

ADVANCE TRAINING IN FORENSIC SCIENCE & LAW

The overall goal of the training program “**ADVANCE TRAINING IN FORENSIC SCIENCE & LAW**” is to provide the trainee with the skills they will need to provide appropriate Forensic findings as expert witnesses in the court of law. That evidence can include blood, saliva, fibres, tire tracks, drugs, alcohol, paint chips and firearm residue etc.

SCOPE OF THE TRAINING -

Forensic Chemist apply their extensive knowledge of chemistry to analyse the samples of cement , mortar , fire , arsons , cheating , bribe and cases of adulteration . We will provide you hands on experience to analyse the forensic samples and documentation before court of law .

Forensic Biologist identify and analyse Forensic DNA Samples. Forensic Consultant provide scientific and legal consultancy as forensic expert.



Scope of training :

- Research & Development
- Forensic Science Lab
- Toxicology Research & Analysis
- Analytical Testing Lab
- Academic Institutions

Advantage -

- Industry Oriented Design
- Sprit of the training is to make you employable
- Rigorous Hands on Learning
- Capacity Building
- State of art research facility
- Flexibility of Time & Working Hours

Duration : 250 Hours (2 - 3 Months) **Timings :** Monday - Saturday (9 A.M to 5 P.M)

Important Note:

- **This training program have the potential to make you employable**
- **As a part of our training program, we may suggest your name to our clients against available vacancy**
- **This training is limited to skill development only and we do not assure you for employment or campus interview**
- **Our prime motive is “Bridging Gap Between Industry & Academia”**

TRAINING SYLLABUS

UNIT – 1 BASICS OF FORENSIC LABORATORY

Basics of Forensic Laboratory: : Evidence Collection methodology , Evidence containers , Lab safety and Procedures : Biological lab Safety , Chemistry Lab Safety , Forensic Record Maintenance : Understand the importance of the maintenance of forensic records from crime science to court , Forensic Record Formats , Documentation of Scientific evidence : Draft petition with the admission of scientific evidence , prosecution strategy ,

UNIT – 2 HANDLING OF FORENSIC SAMPLES

General Procedures of Sample Handling : Types of Evidence Examined ,Planning the Examination Evidence Processing , Note Taking & Report Writing SOP for Evidence Collection : Collection of Blood , Collection of Hairs & Fibers , Seminal Fluid Collection , Collection of Body Fluids , Evidence Collection Guidelines Evidence Packaging Guidelines.

Real Time PCR Technology – Introduction to Real Time PCR , Primer Designing for Real Time PCR , Application of Real Time PCR in Food Genetics , Real Time PCR Run For Food Samples , Data Analysis

Preparation of Extract - Blood Stains , Preparation of Extract from Calcified Tissues , Preparation of Extract from Soft Tissues. Precipitin Tube Method , Double Diffusion , Cross Over Electrophoresis , Documentation of Forensic Samples

UNIT – 3 OPTIMISATION OF NUCLEIC ACIDS EXTRACTION TECHNIQUES FROM FORENSIC SAMPLES

Extraction of DNA for Forensic Analysis - DNA, RNA, Mitochondrial DNA (Any probative biological sample that has been stored dry or frozen, regardless of age, may be considered for DNA analysis Quantitative & Qualitative Analysis of Nucleic Acid - DNA Electrophoresis , Gel Docking or imaging and spectrometer. Purification of Nucleic Acids – Column Purification , Digestion etc. Forensic Sample For Analysis - Hair , Nail , Sputum , Blood , Plant , Microorganism etc.

UNIT 4 - ANALYSIS OF FORENSIC SAMPLES BY PCR AND REAL TIME PCR

Basic Bioinformatics Tools - Primer Designing, Vectors , Selection of Restriction Sites, Virtual PCR, Bioinformatics tools & Techniques , Gel Analysis Software , Vector Selection Software, Q-PCR Primer designing Tool , Software to run Real Time PCR , Data Analysis

DNA Profiling - Preparation of reaction mixture and its safety for cross contamination , Optimisation of PCR Reaction – Melting Point , GC Content , Concentrations and Cycles , Sample run , PCR analysis & DNA bar coding, Dendrogram Generation, Similarity & Dissimilarity Matrix , Data Analysis

cDNA Construction Purification of mRNA from total RNA , first strand cDNA synthesis or construction of cDNA

Real Time PCR Analysis

Introduction to Real-time PCR & Applications , Real-time PCR reaction setup , Construction of a standard curve: Bio-statistics principles; Linear regression , Standard melt curve analysis ,High resolution melt curve analysis . Analysis of SYBR Green real-time PCR results

UNIT 5 - ISOLATION , PURIFICATION AND ANALYSIS OF TOXINS

Classification of Toxins - Antibiotics , Drugs , Acids , Snake Venoms , Plants Toxins , Heavy Metals ,Mineral Oils Organic Toxic Compounds – Acetaldehyde , Acetone , Benzene , Alcohol , Chloroform , Phenol etc.etc.

Extraction of Toxins - Different extraction methods for volatile , semi volatile and non volatile samples through digestion , soxhlet extraction , distillation , Vacuum Rotary Evaporator , Solid Phase Micro Extraction etc.

Chromatography Separation of Toxins - Column Chromatography , TLC , HPLC , Gas Chromatography , Solid Phase Extraction etc.

UNIT – 6 EXAMINATION OF FIRE / ARSON CASES

Extraction of Fire / Arson Forensic Analysis - Detection and identification of inflammable materials or their residues in the exhibits of fire/arsen cases like ; petrol, kerosene, diesel, alcohols, thinners, solvents etc.

Sample Preparation and Gas Chromatography : Method Development for the analysis of petrol, kerosene, diesel, alcohols, thinners, solvents etc.

UNIT - 7 EXAMINATION OF CEMENT , MORTAR AND CONCRETE

Sampling Procedure - Collection procedures of forensic samples of cement , concrete & mortar

Chemical Assay : Thymolphthalein Test of cement , Determination of `Calcium` by EDTA Titration , Direct Cement % by acid titration , Testing of Mortar by Titration & EDTA

UNIT 8 – ANALYSIS OF CHEMICALS IN TRAP CASES

Detection and identification of phenolphthalein, sodium ions, carbonate ions, calcium ions, anthracene etc

Test for Phenolphthalein : Chemical Assay , Folin-Ciocalteu's reagent test , Spectroscopic Determination , Extraction and TLC of Phenolphthalein , HPLC Analysis.

Separation and purification of Anthracene : TLC , UV and HPLC Analysis of anthracene

UNIT 9 – ANALYSIS OF ALCOHOL IN LIQUOR / DRINKS

Analysis of various types of alcoholic drinks/liquor in crime exhibits. Qualitative analysis of Liquor - Iodoform Test , Dichromate Test , Chromotropic Acid Test for methanol .

Quantitative analysis of alcohols by Spectroscopy , TLC , HPLC & Gas Chromatography.

UNIT 10 – ANALYSIS OF FATS AND OILS

Analysis and characterisation of various oils and fats for adulteration Qualitative analysis of Liquor – Chemical test for different oils and fats. Quantitative analysis of alcohols by Spectroscopy , TLC , HPLC & Gas Chromatography

WHO MAY JOIN ?

Indian Aspirants From Biotechnology , Microbiology , Biochemistry , Life Science , Chemistry , Pharmacy ,Forensic Science , Food Science etc.

Fee Structure : Rs 25,000 /- (Payable in Two Instalments)

Duration : 250 Hours (2 - 3 Months) **Timings** : Monday - Saturday (9 A.M to 5 P.M)

HOW TO APPLY –


Details of Documents For Registration :

1. Any identity proof along with University / College Identity Card / Aadhar Card etc.
2. Filled **Registration form** with photograph (Given in Last Page of Brochure)
2. **Registration fee** will be Rs 1000 / - paid through cheque or on line payment

How to pay Registration Fee Off Line (Those Who Send Documents by Post) :

1. Cheque or D.D will be in favour of “ **Allele Life Sciences Private Limited**”

On Line Payment :

Payment By Internet Banking	Scan UPI Code
Beneficiary Name - Allele Life Sciences Private Limited Account Number - 61071508494 IFSC Code - SBIN0031811 Bank Name - State Bank of India Bank Address - SBI, 14/15, Sector-18, Noida, UP - 201301	
Or Pay Through UPI / BHIM App UPI Address - allelelifesciences@upi	

How to send document :

Those who pay through cheque send all documents at following address :

Allele Life Sciences Pvt. Ltd.

C - 59 , Sector - 10 , Noida
Uttar Pradesh - 201301 , IN
M : + 91-9891179928

Those who opt on Line registration send scan copy of all documents and receipt of online payment at : allelelifesciences@gmail.com

Note : We will send confirmation within specified time through e.mail or remind us.

Registration Form

Name of Training Program :

Expected Date of Joining :

Candidate Details :

Name:

Father's Name:

Address :

Contact No :

Email:

Institution :

Qualification :

Terms & Conditions :

1. The admission to training / internship programs will be confirmed after the payment of registration fee along with documents.
2. The registration fee deposited is completely non refundable.
3. The industrial training fee includes the cost of chemical , reagents and study material costs.
4. I will deposit the service charges as decided by the company at the time of joining date of training program.
5. Students have to bear their own boarding/lodging /conveyance charges. We facilitate students in finding proper paying guest arrangements.
6. The trainees will have to bring their own lab coat and wear them all the time in the campus.
7. Trainees are selected on first come first serve basis
8. Trainees will maintain adequate discipline inside the lab premises.
9. Company will not be responsible for any medical, legal issues during the internship tenure.

DECLARATION

I _____ from _____
hereby declare that all statement/information given in the application form are true to the best of my knowledge and belief . I will strictly abide by the norms/lab etiquette during the training

Signature

Place: _____

Date: _____

For office use only

Instruments Capabilities

Our State of art facility is located in Industrial Area of Noida (NCR) . The lab / research facility is Total : 6000 Sq Feet

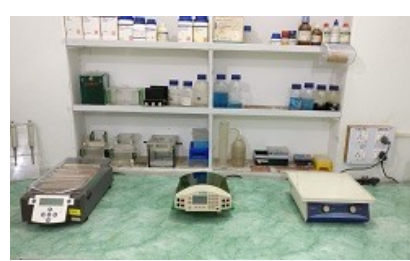
Affymatrix & Agilent Microarray Platform	Gene Expression Studies, Biomarker, Sequencing
Real Time PCR (ABI)	Gene Expression, Sequence Detection
PCR (ABI, Biorad , Eurofins) - 5 in numbers	Amplification of nucleic acids
Bioanalyser & Spectrophotometer	Quantification of Nucleic Acids
Gel Documentation System	Visualisation of Nucleic Acids, PCR Products etc.
Electrophoresis & Power Supply (Biorad) - 7 Sets	Separation of Nucleic Acids & Other Arrays
DNA Concentrator (Thermo Speedvac)	Nucleic Acid Extraction
Centrifuge, High Speed Centrifuge - 8 Nos	Sample Preparation
PCR Station and other accessories	

Biorad Profinia Affinity Chromatography	Affinity Chromatography - IMAC, GST, Antibody
Biorad Biologic Low Pressure Chromatography	Size Exclusion, Ion Exchange, Affinity etc.
Preparative HPLC (Thermo) , Agilent 1100	Bulk Protein Purification & Analysis
GE Amersham 2-D Electrophoresis System	Protein Characterisation
Immunoblot, SDS-PAGE , Biorad HV Powerpac	Visualisation of Nucleic Acids, PCR Products etc.
Mass Spectrometry , ELISA, Immunoassay	Protein Identification
Cryo Preservation Facility & Common Facility	Sample Storage & Preparation

Agilent HPLC System - PDA, FLD & ECD Detector	Separation and analysis of molecules
Agilent GC with FID & FPD Detectors	Separation and analysis of molecules
Thermo Prep HPLC with Dual Pump & UV-Vis	Bulk Purification & Analysis
Shimadzu GC with FID & NPD Detector	Separation and analysis of molecules
Triple Quad GC-MS System (Agilent)	Analysis of Semi Volatile & Volatile Compound
LC-MS-MS (API Sciex)	Analysis of Non Volatile Compound
Varian Carry Spectrophotometer	Analytical Tool for various purpose
Thermo Helios Spectrophotometer	Analytical Tool for various purpose
Vacuum Rotary Evaporator (Buchi)	Sample Preparation

Other Analytical Chemistry Equipments :

Refractometer , Flame Photometer (Toshniwal), Karl Fisher Titrator (Sistrionics), Potentiometer, Polarimeter , Tintometer ,Viscometer , Kjeldahl Distillation Unit , Kjeldahl Digestion Unit , Ion Selective for Fluoride Analysis (Thermo Orion) , Nephelometer , Soxhlet Extraction , Rotatory Vaccum Evaporator with chiller , etc.



Microbiology & Cell Culture Facility : Vertical Laminar Air Flow (4x2x2) , Horizontal Laminar Air Flow (2x2x2) B.O.D. Incubator (Julabo) , CO₂ Incubator (Jauan) , Orbital Incubator Shaker, UV Chamber , Incubator, Colony Counter , Colorimeter , Muffle Furnace , Hot Air Oven , Desiccators, Binocular Microscopes and , Lypholizer

Biochemistry / Organic Synthesis Chemistry Lab : Spectrophotometer (Thermo Heleus Alpha) , Analytical Balance (Sartorius) , Ph Meter (Thermo Orion) , Ion Selective (Thermo Orion) , Conductivity Meter (Thermo Orion) , Dissolved Oxygen Meter (Thermo Orion) , Turbidity Meter, Autoclaves, Hot Air Oven , Hot Plate , Magnetic Stirrers , Pipette Washer , Shaking Machine , Water Bath , Colorimeter , Flame Photometer , etc.

Lab Water Purification : Millipore Milli Q System

Clinical Biology Lab : Haematology Analyser , Automatic Immunoassay, Haematology HPLC Biorad Variant II



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