- NUMBER OF STUDENTS ENROLLED FOR THE COURSE: 13
- NUMBER OF STUDENTS COMPLETED THE COURSE: 13
- ASSESMENT CRITERION: EVALUATION TEST



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Departmental meeting and minutes

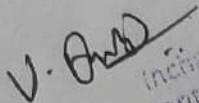
Date	Page
2/12/22	3
<u>Agenda</u>	<u>Minutes of the Departmental Meeting</u>
1. To discuss the departmental meeting of 21/11/22	The departmental meeting was held on 21/11/22 in the Department of Chemistry at Narayanapur. The purpose of the meeting was to discuss the following:
2. To discuss the departmental meeting of 21/11/22	The following resolutions were passed at the meeting:
3. To discuss the departmental meeting of 21/11/22	1. The departmental meeting of 21/11/22 was held in the Department of Chemistry at Narayanapur. The purpose of the meeting was to discuss the following:
4. To discuss the departmental meeting of 21/11/22	2. It was decided that the departmental meeting of 21/11/22 should be held in the Department of Chemistry at Narayanapur.
5. To discuss the departmental meeting of 21/11/22	3. It was decided that the departmental meeting of 21/11/22 should be held in the Department of Chemistry at Narayanapur.
6. To discuss the departmental meeting of 21/11/22	4. It was decided that the departmental meeting of 21/11/22 should be held in the Department of Chemistry at Narayanapur.
7. To discuss the departmental meeting of 21/11/22	The meeting was held in the Department of Chemistry at Narayanapur on 21/11/22.
8. To discuss the departmental meeting of 21/11/22	<u>Signature of the Chairman</u>
9. To discuss the departmental meeting of 21/11/22	1. To discuss the departmental meeting of 21/11/22
10. To discuss the departmental meeting of 21/11/22	2. To discuss the departmental meeting of 21/11/22
11. To discuss the departmental meeting of 21/11/22	3. To discuss the departmental meeting of 21/11/22
12. To discuss the departmental meeting of 21/11/22	4. To discuss the departmental meeting of 21/11/22

Minutes of departmental meeting on certificate course

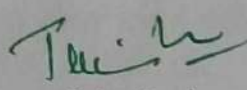
The faculty members of Department of Chemistry met in the Principal's chamber under the chairperson ship of Dr.T.K.Visweswara Rao at 3 PM on Dt :09.07.2019 discussed and resolved as detailed here under.

After the through discussion on the agenda of conducting certificate course as per the departmental action plan, it was resolved to

1. Conduct a certificate course titled **Soil Analysis** with a duration of 30 hours during the working days
2. Frame the syllabus and regulations for the successful completion of certificate course
3. Conduct the examination after the completion of course and issue certificate to the qualified students
4. Set 40% of marks as eligibility for the completion of the course
5. Serve notice to the students well in advance for the enrolment into this course
6. Commence the course on the date fixed obtaining due permission from the chair.


In-charge
Department of Chemistry
SAS GOVT. DEGREE COLLEGE
NARAYANAPURAM 534 406

Signatures of the faculty


Principal
PRINCIPAL
SAS GOVT. DEGREE COLLEGE
NARAYANAPURAM
West Godavari District.
Pin: 534 406, Andhra Pradesh



PERMISSION LETTER FOR CERTIFICATE COURSE

NARAYANAPURAM,

DL11.07.2019

From
The In-charge,
Department of Chemistry,
SAS GDC,
Narayanapuram.

To
The Principal,
SAS GDC,
Narayanapuram.
Sir,

Sub: Department of Chemistry ,SAS Govt. Degree College,
Narayanapuram-Conduct of Certificate course in **Soil analysis**(30
hours) -Accordance of permission requested-Reg.

Ref: Minutes of the departmental meeting dated 10.07.2019

Adverting to the subject, I wish to submit to your kind self that the Department of Chemistry is planning to conduct a Certificate course in "**Soil Analysis**" with 30 hours duration for the students of our college as well as the general public . A resolution was passed to this effect in the Departmental meeting dated 09.07.2019. Hence I request you to kindly accord permission to conduct the same from 22.07.2019 onwards.

Thanking you sir.

Enclosures

1. A xerox copy of the minutes of Departmental meeting dt.09.07.2019



Yours faithfully

V. Durga Praveena

(V. Durga Praveena)
Lecturer in Chemistry

Department of Chemistry
GOVERNMENT DEGREE COLLEGE
NARAYANAPURAM-534 406

PROCEEDINGS OF THE PRINCIPAL, SAS GOVT. DEGREE COLLEGE, NARAYANAPURAM.

PRESENT: Dr.T.K.Visweswara Rao

DATE:12.07.2019

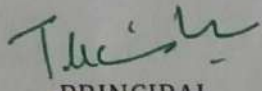
To
The In-charge,
Department of Chemistry,
SAS GDC
Narayanapuram .

Sir/Madam,

Sub: SAS Govt. Degree college, Narayanapuram- Conduct of certificate course
in Soil analysis- Permission accorded- Reg.

Adverting to the subject, I here by draw the kind attention of the in-charge of department of Chemistry of this college ,that a decision was taken in the staff council meeting dated 11.07.2019 after much discussions and deliberation to approve and accord permission for the conduct of a certificate course" Soil Analysis" with 30 hours duration for the general public as well as the students of our college from dt.22.07.2019

You are further instructed to make all the necessary preparations and arrangements for the commencement of the course on dt.22.07.2019


PRINCIPAL
PRINCIPAL
SAS GOVT. DEGREE COLLEGE
NARAYANAPURAM
West Godavari District.
Pin: 534 406, Andhra Pradesh

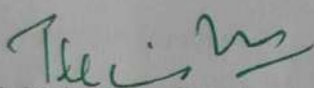


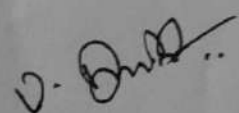
NOTICE

NARAYANAPURAM

Dt:12.07.2019

All the students of SAS Govt. Degree college, Narayanapuram are hereby informed that the Department of Chemistry is intending to conduct a certificate course in Soil Analysis from 22.07.2019 onwards . The required permission from the honourable Principal of the college has been obtained. Hence the students who are interested in enrolling themselves for the course may please contact the in-charge of the department for further details on or before dt.21.07.2019


Initials of the Principal


In-charge of the dept.
Incharge
Department of Chemistry
SAS GOVERNMENT DEGREE COLLEGE
NARAYANAPURAM-534 406





Highlights of the certificate course in Soil Analysis

Introduction

Soil is one of Earth's most essential natural resources, serving as the foundation for all terrestrial life. It is a complex and dynamic mixture of minerals, organic matter, water, air, and living organisms that interact to support plant growth, regulate water flow, and contribute to various ecological processes. From agriculture to forestry, from construction to environmental sustainability, soil plays a vital role in shaping human civilizations and ecosystems worldwide. Soil plays a critical role in crop production and irrigation management, serving as the foundation for plant growth and the medium through which water and nutrients are supplied to crops. By understanding soil properties, moisture content, nutrient availability, and salinity levels, farmers can implement tailored irrigation and soil management strategies to optimize crop yields, conserve water resources, and promote sustainable agriculture.

Objectives of the course

- To determine the quality of the soil for irrigation.
- To understand the effects of soil quality parameters in irrigation and to learn the laboratory techniques.

Course outcomes

After successful completion of course the student will be able to

- Understand that Soil quality testing is an important part of environmental monitoring.
- Know about quality of soil, if it is poor, it can lead to decreased plant diversity and disrupt **ecosystem** stability.
- Gain knowledge on the measurement of quality of soil. Physical properties of soil quality include Specific Gravity, Moisture content and water holding capacity. Chemical properties involve parameters such as P^H , E.C, Cl^- , Ca^{2+} , Mg^{2+} , SAR. Biological properties involve Organic matter. The above parameters are studied in soil of Narayanapuram surroundings.
- Know the fact that Soil quality sampling and testing allows owners to establish baseline values, ultimately increasing the knowledge and understanding surrounding the specific issues.



Syllabus of the course

Unit – I (5) hrs

1. Introduction

- a) Soil, Types, Classification
- b) Ways of Pollution
- c) Soil Analysis

Unit – II (5) hrs

2. Soil Pollution – Types

- a) Effects on ecosystem, human health, and the environment

Unit - III (3) hrs

How to reduce Soil pollution

Unit - IV (3) hrs

Field Trip

Experiments - Practical's (10) hrs

- 1. Collection of Samples
- 2. Specific Gravity
- 3. Moisture Content
- 4. Water holding Capacity
- 5. pH Value
- 6. Electrical conductance
- 7. Chloride ion
- 8. Determination of Ca^{2+} , Mg^{2+}
- 9. Organic Matter
- 10. SAR

Evaluation:

Examination in the form of multiple choice questions (1hr) for $2 \times 25 = 50$ mark

Study area:

The soil samples has been studied from irrigation fields of Narayanapuram and surroundings areas, West godavari Dist.

Methodology of Sample Collection:

The Soil samples are collected in unused plastic zip covers from irrigation fields and practical by volumetric analysis

List of students enrolled for certificate course



S. No	Regd.No.	Name of the Student	Program of study
1.	183557101002	G.GAYATHRI	II B.Sc MPC
2.	183557101007	N.MOUNICA DEVI	II B.Sc MPC
3.	183557110008	B.B.SUMA	II B.Sc BZC
4.	183557110009	B.SIRISHA	II B.Sc BZC
5.	183557110010	CH.NANI	II B.Sc BZC
6.	183557110012	CH.MANISHA	II B.Sc BZC
7.	183557110014	G.PRASAD	II B.Sc BZC
8.	183557110017	L.SAI PRASANNA	II B.Sc BZC
9.	183557110018	M.KARUNA	II B.Sc BZC
10.	183557110019	M.DURGA DEVI	II B.Sc BZC
11.	183557110020	N.NIHARIKA	II B.Sc BZC
12.	183557110022	T.KEERTHI	II B.Sc BZC
13.	183557110023	T.MOHAN	II B.Sc BZC

Attendance



S. No	Regd.No.	Name of the Student	Attendance Particulars															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
			18/10	19/10	20/10	21/10	24/10	1/11	2/11	3/11	4/11	10/11	11/11	12/11	15/11	17/11	18/11	
1.	183557101002	G.GAYATHRI	P	P	P	P	P	P	P	P	P	P	P	p	p	p	p	
2.	183557101007	N.MOUNICA DEVI	P	P	P	P	P	P	P	P	P	P	P	p	p	p	p	
3.	183557110008	B.B.SUMA	P	P	P	P	P	P	a	P	P	P	P	p	p	p	p	
4.	183557110009	B.SIRISHA	P	P	P	P	P	a	a	P	P	P	P	p	p	p	P	
5.	183557110010	CH.NANI	P	P	P	a	P	P	P	P	P	P	P	p	a	p	P	
6.	183557110012	CH.MANISHA	P	P	P	P	P	P	P	P	P	P	P	p	p	p	P	
7.	183557110014	G.PRASAD	P	P	P	P	a	P	P	P	P	P	P	p	p	p	A	
8.	183557110017	L.SAI PRASANNA	P	P	P	P	P	P	P	P	a	P	P	p	p	a	P	
9.	183557110018	M.KARUNA	P	P	P	P	P	P	P	P	P	P	P	p	p	p	P	
10	183557110019	M.DURGA DEVI	P	P	P	P	P	P	a	P	P	P	P	p	p	a	P	
11.	183557110020	N.NIHARIKA	P	P	P	a	P	P	P	P	P	P	P	p	p	p	P	
12.	183557110022	T.KEERTHI	p	p	p	p	p	p	p	p	p	p	p	p	p	p	P	
13	18355711002	T.MOHAN	p	p	p	p	p	p	p	a	p	p	p	p	p	p	P	



S. No	Regd.No.	Name of the Student	Attendance Particulars 17-10-2016																
			16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
			22/ 11	23/ 11	25/ 11	28/ 11	29/ 11	30/ 11	01 / 12	02/ 12	03/ 12	05 / 12	06 / 12	08/ 12	09 / 12	13 / 12	14/ 12		
1.	1835571010 02	G.GAYAT HRI	P	P	P	P	P	P	P	P	P	P	P	P	p	p	p		p
2.	1835571010 07	N.MOUNIC A DEVI	P	P	P	P	P	P	P	P	P	P	P	P	p	p	p		p
3.	1835571100 08	B.B.SUMA	P	P	P	P	P	P	P	a	P	P	P	P	p	p	p		p
4.	1835571100 09	B.SIRISHA	P	P	P	P	P	P	P	P	P	P	P	P	p	p	p		P
5.	1835571100 10	CH.NANI	P	P	P	P	a	P	P	p	P	P	P	P	p	a	p		P
6.	1835571100 12	CH.MANIS HA	P	P	P	P	P	P	P	P	P	P	P	P	p	p	p		P
7.	1835571100 14	G.PRASAD	P	P	P	P	P	a	P	P	P	P	P	P	p	p	p		A
8.	1835571100 17	L.SAI PRASANN A	P	P	P	P	P	P	P	P	P	a	P	P	p	p	a		P
9.	1835571100 18	M.KARUN A	P	P	P	P	P	P	P	P	P	P	P	P	p	p	p		P
10	1835571100 19	M.DURGA DEVI	P	P	P	P	P	P	P	a	P	P	P	P	p	p	a		P
11.	1835571100 20	N.NIHARI KA	P	P	P	P	a	P	P	P	P	P	P	P	p	p	p		P
12.	1835571100 22	T.KEERTH I	p	P	p	p	p	p	p	p	p	p	p	p	p	p	p		I
13.	1835571100 23	T.MOHAN	p	P	p	p	p	p	p	p	a	p	p	p	p	p	p		



Question paper

MULTIPLE CHOICE QUESTION PAPER FOR SOIL ANALYSIS

Maximum marks 2 x 25 = 50

1. What is the primary purpose of soil analysis? (B)
 - a) Determining soil texture
 - b) Assessing nutrient content
 - c) Identifying soil microorganisms
 - d) Measuring soil compaction
2. Which of the following nutrients is typically not included in a basic soil test? (A)
 - a) Nitrogen (N)
 - b) Phosphorus (P)
 - c) Potassium (K)
 - d) Magnesium (Mg)
3. Soil texture refers to the relative proportions of : (A)
 - a) Sand, silt, and clay
 - b) Organic matter and minerals
 - c) Nitrogen, phosphorus, and potassium
 - d) Soil horizons
4. Which of the following is not a primary macronutrient essential for plant growth? (C)
 - a) Calcium
 - b) Magnesium
 - c) Iron
 - d) Nitrogen
5. Which of the following soil properties is not typically measured during soil analysis? (D)
 - a) Electrical conductivity
 - b) Organic Matter
 - c) S.A.R
 - d) Alkalinity
6. Soil organic matter content is crucial for (A)
 - a) Improving soil structure and water retention
 - b) Increasing soil compaction
 - c) Reducing soil pH
 - d) Promoting erosion
7. Which nutrient deficiency is typically associated with yellowing of leaves (chlorosis) in plants? (D)
 - a) Nitrogen
 - b) Phosphorus
 - c) Potassium
 - d) Iron
8. What does the term "soil pH" measure? (B)
 - a) Soil texture
 - b) Soil acidity or alkalinity
 - c) Soil moisture content
 - d) Soil organic matter content
9. What is the ideal calcium to magnesium ratio in soil for most crops? (B)
 - a) 1:1
 - b) 2:1
 - c) 5:1
 - d) 10:1
10. The texture of soil refers to (C)



- a) Its color
c) The size distribution of mineral particles
- b) Its ability to retain water
d) Its pH level
11. Which soil testing method involves heating a soil sample to determine its moisture content? (D)
- a) Sieve analysis
c) Proctor compaction test
- b) Air-drying method
d) Oven-drying method
12. The term "soil salinity" refers to: (A)
- a) The presence of excessive salts in the soil
c) The pH level of the soil
- b) Soil erosion caused by water
d) Soil compaction
13. The soil sample collection depth for agricultural purposes is typically: (B)
- a) 1-2 inches
c) 12-18 inches
- b) 6-8 inches
d) 24-36 inches
14. What instrument is typically used to measure soil moisture content? (D)
- a) Hydrometer
c) Tensiometer
- b) Refractometer
d) Soil moisture probe
15. Which soil property affects the availability of nutrients to plants? (B)
- a) Soil color
c) Soil texture
- b) Soil pH
d) Soil organic matter content
16. Which of the following is NOT a common method for soil sample collection? (D)
- a) Random sampling
c) Depth sampling
- b) Grid sampling
d) Aerial sampling
17. The presence of earthworms in soil is generally an indicator of: (C)
- a) Poor soil quality
c) Healthy soil biology
- b) High soil compaction
d) Excessive soil acidity
18. A soil test reveals a high concentration of potassium. This suggests that the soil: (C)
- a) Will be highly acidic
c) Affecting plant growth
- b) Is deficient in potassium
d) Is well-balanced in terms of nutrients
19. Which of the following soil analysis methods involves to determine the organic matter content? (D)
- a) Titration
c) Colorimetric analysis
- b) Gravimetric analysis
d) Loss on ignition
20. What is the ideal pH range for most plants to grow in soil? (B)
- a) 5.0 - 6.0
c) 7.0 - 8.0
- b) 6.5 - 7.5
d) 8.5 - 9.0
21. Which of the following factors can affect soil organic matter content? (D)

- a) Climate
c) Crop rotation
22. Which soil test measures the available nitrogen content in soil? (C)
- a) Ammonium acetate extraction
c) Kjeldahl method
- b) Soil texture
d) All of the above
- b) Mehlich-3 extraction
d) Bray extraction
23. What is the role of magnesium (Mg) in plant nutrition? (A)
- a) It aids in photosynthesis
c) It enhances root absorption of water
- b) It promotes flowering
d) It regulates soil pH
24. Which soil parameter is particularly important for rice cultivation in India? (D)
- a) Soil pH
c) Soil salinity
- b) Soil organic matter
d) Soil moisture content
25. Which of the following is a symptom of calcium deficiency in plants? (D)
- a) Yellowing of leaves
c) Excessive leaf wilting
- b) Stunted growth
d) Poor fruit development

Experimental procedures :

1. Determination of Specific Gravity: Dry the soil in an oven at 105°C until a constant weight is attained. Fill a pre-weighted glass bottle of known volume with dried soil and records its weight. Fill another pre-weighted glass bottle of same volume with distilled water and records its weight.

$$\text{Calculation : } G = \frac{W_2 - W_1}{(W_4 - W_1) - (W_3 - W_2)}$$

Where, G = specific gravity, W1 = Empty weighed bottle

W2 = Bottle + soil, W3 = Bottle + soil + water, W4 = Bottle + water

2. Determination of Moisture Content: Take a fresh homogenized sample of soil and weight it. Now dry it in an oven at 105°C until a constant weight is attained. Cool in a desiccator and record the final weight of sample.

$$\text{Calculation: Moisture content} = \frac{I - F}{I} \times 100$$

Where I = Before weight, F = After weight

3. Determination of Water Holding Capacity: Dry the crushed soil sample in an oven at 105°C. Place a filter paper inside bottom of the circular soil box, weight the box and fill it with dried soil sample. Note the weight of box filled with dried soil. Place the box in

petridish of 10 cm diameter containing water for about 12 hours. So that water enters the box and saturates the soil. Take the box out of water wipe it dry on the outside and records its weight.



Calculation: Water holding capacity = $\frac{(Y-Z)}{X} \times 100$

Where, X= weight of soil , Y = volume of water pour into soil ,
Z =volume of water collected in beaker

4. Determination of pH: The pH of Soil sample is determined by using pH meter. Take 10 gm of air-dry soil/sediment and add 25 ml of distilled water to make a suspension of 1:2.5 w/v dilution. Determine the pH of suspension.

5. Determination of Electrical Conductivity (E.C.): The E.C of soil sample is determined by conductivity bridge. Take 10 gm of air-dry soil/sediment and add 25 ml of distilled water to make a suspension of 1:2.5 w/v dilution. Determine the E.C of suspension.

6. Determination of Chlorides: Take 10 gm of soil/sediment and add 100 ml of distilled water to prepare a 1:10 w/v suspension. Filter it through a filter paper and estimate the chloride in filtrate following the method given for water. The Chlorides present in the water is determined by Argento metric titration.

7. Determination of total hardness of water (Ca^{+2} and Mg^{+2}): Air dries the soil/sediment and takes 50 gm of it in a flask. Add 100 ml of 40% of ethyl alcohol, shake well, wait for about 10 minutes, and filter the suspension through filter paper. Transfer the residue to a beaker, add 100 ml of ammonium acetate solution, stir and allow standing overnight. Filter the supernatant through filter paper and collect the filtrate .Note the total volume of soil extract.

Find out magnesium content in the extract following the method given for determination of magnesium in water

Calculation : Amount of Ca = $\frac{BR \times N \times 1000}{\text{sample taken}} \times 20$

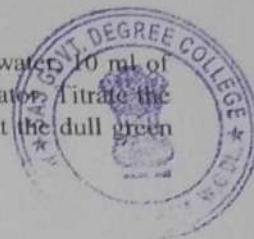
Amount of Mg = (Amount of Ca – Amount of eq Mg)

Amount of eq Mg = $\frac{BR \times N \times 1000}{\text{sample taken}}$

Where, BR = burette reading, N = Normality OF EDTA

8. Determination of Organic matter: Air-dry the soil/sediment and take 0.5 gm of it in 500 ml Erlenmeyer flask. Add 10 ml of potassium dichromate (1N) solution and gradually 20 ml of

10 ml of sulphuric acid. Wait for about half an hour, and then add 200 ml of distilled water, 10 ml of phosphoric acid, 0.2 gm of sodium fluoride and 1 ml of diphenylamine indicator. Titrate the contents against ferrous ammonium sulphate (0.5N) solution, at the end point the dull green colour changes through turbid blue to the brilliant green.



$$\text{Calculation: Percentage of carbon} = \frac{(B-M) \times 0.003}{\text{weight of sample}} \times 100$$

Where, B = blank titration value, M = sample titration value

9. Determination of SAR: The sodium adsorption ratio (SAR) is an irrigation water quality parameter used in the management of sodium-affected soils

$$\text{Calculation : SAR} = \frac{Na^+}{\sqrt{(Ca^{2+} + Mg^{2+})}}$$

MARKS OBTAINED IN SOIL ANALYSIS EXAMINATION

S.No	Regd.No.	Name of the Student	Marks obtained
			50
1.	183557101002	G.GAYATHRI	46
2.	183557101007	N.MOUNICA DEVI	48
3	183557110008	B.B.SUMA	46
4	183557110009	B.SIRISHA	50
5	183557110010	CH.NANI	46
6	183557110012	CH.MANISHA	44
7	183557110014	G.PRASAD	48
8.	183557110017	L.SAI PRASANNA	44

9.	183557110018	M.KARUNA	42
10	183557110019	M.DURGA DEVI	50
11	183557110020	N.NIHARIKA	48
12	183557110022	T.KEERTHI	46
13	183557110023	T.MOHAN	42



Reference:

1. Quantitative Analysis by A.I.Vogel
2. Handbook of Soil Analysis: **Mineralogical, Organic and Inorganic Methods**

Marc Pansu, Jacques Gautheyrou



Students attending classes on
Soil Analysis

CERTIFICATE



CERTIFICATE OF COMPLETION

This is to certify that **Mr./Ms. N. MOUNIKA DEVI**.....
of **SOIL Analysis**..... has **Successfully completed**
certificate course on **SOIL ANALYSIS** in (30 hours)
conducted from **22.07.2019**... to **26.08.2019**... By the
Department of Chemistry.

V. Dm
Course Coordinator
Incharge

Department of Chemistry

SAS GOVT. DEGREE COLLEGE
NARAYANAPURAM
Pin-534 406

V. Dm
IQAC Coordinator

T. Vinu
Principal

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Report on Certificate Course in Soil Analysis

The Department of Chemistry of SAS GDC , Narayanapuram conducted a certificate course in Soil analysis from 22.07.2019 to 26.08.2019 with 30 Hrs duration. Dr.V.Durga Praveena acted as the instructor for the course.13 Students of II B.Sc (MPC&BZC) enrolled for the course which is important for them as they hail from rural areas and mostly from farming families.

The course commenced on the AN of 22.07.2019.A total number of 30 instruction hours(Both Theory and practicals) were conducted to enhance the knowledge levels of the student on soil analysis. As a part of this course, students were given hands on training at Dept. of Chemistry. The students observed different analytical techniques used in soil analysis for two days. Soil testing is a low-cost practice to learn about the ability of soil to support crop growth. With knowledge of what each soil test value means, growers can become more aware of the crop input decisions to minimize risk and maximize profits.

At the end of the course a test was conducted for 50 marks with 40% of marks(20 Marks) as eligibility criterion for the completion of the course. On the last day of the course certificates were issued to the students who had successfully completed the course.



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