

ILLINOIS DEPARTMENT OF CENTRAL MANAGEMENT SERVICES  
CLASS SPECIFICATION

FORENSIC SCIENTIST SERIES

<u>CLASS TITLE</u>	<u>POSITION CODE</u>	<u>EFFECTIVE</u>
FORENSIC SCIENTIST TRAINEE	15897	5/1/10
FORENSIC SCIENTIST I	15891	5/1/10
FORENSIC SCIENTIST II	15892	5/1/10
FORENSIC SCIENTIST III	15893	5/1/10

INTRODUCTION:

Forensic Scientists are involved in the use of scientific methods of observation and analysis to detect and interpret physical evidence associated with criminal investigations. The forensic science laboratory system provides three areas of career development. An incumbent in this series performs or has promotional opportunity to perform 1) as a career forensic caseworker or benchworker, 2) as a training instructor, training program coordinator, quality assurance coordinator, research Program Administrator or 3) as part of management, planning, coordinating, implementing or controlling various policies and services provided by the forensic science laboratory system.

The majority of the Forensic Scientists are involved in the examination of physical evidence and the subsequent presentation of their observations and analysis in criminal court. These are the caseworker or benchworker levels of the series. Casework is found to incorporate one or more work specialties such as drug and marijuana identification (Chemistry Section), document identification (Documents Section), firearms and toolmarks identification and comparison (Firearms/Toolmarks Section), fingerprint identification and footwear impressions (Latent Prints Section), hair, fiber, soil, and particulate unknowns identification (Microscopy Section), computer image enhancement/physical evidence enrichment (Image Enhancement Section), forensic serological examination (Serology Section), paint chip identification and arson identification (Trace Section); Forensic toxicological analysis (Toxicology Section).

A person entering this series as a trainee receives very structured and comprehensive training designed to provide the necessary technical experience to successfully perform routine forensic casework. The trainee will also be introduced to the court system and various contacts (e.g., user law enforcement agency systems and personnel, attorneys, judges, and related contacts) who will become an essential part of the caseworking function.

Finally, the trainee will be introduced to the administrative and managerial functions encompassed in the Forensic Scientist series. The length of training period depends on the specialty area where the incumbent is selected to perform analysis. It will also depend on the variety of instruments used in his/her specialty area, the ability to use such instruments, and the size of caseloads (this depends on the number of items of evidence to compare and/or identify, the variety of instruments used in performing the analysis, and length of time to perform each step in the analysis).

INTRODUCTION (Continued):

Level differentiations in the benchwork levels (Forensic Scientist I, II, and III levels) of the series are based on type of supervision received or exercised, type of review received, independence of action when performing scientific examinations and providing results to the justice system, and additional duties accrued in career development while assisting management achieve bureau goals.

As an incumbent progresses to the management level (Public Service Administrator or Senior Public Service Administrator), performing bench work loses emphasis and changes to management of the forensic science laboratory personnel and facilities or providing training programs and technical improvements for new and current staff along with other managerial functions.

Certain positions are specifically excluded from this series. Polygraph Examiners are components of the forensic science crime laboratory, but are regularly engaged in the detection of deception through polygraph examinations, interviewing witnesses and interrogating suspects. Examination of physical evidence is not a function in the Polygraph Examiner class series. Additionally, incumbents in these positions are required to possess a valid Illinois license as a Detection of Deception Examiner.

FORENSIC SCIENTIST TRAINEE

POSITION CODE: 15897

**DISTINGUISHING FEATURES OF WORK:**

Under immediate supervision, for a period of six months and not to exceed twelve months, participates in an agency sponsored training program receiving working assignments designed to develop knowledge, understanding, and technical skills related to one of the specialty areas of the Forensic Science Laboratory System; receives instruction and must demonstrate proficiency in the various examinations, techniques, and instrumentation used in the assigned specialty area; observes courtroom procedures and courtroom demeanor and participates in skill development mock trials.

**ILLUSTRATIVE EXAMPLES OF WORK:**

1. Receives comprehensive laboratory training in one of the specialty areas of forensic science, observes and demonstrates proficiency in the technical examinations and equipment essential to perform casework in one of the specialty areas. For example, uses the stereoscopic microscope for locating evidence that may be present in debris, garments, weapons and tools, or using an infrared spectrophotometer in identifying a substance in a compound or drug or performs electrophoresis tests on blood stains, or any combination of equipment and techniques in examination of physical evidence; prepares written reports relative to the examination results to include a descriptive outline of an examination and other activity in statistical reports.
2. Attends seminars or lectures to develop intimate knowledge of various service philosophies and operating objectives of other specialty groups within and outside the laboratory system; attends and participates in staff meetings, conferences, and other training and development activities.
3. Receives instruction in the various techniques used in the collection, preservation, handling, and receipt of physical evidence; learns the importance of qualitative control of evidence and testifies in court on the chain of custody of evidence.
4. Reviews books, journals, periodicals, and other informative materials pertinent to the duties of the position; becomes familiar with current trends in new and/or unproven techniques in the forensic science field.
5. Learns to clean and calibrate sensitive scientific instruments used in specialized area of assignment.
6. Performs other duties as required or assigned which are reasonably within the scope and duties enumerated above.

## FORENSIC SCIENTIST TRAINEE (Continued)

### DESIRABLE REQUIREMENTS:

#### Education and Experience

Requires a bachelor's degree in natural or forensic science.

In addition to this degree requirement, the three options require as follows:

Option A subsumes the laboratory discipline areas of firearms/tool marks, latent prints, questioned documents and imaging photography.

Option A requires no additional education beyond the bachelor's degree in natural or forensic science.

Option B subsumes the laboratory discipline areas of trace chemistry/microscopy, drug chemistry and toxicology.

Option B requires, in addition to the bachelor's degree in natural or forensic science requirement, a minimum of twenty semester hours of chemistry with a total of sixty semester hours of natural science.

Option C subsumes the laboratory discipline areas of biology and DNA.

Option C requires, in addition to the bachelor's degree in natural or forensic science requirement, successful completion of coursework of nine (9) semester hours in the three DNA class requirements of genetics, biochemistry and molecular biology with a total of sixty semester hours of natural science.

#### Knowledges, Skills and Abilities

Requires elementary knowledge of basic statistical methods and procedures.

Requires elementary knowledge of laboratory techniques used for scientific examination of physical evidence.

Requires ability to maintain and establish satisfactory working relationships with coworkers, various law enforcement personnel, and legal system personnel.

Requires ability to communicate ideas effectively in oral and written form.

Requires ability to construct court exhibits and demonstration charts.

Requires ability to analyze and correlate data contained in reports of crime.

Requires ability to develop evidence and to present it convincingly in written reports or orally.

Requires ability to compare, analyze, and/or identify physical materials and other matters.

FORENSIC SCIENTIST I

POSITION CODE: 15891

DISTINGUISHING FEATURES OF WORK:

Under direct supervision, performs selected forensic science casework of limited complexity and difficulty at a working level, which may subsequently need presentation of findings and analysis in a criminal court, in one of the specialty sections of forensic science; prepares documentation and reports according to established procedures.

The casework is specifically assigned to introduce the beginning benchworker to the diversity of cases, the importance and notoriety of a case, the variety and relationship of various investigations being conducted and the cooperation, coordination, and time involved to produce the needed factual information. The casework, all charts and reports of findings are carefully reviewed and certified by a higher level scientist. Researching new techniques, independent lecturing and conducting seminars in forensic science techniques is typically not practiced at this level.

ILLUSTRATIVE EXAMPLES OF WORK:

1. Performs assigned laboratory analysis of physical evidence in one or more of the specialty areas of the forensic laboratory system; obtains information and potential evidence from trainer, higher level benchworker and/or user agency personnel, discusses what is to be examined; develops own application in performing examinations which involve comparing, analyzing and/or identifying physical evidence.
2. Develops good rapport with user agencies by contacting various law enforcement agency personnel, and legal personnel - for example, State's Attorneys and their assistants - to provide for a smooth disposition of assigned casework; makes arrangements for information gathering, pretrial hearings and trial dates for cases requiring such effort.
3. Prepares written case reports describing evidence examined and results of observations and findings, forwards case reports to assigned benchworker or trainer for complete review and verification of examinations performed insuring that departmental policies and procedures are followed; completes requisite activity sheets for statistical reports.
4. Prepares evidence for presentation in court proceedings; maintains case files and receipts to prevent chain of custody contamination and preserve the integrity of examinations performed; utilizes and performs work necessary for photographic enlargements and other visual aides in cases requiring such presentation; testifies in court regarding examination results.
5. Assists in routine preventative maintenance of laboratory, safety equipment and analytical instruments.
6. Assists in crime scene investigations for case development during or after normal working hours, collects and packages potential evidence.

FORENSIC SCIENTIST I (Continued)

7. Performs other duties as required or assigned which are reasonably within the scope and duties enumerated above.

#### DESIRABLE REQUIREMENTS:

##### Education and Experience

Requires a bachelor's degree in natural or forensic science.

In addition to this degree requirement, the three options require as follows:

Option A subsumes the laboratory discipline areas of firearms/tool marks, latent prints, questioned documents and imaging photography.

Option A requires no additional education beyond the bachelor's degree in natural or forensic science.

Option B subsumes the laboratory discipline areas of trace chemistry/microscopy, drug chemistry and toxicology.

Option B requires, in addition to the bachelor's degree in natural or forensic science requirement, a minimum of twenty semester hours of chemistry with a total of sixty semester hours of natural science.

Option C subsumes the laboratory discipline areas of biology and DNA.

Option C requires, in addition to the bachelor's degree in natural or forensic science requirement, successful completion of coursework of nine (9) semester hours in the three DNA class requirements of genetics, biochemistry and molecular biology with a total of sixty semester hours of natural science.

Requires one year of professional forensic science work experience or completion of an agency approved training program.

##### Knowledges, Skills and Abilities

Requires working knowledge of basic statistical methods and procedures.

Requires working knowledge of laboratory techniques utilized in one of the forensic science specialty areas.

Requires working knowledge of photographic techniques used in evidence examination and courtroom presentation.

Requires elementary knowledge of state, federal, and local criminal laws and regulations as they relate to the examination of physical evidence.

Requires elementary knowledge of the rules of evidence in criminal law.

Requires ability to establish and maintain satisfactory working relationships with coworkers, various law enforcement personnel, and legal system personnel.

Requires ability to analyze, compare, and/or identify materials and interpret its significance as physical evidence in a criminal court.

Requires ability to communicate thoughts, scientific examinations and conclusions in a clear, concise, and logical manner both orally and in writing.

Requires ability to construct court exhibits and demonstration charts.

Requires ability to testify in court as an expert witness and develop good courtroom demeanor.

Requires ability to perform routine preventative maintenance on laboratory and safety equipment and instruments.

Requires ability to prepare chemicals used in scientific analysis and quality control activities.

Requires ability to respond to emergency situations 24-hours a day, seven days a week.

FORENSIC SCIENTIST II

POSITION CODE: 15892

DISTINGUISHING FEATURES OF WORK:

Under general supervision, performs technical, forensic laboratory analysis, with overall limited review and evaluation, in one of the forensic science specialty areas; prepares and certifies own documentation and reports of examination findings; assists higher level scientists in improving or developing new techniques.

ILLUSTRATIVE EXAMPLES OF WORK:

1. Independently selects and performs a variety of technical laboratory analyses of physical evidence in one of the specialty areas of the forensic science laboratory system; receives potential evidence from user agency personnel, discusses case and determines what examinations can and will be performed; analyzes and/or identifies physical evidence; maintains case files and receipts to prevent chain of custody contamination and preserve the integrity of examinations performed.
2. Contacts user agency and legal personnel to make arrangements for information gathering, pretrial hearings and trial dates as necessary; prepares evidence for court presentation and testifies in criminal court regarding examination results.
3. Prepares written case reports describing evidence examined and results of observation findings, certifies and returns all necessary evidence and reports to user agencies and/or court system.
4. Assists higher level scientists in performing research, improving current techniques, and/or developing new techniques; performs literature search and examinations necessary to validate or prove a known technique.
5. Performs preventative maintenance of laboratory and work area, cleans and maintains safety equipment and/or calibrates analytical equipment; prepares chemicals needed for analysis and checks chemical reagents against known standards essential to quality control.
6. Conducts periodical discipline area talks for user agency and nonuser agency personnel; assists higher levels in training user agency personnel in the proper methods of collection and preservation of physical evidence as necessary.
7. Attends professional meetings and seminars relative to the functions of the crime laboratory program; reviews current literature pertinent to the duties of the position for professional development.
8. Assists in crime scene investigations for case development during or after normal working hours, collects and packages potential evidence.
9. Performs other duties as required or assigned which are reasonably within the scope and duties enumerated above.

## FORENSIC SCIENTIST II (Continued)

### DESIRABLE REQUIREMENTS:

#### Education and Experience

Requires a bachelor's degree in natural or forensic science.

In addition to this degree requirement, the three options require as follows:

Option A subsumes the laboratory discipline areas of firearms/tool marks, latent prints, questioned documents and imaging photography.

Option A requires no additional education beyond the bachelor's degree in natural or forensic science.

Option B subsumes the laboratory discipline areas of trace chemistry/microscopy, drug chemistry and toxicology.

Option B requires, in addition to the bachelor's degree in natural or forensic science requirement, a minimum of twenty semester hours of chemistry with a total of sixty semester hours of natural science.

Option C subsumes the laboratory discipline areas of biology and DNA.

Option C requires, in addition to the bachelor's degree in natural or forensic science requirement, successful completion of coursework of nine (9) semester hours in the three DNA class requirements of genetics, biochemistry and molecular biology with a total of sixty semester hours of natural science.

Requires three years of professional forensic science work experience.

#### Knowledges, Skills and Abilities

Requires extensive knowledge of statistical methods and procedures.

Requires working knowledge of laboratory techniques in methods of application utilized in one of the forensic science specialty areas.

Requires working knowledge of photographic techniques used in evidence examination and courtroom presentation.

Requires working knowledge of state, federal and local criminal laws and regulations as they relate to the examination of physical evidence.

Requires working knowledge of the rules of evidence in criminal law.

Requires working knowledge of collecting and preserving physical evidence.

Requires working knowledge of scientific research and methods and procedures as it relates to the field of forensic science.

Requires ability to establish and maintain satisfactory working relationships with coworkers, other law enforcement agency personnel, and legal system personnel.

Requires ability to apply forensic laboratory principles and techniques in an accurate and progressive manner for efficient disposition of casework.

Requires ability to work independently.

Requires ability to communicate thoughts, interpretations of scientific examinations, and conclusions in a clear, concise, and logical manner both orally and in writing.

Requires ability to construct court exhibits, demonstration charts, and testify in court as an expert witness, with proper courtroom demeanor.

Requires ability to perform literature search and other scientific research relative to forensic science practices and techniques.

Requires ability to introduce user agency personnel to methods of collection and preservation of physical evidence.

Requires ability to calibrate sensitive scientific instruments and perform preventative maintenance and quality control activities.

Requires ability to respond to emergency situations 24-hours a day, seven days a week.

FORENSIC SCIENTIST III

POSITION CODE: 15893

DISTINGUISHING FEATURES OF WORK:

Under direction, serves as the advanced lab discipline specialist, performing both routine and advanced forensic science casework which may be sensitive and controversial in nature, together with various combinations of work listed below: serves as a quality assurance monitor, performing statewide laboratory inspections and proficiency tests in one of the specialty areas of the program, and/or assisting management performing special projects, e.g., writes procedures manuals, designs plans or reorganizes laboratory space, coordinates material and equipment procurement and/or facility and equipment maintenance; provides orientation to new staff, section lectures to user agency personnel; approves or performs case reviews of lower level scientists' work, and serves as a rebuttal witness in job related court cases.

ILLUSTRATIVE EXAMPLES OF WORK:

1. As a quality assurance coordinator, inspects laboratories and gives proficiency tests to Forensic Scientists I, II and III in an effort to improve quality and promote quality awareness; identifies and discusses problems, forensic techniques and equipment with fellow scientists in an effort to improve their capabilities and raise levels of confidence; recommends actions to prevent problems from occurring or reoccurring, suggests equipment procurement and other services which provide the criminal justice system with quality forensic science laboratory services.
2. As an advanced specialist, performs both routine and advanced casework which may be sensitive and controversial in nature, for example, cases with multiple suspects or multiple victims, cases requiring a large number of examinations and/or cases which have and are expected to receive a great amount of press by the news media, cases which require a large amount of cross section communicating and coordinating efforts for a smooth disposition of the case; prepares written reports of examination results and provides testimony in criminal courts as necessary; serves as a rebuttal witness; and reworks cases when user agencies find other forensic scientist's findings and results unacceptable for presentation in court.
3. Participates in research projects, performs and/or serves as team leader to lower level professionals performing literature searches and scientific examinations necessary to prove or validate a known technique; develops new or improves current techniques used in the laboratory system and develops work hypothesis for discovery research.
4. Participates in the agency's training efforts of both in-house and user agency personnel; assists laboratory manager in coordinating and arranging training for user agency personnel in the proper methods of collection and preservation of physical evidence or coordinating regional programs such as the Marijuana Leaf Identification program; provides orientation and demonstrates operation of scientific equipment and instruments to new employees.

### FORENSIC SCIENTIST III (Continued)

5. Performs administrative support functions to include, but not be limited to, coordinating instrument and equipment maintenance, inventory and ordering of laboratory supplies, writing safety and work procedures, and preparing bid specifications for the procurement of new analytical equipment.
6. Assists in crime scene investigations for case development during or after normal working hours, collects and packages potential evidence.
7. Performs other duties as required or assigned which are reasonably within the scope or duties enumerated above.

### DESIRABLE REQUIREMENTS:

#### Education and Experience

Requires a bachelor's degree in natural or forensic science.

In addition to this degree requirement, the three options require as follows:

Option A subsumes the laboratory discipline areas of firearms/tool marks, latent prints, questioned documents and imaging photography.

Option A requires no additional education beyond the bachelor's degree in natural or forensic science.

Option B subsumes the laboratory discipline areas of trace chemistry/microscopy, drug chemistry and toxicology.

Option B requires, in addition to the bachelor's degree in natural or forensic science requirement, a minimum of twenty semester hours of chemistry with a total of sixty semester hours of natural science.

Option C subsumes the laboratory discipline areas of biology and DNA.

Option C requires, in addition to the bachelor's degree in natural or forensic science requirement, successful completion of coursework of nine (9) semester hours in the three DNA class requirements of genetics, biochemistry and molecular biology with a total of sixty semester hours of natural science.

Requires five years of professional forensic science work experience.

#### Knowledges, Skills and Abilities

Requires thorough knowledge of statistical methods and procedures.

Requires extensive knowledge of laboratory techniques and methods of applications utilized in one of the forensic science discipline areas.

Requires extensive knowledge of collecting and preserving physical evidence.

Requires extensive knowledge of photographic techniques used in evidence examination and courtroom presentation.

Requires extensive knowledge of state, federal, and local criminal laws and regulations as they relate to the examination of physical evidence.

Requires extensive knowledge of the rules of evidence in criminal law.

Requires extensive knowledge of scientific research methods and procedures as it relates to the job.

Requires ability to establish and maintain satisfactory working relationships with coworkers, other law enforcement personnel, and legal personnel.

Requires ability to coordinate the activities of a small group or staff.

FORENSIC SCIENTIST III (Continued)

Requires ability to perform specialized and sensitive physical evidence examination cases in an accurate and progressive manner.

Requires ability to communicate thoughts, interpretations of scientific examinations, and conclusions in a clear, concise, and logical manner both orally and in writing.

Requires ability to testify in court as both an expert and rebuttal witness.

Requires ability to perform literature search and other scientific research relative to forensic science.

Requires ability to coordinate and conduct training seminars for user agency personnel.

Requires ability to coordinate and perform preventative maintenance of laboratory equipment and vehicles, adjust and calibrate sensitive equipment, and quality control activities.

Requires ability to perform laboratory inspections and proficiency testing in assigned discipline area.

Requires ability to respond to emergency situations 24-hours a day, seven days a week.