

S.S.E.S.A's
Science College
Congress Nagar, Nagpur

Certificate course in Groundwater Exploration
Session 2019-2020

Notice

It is hereby notified to all the students of Certificate course in Groundwater Exploration that their classes will be commenced from 31 March 2019 regularly. Therefore, they are asked to attend the classes on regular basis. All the classes will be running simultaneously with the UC regular classes as mentioned in the timetable.



Course co-ordinator



RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY
Established by Government of Central Provinces Education Department by Notification No. 513 dated the 1st of August, 1923 & presently a State University governed by Maharashtra Public Universities Act, 2016 (Mah. Act No. VI of 2017)

DEPARTMENT OF LIFELONG LEARNING AND EXTENSION

Gurunanak Bhavan, University Campus, Amravati Road, Nagpur - 440 033. Phone : 2530860
E-mail : doll.rtmnu@gmail.com

To,
The Principal
Shivaji Science College,
Nagpur,

No.DOLLE/237/19

Dated : 16.10.2019

9423 103043
Subject :

**Sanction for Conducting Short Term Courses under
Jeevan Shikshan Abhiyan on No Grant Basis.**

Sir/Madam,

With reference to your proposal for conducting Short Term courses indicated below under Jeevan Shikshan Abhiyan of this Department, I am to inform you that your proposal has been accepted by the Department and your College has been granted permission to conduct the course on the following conditions:

Details of the Course

Sr. No.	Name of the Course	Duration	No. of Candidates to be admitted	Fees to be Charged per Student	Fees to be Deposited With the Deptt.
1 ✓	Diploma Course in Groundwater Exploration	8 Weeks	20	1200/-	10%
2	Diploma Course in Statistical Quality Control	10 Weeks	16	850/-	10%
3	Diploma Course in Immune-Diagnostics	8 Weeks	20	2200/-	10%
4	Diploma Course in Environmental and Water Management	6 Weeks	10	1000/-	10%
5	Diploma Course in Mushroom Cultivation	8 Weeks		1000/-	10%
6	Diploma Course in Biofertilisers and Biopesticides	14 Weeks	20	1500/-	10%
7	Diploma Course in Forestry and Wild Life Management	6 Weeks	20	1500/-	10%

Rules & Regulations of this Department regarding these courses should be strictly followed.

1. **This sanction is valid for this particular Batch only.**
2. Fees for the course should be charged as per the norms prescribed.
3. Expenditure on the course should be incurred as per norms.
4. Course should be started within a Month from the date of sanction.
Please communicate your acceptance within a month and submit Initial Report Along with list of students admitted.

Dr. A.D. Bobdey
for n.a.
MSHore
03.01.2020

Your's faithfully,

p.watekar

Director

Application for Admission to Skill based course.

1) Certificate course : ☒ 2) Diploma course: ☐ 3) Advance diploma: ☐



To,
The Principal,
Science College
Congress Nagar, Nagpur-12

R/Sir,
I hereby apply for admission to the above course. I shall abide by the rules and regulations of the concerned department and college.

Signature of the applicant

PARTICULARS TO BE FILLED IN BY THE CANDIDATE:

1) Full Name (Block Letters) RUCHITA RAMESH BANSOD

2) Details of last exam. passed/failed/group/ percent marks obt. PASSED 65%

3) Name of Skill base programme to apply : GROUND WATER EXPLORATION CERTIFICATE COURSE

4) Details of other courses Applied/admitted -----

5) Date of birth : 09/01/2002 Contact No. 9511275935

E-mail. ruchitabansod09012002@gmail.com

6) Information of Father / Guardian:

a) Full Name : RAMESH SHIVDAS BANSOD b) Occupation: TEACHER

c) Annual Income: 45,000 d) Contact No. 9765928721

e) E. mail rameshbansod2011@gmail.com


Postal address of student for correspondence:

Sant Tukdoji ward, pimpalgaon
road, sant tukdoji ward,
Hinganghat


Signature of the applicant

Declaration of Father or Guardian

I declare that the applicant is my son / daughter / ward and the particulars given above by him / her are correct and shall see that he / she observes all the rules of the college.


Signature of the father / Guardian.
Full Name. Ramesh Bansod
Address pimpalgaon road
Hinganghat.

RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR

IN COLLABORATION WITH

SHRI SHIVAJI SCIENCE COLLEGE, CONGRESS NAGAR, NAGPUR-12

SYLLABUS FOR DIPLOMA COURSE IN GROUNDWATER EXPLORATION

(With effect from academic year 2019-2020)

The skill based Diploma course syllabus for B.Sc. I, II and III appearing student is 06 weeks Diploma Course in Groundwater exploration. The examination of Course shall comprise of theory paper of 3 hours caring 75 marks and a practical of 3 hours duration caring 50 marks. Project based on the carries 25 marks. Candidates are expected to pass separately in theory, Project and practical examinations.

The student requires 40% marks in theory for passing including the project marks. Separate passing in practical examination is required.

Structure of syllabus for diploma course along with distribution of marks is also displayed in the following table.

Course	Theory Papers and practical's	Marks			Total Marks
		Theory	Internal Assessment (Project)	Practical	
Diploma Course in Groundwater Exploration	Theory paper – GROUNDWATER EXPLORATION (HYDROGEOLOGY) Practical based on Toposheet reading and well Inventory	75	25		150
				50	
		Grand Total			150

Internal Assessment:

Based on Students attendance and the performance in field work and Project report.

Syllabus

Certificate Course in

Groundwater Exploration (Hydrogeology)

Unit I

Defination of Precipitation, Precolation, runoff, evaporation and transpiration, hydrogeology cycle. Occurence and distribution of groundwater. Zone of aeration and saturation. water table. cone of depression and recharge.

Unit II

Influent and effluent seepage and springs. Elementasry idea about groundwater flow. Hydrogeologic characteristics of different types of rock

Unit III

Aquifer and their classification. Groundwater management: Artificial and natural groundwater recharge. Groundwater province of India. Groundwater conditions in different parts of Maharashtra.

Unit IV

Concept of watershed management. Preparation of hydrogeological maps, statistical analysis of hydrogeological data and use of computer based technique for data anylisis and interpretation.

Practicals

1. Problems on aquifer properties of groundwater.
2. Well inventory
3. Water table contour map

Teaching Plan

Certificate Course (15 weeks)

Groundwater Exploration (Hydrogeology)

Weeks	Theory/ Practical	Hours	Content
Week I	Theory I	I	Definition of Precipitation, Percolation.
	Theory II	II	Brief idea about Precipitation, Percolation (Continued)
	Theory III	III	Definition of runoff, evaporation and transpiration
Week II	Theory I	IV	Brief idea about Runoff
	Theory II	V	Brief idea about evaporation
	Theory III	VI	Brief idea about transpiration.
Week III	Theory I	VII	Introduction to hydrological cycle
	Theory II	VIII	Hydrogeology cycle.
	Theory III	IX	Hydrogeology cycle.(Continued)
Week IV	Theory I	X	Zone of aeration and saturation.
	Theory II	XI	Zone of aeration and saturation,
	Theory III	XII	Zone of aeration and saturation,
Week V	Theory I	XIII	Zone of aeration and saturation,(Continued)
	Theory II	XIV	Water table
	Theory III	XV	Cone of depression
Week VI	Theory I	XVI	Recharge of groundwater
	Theory II	XVII	Elementary idea about groundwater flow.
	Theory III	XVIII	Elementary idea about groundwater flow.(Continued)
Week VII	Theory I	XIX	Hydro geologic characteristics of different types of rock
	Theory II	XX	Hydro geologic characteristics of different types of rock.(Continued)
	Theory III	XXI	Aquifer and their classification.
Week VIII	Theory I	XXII	Aquifer and their classification.(Continued)
	Theory II	XXIII	Groundwater management: Artificial recharge.
	Theory III	XXIV	Groundwater management: Artificial recharge.(Continued)
Week IX	Theory I	XXV	Groundwater management: natural groundwater recharge.
	Theory II	XXVI	Groundwater management: natural groundwater recharge.(Continued)
	Theory III	XXVII	Groundwater province of India.

Week X	Theory I	XXVIII	Groundwater province of India.(Continued)
	Theory II	XXIX	Groundwater conditions in different parts of Maharashtra.
	Theory III	XXX	Groundwater conditions in different parts of Maharashtra.(Continued)
Week XI	Theory I	XXXI	Concept of watershed management.
	Theory II	XXXII	Concept of watershed management.(continued)
	Theory III	XXXIII	Preparation of hydrogeological maps
Week XII	Theory I	XXXIV	Preparation of hydrogeological maps (continued)
	Theory II	XXXV	statistical analysis of hydrogeological data
	Theory III	XXXVI	Detail information about Aqua meter/ Resistivity meter
Week XIII	Practical I	XXXVII	Problems on aquifer properties of groundwater
	Practical I	XXXVIII	Problems on aquifer properties of groundwater
	Practical III	XXXIX	Well inventory
Week XIV	Practical I	XXXX	Well inventory
	Practical II	XXXXI	Water table contour map
	Practical III	XXXXII	Water table contour map
Week XV	Practical I	XXXXIII	Aqua meter
	Practical II	XXXXIV	Resistivity meter
	Practical III	XXXXV	Resistivity meter

2019-2020

Days	Class	Certificate Class (9-10)	10:00	10:48- 11:36	11:38 – 12:26	12:44	1:32	2:20	3:08	3:56	4:44 - 5:32
Monday	B.Sc. II				(PBZ)			(ADF)			
	B.Sc. IV					Pract G1 G2- (PNK+PBZ)					
	B.Sc.VI		(ADF)								
Tuesday	B.Sc. II				(PBZ)			(PBZ)			
	B.Sc. IV					Pract G1 G2- (PNK+ADF)					
	B.Sc.VI		(ADF)					(PBZ)			
Wednesday	B.Sc. II	Certificate Class (ADF)	Pract G1- (PBZ)								
	B.Sc. IV					Pract G1 G3- (ADF)				(ADF)	
	B.Sc.VI					(KCS)					
Thursday	B.Sc. II	Certificate Class (PBZ)	Pract G1- (PNK)					(PBZ)			
	B.Sc. IV					Pract G1 G3- (ADF)				(ADF)	
	B.Sc.VI					(PNK)					
Friday	B.Sc. II	Certificate Class (PBZ)				(PBZ)			Pract G2 G3- (PNK)		
	B.Sc. IV				(ADF)	Pract G2- (ADF)					
	B.Sc.VI			Pract G3- (PBZ)					(PBZ)		
Saturday	B.Sc. VI					(PBZ)			Pract G2 G3- (PBZ +PNK)		
	B.Sc. II				(ADF)	Pract G2- (ADF)					
	B.Sc. IV							(KCS)			
	B.Sc.VI		Pract G3- (PBZ)								

Head

NOTICE

Shri. Shivaji Science College Nagpur, Congress Nagar Nagpur,

Geology Department

Short listed candidates for skill based certificate course


Groundwater Exploration

2019-20

Sr. no	Student name
1	Aditi Chavre
2	Aditi Joardar
3	Vedant Patwa
4	Bhuvan Pashine
5	Naina Bhalerao
6	Ketki Mohatkar
7	Sejal Motghare
8	Rutuja Shende
9	Simran Ninawe
10	Anchal Khatke
11	Pallavi Nitnaware
12	Ruchita Bansod
13	Gauri Zodape
14	Atul Nikose
15	Rohan Mankar
16	Parul Dhakate
17	K.R. Shete
18	Chankshi Masram
19	Rahul Bhusele
20	Shreya Thakre

Date: 30/08/2019

Place:Nagpur


Mr. S.K. Paunikar
Asst. Professor (CHB)
Department of Geology

Shri Shivaji Education Society Amravati's Science College

Congress Nagar Nagpur

Certificate Course in Groundwater Exploration (Hydrogeology)

Attendance

Theory / Practical (2019-20)

Name of the Teacher: Mr. Pournikar

Sr. No.	Name of the Student	21/11/19	28/11/19	5/12/19	12/12/19	19/12/19	26/12/19	2/1/20	1/1/20	8/1/20
1	Shreyas Thakre	P		P	P			P		P
2	K. S. Moholkar	P	P	P	P		P		P	
3	S. S. Motghare	P	P	P		P	P		P	P
4	A. S. J. Bhandar	P			P			P		
5	R. M. Rande	P		P	P	P	P		P	P
6	R. K. Manhar	P	P	P	P	P	P	P	P	P
7	A. S. Chaudhary	P		P	P				P	P
8	P. P. Dhakate		P					P		P
9	N. S. Bhalerao		P	P						P
10	R. A. Shende	P	P	P	P	P		P	P	P
11	A. D. Khatke	P	P	P	P	P		P	P	P
12	H. R. Shete	P		P				P		
13	H. K. Wasekar	P	P	P	P	P	P	P	P	P
14	S. K. Ninave	P		P	P	P	P		P	
15	B. D. Ambane	P		P	P	P		P		P
16	A. V. Nikote	P		P		P		P		P
17	Chankshi K. #	P	P	P			P		P	P
18	Muscom	-	-	-	-	-	-	-	-	-
19	R. R. Bansod	P	P		P	P	P	P	P	P
20	A. A. Hinglapur	P	P	P		P		P	P	P
21	B. S. Ambade	P		P		P		P		P
22	A. B. Bansod	P	P	P	P	P		P	P	P
23	R. Samant	P	P	P	P	P		P	P	P
24	Kirti Kumrey		P	P	P			P		

Pournikar

Course Coordinator

Shri Shivaji Education Society Amravati's Science College

Congress Nagar Nagpur

Certificate Course in Groundwater Exploration (Hydrogeology)

Attendance

/ Practical (2019-20)

	22/11	23/11 (P)	29/11	30/11 (P)	6/12	7/12 (P)	13/12	14/12 (P)	20/12	21/12 (P)	27/12	28/12 (P)	3/1/20	4/1/20 (P)	10/1/20	11/1/20 (P)	14/1/20	18/1/20 (P)
Shreya C. Thakre																		
Kaeti S. Mehalkar																		
Sejal Motghare																		
Aditi S. Jaiswal																		
Rupal M. Jale																		
Rehan K. Mankar																		
Aditi S. Chavare																		
Ramul P. Dhavare																		
Nandya S. Chakraborty																		
Ratna A. Shenkar																		
Anchal D. Khatke																		
Heshkumar R. Shete																		
Haridik R. Goswami																		
Simran K. Niyak																		
Bhargav D. Ambhane																		
Atul V. Nikose																		
Charakshi K. Masram																		
Ruchita R. Ramrod																		
Atmanv A. Hingde																		
Bhuvan S. Ambekar																		
Ashish S. Bansod																		
Kirti Kurnarey																		
Rutuja Samant																		

Name of the Teacher: A. D. Fuladi.

S.S.E.S.A's
Science College
Congress Nagar, Nagpur

Exam: Certificate course in Groundwater Exploration
Session 2019-2020

Time: 2 hours]

[Max. Marks-70

1. Describe the hydrologic properties of rocks. (5 M)
2. Describe the Maharashtra ground water provenance. (5 M)
3. Describe various well logging principles. (5 M)
4. Use of GIS technique in Ground water. (5 M)
5. Explain types and concepts of groundwater basin. (5 M)
6. Describe electrical resistivity method. (5 M)
7. Identification of potential groundwater zones through study of satellite imagery or photographs. (30 M)
8. Project (10 M)



Course Coordinator

Acen No _____
Index No. _____
Scheme : _____

WELL INVENTORY

Village _____ Census Code No. _____
Block _____ Taluka _____
District - Aurangabad Toposheet No. _____ Reporter _____
Jr. Geol/Asst. Geol.

Quadrant _____ Co-ordinates _____
Altitude _____ (M S L) Date _____ Time _____

1. Field No. _____ 2. Altitude MP _____ (M S L) 3. Revenue S. No. _____
GL _____ Gal No. _____

4. Location _____
5. Owner's Name in Full _____ Son of / wife of etc. _____
6. Address _____ 7. Type of well _____
(dug well/bore-well/dug-cum-bore well)

8. Date of construction _____ 9. Measurement Point _____
10. Height of parapet _____ 11. Dimension of well Top _____ m
Bottom _____ m. Depth _____ m. 12. Dimension of bore well
Horizontal / Vertical: Dia _____ m. Depth. _____ m.

13. Dimension of Dug cum bore well _____ M. Depth of bore _____ m.
14. Depth of lining _____ m. nature of lining _____ Condition _____

15. DWL	Summer _____ m	SWL	Summer _____ m
	Winter _____ m		Winter _____ m.
PWL	Summer _____ m	Draw Down	Summer _____ m.
	Winter _____ m		Winter _____ m.

16. Trajectory _____ 17. Rate _____ Lit /minute _____ LityHr.
18. Duration of pumping : Summer _____ 19. Quantity Pumped : Summer _____ K. Li/day
Winter _____ Winter _____ K. Li/day

20. Recuperation : Summer _____ Mtr/hr Quantity Recuped: Summer _____ K. Li/day
Winter _____ Mtr/hr Winter _____ K. Li/day

21. Prime mover EM / OE / Mhol Make _____
H.P. _____ R. P. M. _____ Drive : coupled / Belt driven/ Monoblock

22. Pump - Type : Centrifugal / Centripetal / Turbine / submersible; Make _____
H.P. _____ Size - Suction / Delivery _____ in mtrs.
_____ in mtrs.

3. Pump Setting - Summer _____ in mtrs. Pump Inlet - Summer _____ in mtrs
Winter _____ in mtrs Winter _____ in mtrs

4. Use of Water - Irrigation / Domestic / Industrial State of water - Perennial / Seasonal / Intermit
Quality of Water - Sweet / brackish / saline / fresh / muddy

Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur
Examination Summer 2020

Skill Based Programme

Certificate Course: Groundwater Exploration (Hydrogeology) 2019-20

Centre: S.S.E.S.A's Science College, Congress Nagar, Nagpur


Date: 03/11/2020

Total Marks: 80

Sr. No.	Name of Student	Theory Marks (30)	Practical Marks (30)	Assignment Marks (10)	Internal Assessment (10)	Total Marks (80)	Grade
1	Sherya C. Thakre	29	29	10	10	78	A+
2	Ketki S. Mohatkar	23	27	10	10	70	A
3	Sejal S. Motghare	30	30	10	10	80	A+
4	Aditi S. Joardar	27	30	10	10	77	A+
5	Rupal M. Lande	27	28	10	10	75	A+
6	Rohan K. Mankar	27	30	10	10	77	A+
7	Aditi S. Chaware	28	29	10	10	77	A+
8	Parul P. Dhakate	21	28	10	10	69	B
9	Naina S. Bhalerao	21	27	10	10	68	B
10	Rutuja A. Shende	29	28	10	10	77	A+
11	Anchal D. Khatke	27	30	10	10	77	A+
12	Harshkumar R. Shete	28	29	10	10	77	A+
13	Hardik R. Waseker	28	28	10	10	76	A+
14	Simran K. Ninave	25	28	10	10	73	A
15	Bhargav D. Ambone	19	27	10	10	66	A
16	Atul V. Nikose	25	27	10	10	72	A
17	Chankshi K. Masram	19	28	10	10	67	B
18	Ruchita R. Bansod	27	28	10	10	75	A+
19	Atharva A. Hinglaspurkar	30	30	10	10	80	A+
20	Bhuvan S. Ambade	27	28	10	10	75	A+
21	Ashish S. Bansod	29	26	10	10	75	A+
22	Kirti Kumrey	17	26	10	10	63	B
23	Rutuja Samrit	23	29	10	10	72	A

Thakre
Mohatkar
Motghare
Joardar
Bonde
Lande
Mankar
Dhakate
Naina
Rutuja
Anchal
Shete
Hardik
Simran
Bhargav
Atul
Chankshi
Ruchita
Atharva
Bhuvan
Ashish
Kirti
Rutuja

College- Course Coordinator
Dr. A. D. Bobdey


Course Coordinator
Ms. P.B. Zamarkar

Shri Shivaji Education Society Amravat's

Science College

Congress Nagar, Nagpur

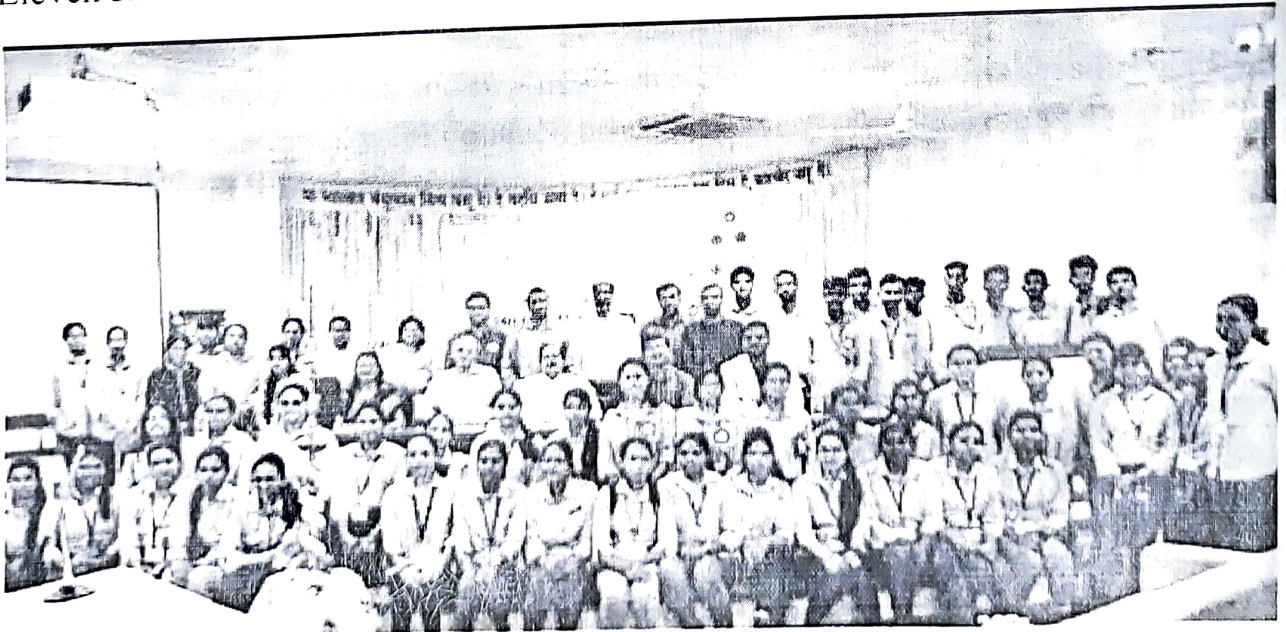
Department of Geology

Certificate and Diploma course in Hydrogeology Exploration

Session 2019-2020

During the session classes and practical's were carried out. In this session field visit to college campus were done. Nearby wells were taken for the well inventory. The well inventory was carried out in the presence of Dr. Shah, Head Department of Geology, Shivaji Science College, Nagpur. The field tour was taken under the guidance of Ms. P. B. Zamarkar and Ms. A D. Fuladi.

In this session 23 students were enrolled for the certificate course in Groundwater Exploration, All the students were qualified with good grades. Eleven students were present in the certificate course in the session 2019-2020. For the diploma course same students were carried out and in the session 2019-2020, 8 Eleven students successfully qualified Diploma course.



P. B. Zamarkar
Course Coordinator



Rashtrasant Tukadoji Maharaj Nagpur University


Board of Lifelong Learning and Extension

Certificate

◆ — OF APPRECIATION — ◆

Awards this certificate to Shri/Smt./Ku. Sandip B. Malghati on satisfactory completion of the skill based course in Ground Water Exploration under Jeevan Shikshan Abhiyan run by Department of Lifelong Learning and Extension, Rashtrasant Tukadoji Maharaj Nagpur University, Nagpur in collaboration with Shri Shivaji Education Society Amravati's Science College, Nagpur from 31 / 03 / 2019 to 06 / 04 / 2019

He/She passed at the Examination in Grade - 'A'



Course Co-coordinator
S.S.E.S. Amt's Science College
Congress Nagar, Nagpur



Principal
S.S.E.S. Amt's Science College
Congress Nagar, Nagpur



Director
Deptt. of Lifelong And
Extension, R.T.M. Nagpur University

in mtrs.