

## FORENSIC SCIENTIST I

### JOB DESCRIPTION

**Classification Responsibilities:** A Forensic Scientist I is responsible for applying the physical sciences to the investigation of crimes by learning to perform laboratory examinations of physical evidence submitted to the Police Department Forensic Services. An employee in this class receives extensive training under direct supervision. Assignment areas include:

**Biology Unit Assignment:** A Forensic Scientist I 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, 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 judgement 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 patterns 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 Substance Unit Assignment:** A Forensic Scientist I in the Controlled Substances Unit performs forensic examinations of physical evidence submitted to Forensic Services related to the identification of controlled substances and fire debris analysis. Duties include: performing qualitative analysis of suspected drug samples and trace evidence of fire debris. 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, maintenance of instrumentation and distributing the test kits. This class is responsible for performing related duties as required.

**Firearms Unit Assignment:** A Forensic Scientist I assigned to the Firearms Unit performs 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.

***Latent Print Unit Assignment:*** A Forensic Scientist I in the Latent Print Unit performs forensic examinations of physical evidence submitted to the Forensic Services related to friction ridge comparative analysis. Duties include: taking exemplars for criminal and non-criminal matters, including deceased persons; making accurate conclusions regarding friction ridge comparative analysis; and operating the Arizona Automated Fingerprint Identification System (AZAFIS) and Next Generation Identification (NGI). Authorized personnel may perform shoe and tire comparisons. This class is responsible for performing related duties as required.

***Toxicology Unit Assignment:*** A Forensic Scientist I 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/MS/MS), liquid chromatography tandem mass spectrometry (LC/MS/MS), sample preparation using solid phase extraction (SPE) and associated equipment (positive pressure manifolds and sample concentrators), liquid/liquid extractions, pipetting and centrifuges; documentation of quality assurance and controls, maintenance logs, results entered into a Laboratory Information Management System (LIMS). This class is also responsible for performing related duties as required.

***Common Duties:*** A Forensic Scientist I writes scientific examination reports, prepares findings for court presentation, testifies in court, and discusses laboratory results with officers and attorneys. Personnel in this job classification work under close supervision from more experienced personnel and subject matter experts. This class is responsible for performing related duties as required.

***Distinguishing Features:*** This is a professional entry-level class in the Forensic Scientist series. Incumbents in this class receive training in higher skill level duties and perform examinations under close supervision. An employee in this class reads relevant materials and attends training sessions in all aspects of forensic laboratory practices. Routine work is performed independently, but assignments that are more complex may be performed under direct supervision depending on the level of difficulty. A Forensic Scientist I is distinguished from the Forensic Scientist II class by the latter's competence/expertise in more areas of forensic science and recognition as an expert witness in court. All work is performed in accordance with established departmental policies and procedures, federal/state guidelines, and accreditation standards. Employees in this class work with chemicals and other hazardous materials. As training progresses, incumbents are expected to exercise independence and good judgment. A Forensic Scientist I may progress by noncompetitive promotion to the classification of Forensic Scientist II after successful completion of all requirements stipulated in the criteria-based promotion plan, which include four years of forensic laboratory experience. This class is supervised by a Forensic Scientist Supervisor who reviews work in progress and through reports, meetings, and results achieved. 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 a closely related natural science. Job related experience may substitute for the degree requirements on a year-for-year basis. In addition, the following disciplines have specific minimum educational requirements. **Toxicology Unit Assignment:** Twenty-four (24) credit hours of college coursework in chemistry and/or toxicology completed successfully. **Controlled Substances Unit Assignment:** Twenty (20) credit hours of college coursework in chemistry completed successfully. **Biology Unit Assignment:** A minimum of three courses (biochemistry, genetics, and molecular biology) totaling at least nine credit hours of college coursework completed successfully. **Latent Print Unit Assignment:** Twenty-four (24) credit hours of college coursework in STEM (Science, Technology, Engineering, or Math) 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 Class D 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 internationally accredited laboratory actively engaged in the forensic sciences and testifying in court as an expert witness. **Firearms Unit Assignment:** Twenty (20) credit hours of college coursework in chemistry completed successfully and experience with firearms examination. **Biology Unit Assignment:** Successful completion of a college level course in statistics or population genetics.

## ESSENTIAL FUNCTIONS

**Communication:** Communicates with supervisors, sworn personnel, other City employees, attorneys, and the general public in order to answer citizen's inquiries, assist with the evaluation of evidence for the investigation of crimes, and prepare for court. Receives instructions and on-the-job training from other Forensic Services personnel. Communicates with other experts in the field to exchange information on the analyses of evidence. Consults and coordinates with forensic scientists, forensic latent print 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 routinely during examinations and 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 Class D 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:

International accreditation standards;  
Occupational Safety and Health Administration (OSHA) safety requirements;  
Safety Data Sheets (SDS);  
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, biology, physiology, botany, and mathematics/statistics as related to forensic science;  
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;  
criminal procedures concerning time limits, discovery evidence, and expert witnesses; and  
crime scenes procedures.

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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EEO-Prof  
JOB FCTN-TEC  
INCREMENTS 40-200

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