



सीएसआईआर - राष्ट्रीय भूभौतिकीय अनुसंधान संस्थान
(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्)
उप्पल मार्ग, हैदराबाद, तेलंगाणा, भारत - 500007



CSIR - National Geophysical Research Institute
(Council of Scientific & Industrial Research)
Uppal Road, Hyderabad, Telangana, India - 500007

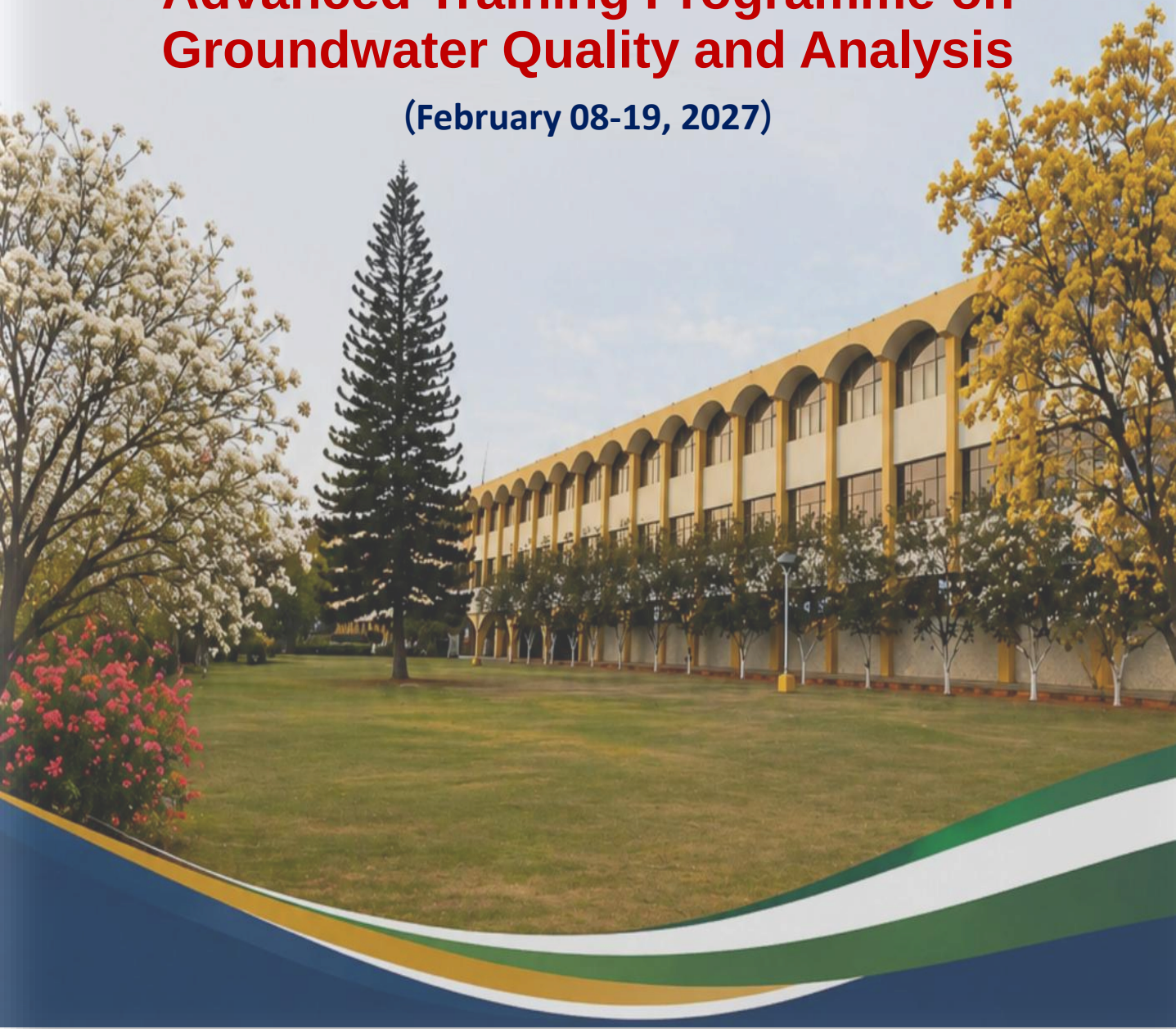
प्रशिक्षण कार्यक्रम
(सीएसआईआर की एकीकृत कौशल पहल)
Training Program
(CSIR-Integrated Skill Initiative)



CSIR Integrated Skill Initiative

Advanced Training Programme on Groundwater Quality and Analysis

(February 08-19, 2027)





About CSIR-NGRI



The CSIR-National Geophysical Research Institute (CSIR-NGRI), a constituent research laboratory of the Council of Scientific & Industrial Research (CSIR) was established in 1961 with the mission to carry out research in multidisciplinary areas of the highly complex structure and processes of the Earth system and its extensively interlinked subsystems. NGRI has the mandate to conduct research for public-good science to enable government agencies, public and private sector stakeholders to make informed decisions about use of geo-resources sustainably and improve preparedness and resilience to natural hazards.

As a close understanding of Earth processes and its intersections with the growth and development of the human society only can secure the future, it is our vision to develop the knowledge base of Earth system processes and apply it to produce strategies to minimize loss of life and property from natural disaster as well as manage water, energy, and mineral resources for enhancing the quality of life.

The research activities fall broadly under three themes: **Geodynamics**, which revolve round investigating and modeling fundamental aspects of the Earth system and processes, **Earthquake Hazards**, which encompass features on the surface and subsurface of crust which may potentially endanger lives and properties through catastrophes like earthquakes and landslides as well as depleting and deteriorating groundwater resources and soil, changes in climatic conditions and associated environmental issues. The theme **Natural Resources** comprise of implementation of techniques to identify primary geo-resources, which are the pillars of human civilization and the fount of economic growth like groundwater, hydrocarbons as well as alternate energy sources and minerals.

The Institute is structured into seven major R&D Groups and twenty one Activities, which include expertise in a variety of geophysical, geochemical, geological techniques like Seismology, Magnetotellurics, GPS, Paleo-seismology, Structural geology, Controlled Source Seismics, Gravity and Magnetism, Geochemistry, Geochronology, Paleomagnetism, Planetary, Polar Geophysics, Geomagnetism, Airborne geophysics, Shallow subsurface geophysics and Rock Mechanics, Hydrochemistry, Paleo-environmental studies and Modeling and simulation of Earth processes.

1. About the Training Program

Advanced Training Programme On Groundwater Quality (ATGWQ)

Groundwater is an extensive, concealed, and inaccessible resource, and its quality changes often very slowly within the subsurface aquifers. These changes warrant for extensive monitoring networks, data generation, processing, and interpretation. Therefore, these observed groundwater quality trends provide key inputs for its management. The focus of the ensuing training course would be to understand the concepts of monitoring and assessment of groundwater beginning from appropriate site selection and field sampling, sample preparation, and analysis in the laboratory. There will be lectures on theoretical aspects as well as a demonstration of the state-of-art analytical instrumentation that will provide key skills and the latest knowledge on the above subject to the participants.

Need For Training/Re-skilling

Due to the interaction of water with chemical, biochemical, and geological materials (rocks, soils, and sediments), groundwater contains a wide variety of dissolved inorganic chemical constituents in various concentrations. In addition, anthropogenic factors (industrial effluents, agrochemicals, municipal solid waste, etc.) also affect the quality of groundwater. Inorganic contaminants like salinity, chloride, fluoride, nitrate, iron, and heavy/toxic metals are important to determine the suitability of groundwater for drinking/irrigation purposes. Therefore, monitoring and assessment of groundwater quality is essential to know the quality threats and their mitigation through proper management of this valuable natural resource.

Course Structure:

The objective of this training programme is to equip participants with comprehensive theoretical knowledge and hands-on practical skills in groundwater quality assessment, hydro-geochemistry, contamination studies, various analytical techniques for the groundwater quality studies, and modern tools such as GIS, remote sensing, AI/ML, and stable isotopic applications. The programme aims to enhance participants' ability to investigate groundwater quality issues, interpret hydrochemical data, utilize advanced laboratory instrumentation, and develop sustainable strategies for groundwater monitoring, management, and environmental protection. The training will be conducted by experts at NGRI and other institute with extensive experience.

About the Training Program

Major thrust areas of learning

- Fundamentals of groundwater quality and hydrogeochemistry
- Groundwater contaminations
- Seawater intrusion along the coastal aquifers
- Applications of geophysical survey (ERT) for groundwater contaminations
- Groundwater flow and mass transport modelling
- Applications of Remote Sensing and GIS in groundwater quality
- Stable isotopes applications in Geohydrological and recharge studies
- Field techniques for groundwater sampling and water level measurements
- Practical for groundwater chemistry analysis

Participants will gain hands-on training in:

- Bench-top meters for pH, EC and TDS measurements
- Classical titration methods for ion analysis
- Flame Photometer
- UV–Visible Spectrophotometer
- Ion Chromatography (IC)
- ICP-OES (Inductively Coupled Plasma – Optical Emission Spectroscopy)
- ICP-MS (Inductively Coupled Plasma – Mass Spectrometry)
- Stable isotope analyses through IRMS techniques

Selection Procedure:

Selection will be on a first-come, first-served basis, subject to seat availability

Sponsorship:

Established academic institutions/Government organizations/ industrial sectors are welcome to sponsor candidates of their interest.

Duration	: 10 Days
Mode of Training Course	: Offline
Number of Seats	: 30
Certification	: A certificate will be issued to the participants for the successful completion of the course
Venue	: CSIR- National Geophysical Research Institute, Uppal Road, Hyderabad - 500007

2. Eligibility

Educational Qualifications:

Candidate should hold a

- I. Master Degree with minimum of 65% of Marks in Geology/ Applied Geology/Applied Geochemistry /Analytical Chemistry/ Environmental Sciences//Hydrology and any other equivalent/allied field.
- II. Doctoral Research Students in Applied Geology/ Geochemistry/ Analytical Chemistry/Environmental Sciences/Geology/Hydrology and any equivalent/allied field

Nationality: Indian

3. Technical Requirements

SALIENT FEATURES OF THE TRAINING

- 50% Theory and 50% Practical Sessions as per the course curriculum.
- Exposure to basic to advanced equipment for data analysis and demo software for hands-on exercise
- Lectures assisted with multimedia aids.
- Tutorials (personal attention), interactive sessions, and guest lecturers from experts.

Participants have to go through the hands-on training of data collection, including processing and interpretation. Therefore, participants are requested to bring their own laptops for the computational exercise.

4. Required Documents

The interested candidates may apply through online link given below:

(<https://www.ngri.res.in/cms/skill-development.php>) and has to upload the following documents in the application form:

1. Proof of age (SSC/Aadhar Card/Pan Card)
2. A copy of last examination passed
3. ID proof (College/ Institute/ Employer) & Address proof (Aadhar Card)
4. No Objection Certificate (NOC) from the Institution / Employer
5. Self Declaration form (for those candidates who are currently not pursuing any higher degree or unemployed/not getting any fellowship).

5. Important Dates

Duration: February 08-19, 2027

Last Date for Applying: January 18, 2027

6. Charges

Course Fee:

- Rs. 2,500/- + 18% GST = 2,950/- (only for Pursuing Master's Students)
- Rs. 5,000/- + 18% GST = 5,900/- (For completed Masters/pursuing Ph.D./and who are working as Project assistant/ Project Associates and Senior Project Associate)
- Rs. 10,000/- + 18% GST = 11,800/- (for Project Scientist/Post Doctorate/ Faculty / Industry sponsored)
- Course fee includes training fee, course material, working Lunch, Tea, and Snacks. It should be paid online by the shortlisted participants

Food:

Breakfast and dinner will be available at nominal rates in the CSIR-NGRI Campus and will be payable by the participants.

Accommodation Charges:

- **CSIR-NGRI Guest House (twin sharing basis):** ₹600/- per head per day for the first 6 days, ₹1200/- per head per day from the 7th day onwards.
- **Skills Development Quarters (twin sharing basis):** ₹100/- per head per day.
- **Staff Quarters/Research Scholars' Hostel (twin sharing basis):** ₹50/- per head per day.

7. Training Coordinator(s)

Dr. Atulya Kumar Mohanty, Scientist - E

(e-mail: atulyakmohanty@gmail.com; akmohanty.ngri@csir.res.in)

Contact Details: 040-2701-2634/2632)/ 7981754836

Dr. K. Rama Mohan, Scientist - F

(e-mail: krmenviron.ngri@csir.res.in, krngri@rediffmail.com)

Contact Details: 040-2701-2634/2632)/ 9490443117

8. Extra Curriculum Activities

- Yoga Classes with expert Trainer
- Quiz Competition/Running/Cultural Programs (Dance/Singing)

9. Program Management Committee

Nodal Officer: Dr. Abhey Ram Bansal, Scientist - G

Email: arb.ngri@csir.res.in

Dr. Satendra Singh, Sr. Technical Officer

Email: satendrasingh.ngri@csir.res.in

Ms. Swaroopa G., Senior Project Associate

Email: skills.ngri@csir.res.in

Office Contact: 040-2701 2325/2810

10. Chairman

Dr. Prakash Kumar

Director

CSIR- National Geophysical Research Institute

Email: director.ngri@csir.res.in

Office Contact: 040-2701 2302

11. Visit Us



<https://www.ngri.res.in/cms/skill-development.php>



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