

FORENSIC SCIENTIST II

JOB DESCRIPTION

Classification Responsibilities: A Forensic Scientist II performs specialized forensic evaluations and/or complex forensic examinations of physical evidence submitted to the Police Department Forensic Services. A Forensic Scientist II is recognized as an expert in at least one area of forensic science, which may include blood alcohol analysis, controlled substance identification, toxicology, serology/DNA, arson, firearms/toolmark examination, or trace evidence analyses. Assignment areas include:

Biology Unit Assignment: A Forensic Scientist II assigned to the Biology Unit, performs serological and/or deoxyribonucleic acid (DNA) analysis on items of evidence related to police investigations. Duties include: visual examination, microscopic examination and/or serological testing on a variety of evidence items to examine for the presence of blood, semen, saliva, hair, bone and other potential biological material; preparation of samples for DNA analysis, DNA extraction using manual or robotic techniques, quantitation using Real Time Polymerase Chain Reaction (PCR) technology, PCR for the amplification of DNA extracts using a variety of DNA typing kits and DNA typing using Capillary Electrophoresis. The incumbent will interpret DNA typing results to include making comparisons to known profiles, making determinations about the inclusion or exclusion of contributors and making determinations about profiles to be entered into the Combined DNA Index System (CODIS). Additionally, the incumbent will utilize statistical databases to make determinations about the frequency of occurrence of profiles developed in the laboratory. The incumbent must use significant judgment in determining tests performed and items tested. Incumbents may be responsible for responding to crime scenes for Bloodstain Pattern Interpretation or they may be requested to interpret bloodstain in the laboratory based upon photographs and evidence items collected from crime scenes. Incumbents may also design and conduct experiments related to specific case issues. This class is responsible for performing related duties as required.

Controlled Substances Unit Assignment: A Forensic Scientist II in the Controlled Substances unit performs forensic examinations of physical evidence submitted to Forensic Services related to the identification of controlled substances. Duties include: performing qualitative analysis of samples on suspected drug samples including powders, liquids, plant materials, paper, and paraphernalia. Incumbents will perform macroscopic examinations, microscopic examinations, weight measurements, preliminary color tests, instrumental tests to include gas chromatography/mass spectrometry (GC/MS) and infrared spectrophotometry (FTIR/ATR), thin layer chromatography (TLC) and microcrystalline tests as well as interpret instrumental data. Incumbents will provide support for the K9 units and the field drug testing program including training of police personnel, proficiency testing, and distributing the test kits. This class is responsible for performing related duties as required.

Firearms Unit Assignment: A Forensic Scientist II assigned to the firearms unit performs complex forensic examinations of physical evidence submitted to the Forensic Services related to firearms and tool mark identification. Duties include: performing examinations of firearms, ammunition, ammunition components, tools, tool marks, and other firearms or tool related evidence. Incumbents may perform examinations on clothing, bedding, and other surfaces for the presence of gunshot residues or powder patterns, muzzle to target distance determinations, chemical restoration of obliterated serial

numbers, cartridge case ejection pattern testing and long range trajectory evaluations. Incumbents may also design and conduct experiments related to specific case issues. Incumbents are responsible for responding to crime scenes to assist with the documentation and collection of evidence, chemical testing for trace metals, projectile trajectory determination, reconstruction and diagramming of shooting events, and providing assistance of a technical nature to investigators. Incumbents are also responsible for entering and searching data in the National Integrated Ballistics Information Network (NIBIN). This class is responsible for performing related duties as required.

Toxicology Unit Assignment: A Forensic Scientist II in the Toxicology unit performs forensic examinations of blood and urine related to police investigations. Duties include: blood volatile analysis using headspace gas chromatography; enzyme-linked immunosorbent assay (ELISA) screening of blood and urine for drugs of abuse; confirmations of drugs of abuse from blood and urine utilizing gas chromatography mass spectrometry (GC/MS), gas chromatography tandem mass spectrometry (GC/MSMSMS), liquid chromatography tandem mass spectrometry (LC/MSMSMS), sample preparation using solid phase extraction (SPE) and associated equipment (positive pressure manifolds and sample concentrators), Liquid/Liquid extractions, pipetting and centrifuges; and documentation of quality assurance and controls, maintenance logs, results entered into a Laboratory information management system (LIMS); and may be involved in training of new analysts (Forensic Scientist I) and validation of appropriate new methods. This class is also responsible for performing related duties as required.

Common duties: A Forensic Scientist II writes scientific examination reports, prepares findings for court presentation, testifies in court, and discusses laboratory results with officers and attorneys. This class is responsible for performing related duties as required.

Distinguishing Features: This class is considered a journey-level position in the Police Department Forensic Services Forensic Scientist series. Incumbents in this class have progressed by non-competitive criteria-based promotion through successful completion of all stipulated requirements, or meet the education and experience requirements prior to being hired by the City of Mesa Police Department. Employees in this class may receive further training in order to progress by non-competitive promotion to the classification of Forensic Scientist III upon successful completion of requirements stipulated in the criteria-based promotion plan and the requirements of the class. A Forensic Scientist II may conduct field investigations at crime scenes to search for, collect, and preserve evidence for laboratory analysis; and reconstruct situations and physical evidence of a crime in the demonstration of proof of the connection of persons, instruments, or materials with the crime. The Forensic Scientist II class is distinguished from Forensic Scientist III class by the latter's state of the art expertise and years of laboratory experience. A Forensic Scientist II is supervised by a Forensic Scientist Supervisor through on-the-job observations, reports, meetings, and results achieved. All work is performed in accordance with established departmental policies and procedures, federal/state guidelines, and accreditation standards. A Forensic Scientist II works with chemicals and other hazardous materials. This class is FLSA exempt-professional.

QUALIFICATIONS

Employee Values: All employees of the City of Mesa are expected to uphold and exhibit the City's shared employee values of Knowledge, Respect, and Integrity.

Minimum Qualifications Required. Graduation from an accredited college or university with a Bachelor's or advanced degree in Biology/Biochemistry, Chemistry, Forensic Science, or closely related natural science. At least four years' experience in a crime laboratory as a Forensic Scientist or equivalent; and acceptance as an expert witness in court in at least one forensic discipline **OR** successful completion of all requirements stipulated in the criteria-based promotion plan for this classification. In addition, the following disciplines have specific minimum educational requirements: **Blood Alcohol/ Toxicology:** 24 credit hours of college coursework in chemistry and/or toxicology completed successfully. **Controlled Substances:** 20 credit hours of college coursework in chemistry completed successfully. **DNA:** A minimum of three courses (biochemistry, genetics, and molecular biology) totaling at least nine credit hours of college coursework completed successfully.

Special Requirements. Because of the confidential, sensitive nature of information handled, successful completion of a background investigation and polygraph is required. Must possess a valid Arizona Driver's License by hire date.

Substance Abuse Testing. Due to the safety and/or security sensitive nature of this classification, individuals shall be subject to pre-employment or pre-placement alcohol, drug and/or controlled substance testing as outlined in City policy and procedures.

Preferred/Desirable Qualifications. Experience as a Criminalist/Forensic Scientist in an American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) accredited laboratory actively engaged in the forensic sciences. **Firearms Assignment:** 20 credit hours of college coursework in chemistry completed successfully, experience with firearms examination, membership in the Association of Firearms and Toolmark Examiners in good standing, and completion of the National Firearms Examiner Academy.

ESSENTIAL FUNCTIONS

Communication: Communicates with the general public, other City employees, supervisors, sworn personnel, attorneys, and officers of the court in order to answer citizen's inquiries, assist with the evaluation of evidence for the investigation of crimes, and testify in court. Receives instructions and on-the-job training from other laboratory personnel. Communicates with other experts in the field to exchange information on analyses and evidence. Consults and coordinates with other forensic scientists, forensic latent fingerprint examiners, police officers, attorneys, private experts, and others on plans for the solution of problems involving the analysis, comparison, and identification of physical evidence. Prepares scientific examination reports with clearly organized thoughts using scientific nomenclature, proper sentence structure, punctuation, and grammar in order to present laboratory examination results.

Manual/Physical: Inspects and evaluates equipment, objects, information, and work-related conditions to determine compliance with prescribed operating and safety standards, regulations, and guidelines including manufacturer's specifications on computerized scientific equipment. Distinguishes colors to determine results of drug test/analyses and/or chemical tests. Uses common hand tools such as a screwdriver and various maintenance tools to maintain, set up, and clean laboratory instruments. Enters data into a personal or laboratory computer in order to analyze various items of evidence. Operates a motor vehicle requiring a standard Arizona Driver's License to respond to crime scenes, attend meetings, and provide court testimony. Prepares graphs, charts, and/or diagrams resulting from scientific

examinations. Works with chemicals using specialized non-routine, protective equipment to perform laboratory analyses.

Mental: Conducts research and analyzes data to perform scientific examinations. Performs mathematical and statistical computations in order to complete scientific examinations. Interprets graphs, charts, and mathematical formulas to check scientific reports. Comprehends and makes inferences from written material such as scientific literature and laboratory reference files to acquire expertise in the forensic field. Learns job-related material through on-the-job training and in a classroom setting regarding forensic laboratory techniques.

Knowledge/Skill/Abilities:

Knowledge of:

ASCLD/LAB accreditation standards;
Occupational Safety and Health Administration (OSHA) safety requirements;
Material Safety Data Sheets (MSDS);
applicable Arizona State Revised Statutes;
applicable scientific technical working groups requirements (for discipline/unit assigned);
applicable professional organizations (for discipline/unit assigned);
the principles, methods, materials, equipment, and techniques of forensic science;
the principles of chemistry, physics, biochemistry, and mathematics/statistics as related to forensic science;
crime scene procedures;
recent developments, current literature, and sources of information in the forensic science field;
state and federal statutes and case law covering contraband, drugs, and the use of physical evidence in court; and
criminal procedures concerning time limits, discovery evidence, and expert witnesses.

Skill in the use of forensic laboratory equipment.

Ability to:

carefully follow verbal and written instructions;
perform assigned tasks according to prescribed procedures;
make accurate observations and records of test results;
readily learn and apply the various methods and techniques involved in the scientific analysis of evidence;
withstand cross-examination in court; and
establish and maintain effective working relationships with department personnel and outside agencies.

The duties listed above are intended only as general illustrations of the various types of work that may be performed. Specific statements of duties not included does not exclude them from the position if the work is similar, related, or a logical assignment to the position. Job descriptions are subject to change by the City as the needs of the City and requirements of the job change.

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