



Organized by

CSIR –NATIONAL ENVIRONMENTAL ENGINEERING RESEARCH INSTITUTE (NEERI)

(DSIR, Ministry of Science and Technology, Govt. of India)

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CSIR-NEERI, Nehru Marg, Nagpur-440020

Skill Training Program on

“Water Quality: Testing and Data Management”

August 12-14,2024



OBJECTIVES

Skill 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
- 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 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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/tTT363fE78E2do7F7>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 3540/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **July 12, 2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Center (SDC)	Dr. G.K. Khadse Senior Principal Scientist, WR

OBJECTIVES

To disseminate knowledge among students, researchers, academicians, industry and others regarding:

- Cleaner Energy related challenges and opportunities
- Strategies for mitigating environmental impacts associated with combustion sources in informal sectors and others.
- Utilization of advanced tools and methodologies for monitoring, and controlling emissions.
- Functionally designed materials optimized for green energy harvesting.
- Application of GIS, AI, and ML tools for resource mapping, management and cleaner energy.

COURSE CONTENTS

1: Energy and Environment: Challenges and Opportunities

- Introduction to Energy related emissions and its management
- Cleaner Energy use: Automobile emission control
- Emission monitoring and control from informal sectors
- Energy Management and Carbon Financing

2: Environmental Resource Management and Utilization

- Waste Resource Management for Sustainable Energy Use
- Waste Utilization & encapsulation and functionally designed materials for green energy harvesting.

3: Advanced Environmental Monitoring and Assessment Tools

- Advanced monitoring tools based on Drone, Sensors, and AI
- Resource Mapping and Utilization (landfill mapping and waste management)
- Life Cycle Assessment for Environmental Resource Management
- AI and ML based Environmental Applications
- Introduction to GIS and its applications in resource mapping and management

4. Lab Visits and Field Demonstration

- Visit to emissions monitoring laboratory of small combustion devices.
- Field Demonstration of drone-sensor-AI based environmental applications.

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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/HAmCWFAr2rq92NFj8>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 2360/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **August 03,2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Center (SDC)	Dr. Nitin Labhassetwar Chief Scientist & Chair, EPRM Dr Avneesh Anshul Principal Scientist, ERPM-ER Dr Ankit Gupta Principal Scientist, ERPM-ER



OBJECTIVES

Microorganisms play a critical role in the environment and provide several ecosystem services. The anthropogenic activities could modulate the diversity of microbes and pose serious threats to the ecosystem. Thus, the impact of anthropogenic pressure on the environment could be studied by assessing the microbial diversity. However, only ~5% of microbes could be culturable, and the rest of the microorganisms are nonculturable.

Amplicon analysis is a useful method to explore the diversity of culturable and nonculturable microorganisms, simultaneously. However, the analysis of amplicon data is complicated. Thus, this training module aims to provide insight into the amplicon data analyses in environmental studies. This training module also has hands-on sessions on data analysis.

COURSE CONTENTS

- Introduction to amplicon-based microbiome studies
- Big Data analysis in environmental microbiology
- Theoretical overview of amplicon data generation
- Amplicon data analyses and microbial diversity assessment
- Basic statistical methods involved in amplicon analyses.
- Amplicon data analyses on laptop: hands-on session

VENUE: CSIR-NEERI’s Hyderabad Zonal Centre (HZC), Hyderabad

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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/RyAzoB3RmjcC57H96>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 3540/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Last date of Application: **August 10,2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Centre (SDC)	Dr. Shaik Basha Chief Scientist & Chair, HZC Dr. P. R. Meganathan Senior Scientist, HZC

September 24-26, 2024

OBJECTIVES

Water scarcity in the country warrants recycling and reuse of the treated water from the waste water treatment plants. The wastewater either domestic or industrial needs pollutant specific treatment in waste water treatment plants. Efficient operation, maintenance, performance and design of waste water treatment plants require proper planning and trained manpower. Big industries manage their wastewater by constructing and efficiently operating the waste water treatment plants. However, small scale industries often find it difficult to construct and operate proper capacity waste water treatment plants due to space, financial and skilled manpower constraints. Hence, Sewage Treatment Plants (STP) and Common Effluent Treatment Plants (CETPs) provide a centralized platform for a homogeneous and heterogeneous cluster of industries to treat waste water on chargeable basis. Wastewater treatment in the treatment plants has now become an important revenue generating business, a resource of recycled water, a process of protecting environment and influencing quality of life at large. However, wastewater treatment plant operation is a tricky affair since wastewater received is diverse. Hence, this program has been specifically designed for the training and guidance of participants on operation, maintenance, management and performance of waste water treatment plants and can be extended to manage wastewater optimally in ETP too.

COURSE CONTENTS

- Fundamentals of Water Pollution, its sources and Health Exposure Assessment
- Wastewater Treatment: A Conceptual Overview
- Wastewater Treatment Technologies: Physical, Chemical and Biological
- Fundamental of Design of wastewater treatment plants
- Wastewater Treatment Plant Components
- Operation, Maintenance and Monitoring of wastewater treatment plant
- Wastewater Chemistry: Sampling, Preservation & Analytical Techniques
- Troubleshooting of treatment operations and processes
- Work safety at the wastewater treatment plants
- Effluent Recycle/Reuse and Sludge Management

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

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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/ysr5xFBzKxsDSnsaA>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 3540/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Last date of Application: **August 24, 2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Center (SDC)	Dr. Raman Sharma Principal Scientist, DZC Dr. S. K. Goyal Chief Scientist & Chair, DZC

Skill Training Program on
“Development of Capacity on Climate Change in Water Sector”
October 03-04, 2024

OBJECTIVES

Objective of the program is to develop the capacity of personnel in the water sector with reference to climate change and thus support the development of policies for 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 participants on climatic aspects and solutions in water sector. 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.) may also 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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/EB4Ev5vakJZFe7VP6>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs.2360/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **September 03,2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Centre (SDC)	Dr. G. K. Khadse Senior Principal Scientist, WR

OBJECTIVES

The objective of the program is to develop capacity of the participants related to understanding the science behind climate change and approach to solving and mitigating it through scientific approaches and policies. Climate change studies are multi-disciplinary and involve every aspect of living and non-living beings on the planet Earth.

The training program is designed to teach participants the art of preparation of national GHG inventory in a few sectors with case studies. The green gases included in the inventory preparation include carbon dioxide, methane, and nitrous oxides besides other gases generated due to anthropogenic activities such as energy production, agriculture, industrial processes, and waste generation. The training program helps in understanding the climate change process, developing the capacity of personnel in our country, and thus supporting the development of policies and implementation of mitigation and adaptation schemes with a climate lens.

The capacity development activity will also focus on the schemes being implemented by the government under the climate change activity and develop the capacity of participants particularly engineers, geologists, technicians, etc. Indicative topics are given below.

COURSE CONTENTS

- Climate change and impacts: An overview
- National inventory preparation with case studies on Waste, Agriculture, and Energy Sector
- India’s Response to Climate Change – Mitigation and Adaptation Policies.

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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/hysKcuPGRhhTD7C38>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 1180/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **September 22, 2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Centre (SDC)	Er. M, Karthik Senior Principal Scientist, SDC



OBJECTIVES

More extensive and more diverse urbanization is a signal of the growingly propulsive economies of a country. Decades of unmatched development have, however, come at a price. Prominence in urban settlements and redoubled concentration of industry and automobile traffic in and around cities have resulted in severe air pollution, deteriorating human health and weakening the productivity of the urban settlement. An all-embracing range of legal policies, strategies, and stakeholder participation have been put through to improve air quality all over the world. Urban Air Quality Management (UAQM) has various components like (a) Air Quality Assessment (b) Environmental & Health risk assessment (c) Abatement options and selection (d) Optimum control (e) Cost effectiveness analysis etc. This training program aims to develop a deeper understanding of the ground realities of Urban Air Quality Management & Control strategies. This course will help the participant understand the implications and limitations of Urban Air Quality Management in India and assist in exploring their potential to contribute to UAQM for the prospect of further economic growth.

COURSE CONTENTS

- Urban Air Pollution & its Abatement -An Overview
- Air Quality Management
 - Air Quality Assessment (Instruments and hands-on for selected parameters)
 - Emission inventory
 - Air Dispersion Models
- Short- & Long-term Control options, Action plans
- Optimum Control strategies
 - Case studies with Source apportionment tools & techniques
- Field visit

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

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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/zVusLsYiTHtadBEZA>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 3540/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Last date of Application: **October 12,2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Center (SDC)	Dr. Anirban Middey Principal Scientist, KZC Dr. Deepanjan Majumdar Senior Principal Scientist & Chair, KZC



CSIR-NEERI, Nehru Marg, Nagpur-440020

Skill Training Program on

“Biological and Microbiological Analysis of Water Resources”

November 19, 2024



OBJECTIVES

Fresh water resources are declining due to exploitation, climate change & depletion of water table of ground water in urban area in many part of India. The water is precious resource for growth, development and survival of living entities. Any pollutant enters in to water environment is adversely affect organisms which are indicators of water quality. Since water is aesthetically seen for aquatic, avifaunal diversity and urban population dependence over the centuries, and one of the “Panchtatva” on Earth. The attention is required for water resource management in different seasons. Except the ground water bore wells and tube wells, other water from ponds, lakes and reservoirs have to be treated in water treatment plants for human consumption.

Considering above facts, the objectives of training module is designed to make aware the trainee of various discipline & to provide guidelines for unskilled urban population.

COURSE CONTENTS

- Plankton analysis of water for evaluation of water environment
- Certain characteristics of bacterial genera their bio-geological relationship and detection techniques
- Coliform group of bacteria from wastewater
- Laboratory work: Biological Sample Collection and Plankton Analysis of Water in Laboratory
- Laboratory work: Bacteriological Sample Collection and MPN technique in Laboratory

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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/3c4rMCdAg2d6LA857>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 1180/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **October 19, 2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Centre (SDC)	Dr. V. W. Lande Principal Scientist, SDC

OBJECTIVES

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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/7Zie4AwF8M3Uk5NFA>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 2360/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **October 28, 2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Centre (SDC)	Dr. G.K. Khadse Senior Principal Scientist, WR

OBJECTIVES

The main objective of the training program is to update government officials, particularly from the municipality, village panchayats, schools, hotels, gated community residences, young researchers, and NGOs on the need to update on the current trends happening in the field of wastewater management, availability of technologies, and local rules & regulations.

COURSE CONTENTS

- Introduction to Wastewater; Various Sources and Types of Wastewaters- Domestic, Commercial, and Industrial; Need and Concept of Wastewater Management; Centralized and Decentralized Wastewater Treatment, concepts of ETP, CETP and POTW.
- Impact of Pollutants on Water (Surface Waters + Ground Water), Soil, Air Environment,
- Water Quality Parameters and Standards (COD, BOD, DO, Solids, Nutrients, Metals, And Emerging Contaminants). Regulations, Discharge Standards,
- Preliminary and Primary Treatment Processes: Screening; Grit Removal; Equalization Tank; Sedimentation Theory; Rectangular and Circular Sedimentation Tanks, Design Basics.
- Secondary Treatment Processes: Biological Treatment of Wastewater; Microbial Ecology and Growth Kinetics; Types of Microorganisms; Aerobic and Anaerobic Processes; Suspended and Attached Growth Systems, Decomposition of Organic Matter; Fluidized Bed Systems; Upflow Anaerobic Sludge Blanket Systems.
- Activated Sludge Process; SBR, MBBR, Tricking Filters and Rotating Biological Contactors and Most Biological Treatment Process Adopted in India. S
- Biogas Production and Collection; Other Reactor Configurations,
- Sludge and Septage Management: The Quantity and Characteristics of Sewage Sludge; Sludge Dewatering, Drying, And Thickening; Sludge Digestion; Aerobic and Anaerobic Sludge Stabilization; Composting.
- Wastewater Recycling: Scope, Need, and Demands; Types and Stages of Recycling; Recycling Requirements; Designated Reuse Criteria; Uses of Reclaimed Water, National Policy, Impact of Climate Change on The Water Environment.

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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/ydXiTa1U3S1AYu4c8>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 2360/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **November 11, 2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Centre (SDC)	Er. M, Karthik Senior Principal Scientist, SDC

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 participants 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
- Principals 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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/L2dvqeM7DbS58Z1R9>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 3540/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **November 17, 2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Centre (SDC)	Dr. Sharda Kosankar Principal Scientist, EIAAP

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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/D5G4XAKh4ro8KxA57>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 2360/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **December 08,2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Centre (SDC)	Dr. Sanjeev Kumar Singh Senior Principal Scientist & In-Charge, SEAF

OBJECTIVES

To determine the impact of water pollution and consequently, to devise and adopt remediation measures; correctness of sampling, analysis and interpretation of the data is important to assess the impact of anthropogenic activities on the quality of water component and the waste water generated.

The proposed training program is broadly intended to provide perspective, insights and knowledge required for effective and efficient assessment of water component in terms of its suitability for specific usage and treated waste water in terms of polluting natural water bodies and possibility of reuse in the given scenario of scarce availability of water. The specific aim of the training program is to enhance the capacities of the participants in monitoring, analysis and treatment of water and waste water.

COURSE CONTENTS

- Introduction to basics of water and waste water quality
- Emerging water pollutants
- Monitoring of physico-chemical and biological parameters of water and waste water (including sampling and analysis)
- Treatment technologies for water and waste water remediation
- Case studies

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

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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/AWVehETeVroYV7ZQ8>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 1180/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed.
- Last date of Application: **December 23,2024**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Center (SDC)	Dr. Shalini Tandon Principal Scientist, MZC Mrs. Komal Kalawapudi Technical Officer, MZC Dr. Nitin Goyal Principal Scientist & Chair, 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 overview of occurrence and fate of pollutants in environment will be discussed 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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/UJxUY4SDZtrMFEqo6>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 2360/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **January 19, 2025**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Centre (SDC)	Dr. Sanjeev Kumar Singh Senior Principal Scientist & In-Charge, SEAF Er. G.S.Kanade Senior Principal Scientist, SEAF Dr. Kavita Gandhi Principal Scientist, SEAF

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 with educational qualification (Graduate & above in Science / Engineering subjects) may submit the Application Form through following web link:
Application Form Link: <https://forms.gle/uPD2qXsE24FwgLuq7>
- Applicants will be informed via email for completion of registration including submission of **registration fee of Rs. 3540/-** (including GST)
- Seats are limited and registration will be confirmed on first come first get basis. After receiving requisite registrations, application form link will be closed even before closing date of application
- Accommodation at CSIR-NEERI Guest House can be arranged on payment basis, if available
- Last date of Application: **February 05, 2025**

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

DIRECTOR	SKILL NODAL OFFICER	COURSE CO-ORDINATOR
Dr. Atul N. Vaidya Director CSIR-NEERI	Dr. Harshvardhan Singh Senior Principal Scientist & In-Charge Skill Development Centre (SDC)	Dr. Harshvardhan Singh Senior Principal Scientist, SDC