

812

**2020-2021**

**UGC-NSQF CERTIFICATE COURSE**

**CHEMISTRY OF WATER**

**QUALITY ANALYSIS**

83

1

**Sree Narayana College, Kollam**  
**Department of Chemistry**

UGC approved Certificate Course

## **"Chemistry of Water Analysis"**

**Duration: 6 months**

**Qualification: +2/Equivalent**

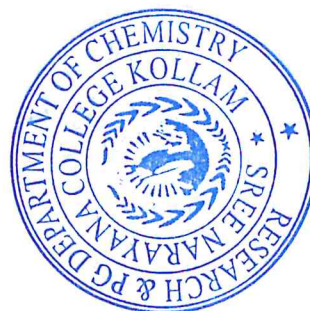
**No Age limit**

**30 Seats available**

For more information contact:

9400636474

8129225858



# SELECTED STUDENTS LIST.

## SREE NARAYANA COLLEGE KOLLAM UGC NSQF STUDENTS DETAILS 2020-21

SL.NO.	Admission NO	NAME	DOB	QUALIFICATION	CATEGORY	STATUS/DATE
1	164	Athira Unnikrishnan	29-10-1997	B.Sc	General	27-10-2020
2	1	Arya Babu	4/1/1998	PLUS TWO	SC	27-10-2020
3	2	Preethu P	4/7/1995	MSc	Dheevara	28-10-2020
4	3	Arun A	28-8-1999	PIUS TWO	Ezhava	4/11/2020
5	4	Fathima A	31-7-1995	PLUS TWO	Muslim	16-11-2020
6	7	Ansiya A	2/10/1995	PLUS TWO	Muslim	17-11-2020
7	20	Devu Krishna A	10/7/1998	B.Sc	General	23-11-2020
8	14	Revathy Janakan	22-12-2000	PLUS TWO	OEC	25-11-2020
9	6	Krishna Raj T.S	4/3/2000	PLUS TWO	OBC	25-11-2020
10	12	Abhijith.S	15-6-2000	PLUS TWO	OBC	25-11-2020
11	10	Adhya V S	19-09-2001	PLUS TWO	SC	25-11-2020
12	11	Arya Sunil	16-11-2001	PLUS TWO	Ezhava	25-11-2020
13	5	Adithya Mahendra	30-03-2001	PLUS TWO	Ezhava	25-11-2020
14	13	Abhijith.S.	4/5/2000	PLUS TWO	Ezhava	25-11-2020
15	9	Ananthu MR	1/4/2000	PLUS TWO	Viswakarma	25-11-2020
16	8	Akhil. V.S	19-02-1999	PLUS TWO	Ezhava	25-11-2020



*Prinhalharayil*  
Principal  
Sree Narayana College  
Kollam



## CERTIFICATE COURSE (UGC-NSQF)

(Offered By Department of Chemistry, S N College, Kollam)

### Chemistry of water quality analysis

Total Hours: 30

#### Aim of the Course

The course builds on the plus-two level introductory Science and familiarizes theoretical aspects of Water quality parameters and analytical laboratory methods. Subsequently, aims to impart skill for analyzing the parameters and ensure the quality of water after comparing with BIS standards

#### Course objectives

The course helps to learn the students to understand Water quality parameters and analytical laboratory methods. Subsequently, aims to impart skill for analyzing Upon course completion, the student will be able to analyze the water quality, by chemical methods

#### GENERAL ASPECTS OF EVALUATION

##### Mode of Evaluation – Certificate Course on Chemistry of Water Quality Analysis

(i) Attendance for lecture and laboratory sessions (to be noted separately where both lecture and laboratory hours have been specified within a course);

(ii) Test for theory and Practical

The weight age is shown in Table 1.1

Table 1.1

No	Component	Marks
1	Paper-1	25
2	Paper-2	25
3	Paper-3 Practical	50
	Total	100





## DISTRIBUTUIN OF HOURS

Hours/Week		Course code	INSTRUCTIONAL HOURS
Thoery(L)	Practical		
2	3	CPWQA	2X7=14 2X8=16

## COURSE OUTCOME

Co No	COURSE OUTCOME	Cognitive Level
	Upon completion of this course, students	
1	Discuss reason of lowering of water quality and the analysis process procedure	U
2	Recognize the different parameter and their conclusion	U,A
3	Develop skill in analysis of water sample	A

## INSTRUMENTATION AND BASIC CONCEPTS

**8 Hours**

**MODULE I.** Analytical instruments –Brief outline. Flame emission spectro photometer (FES), UV-Vis spectrophotometer, Atomic absorption spectrophotometer (AAS), Biological analyzers .Autoclave, incubator, water analyzer for pH, salinity and electrical conductance ; Units iwhich the quality parametrs are reporting during each analyzing.



(4 hrs)

**MODULE II.** : . Physical, chemical and bacterial measures of water quality; pH, Salinity, Alkalinity, Hardness of water, Quality of groundwater for domestic, irrigational and agricultural uses. Hardness of water, alkalinity, effect of anions and cations – causes and effects – methods of estimation – removal of hardness Domestic water treatment – Sewage – Sewage analysis - Sewage treatment.

(4hrs)

**Paper-2**

**8 Hours**

**TYPES OF WTER POLLUTION AND ANALYTICAL METHODS**

**MODULE I :** Inorganic materials leading to toxicity of water – Its Hazardous value, safety measures and precautions. Maximum permissible limits of toxic contaminants, Possible Reasons for water and soil contamination, Control of water pollution – ISI/BSI standards of drinking water, Organic materials causing water pollution, Chemically oxygen demanded COD, Biologically oxygen demanded BOD analyses. Adverse effect in biological system– pesticides , detergents, antibiotics, fertilizers. Detailed study about detergent contamination in ground water

(4hrs)

**MODULE II :** Sea water intrusion, Quality of groundwater – methods of collection and analysis of water samples as related to Ground water investigations. Determination of Soil texture- its significance. Data reporting methods, comparison of results with BIS Standards

(2 hrs)

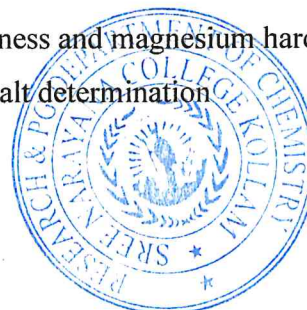
**PAPER-3**

**Practical: Water quality analysis**

**( 16 hours)**

**One seasonal collection of 50 ground water samples**

1. Determination of Hardness; total hardness, calcium hardness and magnesium hardness.
2. pH ,salinity, Electrical conductance and total dissolved salt determination



3. Determination of Calcium Magnesium concentration
4. Sulphate , chloride, nitrate, phosphate content of ground water determination
5. Determination of Alkalinity
6. Water analysis procedures to determine the various toxic metals using AAS; Cu, Fe, Cr, Cd ect.
7. Determination of soli texture and classification of slit, clay, sand percentage.
8. **Lab analysis report**

#### References

1. Environmental Chemistry, A.K. De.
2. Environmental Chemistry, P.S. Sindhu
3. Essentials of environmental studies, S.P. Misra & S.N. Pandey
4. Davis, Stanley N. and Deweist, Roger J. M. Hydrogeology. John Wiley & Sons, 1966
5. Krauskopf K. B. Introduction to Geochemistry.
6. Davis, Stanley N. and Deweist, Roger J. M. Hydrogeology. John Wiley & Sons, 1966
7. Chemical and biological methods for water pollution studies – P.K. Goel and R.K. Thrivedi
8. Analytical Chemistry: (J.W) G. D. Christian
9. Instrumental Methods of Inorganic Analysis(ELBS) : A.I. Vogel



*Sree Narayana*  
Principal  
Sree Narayana College  
Kollam



**SREE NARAYANA COLLEGE KOLLAM**  
**UGC NSQF MARKLIST OF STUDENTS 2020-21**

SL NO	Name	MARKS		Score (100)
		Theory (50)	Practical (50)	
1	ARUN A	44	40	84
2	ADHYA V S	48	49	97
3	ARYA SUNIL	44	46	90
4	LEKSHMI BABU	44	46	90
5	ABHIJITH S	46	45	91
6	DEVU KRISHNA A	42	46	88
7	ANSIYA A	44	44	88
8	REVATHI JANAKAN	48	45	93
9	AKHIL V S	38	46	84
10	ANANTHU M R	36	46	82
11	KRISHNARAJ T S	48	44	92
12	ATHIRA UNNIKRISHNAN	38	46	84
13	ADITHYA MAHENDRA	38	42	80
14	FATHIMA	40	44	84
15	PREETHU	36	42	78
16	ARYABABU	30	40	70





## REPORT

### UGC-NSQF CERTIFICATE COURSE ON CHEMISTRY OF WATER QUALITY ANALYSIS 2020-2021

UGC approved The Certificate Course on Chemistry of water quality analysis conducted by Department of Chemistry Sree Narayana college, in association with The National Skills Qualifications Framework (NSQF)., Kollam, 25th January 2020 to 25th July 2021 at Department of Chemistry Sree Narayana college, Kollam. NSQF organizes qualifications according to a series of levels of knowledge, skills and aptitude. These levels, graded from one to ten, are defined in terms of learning outcomes which the learner must possess regardless of whether they were acquired through formal, non-formal or informal learning. It is, therefore, a nationally integrated education and competency-based skill and quality assurance framework that will provide for multiple pathways. The total Number of Participants was 15 and include outside candidates other than our students. They got certificates and the aim was to increase their academic grade points along with professional outlook .The Brochure, and other details furnished. The number of seats were limited and gave admission to all the applied students, all were passed the examination conducted. Department faculties handled the class in fixed schedule along with resource persons expertise in the field. Total teaching hour was 30 hours among these hours 16 practical hours included. Two of the students got placement in the various lab in the Kerala itself .

*Turhaththarajil*  
Principal  
Sree Narayana College  
Kollam





# Sree Narayana College, Kollam

Affiliated to the University of Kerala

(Accredited by NAAC Grade 'A' & ATAL 'A' Band Institution)

UGC – NSQF CERTIFICATE COURSES

## CERTIFICATE

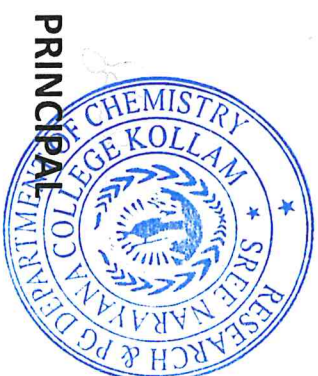
This is to certify that Mr./Ms./Mrs. **Athira Umnikrishnan**.....

Reg. No. .... **235A20132001**..... has successfully completed UGC approved

certificate course in..... **Chemistry of water quality Analysis**.....  
during ..... **2020 - 2021**.....

COURSE CO-ORDINATOR

**Dr. Deepa.J.R.**



PRINCIPAL





# Sree Narayana College, Kollam

Affiliated to the University of Kerala

(Accredited by NAAC Grade 'A' & ATAL 'A' Band Institution)

UGC – NSQF CERTIFICATE COURSES

## CERTIFICATE

This is to certify that *Mr./Ms./Mrs*..... **Arya Babu**.....

Reg. No. .... **235A.20132.002**..... *has successfully completed UGC approved*

*certificate course in*..... **Chemistry of water quality Analysis**  
*during* ..... **2020 - 2021**.....

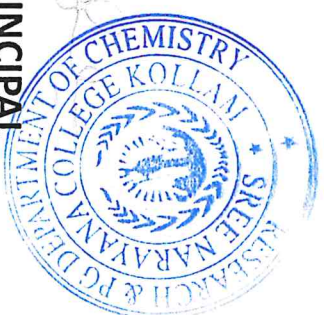
*[Signature]*

COURSE CO-ORDINATOR

**Dr. Deepa.J.R.**



PRINCIPAL







# Sree Narayana College, Kollam

Affiliated to the University of Kerala

(Accredited by NAAC Grade 'A' & AITL 'A' Band Institution)

UGC – NSQF CERTIFICATE COURSES

## CERTIFICATE

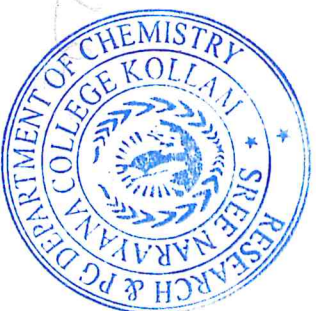
This is to certify that *Mr./Ms./Mts.* **Prathu. P** .....

Reg. No. .... **235A.20132003** ..... *Has successfully completed UGC approved*

*certificate course in* **Chemistry** *of water quality Analysis.*  
during ..... **2020 - 2021** .....

COURSE CO-ORDINATOR

**Dr. Deepa. J.R.**



PRINCIPAL





# Sree Narayana College, Kollam

Affiliated to the University of Kerala

(Accredited by NAAC Grade 'A' & ATAL 'A' Band Institution)

UGC – NSQF CERTIFICATE COURSES

## CERTIFICATE

This is to certify that Mr./Ms./MAs..... **Arun A** .....

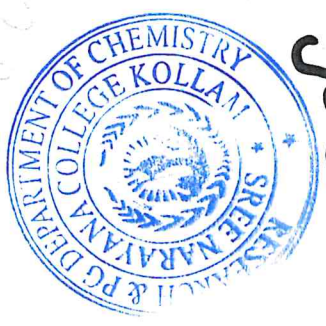
Reg. No. .... **235A20132004** ..... has successfully completed UGC approved

certificate course in..... **Chemistry** ..... of **water quality analysis** .....

during **2020-2021** .....

COURSE CO-ORDINATOR

**Dr. Deepa. J.R**



PRINCIPAL



# Sree Narayana College, Kollam

Affiliated to the University of Kerala

(Accredited by NAAC Grade 'A' & ATAL 'A' Band Institution)

UGC – NSQF CERTIFICATE COURSES

## CERTIFICATE

This is to certify that Mr./Ms./Mrs.....**Fathima. A.**.....

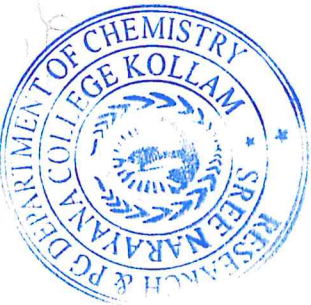
Reg. No. ....**235A2013.2005**..... has successfully completed UGC approved

certificate course in.....**Chemistry**..... of **water quality Analysis**.....

during **2020-2021**.....

COURSE CO-ORDINATOR

**Dr. Deepa. J.R.**



PRINCIPAL