



MAHISHADAL RAJ COLLEGE

(Govt. Sponsored)

NAAC Accredited 'A' Grade College

DST (FIST) Govt. Of India approved College, NSDC Training Partner

Estd. : 1946

Mahishadal : Purba Medinipur

Phone STD 03224 No. 240220

Ref. No.....

Date:

Online ADD ON COURSE 2020-21

Organised by Department Zoology & Geography

Topic: Water and soil analysis

Add on course summary:

REPORT:

Name of the course- Water and soil analysis

Course coordinator: *Dr. Shubhamoy Das*, (Associate Professor, HOD, Department of Zoology , Mahishadal Raj College)

Date of commencement: 10.12.20

Date of completion: - 24.12.20

Number of participant enrolled: 30

Total duration day: 15

Total duration hour: 30

Evaluation method:- Paper pen and practical work online

RESULT DETAILS:-

Number of student participate in this program: 30

Number of student completes this program: 27

Number of student got certificate in this program: 27

Name of the course: Water and soil analysis

Course coordinator: *Dr. Shubhamoy Das*, (Associate Professor, HOD, Department of Zoology , Mahishadal Raj College)



Water and soil analysis

✚ About the course:

Water and soil are essential for the sustenance of life. No living being on the planet Earth can survive without it. It is a prerequisite for human health and well-being as well as for the preservation of the environment. This course will discuss analytical methods and theories to determine the water and soil quality of different water and soil resources and factors and processes affecting the quality of water and soil. The course will also cover water and soil remediation and safeguard techniques for the improvement of water and soil quality for sustainable development. Completing such a course can open up various job opportunities in sectors related to environmental monitoring, agriculture, water resource management, and regulatory compliance.

✚ Learning outcomes:

Completing a water and soil analyst course prepares individuals for roles where they can contribute to environmental conservation, sustainable agriculture, and the responsible management of natural resources. Job opportunities in water and soil analysis are diverse and can span across government agencies, environmental organizations, research institutions, consulting firms, and industries related to agriculture, water treatment, and natural resource management.

✚ Target audience:

Students of science background (UG & PG), Researcher, and faculty members. Environmental Studies student may also participate.

✚ Course content overview:

A soil test can determine fertility, or the expected growth potential of the soil which indicates nutrient deficiencies, potential toxicities from excessive fertility and inhibitions from the presence of non-essential trace minerals. The test is used to mimic the function of roots to assimilate minerals.

It involves the estimation and evaluation of the available nutrient status and acidic reaction of a sample of soil. After testing, a fertility map is prepared where the available nitrogen, phosphorous and potassium is marked as low, medium or high.



✚ **Schedule:** Total 30 hours

DAY	SCHEDULE
Day 1	Introduction to water and soil sampling and analysis using titrimetric and spectrophotometric method. (2 hours)
Day 2	Estimation of pH, turbidity, TDS, and TSS (T + P) (2 hours)
Day 3	Estimation of dissolved oxygen and free CO ₂ of water. (T + P) (2 hours)
Day 4	Estimation of salinity, hardness, and alkalinity of water. (T + P) (2 hours)
Day 5	Estimation of BOD and COD of effluent water. (T + P) (2 hours)
Day 6	Estimation of phosphate in water and soil. (T + P) (2 hours)
Day 7	Estimation of Nitrite and nitrate in soil and water. (T + P) (2 hours)
Day 8	Estimation of available potassium in soil sample. (T + P) (2 hours)
Day 9	Estimation of organic carbon of soil. (T + P) (2 hours)
Day 10	Estimation of iron of water sample. (T + P) (2 hours)
Day 11	Bacteriological test (MPN) for drinking water. (T + P) (2 hours)
Day 12	Estimation of moisture content and water holding capacity of soil. (T + P) (2 hours)
Day 13	Role of soil and water quality in agriculture and fishery. (T) (2 hours)
Day 14	A field visit with mobile laboratory. (2 hours)
Day 15	Overall discussion. Doubts clear and revision



✚ Detail Work Schedule

Date	Day	Contents	Time	Duration	Experts	Designation
10.12.20	1	Introduction to water and soil sampling and analysis using titrimetric and spectrophotometric method.	12 to 2pm	2	Dr. Rajkumar Guchhait	SACT Mahishadal Raj College
11.12.20	2	Estimation of pH, turbidity, TDS, and TSS (T + P)	1 to 3 pm	2	Prof.Moumit a Jana	SACT Mahishadal Raj College
12.12.20	3	Estimation of dissolved oxygen and free CO ₂ of water. (T + P)	3 to 5pm	2	Prof.Manik Das	SACT Mahishadal Raj College
13.12.20	4	Estimation of salinity, hardness, and alkalinity of water. (T + P)	03 to 05pm	2	Prof. Sagnik Mandal	SACT Mahishadal Raj College
14.12.20	5	Estimation of BOD and COD of effluent water. (T + P)	02 to 04pm	2	Dr. Rajkumar Guchhait	SACT Mahishadal Raj College
15.12.20	6	Estimation of phosphate in water and soil. (T + P)	01 to 03pm	2	Dr Rajkumar Guchhait	SACT Mahishadal Raj College
16.12.20	7	Estimation of Nitrite and nitrate in soil and water. (T + P)	03 to 05pm	2	Dr Rajkumar Guchhait	SACT Mahishadal Raj College
17.12.20	8	Estimation of available potassium in soil sample. (T + P)	02 to 04pm	2	Dr.Rajkumar Guchhait	SACT Mahishadal Raj College
18.12.20	9	Estimation of organic carbon of soil. (T + P)	02 to 04pm	2	Dr.Subhamoy Das	HOD, Zoology, MRC
19.12.20	10	Estimation of iron of water sample. (T + P)	01 to 03pm	2	Prof.Saheli Maiti	SACT Mahishadal Raj College
20.12.20	11	Bacteriological test (MPN) for drinking water. (T + P)	02 to 04pm	2	Prof.Moumit a Jana	SACT Mahishadal Raj College
21.12.20	12	Estimation of moisture content and water holding capacity of soil. (T + P)	02 to 04pm	2	Dr.Subhamoy Das	HOD, Zoology, MRC
22.12.20	13	Role of soil and water quality in agriculture and fishery. (T)	01 to 03pm	2	Dr.Subhamoy Das	HOD, Zoology, MRC
23.12.20	14	Online Practical	01 to 03pm	2	Dr.Subhamoy	HOD,



					Das, Prof.Moumit a Jana, Prof.SaheliM aiti, Prof.Manik Das	Zoology, MRC, SACT Mahishadal Raj College
24.12.20	15	Evaluation, valediction, feedback Overall discussion.	12 to 2 pm	2	Dr. Subhamoy Day, Dr. Rajkumar Guchhait, Prof. Sagnik Manadal, Prof. Manik Das and Prof. Moumita Jana. DR.Asim Kr Bera	HOD & SACT., Zoology; Principal, MRC
				30 hours		

✚ **Course structure and examination scheme:**

Course name	Theory classes (hr.)	Practical classes (hr.)	Internal marks	External marks		Total marks
				Theory	Practical	
Water and soil analysts	10	20	20	30	50	100



✚ Participant's Details and attendance:

Enrolment Details of Students

Sl no.	Student ID	Roll no.	Name
1.	B.Sc/19/0326	2190326	RUDRA PRASAD NAYAK
2.	B.Sc/19/0327	2190327	SAYAN BERA
3.	B.Sc/19/0328	2190328	SOUGATA PRAMANIK
4.	B.Sc/19/0349	2190349	ANUPAMA MONDAL
5.	B.Sc/19/0376	2190376	SUBHADIP JANA
6.	B.Sc/19/0377	2190377	SOUVIK MANNA
7.	B.Sc/19/0379	2190379	SUDESHNA METYA
8.	B.Sc/19/0380	2190380	SUSAMA MANDAL
9.	B.Sc/19/0382	2190382	SOMSUBHRA DAS
10.	B.Sc/19/0404	2190404	BIKRAM SAMANTA
11.	B.Sc/19/0407	2190407	ATANU DAS
12.	B.Sc/19/0409	2190409	SASWATI MAITY
13.	B.Sc/19/0432	2190432	LINA GOSWAMI
14.	B.Sc/19/0433	2190433	SUNANDA MAITY
15.	B.Sc/19/0434	2190434	PRABIR KUILA
16.	B.Sc/19/0435	2190435	ATANU MAITY
17.	B.Sc/19/0461	2190461	ARIJIT ROY
18.	B.Sc/19/0493	2190493	LABANI JANA
19.	B.Sc/19/0529	2190529	PRITAM MAITY
20.	B.Sc/19/0543	2190543	RITU CHAKRABARTY
21.	B.Sc/19/0052	2190052	SUPRIYA MAITY
22.	B.Sc/19/0053	2190053	MALLIKA DAS
23.	B.Sc/19/0054	2190054	MERY DAS
24.	B.Sc/19/0055	2190055	AMIT BAR
25.	B.Sc/19/0089	2190089	SUBHRA GHARA
26.	B.Sc/19/0091	2190091	JAYANTI MONDAL
27.	B.Sc/19/0147	2190147	SOMA BARMAN
28.	B.Sc/19/0148	2190148	REJIWONA PARVIN
29.	B.Sc/19/0149	2190149	ANKITA MALLIK
30.	B.Sc/19/0150	2190150	SAIKAT DAS



Sample Question of Examination





✚ **SAMPLE CERTIFICATE OF COURSE COMPLETION**



CERTIFICATE OF COURSE COMPLETION

THIS IS TO CERTIFY THAT

RUDRA PRASAD NAYAK

has successfully completed the **Add-on Course** on **Water and soil analysis**
held during **2020-21** academic year at Mahishadal Raj College.

Subhamoy Das.
Course Co-ordinator

S. Mookherjee
IQAC Co-ordinator

[Signature]
Principal



CERTIFICATE OF COURSE COMPLETION

THIS IS TO CERTIFY THAT

RITU CHAKRABARTY

has successfully completed the **Add-on Course** on **Water and soil analysis**
held during **2020-21** academic year at Mahishadal Raj College.

Subhamoy Das.
Course Co-ordinator

S. Mookherjee
IQAC Co-ordinator

[Signature]
Principal