



Organized by

CSIR –NATIONAL ENVIRONMENTAL ENGINEERING RESEARCH INSTITUTE (NEERI)
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OBJECTIVES

The Internet of Things (IoT) is an emerging area in Information Communication and Technology (ICT) with a wide range of applications. More than 50 billion devices will be connected to the Internet in the near future including all gadgets, human beings, and systems on a single network to exchange information. It transforms each device into an intelligent virtual entity.

Wireless sensor networks (WSNs) comprise some low-power sensor nodes. Each node has several sensors, interface circuitry, and a wireless communication module for transferring the gathered data. A communication module is an electronic device that enables the transmission and reception of sensor data using a free-available frequency band such as the 2.4 GHz, 5 GHz ISM band, or some of the free-available frequency bands between 800-900 MHz IoT system emerged as an important tool for environmental monitoring and management.

The main objectives are:

- To understand the feasibility study based on the available and installed devices for environmental monitoring
- Explore the design of the multi-gas sensor and noise system based on IoT for environmental monitoring
- Understand the development of Low Power Personal Area Network (LoWPAN) compliant sensor system using appropriate topology
- Exposure for selecting a suitable microcontroller board as a hardware platform for system development
- Understanding the role of Artificial Intelligence and Machine learning for the big data generated due to IoT devices.

COURSE CONTENTS

- Sensor testing in the known concentration of various gases (Gas Chamber)
- Obnoxious Gases monitoring using the Internet of Things (IoT)
- Distributed Sensor Data Access under the IoT platform
- Large Data Set Storage and Management: relating to the sizes of data being collected and analyzed by multiple users at different locations for different purposes
- Establishing a correlation using an indigenously developed IoT system between sensory and analytical measurements for the sulphurous odorants generated from various industries
- Role of Artificial Intelligence and Machine learning for the big data generated due to IoT devices

VENUE: CSIR-NEERI, Nagpur

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/iDk5NhbMTbgKE7pGA>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
- Registration Fee for Students (Graduates & above): **Rs. 500/-**
- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 1,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **July 15, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Er. Poonam Shivdutt Kumar (Prasad) Principal Scientist, CTMD



CSIR-NEERI, Nehru Marg, Nagpur-440020
Skill Training Program on
“Soil Quality Assessment and Land Management”

August 09-10, 2023



OBJECTIVES

In order to preserve the biodiversity and the productivity of the land, control measures are to be taken in achieving sustainable land use and management systems, to balance productivity and environmental protection. CSIR-NEERI has vast experience in the field of soil quality assessment and successfully implemented soil remediation technologies for various private, public and state / central government agencies in different parts of the country. The major objective of the training program is to impart training on soil quality assessment and management of degraded land practices to make participants well acquainted with the interpretation of data related to soil quality and land management practices to be adopted for the restoration of biodiversity.

COURSE CONTENTS

- Categories of Indian Soils.
- Collection, Preservation and Preparation of Soil Samples for Laboratory Analysis.
- Soil Quality Parameters: Physical, Chemical and Biological.
- QA/QC Procedure in Analysis, Accuracy, Precision and Concepts of Uncertainty Measurement.
- Preparation of Soil Test Report.
- Regulations for industrial land management
- Land Management - I (Case Study on Ecological Restoration of Mine Spoil Dumps)
- Land Management – III (Case study on Remediation of Contaminated Site)

VENUE: CSIR-NEERI, Nagpur

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/XcModRwpNQdvVAVq9>
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- Registration Fee for Students (Graduates & above): **Rs. 1,000/-**
- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 2,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **July 08, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. Sanjeev Kumar Singh Senior Principal Scientist & Head, SEAF

OBJECTIVES

Under CSIR- Integrated Skill Initiative, the proposed training programme on “Development of Capacity on Climate Change in Water Sector”. Develop the capacity of personnel in the water sector with reference to climate change and its impacts in the water sector, and thus support the development of policies and implementation of water schemes with a climate lens. The capacity development activity will focus on the schemes being implemented by the government in water sector and develop capacity of engineers, geologists, technicians etc. on climatic aspects and solutions in water sector.

This training module aims at providing the participants with following details:

The modules include risk assessment, climate change projections etc. apart from specific case studies, impact of climate change and solutions. Skill needed for the assessment of the impacts of climate on water (monitoring of quality, quantity etc.) also may be considered. Indicative topics are given below.

➤ Flood Related:

- Safe drinking water supply
- Flood/storm water management

➤ Drought Related:

- Water Security Plans
- Water Budgeting, Rainwater harvesting, Groundwater Recharge
- Alternative water sources (e.g. grey water)

➤ Quality Related:

- Water Safety Plans
- Identifying climate-related hazards/hazardous events, assessing existing control measures, and risks and risk assessment
- Water Treatment technologies: Evaluations, O&M

COURSE CONTENTS

- Climate change and impacts: An overview
- Climate change and water-related issues
- Water Treatment: Issues and solutions
- Drought mitigations through watershed management and rainwater harvesting: Case studies
- Alternate sources of water for climate change adaptation during draughts: A case study
- Increasing water contamination due to climate change and alternate water treatment options
- Water security planning for climate resilient water supplies
- Water safety planning for climate resilient water supplies
- Geogenic contaminants and Treatment options

VENUE: CSIR-NEERI, Nagpur

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/HEbSMPikLaEB7gxv9>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
- Registration Fee for Students (Graduates & above): **Rs. 1,000/-**
- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 2,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **July 22, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. G. K. Khadse Senior Principal Scientist, WTMD Dr. Pawan Labhasetwar Chief Scientist & Head, WTMD



OBJECTIVES

The environment and its wellbeing is important for the existing ecosystems in nature and the people who are thriving on it. The state of the environment can be understood when the critical parameters are measured and monitored from time to time. This helps in identifying the responsible degrading factors and points of intervention to improve. The monitoring of different attributes is expensive and time-taking and is difficult to develop the trends over period of time if not routine monitoring. With growth of computational infrastructure, Artificial Intelligence and Remote Sensing are two modes through which a continuous monitoring and management of environment can be done. It is important for environment engineers to delve in the field of AI, RS for management of environment as it has less cost, and faster results with results such that the priority actions can be take. This training programme aims to develop an understanding of RS and AI for environment monitoring and management.

The objective of the training programme is as follows-

- 1) To help participants understand the use of RS and AI in the Environment
- 2) To understand the data potential of space programmes (eg. NASA, ISRO, EU etc.) for Environment management and monitoring

COURSE CONTENTS

- Introduction to Artificial Intelligence (AI) in Environment
- Use of Remote Sensing (RS) for monitoring of environment attributes
- Monitoring of air and water environment through AI and RS
- Use of sensor and AI model for environment monitoring
- Hands on for making AI model

VENUE: CSIR-NEERI, Delhi Zonal Centre (DZC)

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/GQS9sWhKJb49Xq827>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
- Registration Fee for Students (Graduates & above): **Rs. 1,000/-**
- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 2,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **August 03, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSSD)	Dr. S. K. Goyal Chief Scientist & Head, DZC Er. Sunayana Scientist, DZC



CSIR-NEERI, Nehru Marg, Nagpur-440020

**Skill Training Program on
“Drinking Water Quality Monitoring and Analysis- Physico-chemical,
Microbiological and Molecular Aspects”**

September 25-27, 2023



OBJECTIVES

Safe drinking water is one of the basic needs of human development, health and well-being. Around 2 billion people worldwide use a drinking water source contaminated with faeces. Microbial contamination of drinking water poses one of the gravest risks to drinking water safety. Major contamination risks in drinking water could arise from natural geogenic contaminants of arsenic, fluoride and nitrate apart from emerging contaminants like pharmaceuticals, pesticides, per- and polyfluoroalkyl substances (PFASs). Inadequate management of urban, industrial and agricultural wastewater could also account for making drinking water dangerously contaminated or chemically polluted. Contaminated water and poor sanitation are linked to transmission of waterborne diseases such as cholera, diarrhea, dysentery, hepatitis A, typhoid and polio and is estimated to cause around 500,000 diarrheal deaths every year. Absent, inadequate, or inappropriately managed water and sanitation services expose individuals to preventable health risks. This is particularly the case in healthcare facilities where both patients and staff are placed at additional risk of infection and disease when water, sanitation and hygiene services are lacking. Globally, 15% of patients develop an infection during a hospital stay, with the proportion much greater in low-income countries. In the purview of this, the present training program will discuss the importance of drinking water monitoring comprehensively in terms of basic physico-chemical parameters as well as microbiological and advanced molecular methods to provide safe drinking water for human consumption in order to achieve sustainable development goals.

COURSE CONTENTS

- Sampling and characterization of drinking water (Parameters: colour, Turbidity, ammonia, TDS, NO₃⁻, F⁻, Fe, Total hardness, Chloride, Free residual Chlorine) (Including Demonstration)
- Isolation and enumeration of total and fecal coliform bacteria from water samples
- Morphological characterization of isolated coliforms (Method: Gram staining)
- Detection of coliform bacteria in drinking water sources through polymerase chain reaction (PCR)
- An overview on the bactericidal treatment of drinking water and Arsenic treatment plant (Hypochlorite and Silver ionization) (with a demonstration of both the pilot plants)
- Statistical analysis and interpretation of water quality data

VENUE: CSIR-NEERI, Kolkata Zonal Centre (KZC)

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/6dYfdyj2TFwhmhDC8>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
- Registration Fee for Students (Graduates & above): **Rs. 1,500/-**
- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 3,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **August 24, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. Rachna Jain Senior Scientist, KZC Dr. Sreemanta Pramanik Sr. Principal Scientist, KZC

OBJECTIVES

Under CSIR- Integrated Skill Initiative, the proposed training programme is on “Water Quality: Testing and Data Management”. Training is an integral part of infrastructural development for improved quality of life. The training of personnel involved in the water quality monitoring and assessment sector will improve the capability in dealing with specific expertise in the area through effective management. The program aims at providing awareness related to prevention of drinking water contamination from catchment to consumer by identifying risk and hazards associated with drinking water supply with suitable control measures and treatment options.

This training module aims at providing the participants with following details:

- Strengthening of knowledge on water quality monitoring and surveillance including advance instrumentation related to:
- Field and laboratory practices for on-site and off-site monitoring of water quality to meet the statutory requirements
- Analysis and interpretation of water quality data
- Water quality data management
- Advanced understanding in water quality assessments and treatment technologies
- Capacity building on water resources management

COURSE CONTENTS

- Water Quality Monitoring and Assessment
- Field work, sampling and on-site analyses of water quality parameters
- Laboratory exercises and practical's for water quality testing
- Demonstrations
- Hands-on training on analytical techniques on instruments

VENUE: CSIR-NEERI, Nagpur

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/mRhqzBFobutReGMv7>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
- Registration Fee for Students (Graduates & above): **Rs. 1,500/-**
- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 3,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **September 10, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. G. K. Khadse Sr. Principal Scientist, WTMD Dr. Pawan Labhasetwar Chief Scientist & Head, WTMD

OBJECTIVES

Climate change is now impacting all sectors and has cascading effects on social, economic, technology and health. Understanding the climate data and communicating it well to respective stakeholder is the biggest challenge. Thus for pre impact analysis studies, mitigation and adaptation policy, identification of evidence of climate change is critical.

This module shall thus aim to prepare trainees, to understand climate data to take further decisions and actions. On completion of the training attendee shall grasp understanding of the following

- Understanding climate science
- Procurement of correct data
- Analyzing data
- Reporting and representing

COURSE CONTENTS

- Introduction to climate science
- Data in climate science
- Methods in data analysis
- Importance of data analysis in environmental engineering
- Hands on experience

VENUE: CSIR-NEERI, Mumbai Zonal Centre (MZC)

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/eEqi5EM6NSGv2i528>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
- Registration Fee for Students (Graduates & above): **Rs. 500/-**
- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 1,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **September 30, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. Arti Soni Scientist, MZC Dr. Nitin Goyal Principal Scientist & Head, MZC



OBJECTIVES

Measurement of environmental pollutants is a very important aspect of understanding the environmental contamination baseline and predicts its impacts for effective environmental decision making and implementing mitigation plans. Both organic and inorganic environmental pollutants are integral part of monitoring programs because of their significant long term and toxic effects on human health and the environment. It is important to identify and quantify these environmental pollutants with a high sensitivity and accuracy as they could be present in the environment at ppb and sub ppb levels. Advances in analytical techniques, has made it possible to measure even the trace level contaminants present in environmental matrices like soil/sediment, water and air, after suitable sample processing.

The objective of this training program is to impart basics and advanced knowledge on analytical instrumentation techniques for analysis of environmental contaminants including trace level analysis like pesticides, using sophisticated instrumentation. An over view of occurrence and fate of pollutants in environment, besides sample collection and processing techniques for environmental analysis.

COURSE CONTENTS

- Basic concepts of analytical techniques used for environmental analysis
- Sample Collection and Preparation Techniques for Organic and Inorganic Contaminants
- Analytical aspects of sophisticated instrumental techniques for analysis using Gas Chromatography, Mass Spectrometry etc. for monitoring of organic contaminant.
- Analytical application of instruments for analysis of inorganic contaminants like Atomic Absorption Spectrometry, Inductively Couple Plasma (ICP-OES/ICP-MS) etc.
- QA/QC of equipment’s and analytical activities as per ISO/IEC 17025:2017.

VENUE: CSIR-NEERI, Nagpur

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/eBNokAYGsEFNnucd6>
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- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 2,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **October 06, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. Sanjeev Kumar Singh Senior Principal Scientist & Head, SEAF Er. G. S. Kanade Senior Principal Scientist, SEAF Dr. Kavita Gandhi Principal Scientist, SEAF

OBJECTIVES

Understanding of basics of environmental engineering is essential of all sectors in today’s world. To determine the impact of pollution and consequently, to devise and adopt remediation measures, assessment of environmental components is an essential prerequisite. Correctness of sampling, analysis and interpretation of the data is vital to assessing the impact (neutral or negative) of anthropogenic activities on the existing status of the environmental components.

The proposed training program is broadly intended to provide perspective, insights and knowledge required for effective and efficient assessment of environment. The specific aim of the training program is to enhance the capacities of the participants in monitoring of air, water and noise.

COURSE CONTENTS

- Introduction to basics of environmental engineering
- Understanding of environmental parameters (air, water, wastewater and noise component)
- Monitoring of environmental parameters – includes sampling & analytical, instrument demonstration, hands on experience
- Fundamental of sources, control measures, recommendation and case studies on environmental monitoring and assessment
- Data representation and reporting
- Importance of statistics in environmental engineering

VENUE: CSIR-NEERI, Mumbai Zonal Centre (MZC)

MODE OF TRAINING: Classroom lectures/demonstration/interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/qCoLw9enNnZymvUY6>
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- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **October 22, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. Shalini Tandon Principal Scientist, MZC Mrs. Komal Kalawapudi Technical Officer, MZC Dr. Nitin Goyal Principal Scientist & Head, MZC

OBJECTIVES

The ecology and biodiversity are challenging and skillful studies require expertise in flora and fauna of terrestrial and aquatic system. Any change in the ecological component causes harm to the keystone species of the developing area. Therefore, while conducting the baseline status it is very essential to understand the ecological processes and its stability. To strengthen the capacity of stakeholders and to manage with the ecological problems and to enable them to play their role and shoulder their responsibilities effectively, a training program has been proposed.

COURSE CONTENTS

- Introduction to the basics of Ecology and Biodiversity
- Principles and concepts of biodiversity laws
- Biodiversity Act 2002 & Wildlife protection act 1972
- IUCN category of animals and plants species of red data book
- Classification of plant and animal kingdom
- Phytosociological studies of flora
- Calculation of IVI Index and interpretation of results
- Study of lower invertebrates and its indication to the environment
- Study of Avifauna, Pisces and Insects
- Study of trophic status of lakes and rivers
- Prediction of impacts and mitigation measures for developmental activities
- Greenbelt Development plan
- Ecological restoration plan for mined out area
- Case studies of coal mine and iron ore mines

VENUE: CSIR-NEERI, Nagpur

MODE OF TRAINING: Classroom lectures/demonstration/interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/LkxNBbR6kK1jP5pU7>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
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- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 3,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **November 04, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. Sharda Kosankar Senior Scientist, EBGD



OBJECTIVES

Under CSIR- Integrated Skill Initiative, the proposed training programme is on “Water Safety Plan”. A Water Safety/Security Plan (WSP) is an improved risk management tool designed to ensure the delivery of safe and adequate drinking water to the consumers. It identifies hazards, means to control them, means and actions to identify loss of control and its restoration. It comprises system assessment and design, operational monitoring and management plans (including documentation and communication).The program aims at providing awareness related to water budgeting, prevention of drinking water contamination from catchment to consumer by identifying risk and hazards associated with drinking water supply with suitable control measures.

This training module aims at providing the participants with following details:

- Ensuring water security
- Explain that a WSP is a source to point-of-use risk management approach that exists within a wider framework for safe drinking-water.
- How to identify risks and hazards associated with drinking water supply
- How to suggest suitable control measures to minimize the risks and hazards in drinking water supply

COURSE CONTENTS

- Introduction to drinking water quality
- Drinking water quality monitoring
- Water supply system and associated risks and hazards
- Identification of hazards and hazardous events and assess the risks in water supply system.
- Determination and validation the control measures, reassessment and prioritization of the risk.
- Water budgeting
- Database management

VENUE: CSIR-NEERI, Nagpur

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/Q5xSv3iEhifTZRhH8>
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- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 2,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **November 18, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. G. K. Khadse Senior Principal Scientist , WTMD Dr. Pawan Labhasetwar Chief Scientist & Head, WTMD



CSIR-NEERI, Nehru Marg, Nagpur-440020

Skill Training Program on

“Industrial Waste and Wastewater Management for Grossly Polluting Industries (GPIs) in the National Capital Territory of Delhi”

January 10-11, 2024



OBJECTIVES

GPIs may be classified in multiple sectors and each sector has different type of associated problems. As a result of this, the freshwater that Indian rivers carry is now so severely polluted that river threaten the very life they once nurtured. On the other hand, managing the hazardous waste and hazardous sludge generated from the water treatment plants/ETPs installed at GPIs is another complex problem.

COURSE CONTENTS

- Introduction to the Grossly Polluting Industries (GPIs) & Problems and Challenges faced by GPIs
- Environmental Legislations, Role of Regulatory Bodies and Judiciary
- Problems related to the treatment of waste water
 - Wastewater Treatment Technologies: Physical, Chemical and Biological
 - Fundamental of Design of wastewater treatment plants/ETPs
 - Operation, Maintenance and Monitoring of wastewater treatment plant/ETPs & Troubleshooting
- Problems related to Hazardous Waste Management
 - Classification of Hazardous Waste (HW)
 - Hazardous Waste Management & TSDF
- How CSIR-NEERI can help GPIs?

VENUE: CSIR-NEERI, Delhi Zonal Centre (DZC)

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/jwphQQtQ5bjtt3b88>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
- Registration Fee for Students (Graduates & above): **Rs. 1,000/-**
- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 2,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **December 09, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. Papiya Mandal Principal Scientist, DZC Dr. S. K. Goyal Chief Scientist & Head, DZC

OBJECTIVES

Air quality management planning needs trained manpower who can understand importance of its key components and connectivity between them. The key components of any management plan are setting the goal, monitoring, emission inventory, modelling and control strategies. The output of one component can be input for others. Therefore, sound knowledge of these components by air quality managers would leads to improved result in managing air quality. In view of that, the proposed training program on Tools and Techniques of Air Quality Management is broadly intended to provide perspective, insights and knowledge required for reduction of air pollution level. The specific aim of the training program is to enhance the capacities of the participants in management of air quality. The main objectives are:

- To provide thorough knowledge about air quality management
- Understanding the importance of each key component of management plan.

COURSE CONTENTS

- Introduction to air pollution
- Regulatory guidelines for air quality management
- Air Quality Monitoring methods
- Stack Monitoring
- Emission Inventory
- Source dispersion monitoring
- Receptor Modelling

VENUE: CSIR-NEERI, Nagpur

MODE OF TRAINING: Classroom lectures /demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/gkhjXrTUbdLUPadM6>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
- Registration Fee for Students (Graduates & above): **Rs. 1,000/-**
- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 2,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **December 22, 2023**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. K. V. George Chief Scientist & Head, APC



CSIR-NEERI, Nehru Marg, Nagpur-440020

**Skill Training Program on
“Energy, Environment & Resources: Monitoring, Control and Management
Options”**

February 15-16, 2024



OBJECTIVES

To impart the knowledge to the students, researchers, academicians etc. about:

- Advanced tools and approaches for emission monitoring, management and control
- Reducing environmental footprints of combustion sources from informal sectors as well as from mobility
- Management and mapping of resources using GIS, AI and ML tools.
- Functionally designed Materials for Green Energy Harvesting

COURSE CONTENTS

- Advanced emission monitoring tools based on Drone, Sensors and AI Tools
- Emission monitoring and control from informal sectors including Cookstoves, Incinerator and Tandoor
- Transportation and mobility related emissions and management including emission control from in-use vehicles
- Energy Management and carbon financing (informal sectors)
- Introduction to GIS and its applications in resource mapping and management
- Resource mapping and utilization (including landfill mapping and waste management)
- Waste utilization and encapsulation
- AI and ML based Environmental Applications
- Functionally designed Materials for Green Energy Harvesting
- **Demo**
 - Drone, sensor and AI-based air quality monitoring including vertical profiling & other applications
 - Exposure to emission monitoring of small combustion devices.

VENUE: CSIR-NEERI, Nagpur

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/QeXGVTmMdh2QtUKK6>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
- Registration Fee for Students (Graduates & above): **Rs. 1,000/-**
- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 2,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **January 14, 2024**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. Nitin Labhasetwar Chief Scientist & Head, ERMD

OBJECTIVES

In order to limit global temperature, the GHG emissions need to be reduced. Most critical response to climate change is reduction of greenhouse gas emission (GHG). Mitigation may be possible by reduction, reuse and recycling. Efficient technologies and behavioral changes are also equally important to achieve reduction. Eliminating GHG emissions by switching to alternative fuels and sources is another mitigation response to climate change. Sequestering or offsetting emissions are other ways of achieving mitigation. This course shall thus guide attendee through the area of mitigating GHG emissions and shall help build an understanding of carbon neutrality.

COURSE CONTENTS

- Fundamentals of Greenhouse gas emissions and Climate Change
- Sectoral contributions of greenhouse gas emissions
- Mitigation potential of various sectors (water, waste-water, soil, agriculture, transport, amongst others) in reduction of greenhouse gas emissions
- Assessment of alternative fuels and energy sources to achieve mitigation strategies
- Role of carbon sequestration and sinks in meeting climate challenges
- Importance of mitigation strategies to build climate action plans
- Mitigation policies in India and World

VENUE: CSIR-NEERI, Mumbai Zonal Centre (MZC)

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/cQioxvE8vZuK6erv8>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
- Registration Fee for Students (Graduates & above): **Rs. 1,000/-**
- Registration Fee for Students (Graduates & Post Graduates) of the EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 2,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **January 26, 2024**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. Arti Soni Scientist, MZC Dr. Nitin Labhasetwar Chief Scientist & Head, ERMD Dr. Nitin Goyal Principal Scientist & Head, MZC

OBJECTIVES

Impact Assessment is broadly intended to provide perspective, insights and knowledge required for effective and efficient management of environment. The specific aim of the training program is to enhance the capacities of the participants in EIA.

The main objectives are:

- Exposure to all aspects of EIA
- EIA process-screening, scoping, data collection to impact assessment, role of public consultation etc.
- Specific reference to the environmental and social impacts of the industrial and developmental projects
- Reviewing EIA reports and identifying its strengths and weaknesses
- How to enhance ability regarding playing active role in post-EIA monitoring
- New possibilities for EIA/EMP using appropriate S&T Tools
- How to delineate pragmatic Environmental Management Plans

COURSE CONTENTS

- Environmental Impact Assessment (EIA): Introduction & NABET Requirements
- Baseline environmental quality of EIA studies
- Ambient Air Quality Monitoring, Analysis and Reporting
- Air Pollution Modelling, Meteorology, Dispersion of Stack and Fugitive Emissions
- Water Quality – Monitoring, Analysis and Reporting & Water Management
- Socio-Economic Aspects
- Noise and Vibration – Monitoring, Modelling and Management Plans
- Soil Quality Parameter, Soil Erosion and Soil Conservation Plans
- Solid & Hazardous Wastes – Characterization, Classification, Transport – Guidelines and Regulations
- Bio-diversity studies for Terrestrial and Aquatic Ecosystems – Forest and Wildlife Clearance
- Advance tools of EIA
- Environmental Management Plans for different Sectors

VENUE: CSIR-NEERI, Nagpur

MODE OF TRAINING: Classroom lectures/ demonstration/ interaction. The lecture material shall be provided to the participants after the completion of the program.

REGISTRATION

- Interested candidate needs to fill up the Google Form through following web link:
Google Form Link: <https://forms.gle/cPagg5az5mnf9vb48>
- Received applications will be screened and selected candidates will be informed via email for completion of registration including submission of registration fee, as applicable.
- Registration Fee for Students (Graduates & above): **Rs. 1,500/-**
- Registration Fee for Students (Graduates & Post Graduates) of EWS category: **NIL**
- Registration Fee for Sponsored/Employed/Self Payment candidates, etc.: **Rs. 3,000/-**
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **February 11, 2024**

CERTIFICATE OF PARTICIPATION: Certificate of Participation will be issued on successful completion.

DIRECTOR	SKILL NODAL PI	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & Head, Training & Skill Development Division (TSDD)	Dr. Harshvardhan Singh Senior Principal Scientist & Head, TSDD

