



A four day Course on Advanced Analytical Techniques, Instrumentation and NABL Quality Assurance (AATIN-QA 2026)

Organised by
Central University of Punjab, Bathinda
In association with
Central University of Punjab Research & Development Foundation
13-16, October 2026



The Analytical Chemistry Landscape:

A global "reproducibility crisis" is currently being driven by inadequate statistical power, poor experimental design, and a lack of adherence to rigorous metrological principles.

Regulatory organizations globally require analytical results to be produced under international quality systems, with NABL acting as India's sole authoritative body for ISO/IEC 17025:2017 accreditation.

Bridging the Academic-Industrial Gap:

Comprehensive training programs are strategically important to provide students with the hands-on instrumental and QA/QC experience they theoretically understand but practically lack.

A firm grounding in classical wet chemistry is required before advancing, encompassing titrimetry, gravimetric analysis, TDS estimation, and pH meter calibration.

Proper sample preparation methods for solid and liquid matrices such as extraction and digestion are vital prerequisites to prevent significant analytical errors.

Advanced Instrumentation and Innovation:

Trace Metal Analysis: Training in Atomic Absorption Spectroscopy (AAS) and Emission Spectroscopy teaches scholars to quantify ultra-trace metals by mastering spectral interferences and calibration curves.

Chemical Identification: The program utilizes GC-MS/MS for separating and identifying volatile chemicals, while LED fluorimetry provides specialized skills for regional public health and environmental monitoring for uranium analysis.

Commercial Incubation: The visit to the CUPRD and e-Yuva centres, are encouraged to view their analytical findings as foundations for viable deep-tech commercial startups in India.

Registration & Participant Guidelines

- **Delegates should submit a biodata to the Convener for participating in the training programme as per the google form link.** After Confirmation, the registration fee should be submitted as per the details provided.
- The registration fee is **non-refundable** under any circumstances.
- **Last Date for Registration: 7th October 2026.**
- **No TA/DA or accommodation** will be provided to participants.
- **Lunch and tea** will be served during the programme sessions.
- **Limited Participation:** To ensure focused learning, small-group interaction, and adequate hands-on exposure to advanced analytical equipment, participation will be limited to **25 nos.** and selection will be based on **merit.**
- **Mandatory Attendance:** Attendance in **all lecture and practical sessions is mandatory** for successful completion of the programme.
- **Assessment & Certification:** The intensive training programme will conclude with an **assessment/examination** to evaluate the knowledge and competencies acquired during the course. Successful participants will receive certification.

Patron:

Prof. Ramakrishna Wusirika, Vice-Chancellor (Acting), CUP, Bathinda

Advisory Committee:

Prof. V K Garg, Head, Dept. of Environmental Science and Technology CUP, Bathinda

Prof. Anjana Munshi, Director, R&D, CUP, Bathinda

Prof. Monisha Dhiman, Director, IQAC, CUP, Bathinda

Prof. Sanjeev Kumar, DSW, CUP, Bathinda

Prof. Sunil Mittal, CUP, Bathinda

Convener

Prof. Raj Kumar,
Chairman

Central Instrumentation laboratory, CUP, Bathinda

ISO/IEC 17025 NABL-accredited laboratory

Email: aatinga.cup@gmail.com, M: 9914567224

Co-Convener:

Prof. Smeer Durani, Professor of Practice, CUP, Bathinda

Organising Secretaries:

1. Dr. J. Nagendra Babu, Convener, CIL, CUP, Bathinda

2. Dr. Anil Kumar, Dept. of Appl. Agriculture, CUP, Bathinda

Organising Committee:

1 Dr. Sumeer Razdan, Technical Officer, CIL, CUP, Bathinda

2. Dr. Rabindra Kumar, Technical Officer, CIL, CUP, Bathinda

3. Mr Ajit Paul Singh, Sr. Technical Assistant, CUP, Bathinda

3. Mr. Ashvani Kumar, Sr. Technical Assistant, CUP, Bathinda

4. Dr. Akshay Nag, Chief Executive Officer, CUPRDF, Bathinda

CUP, Organising laboratories:

1. Central Instrumentation laboratory
2. Department of Applied Agriculture
3. Department of Environmental Science and Technology

Day-wise thematic flow

Day 1: Fundamentals and Classical/Basic Analytical Techniques

Day 2: Sample Preparation and Atomic/Emission Spectroscopy

Day 3: Advanced Instrumentation, Trace Element Analysis and QA/QC

Day 4: Mass Spectrometry, Molecular Spectroscopy, NABL Assessment

Hands on training

- Calibration and verification of instruments
- Preparation of calibration standards
- Method validation/verification
- Quality-control samples and control charts
- Practical aspects of Atomic Absorption Spectroscopy
- Practical aspects of GC-MS/MS
- LED Fluorimeter and Uranium analysis
- Visit to CUPRDF and e-Yuva Center

Registration & Selection

Registration: Submit the required details through the attached Google Form link.

<https://forms.gle/LmTcMEU9Hm5EGk9M6>

Fee Payment: Bank account details for registration fee payment will be shared only with shortlisted candidates.

Registration Fee

Students: ₹2000, Others: ₹5000