

Certificate Program in Biomonitoring of Heavy Metals (CBHM)

Duration: 15 Days | Format: Hands on Training



Mahavir Cancer Sansthan & Research Centre (MCSRC) in Phulwarisharif, Patna, is a leading, 618-bed charitable cancer hospital in Eastern India inaugurated in 1998. It specializes in comprehensive, affordable cancer care, including radiation, medical and surgical oncology, with a focus on treating economically weaker patients. Institute has been recently recognised as **ICMR–Collaborating Centre of Excellence (CCoE)** under the aegis of the Indian Council of Medical Research, Govt. of India. This recognition reflects institution's significant contributions in the identified domain of **Biomonitoring of Heavy Metals** and Its Impact on Public Health also its demonstrated commitment to advancing high-quality health research aligned with national priorities. Institute also engaged with **National Centre for Disease Control (NCDC)**, Directorate General of Health Services, Ministry of Health and Family Welfare, Govt. of India along with **Sate Health Society Bihar**, Govt. of Bihar under **One Health Mission for Biomonitoring of Heavy Metals** across the State Bihar. **Research Department** of Mahavir Cancer Sansthan and Research Centre (MCSRC) Environmental Toxicology Laboratory offers a fundamental training **Certificate Program in Biomonitoring of Heavy Metals (CBMH)**. The program specially designed for students and researcher from any University/Institute and Industry person.

Program Framework

- **Target Audience:** Students/ Faculties/ Scientists
- **Entry Requirement:** Basic environmental science and Public health knowledge
- **Certification Type:** Institutional (with practical competency validation)
- **Batch Size:** 10 participants (for optimal hands-on training)

Structured Training Plan

Week-1	Module	Theory Components	Practical Training	Competency Outcome
	Orientation & Fundamentals	Introduction to Heavy Metals	Environmental toxicology Laboratory visit	Enabling trainees to learn about Environmental toxicology Laboratory
	Good Laboratory Practice: Principles and Applications in Environmental Toxicology Laboratory	Standard Guideline Sampling strategies (water, soil, biological, clinical and food)	Hands On Sampling strategies (water, soil, biological, clinical and food)	Enabling trainee to learn about different kinds of sampling
	Regulatory Guidelines and Standards about different heavy metals	Quality assurance, transportation and storage of samples	Hands On Quality assurance, transportation and storage of samples	Enabling trainee to learn about Quality assurance
	Processing of biological samples (blood/urine)	Introduction to Processing of biological samples (blood/urine)	Hands on Processing of biological samples (blood/urine)	Enabling trainee to learn about Processing of

Week-1	Module	Theory Components	Practical Training	Competency Outcome
				biological samples (blood/urine)
	Processing of biological samples (hair/nails)	Theory related to Processing of biological samples (hair/nails)	Hands On Processing of biological samples (hair/nails)	Enabling trainee to learn Processing of biological samples (hair/nails)
	Processing of food samples (rice/wheat/potato)	Theory related to Processing of food samples (rice/wheat/potato)	Hands on Processing of food samples (rice/wheat/potato)	Enabling trainee to learn Processing of food samples (rice/wheat/potato)
		SUNDAY		
Week-2	Module	Theory Components	Practical Training	Competency Outcome
	Standard preparation and calibration of GF-AAS	Theory related to Standard preparation and calibration of GF-AAS	Hands on Standard preparation and calibration of GF-AAS	
	Estimation of Arsenic in water and biological samples	Theory related to Estimation of Arsenic in water and biological samples	Hands On Estimation of Arsenic in water and biological samples	
	Estimation of Arsenic in clinical and food samples	Theory related to Estimation of Arsenic in clinical and food samples	Hands On Estimation of Arsenic in clinical and food samples	
	Estimation of Lead in water and biological samples	Theory related to Estimation of Lead in water and biological samples	Hands On Estimation of Lead in water and biological samples	
	Estimation of Lead in clinical and food samples	Theory related to Estimation of Lead in clinical and food samples	Hands on Estimation of Lead in clinical and food samples	
	Data analysis, Interpretation, National and International standards	Data analysis, Interpretation, National and International standards	Data analysis, Interpretation, National and International standards	
		SUNDAY		
	Competency based evaluation, Doubt clearance class & Certificate distribution			

Name of the Course: **Certificate Program in Biomonitoring of Heavy Metals (CBHM)**

Duration of the course: **15 Days**

Mode of the course: **Theory and Practical (Hands-On)**

Eligibility: **Bachelors / Masters (In any branch of Science / Allied Streams)**

Course Fees: **Rs. 6,000/-**

Batch Size: **10 Students per batch**

Programme In-charge: **Dr. Arun Kumar, Senior Scientist & In-Charge Environmental Toxicology Laboratory, Research Centre, MCSRC, Patna**

Documentation & Deliverables: Training manual (SOP-based), Final assessment report, Certificate issued with institutional seal

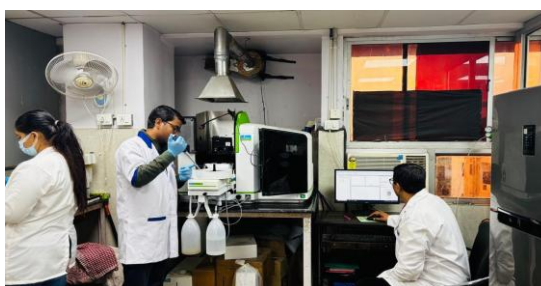
Quality Assurance (Institutional Level): Standardized SOPs for all steps, Training as per National guidelines

Person Involved

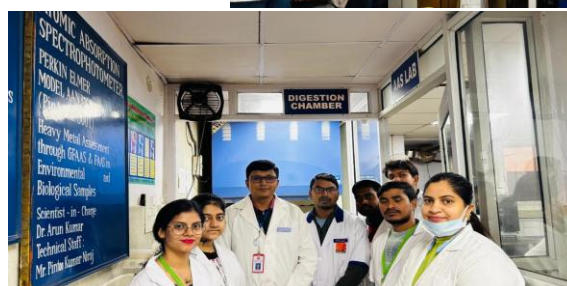
S.No.	Name	Designation	Contact Information
1.	Dr. Arun Kumar	Senior Scientist	9334740800 drarunk31@gmail.com
2.	Dr. Abhinav	Scientist-I	
3.	Mukesh Kumar	Lab Technician	
4.	Prashant Kumar	Lab Technician	
5.	Marium Khan	Ph.D. Student	



GF-AAS



Fume Hood- ICMR II



Atomic Absorption Spectroscopy
MCSRC Funded



Dr. Arun Kumar
Senior Scientist

In-Charge: Environmental Toxicology Lab

**Environmental Toxicology Laboratory Facility
Mahavir Cancer Sansthan and Research Centre (MCSRC), Patna**