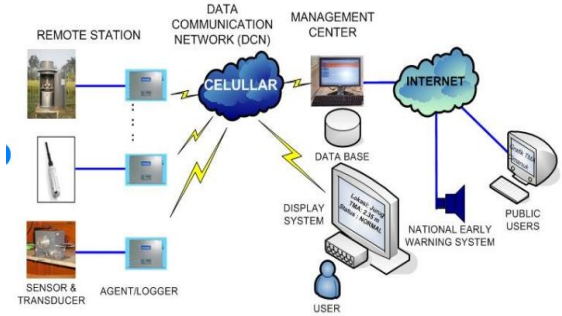
Government Of India
Ministry of Jal Shakthi
Department of Water Resources,
River Development & Ganga Rejuvenation
Central Water Commission
National Water Academy, Pune

Training Programme On "Flood Forecasting Techniques" (05th to 09th Jan 2026)



-Framework for flood forecasting and warning system.

Introduction and Objective

Flood is a natural disaster that needs to be mitigated to lessen the risk of damages. Managing floods through structural measures have been a practice since centuries, it is an effective measure against moderate intensity floods but often proves to be ineffective in disastrous/ high intensity floods. Structures measures may also increase the risk of flood damages in case of failure. Climatic/ whether changes further worsens the problem. Non-structural measures play a vital role not only in reducing catastrophic consequences of residual flood risks but also have significantly lesser impact on environment.

Flood forecasting is one of the most significant, dependable and cost-effective non-structural method to manage floods.

By harnessing scientific data, historical patterns, and advanced modeling techniques, flood forecasting empowers communities, emergency responders, and policymakers to make informed decisions and take proactive measures.

Floods are the most extensive of all natural disasters. The geo-climatic conditions of India make the country prone to floods. About 75% of annual rainfall (& corresponding Runoff) is received just in four monsoon months. Impact of floods are huge in terms of social, loss of human life, vegetation, livestock, property, public utilities, deteriorating water quality etc. resulting in huge economic losses. Though it is not possible to control the flood disaster totally, however, by adopting suitable measures (structural and non-structural) damages can be minimized. Flood Forecasting is an effective non-structural tool by giving advance warning of the magnitude of flood and its time of occurrence; and thus let concerned authorities to regulate release through a dam in manner not harmful to structure itself as well as lives/ properties in both upstream and downstream areas. Availability of latest, reliable, accurate and timely information is a pre-requisite for planning flood management activities. CWC has established nation-wide forecasting and warning system in all the inter-State river basins

Water Resources engineers have been continually endeavoring to forecast future events as accurate and early as possible by adopting newer techniques. CWC has also ventured into Flood Forecasting (FF) using Rainfall Runoff computer Models. All field offices have been mandated to issue flood forecast on real time basis. Conventional flood forecasting is done with the help of various techniques such as correlation curves, unit hydrographs, etc. Also, the correlation curves for new/ existing FF stations needs to be prepared/ updated.

Thus, the program has been conceptualized with an objective to build capacities of the professionals involved in the flood management activities to enhance their knowledge and skills on Flood Forecasting Techniques, Modelling and effective management of floods in accordance with the guidelines and latest techniques.

Program Coverage

The program will comprise of classroom sessions, discussions, assessment/ assignment through hands-on session in a project mode covering following topics:

- Introduction to Flood Forecasting & mandate of CWC
- Conventional and Model Based Flood Forecasting Approaches
- Stochastic/ Statistics Based Flood Forecasting
- Preparation of Travel Time (TT) and Stage Discharge (SD) Curve and its use in FF
- AI/ ML based Level Forecasting
- Rainfall Runoff Processes and its modelling
- API (Antecedent Precipitation Index) calculation and Preparation of rainfall curve with API as parameter and its use in FF
- Methods of run-off assessment from Ungauged Catchments on the basis of rainfall data
- Formulation of Inflow Forecast

Program Duration & Format

The Program is of 5 days duration and will commence from 05th January 2026 and will conclude on 09th January 2026. Four sessions of 75-90 minutes each will be held every day.

It is a residential program to be held at NWA Campus. The participants are expected to reach NWA by the evening of 4th January 2026 and should plan to leave only after 1900 Hrs. on 09th Jan 2026.

Location

National Water Academy is located on the south-western side of Pune city on Pune-Singhad Road between Nanded Phata and Kirkatwadi villages. It is 12 Kms from Swargate Bus Stand, 18 Kms from Pune Station and 29 Kms from Pune Airport.

Local Hospitality and Weather

NWA has a self-contained residential campus, and all out-station participants will be provided with accommodation in the NWA Hostels which are comfortable & fully furnished (viz. television with cable connection, refrigerator, micro-oven, tea maker, intercom etc.). Meals are available (self-service dining) in Canteen/ Mess which is in the same residential campus.

Lodging and Boarding for all officers of CWC shall be provided by NWA, Pune FREE of cost.

During the month of January, weather is normally cool with average temperature of around 20^0C

Target Group

The program is open for the officers of Central Water Commission and other Organisations under DoWR, RD & GR of the rank of JE/AE/AEE/EE and officials and staff in Hydromet Cadre involved in the flood forecasting activities.

Participation

Nominated participants may fill in the Google registration form using the link given below on or before 29.12.2025 without failure (in addition to sending nomination by mail, sponsored by competent authority.

https://forms.gle/zsKMxf6qrwQebFrq7

The List of accepted nominations would be uploaded on NWA website under upcoming event link by 1700 hrs on 02nd Jan 2026.

(https://www.nwapune.gov.in/ongoingevents.jsp)

The nominated officers are requested to start for the program only after confirmation of their nomination.

Program Fees

There is no program fee for participants from Central and State Govt. departments. Charges for participants from various categories are as below:

Category	Description	Fee in ₹(per participant)
A.	Central/State/Local Government	Nil
B.	'Not for Profit' Central and State	Nil
C.	Recognized academic institutions, NGOs	900/-
D.	Central and State Public Sector Undertakings	6,000/-
E.	Private Companies, individuals	9,000/-

Payment for program fee shall be made in advance through Demand draft in favor of PAO-Ministry of Water Resources, payable at NWA Pune

Contact

For sending nominations or for any information of this program, please contact :

Shri Ankit Dudeja

Director (A&C) & Program Director

National Water Academy, CWC,
Khadakwasla R S

Pune – 411 024

Tel : 020 – 24380296 Mob 9717349877

Email:nwa.mah@nic.in; nwa.pune@gmail.com;

NATIONAL WATER ACADEMY, PUNE

Training Program on
Flood Forecasting Techniques

(05th to 09th Jan 2026)

REGISTRATION FORM

Name : _____

Designation : _____

Organization : _____

Responsibilities (In brief) : _____

Full Postal Address : _____

Telephone Nos. : _____

Mobile : _____

Email : _____

SPONSORING AUTHORITY

Organisation : _____

Full Postal Address : _____

Telephone Nos. : _____

Mobile : _____

Email : _____

Date

(Signature & Seal)

Completed Registration Form may be sent by nwa.mah@nic.in, nwa.pune@gmail.com